



Aden Protectorate

STATUS OF FISHERIES 1949: Little has been done to further or develop a fishing industry in Aden, states a May 4 American consular report from that country. According to reports submitted by the Government Fisheries Officer of the United Kingdom this area has potentialities for fisheries development. In British Somaliland, a small canning factory has been set up and it is exporting its products. In Mukalla, two Arab firms operate a dried fish and fish oil business, marketing their products mainly in India. All these fishing operations are on a small scale.

Aden has a fisheries officer doing research. Specimens are gathered and instruction is given to the natives on how to improve their fishing techniques and marketing.

The American Consulate reports that inquiries from American merchants interested in importing dried fish and fish oil from this locality have been received.



Argentine Republic

CURRENT FISH MARKETING SITUATION:^{1/} Because canned fish is a luxury item in Argentina, locally-produced food is plentiful, and the country suffers from a dollar shortage, it is almost impossible for Argentina to import canned fishery products at this time. This is the information submitted by Milton J. Lindner, who is covering the Eastern part of South America in a survey of South American markets for U. S. fishery products.

The Central Bank, which controls dollar permits, will not issue permits to export dollars for canned fishery products. The recent loan from the United States will not materially change this situation in the near future since the loan money will be used to pay the backlog of obligations and to purchase farm and transportation machinery which are in short supply.

^{1/} This is the first report in a series to give information on current and potential markets for United States fishery products in South America. Milton J. Lindner and Robert O. Smith, United States Fish and Wildlife Service representatives, are now in South America investigating markets in connection with a survey sponsored cooperatively with the U.S. Department of Agriculture's Office of Foreign Agricultural Relations. More detailed reports will be issued at a later date as "Foreign Market Circulars" and will be available from the Branch of Commercial Fisheries, U. S. Fish and Wildlife Service, Washington, D. C.

The demand for canned fishery products is being met by increased local production of mackerel, which is packed as tuna, salmon, albacore, and "caballa" (the local name).

Beef is plentiful and cheap, being subsidized by the Argentine Government. Fresh beef of good quality retails from 14¢ to 25¢ per pound (U. S. currency equivalent), and canned mackerel of poor to fair quality from 50¢ to over \$1.30 per pound (U. S. currency equivalent), depending on type of pack.

Prior to the war, Argentina's principal fishery imports were dried cod, mostly from Norway and the United Kingdom; canned sardines, mostly from Spain; herring in brine, mostly from the Netherlands and the United Kingdom; and canned oysters, mostly from Spain. Imports from the United States were chiefly canned pilchards in tomato sauce. Imports were cut off during the war, but increased rapidly after the end of hostilities. Argentina, like many other countries, soon ran out of dollar exchange and by mid-1947 found it necessary to impose restrictions on imports and currency transactions. Very little canned or preserved fishery products have been imported in about two years. A few of the smaller shops still have U. S. canned salmon and oysters. The larger stores, with a greater turnover, have been out of these products for some time. Some frozen squid and octopus were observed in the market, apparently of Spanish origin, retailing at about 90¢ per pound (U. S. currency equivalent).

The Argentine catch of marine fishes is reported about 110 million pounds a year, of which mackerel accounts for about 32 million pounds, hake about 22 million, and anchovy about 13 million. Fresh-water fish production is about 33 million pounds annually, over half of which is sabalo, a species similar to the buffalo fish. Practically all the sabalo are processed for meal and oil.

In Buenos Aires, fresh fish is sold in the round, and selling prices are fixed by the Municipal Government. Ten large trawlers are operating, half of which are owned and operated by the Federal Government. These trawlers supply principally hake and sea trout to the fresh fish markets. A good variety and quality of fresh fish and shellfish are available.

The break in prices of shark-liver oil in the United States market and the prohibition on the imports of canned fishery products into Argentina, have resulted in the fishermen changing from shark to mackerel fishing to meet the changed market situation. Accordingly, shark-liver oil production declined from 23 trillion units of Vitamin A in 1946 to about 3.7 trillion units in 1949. The mackerel fishery increased from practically nothing in 1945 to over 32 million pounds in 1949.

All imports of canned and packaged fish must be labeled in Spanish to indicate: name of product, name of importer or local representative, net weight of contents, country of origin, and year and month of packing. Products having an acid reaction must be packed in enamel-lined cans.



Australia

AUSTRALIAN TUNA EXPORT PROSPECTS: The Australian Assistant Trade Commissioner in San Francisco is optimistic about the Californian market for Australian tuna, reports the March 1950 Fisheries Newsletter issued by the Australian Director of Fisheries.

According to the Commissioner, the Californian industry was most interested in the trial shipment of Australian frozen tuna (in the round) to San Francisco, which arrived in excellent condition.

Although the Australian southern bluefin (Thunnus maccoyii) is not quite the same species as the California bluefin (Thunnus thynnus), it has been established that it is a light-meat tuna.

Australian fishermen catch the tuna by trolling and bleed the fish, and since the fish are handled individually, they are generally free from bruises. On the other hand, California fishermen catch bluefin mostly by purse seine and they are not generally bled.

Samples of Australian canned tuna also created a very good impression in California, according to the Commissioner. However, whereas round tuna is admitted into the United States duty-free, the canned tuna is assessed a duty of 22½ percent ad valorem.

The Commissioner indicated that he had reason to hope that in the not too distant future there would again be direct steamer connections between Sydney and San Francisco obviating consignment to Vancouver for transshipment. This transshipment doubles the freight cost between Sydney and San Francisco.

NEW SPINY LOBSTER PROCESSING TECHNIQUE DEVELOPED: Australian exports of spiny lobster tails (crayfish) have become quite an important factor in the economy of the producing States, particularly, Western Australia and South Australia. Since most of the tails are exported to the United States, the spiny lobster industry is of national importance as a dollar-earner, states the March 1950 Fisheries Newsletter.

The rapid growth of this industry has brought out the need for rapid development of techniques in the handling of spiny lobsters and in the freezing and transportation of the "tails."

Since the Australian Department of Commerce and Agriculture requires that the anus and digestive tract be removed, several methods of doing this have been developed.

However, an employee of one of the processing companies in Geraldton, Western Australia, has recently invented and patented a device for removing the anus and digestive tract. The use of this device will probably supersede all previous methods employed.

The invention is a new vacuum-type machine. A vacuum pump is connected by suitable piping to a vacuum tank (the larger the better), to which is fitted a vacuum gauge. Leading from this vacuum tank is a connecting pipe which leads to a lidded receptacle. The latter is fitted with an air-tight lid, on the underside of which is fixed a baffle that goes down into the receptacle some eight

inches. The connecting pipe from the vacuum tank is fitted into the lid of this receptacle on one side, and leading away, on the other side, is a flexible-hose pipe, into the end of which is fitted a stainless steel tube, threaded and fitted with washers to take the cutting tool. The cutting tool is a screw-on nickel-steel drawn pipe made razor-sharp at the cutting end, which is sufficiently large to fit over the anus. Continuous operation is allowed by having spare, sharp cutting tools.

In operation, this cutting tool is placed over the anus. The suction causes the skin around the anus to be drawn tightly against the cutting edge, thus stretching the skin to some extent and making it easy for the operator, by the exertion of hardly any pressure, to completely sever the anus. The anus, with the digestive tract, is then drawn along the flexible hose into the receptacle, hits the baffle plate, and falls to the bottom. If desired, two or more flexible hoses from the lid to the operating tables can be used, in which case a larger vacuum tank is necessary. The vacuum maintained in the plant at Geraldton was 10 inches. After the removal of the anus and the digestive tract, the operator can, if he sees any blood or dirt, quickly remove it from the tail by the vacuum process. No part of the digestive tract or contents is left behind.

An officer of the Australian Department of Commerce and Agriculture has visited practically all packing establishments throughout Australia and has inspected a large number of "tails" from which the digestive tracts have been removed by various methods. In his opinion, the method just described gives a result which is hygienic and speedy in performance, and leaves nothing to be desired as far as compliance with the Australian export health regulations is concerned.

A more recent development of the industry is the use of the flesh in the claws and the body for the production of packaged, frozen, cooked spiny lobster meat (crayfish meat). After the separation of the raw tail for export, the remainder of the spiny lobster is cooked and the meat removed.

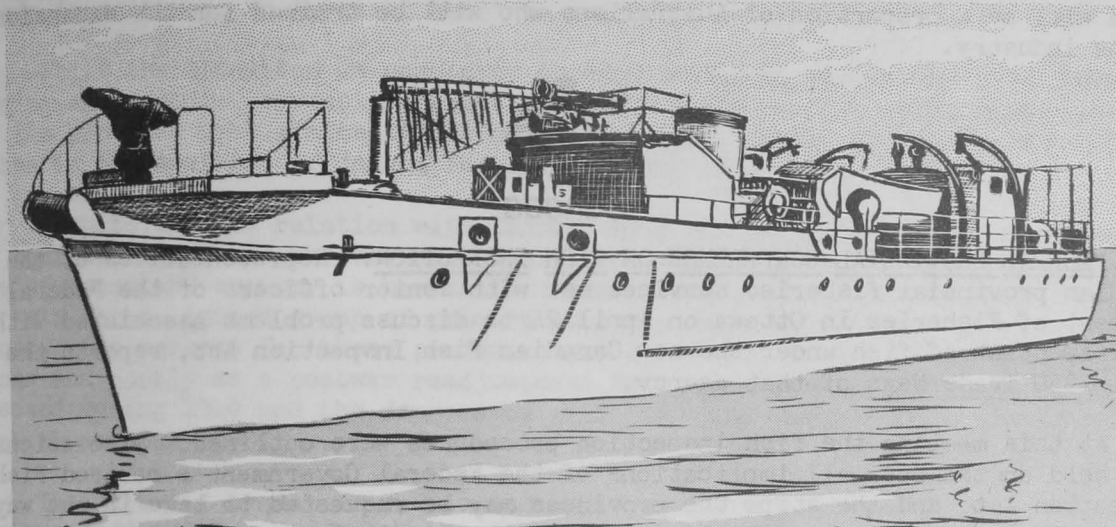
WHALING INDUSTRY: The one Australian whaling company hopes to capture 400 humpback whales this season, which began in June.

This company has two catcher boats, but for nearly all of its first season (1949) it had only one chaser working at a time. Last season (between July 5 and October 12) the company took 190 whales from which 1,000 metric tons of oil was obtained. The company, which operates from Point Cloates, Western Australia, hopes to obtain a higher yield this year.

Just before the end of last season a meal factory began production and turned out about 60 metric tons of 76-percent protein meal. This meal and the guano made from the rest of the offal were sold locally. All the oil was sold to the Dutch Government. The factory is now equipped to handle four whales a day.

All of the whales captured last season were taken within a radius of about 50 miles. This season the chasers are equipped with radiotelephone enabling them to keep in touch with the factory. Each chaser carries a crew of nine, comprising gunner, mate, two engineers, four seamen, and a cook.

About \$224,000 has been invested in this whaling company. The largest number of men employed in the factory last season was 105 and it is expected that



ONE OF TWO CHASERS USED BY THE AUSTRALIAN WHALING COMPANY OPERATING OUT OF POINT CLOATES, WESTERN AUSTRALIA. NOTE FOLDED MAST TO GET UNDER LOW BRIDGES AND ON FOREDECK THE TRACTOR WHICH SERVES AS A WINCH FOR PLAYING WHALES.

about the same number will be employed this year. The manager of the company reports that the average earnings of the workers, based on wages and bonus, were about \$56.00 per week plus free living quarters. Meals cost \$5.60 per week per man.

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GOVERNMENT COMMISSION TO COMMENCE WHALING: The Australian Whaling Commission expects to commence whaling in June this year from its first base at Babbage Island, Carnarvon, Western Australia. It plans to produce 4,500 tons of whale oil, 3,000 tons of meal, and 6,000 tons of whale solubles from a catch of 600 whales in its first season, according to the February 1950 Fisheries Newsletter.

After investigating the possibilities of establishing a whaling industry on a national basis, it was decided that a combination of circumstances made operation of a factory ship in the Antarctic uneconomical, and that a shore station should be established. Legislation was passed bringing into being the Australian Whaling Commission.

Catching operations will be conducted with three catchers. One is being built (Clyde), a second (Southern Breeze) has been purchased in South Georgia; and to date no definite move has been made to purchase a third catcher.

Southern Breeze is 137 ft. x 26 ft. x 13 ft. 7 inches, with a gross metric tonnage of 344, and a speed of 13 to 14 knots. The Clyde is 160 ft. x 31 ft. x 17 ft. 6 inches (moulded), with a gross tonnage of 600, and a speed of 15 knots. Delivery of this vessel is scheduled on May 1, 1950.

A prefabricated steel building (220 ft. x 135 ft.) will enclose a 2-stage flensing deck and all processing equipment, as well as providing store and warehouse facilities.

Most of the technical staff and skilled operatives will be Norwegian, but there will be a proportion of Australians who will be trained for the expansion of the industry.



Canada

FEDERAL-PROVINCIAL CONFERENCE ON FISH INSPECTION: Representatives of the ten Canadian provincial fisheries services met with senior officers of the Federal Department of Fisheries in Ottawa on April 24 to discuss problems associated with the inspection of fish under the new Canadian Fish Inspection Act, reports the April 1950 Trade News of that agency.

At this meeting the fish inspection procedures were outlined. Discussions were held on the over-all implications of the Federal Government's revised Fish Inspection Act, and the steps the provinces may be requested to take in the way of enabling legislation to supplement the Act, when it is proclaimed. The majority stated the provinces would pass complementary and enabling legislation to the new Act when it becomes operative. Some provinces already have their own fish inspection acts, and one of the main purposes of the discussions was to clarify the fields which should be administered by the Federal and provincial authorities, and promote the coordination of administration and legislation on a uniform basis.

The meeting considered desirable the Federal suggestion to ask the fishing industry to cooperate in a zone test to ascertain the amount which domestic fish sales could be increased through higher quality products, coupled with advertising and a consumer education.

Regulations applying to the inspection of whitefish, and the application of compulsory inspection of export shipments of this species were also discussed. To date whitefish inspection has been on a voluntary and trial basis. A notice will be issued when the proposed compulsory product inspection regulations, with whatever amendments are necessary, are to become effective.

FISHERIES PRICES SUPPORT BOARD A PERMANENT BODY: A bill passed by the Canadian House of Commons in March made the Fisheries Prices Support Board a permanent body, according to the Trade News.

The Board was set up when it was expected that the fishing industry might find difficulty in readjusting itself to normal trade conditions after the greatly expanded activities brought about by World War II.

Since the Board's creation in 1947, it had been necessary to have its existence approved annually by Order-in-Council.

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CONFEDERATION AND NEWFOUNDLAND'S FISHERIES: One year after the entrance of Newfoundland into the Canadian union, it has become possible to state definitely that the effects of union upon the vital export trade of Newfoundland appear to be negligible. However, measures proposed for Federal support of fisheries may,

when enacted and implemented, provide some assistance to the Island's faltering trade in salt cod, an April 18 American consular dispatch from St. John's reports.

While the condition is unrelated to confederation, Newfoundland is experiencing an economic depression basically attributable to the complete dependence of the province upon limited types of world trade. Among the depressing influences is the weakness of demand for salt cod and fish oils.

Despite the new relation with Canada which Newfoundland enjoys as the result of confederation, and the economic assistance which that union has made possible, the Newfoundland economy is basically colonial and perilously dependent upon world markets for a limited group of primary products of the forests, fisheries, and mines. The markets for these products, partly as the result of currency devaluations and partly as a postwar readjustment to normal long term trends, became depressed during 1949 and the depression will probably continue with little abatement throughout 1950.

The salt cod trade, which revived under the stimulus of war demand, is in serious difficulties, of which the inability of customary consuming countries to make purchases in sterling or dollars, is but one. The growth of national fishing fleets, changes in consumer preferences away from salt cod, together with antiquated methods of production have contributed to the long-term difficulties in which this phase of Newfoundland's fishery finds itself.

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NEWFOUNDLAND'S FISHERIES DEPRESSED: Salt Cod Fisheries: The market for salt cod, the principal product of Newfoundland's fisheries, remained weak during the first quarter of 1950, a May 4 American consular dispatch from St. John's states. The 1949 salt-cod production, which was greater than that of 1948, moved into market channels much more slowly than in former years. Considerations of price and exchange difficulties, as well as competition and consumption trends away from salt fish appear principally responsible for lack of export demand for salt cod.

Price uncertainties for salt cod and the probability that prices offered would not meet production costs for the Labrador-cure type of salt cod, for which foreign demand has decreased, forecast some difficulty for fishermen in securing supplies and financial backing for the 1950 season, and probably means an abandonment of the Labrador cod fisheries.

Assistance in the marketing of approximately one-third of the annual production of salt cod in European areas is promised by the Canadian Government, but the issue of the price to be paid to fishermen was to be determined by free market conditions rather than by agreement and Government support as had been hoped by the fishermen themselves. In 1948 and 1949, agreement was reached among fish exporters, merchants, and fishermen for a minimum price, but no such agreement has been made for 1950 production. The price of salt cod to producers is expected to fall, and will probably result in reduced employment in the fisheries.

As of March 20 this year, stocks of salt cod amounted to 44,302,600 pounds, compared to 20,769,840 pounds on the same date in 1949.

Frozen Fish: It is believed that production of frozen fish and fillets is being maintained at 1949 levels, since the market for frozen fillets, which is in the United States, is considered firm.

Fish-Production Improvement Planned: The Provincial Government of Newfoundland is giving some attention to improvement of fish production and has recently sent a representative to observe fishing methods and equipment employed in the Scandanavian countries. Several Icelandic vessels have been engaged by the Government to demonstrate fishing methods and to explore areas for herring.



Chile

FISH OILS: Production of industrial fish oils in Chile is still very limited, according to fishing experts. Produced as a byproduct by fish-meal plants, not more than 100 metric tons are estimated to be produced annually, reports a May 3 American consular dispatch from Santiago. However, this output is subject to increase as the various fish meal plants under construction and contemplated for the future go into operation.

Chile has also been producing shark and other fish liver oils for pharmaceutical purposes for many years. Its total output and local consumption are not known, but in 1949 it exported 61 metric tons, 57 percent of which went to the United States and the remainder to France.

WHALING INDUSTRY, 1949: Two Chilean companies engage in whaling—the largest has its principal offices in Valparaiso and the other (which is quite small) is located in Palcahuano.

The large firm has five whaling vessels and a land station at Quintay, not far from Valparaiso. The whaling operations of this company were begun during the war to provide substitute materials for tallow and other scarce fats in its manufacturing processes. In 1949, this company caught and processed 230 baleen whales and 680 sperm whales. The baleen whales yielded 795 short tons of oil, and the sperm whales, 2,866 short tons—a total oil production of 3,661 tons for this company, whose whaling activities are an adjunct to its extensive and diversified soap and manufacturing activities. Over 90 percent of this company's output is used in the manufacture of soaps, the remainder (baleen oil) goes into its production of margarine.

Kind	1949	1948	1947	1946	1945	1944
(in short tons).....					
Baleen.....	795	2,021	2/	948	868	188
Sperm.....	2,866	2,911	2/	2,342	2,942	2,395
Total....	3,661	4,932	4,279	3,290	3,810	2,583
^{1/} Production of the Compania Industrial only—the larger of the two Chilean companies engaged in whaling.						
^{2/} Not available.						

The smallest company's production is negligible. When this firm at Palcahuano cannot sell its production to the large Valparaiso firm for hydrogenation and use in the latter firm's soap factory, the Palcahuano firm sells its production to small soap factories located in the south of Chile.

Egypt

RESTRICTS FISHING BY FOREIGNERS: Egyptian fishing in the Red Sea for many years has been in the hands of Greeks who owned or captained the fishing boats, according to a May 9 American consular dispatch from Cairo. Last year the Government refused fishing permits to foreigners and the catch dropped by more than half. In addition, the Government also restricted the use of motor fishing boats to favor the small sailing ships owned by Egyptians. Therefore, the price of fish has been going up at an alarming rate.

At the beginning of April this year, the Government relaxed many of these restrictions, permitting the motor ships to resume work, and allowing a number of foreigners to use their boats. This has resulted in about 68,750 pounds of fish being delivered to markets in one day, and consequently prices of fish in Cairo have declined somewhat.

The Government is not allowing unrestricted operations by foreigners or by large modern fishing vessels, stating that it is still necessary to preserve the industry for Egyptians and to conserve the supply of fish.



German Federal Republic

NEW GERMAN PROCESS FOR CANNING FISH: A new German mechanical fish-canning process, which is claimed to reduce canning costs up to 35 percent, was reported recently.^{1/} The following additional information has been obtained on this process (known as the Hartmann light-ray blanching method) from an article, "New Processes in the Canning of Fish," which appeared in the German publication Die Fischwaren and Feinkostindustrie of February 1950.

According to the article, researchers investigating the various blanching methods developed in America, in particular, blanching by the use of high-frequency currents (high-frequency heating, infrared rays, and ultraviolet rays), did not go beyond the experimental stage in this field. Following lines of thought similar to those developed by the Americans, the German fish industrialist Karl Hartmann, Kiel-Gaarden, and the engineer Pawlowski developed the principle of ultrared light radiation during the past months into a new fish-canning process for canned herring which gives it a taste like that of canned sardines.

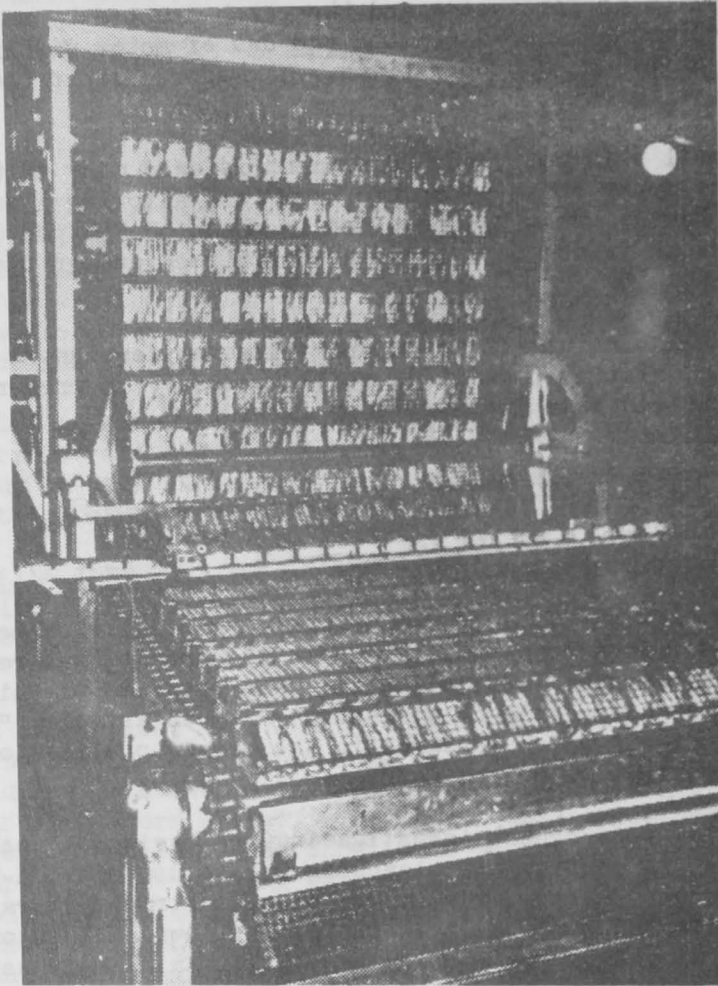
The invention per se and the uniqueness of the Hartmann method is a continuously operating blanching process. This principle was applied in practice in accordance with the ray-depth effect of the arc-ray receiver used in medicine. The rays of the invisible spectrum call for a process similar to cooking of the merchandise which, however, works from the inside toward the outside, rather than the opposite. Therefore, the treated fish is not blanched excessively, as indicated by the undamaged skin of the herring. The light bath extracts the superfluous cell water of the fish, thereby causing the desired shrinkage.

The processing of the sardine-like product (Oelhartinas) is as follows:

After washing, the herrings are scaled and cut the length of the club-size can. Pickling, which follows, supplies the required salt content of the herring. After drying, the fish--still raw--are packed

^{1/} See Commercial Fisheries Review, April 1950, p. 62.

into the containers. Next, the containers are lined up on flat tin boxes, seventeen to the box, and are put into the receiver of the large ray apparatus. A special lid arrangement of perforated tin prevents the fish or cans from dropping out. The containers move



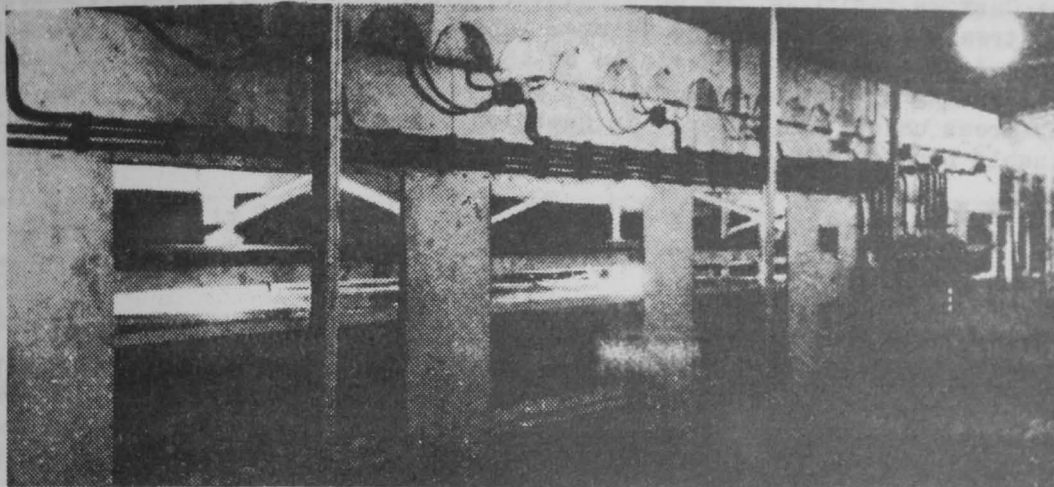
CANS PACKED WITH RAW HERRING ARE LINED UP ON FLAT TIN TRAYS (17 CANS TO THE TRAY), AND ARE PUT INTO THE RECEIVER OF THE LARGE RAY APPARATUS. A SPECIAL LID ARRANGEMENT OF PERFORATED TIN PREVENTS THE FISH OR CANS FROM DROPPING OUT WHILE GOING THROUGH THE MACHINE.

through the apparatus by means of a chain belt. First, the cans pass through the light bath zone where the heating of the herring takes place. In this process, the cell water leaves the fish and collects on the bottom of the can. As soon as the containers have passed through the heat zone (the final temperature is approximately 170°C . or 338°F .) the chain belt makes one rotation. This causes the pouring of the cell water from the cans into a wide trough. The long traveling distance of 16 meters or 52.2 feet (length of apparatus) guarantees the complete removal of the water from the con-

tainers. At the end of the chain belt the boxes holding the cans are removed and are arranged laterally on another belt where the cans are filled with hot oil (70°C . or 158°F .) by means of a special filling machinery. The shrinkage of the fish guarantees that the oil penetrates the entire contents of the can. The cans are sealed without further delay by means of a completely automatic sealing machine (capacity 3,000 cans per hour), put into squirrel cages, and are then conveyed to the autoclave where sterilization takes place. When in operation the light-ray apparatus holds approximately 5,700 cans. It

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is possible to blanch 50,000 cans during an 8-hour period. The heat-light boxes are operated by 60 kilowatts, a.c., per hour. For the starting of the chain belt a $\frac{3}{4}$ h.p. motor is sufficient.



THE HARTMANN LIGHT-RAY BLANCHING METHOD ENTAILS THE USE OF THE APPARATUS PICTURED ABOVE, WHICH IS 52.5 FEET LONG.

It is claimed that the finished product is of excellent quality. The skin is not damaged in any way. The contents are tightly packed. Only very small traces of water remain in the oil. This water is completely absorbed by the herring during storage. Flavor and aroma are actually similar to that of sardines.

The new method of canning calls, however, for the acquisition of rather expensive apparatus. In its favor, on the other hand, is the lowering of production costs due to more effective methods of operation; savings in wages; savings in material through better use of the fish; and more economical distribution of oil.

It is hoped that experience with mass production and lower prices for containers will result in lower costs to both the manufacturer and consumer. The Hartmann method is protected by patents. However, a monopoly is not sought. In the course of its further development, this method is to be made available to other German fish canneries.

NOTE: The article was translated from German by Alfred R. Holfert, Commodity-Industry Economist, U. S. Department of Commerce.



Gold Coast

REVIEW OF THE FISHERIES: Fish from the sea provides much of the protein in the diet of the inhabitants of the Gold Coast Colony and Ashanti Colony and, even at the height of the fishing season the demand is far from satisfied, an April 17 American consular dispatch from Accra reports.

Principal types of fish caught are two species of sardinella caught with gill nets; horse mackerel caught in seines; and tunny, shark, sailfish, and bream caught

on lines. Fishing is carried on from native canoes equipped with sails. There are an estimated 50,000 natives engaged in fishing operations along the coast.

The Customs tariff of the Gold Coast is nonpreferential, owing to international treaty obligations. Ad valorem rates range from 6-1/4 to 66-2/3 percent with most ad valorem imports dutiable at 15 percent. Imports are controlled by a strict licensing system to preserve dollars. No imports are allowed from hard-currency areas unless the article in question is deemed to be essential and is unobtainable from a soft-currency area.



Greece

SPONGE FISHERY AND MARKET, 1949: Sponge fishing represents approximately 20 percent of the fishing industry in Greece (the total industry producing around \$15 million a year, of which sponge fishing brings in about \$3 million), and is important to the Greek Government mainly because all sponges are exported, thus providing a source of badly needed foreign exchange.

The 1949 Greek sponge-fishing fleet, similar to that of 1948, was two months late in getting under way. The fact that the majority of the sponge-fishing boats did not leave port until around the middle of June 1949 is attributed to (1) a belated requirement, on the part of the British, that all Greek sponge fishermen operating in North African waters now under British jurisdiction be able to present new identification cards different from those required of them the previous year, and (2) delays in obtaining necessary government loans. This delay cost the industry approximately \$500,000 in loss of potential harvest.

Fishing Fleet and Number Engaged: Approximately 200 fishing boats of all types and sizes, supported by 65 or 70 auxiliary boats, composed the Greek sponge fishing fleet of 1949.

The number of divers and crew members were broken down into the following categories: divers and fishermen, 1,150 to 1,200; sailors, 1,100 to 1,200; auxiliary boat crews, 330 to 350.

The number of boats and men slightly exceed the most recently revised figures issued by the Greek Ministry of National Economy for the 1948 season.

Harvest, 1949: The total 1949 sponge catch is reported to be a little over 336,000 pounds (approximately 153 metric tons).

Table 1 - Greek Sponge Production, Quantity By Grades, 1948-49			Table 2 - Greek Sponge Production, Quantity By Type and Grounds, 1949					
Grade	Quantity		Type	Greek Waters	Off Cyrenaica	Off Tunisia	Off Egypt	Total
	1949	1948						
	lbs.	lbs.	 (in pounds)				
A ...	143,000	176,368	Honeycomb	60,000	145,000	15,000	55,000	275,000
B ...	88,000	88,184	Turkey-cup & Turkey toilet ..	10,000	-	6,000	9,000	25,000
C ...	99,000	44,092	Zimocca	-	25,000	-	7,000	32,000
D ...	6,000	11,023	Elephant's Ear	-	-	4,000	-	4,000
Total..	336,000	319,667	Total	70,000	170,000	25,000	71,000	336,000

Prices: The 50 percent devaluation of the Greek drachma in September 1949 is said to have resulted in a reduction in the export price of Greek sponges of around only 20 percent, since Greek sponge producers immediately increased their prices by 30 percent. This change in prices is interpreted by the Ministry as a saving shared between the producer and the consumer, but he adds that from the standpoint of the Greek national currency, the devaluation of the drachma produced a drop of 15 to 20 percent in the amount of foreign exchange which might normally have been derived from future sales of Greek sponges.

Table 3 - Prices for Honeycomb Sponges by Grade, 1946-49
(All Prices f.o.b. Greek Port)

Market and Grade	1949	1948	1947	1946
 (in U. S. dollars per pound)			
<u>Bengazi:</u>				
A	15.00-15.50	19.00-19.50	16.00-17.00	16.00-17.00
B	8.00-8.50	10.00-10.50	9.00-9.50	9.00-9.50
C	4.00-5.00	6.00-6.50	5.00-6.00	5.00-6.00
D and other	2.00-2.50	2.50-3.00	2.00-2.50	1.50-2.00
<u>Greek Island:</u>				
A	12.00-12.50	14.50-15.00	13.00-13.50	12.00-12.50
B	6.50-7.00	8.00-8.50	7.00-7.50	6.00-7.00
C and other	4.00-4.50	5.00-5.50	4.00-5.00	4.00-4.50

The prices of Turkey-cup, Turkey toilet, zimocca, and elephant's ear normally average between 10 and 12 percent higher than prices for Bengazi honeycomb, varying proportionately according to grade.

Exports: Only around 172,000 pounds (80 metric tons) of sponges were exported from Greece during the first 11 months of 1949; the bulk going to the following countries listed in order of volume: United States, United Kingdom, Switzerland, Germany, France, Sweden, Iceland, and Belgium—all other purchasers took less than one metric ton each. Exports of sponges in 1948 totaled 32 metric tons, valued at around \$717,000.

Stocks: There are available stocks from the 1947 sponge harvest of around 4,500 pounds, and close to 66,000 pounds left over from the 1948 sponge catch. Therefore, the 1949 harvest plus the stocks on hand indicate that around 436,500 pounds of all grades and types of sponges were the total stocks on hand at the beginning of 1950.

Outlook for 1950: Because production costs are high and prewar markets are not yet recovered, and because production by other Mediterranean countries is presenting a worrisome threat of competition, the Greek sponge producers and exporters are pressing for government assistance in expanding the industry. Government trade experts express the opinion, however, that the condition of the industry could be bettered from within itself and they do not anticipate recommending any form of government subsidy for sponge exports in the foreseeable future.

It would appear that if the production costs were lowered, and the fishing fleets could put in full seasons in the sponging areas, Greece could hold its own on the world sponge market in spite of such competition as is developing in the Mediterranean area.

DIFFICULTIES ENCOUNTERED BY THE INDUSTRY: A favorable effect on the marketing possibilities of Greek sponges because of the devaluation of the drachma is agreed to be rather dim in that other Mediterranean producers of sponges (Tunis, Italy, Dalmatia, and Egypt) have also devalued their currencies by 30 to 40 percent, resulting, so far as is known, in a corresponding drop in prices of their sponges abroad.

The Director of Fisheries, Ministry of National Economy, and a Greek merchant consulted agree that the Greek sponge industry is facing a crisis.

According to the Ministry's representative, every effort must be made to channel Greek sponges to Central Europe as well as to the United States, and particularly to Germany, which was one of the principal purchasers of Greek sponges prior to World War II. He says that if Germany could take \$1 million worth of Greek sponges, the American market would automatically be decongested and a balance between demand and supply would be established. He stresses that provision should be made in the various agreements with Central European countries for an increase in the percentage of sponges to be exported from Greece to those countries so that at least \$1 million worth could be diverted to Germany. In addition, exports of sponges are possible, and desirable he says, to the Netherlands, Denmark, Sweden, Czechoslovakia, Austria, Switzerland, Belgium, France, and Italy.

Great Britain was the principal importer of Greek sponges prior to World War II.^{1/} Consumption in England has dwindled, however, because of its postwar financial weakness and the imposition of high import duties, and the Ministry implies that Greece has lost hope of meeting or exceeding its prewar exports of sponges to the United Kingdom for some time to come. The Director of Fisheries added that export trade in sponges should be financed by the Bank of Greece in the form of loans at reduced interest rates (credit de campagne) so that exporters may receive the help they need when they need it, and that they will not be forced to pay the prevailing high interest rates on loans contracted on the open market.

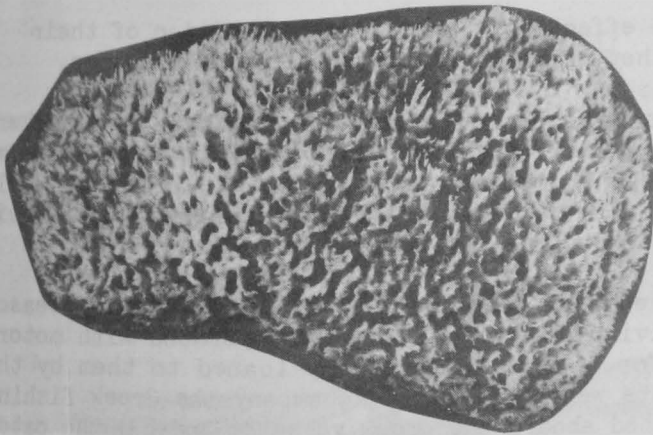
The Director's final suggestion was that all arrangements for sailing of the fishing fleets should be made far enough in advance of the sailing time to assure their departure at the very beginning of the sponge fishing season. These arrangements include the granting of adequate loans from official sources at reasonable rates; timely clarification and execution of all agreements and conditions necessary for granting Greek fishermen the rights to harvest sponges in foreign waters traditionally fished by them (Egyptian; beds off the former Italian colonies on the coast of Libya—Cyrenaica, Tripoli—now under British jurisdiction; and French North African waters—Morocco, Algeria, Tunisia); and timely delivery of parts necessary for boat repair, fishing supplies, and food rations. Most island fishermen depend for their livelihood entirely upon the proceeds from their sponges, and flour and other fishing supplies must be imported from the mainland. Among the points stressed by the merchant-source were: (a) That the Ministry of National Economy should cease considering sponges as necessities (in other words, that they should be considered as "passive" items and their marketing eligible for government favor in the form of subsidies and granting of foreign exchange); (b) Pro-

^{1/} This market required that the sponges be bleached, as they were used mainly for pharmaceutical use, bathing, and other household purposes. Since the war, however, the United States has become the principal buyer of Greek sponges, and uses them primarily for industrial purposes; hence, bleaching is not required. The production costs and processing time is therefore reduced, but another economic problem is created in that a considerable number of workers are thus deprived of their prewar employment in this step of the sponge industry.

ducers must reduce their prices; (c) A way must be found to reduce the costs now burdening exporters, who have to pay as much as 20 to 25 percent interest on money borrowed by them from the Bank of Greece ^{2/} (In consumer countries the importers of Greek sponges should promote sponge sales through wider advertising schemes, stressing the point that "natural sponges are actually cheaper and cleaner than are artificial sponges."); (e) Fishing vessels should be fitted with suitable gasoline engines, which, if they sail on time, will give longer fishing seasons and by increasing the catch will reduce production costs; (f) American importers should be requested to reduce the prices at which Greek sponges are now offered for sale in the United States, as present retail prices of Greek sponges in the United States are considered exorbitant; (g) Charges of foreign governments for licenses for sponge fishing in their waters should be reduced, a point of illustration being the charge of about \$11,358 (at predevaluation rate of exchange) per license now levied by the Egyptian government on Greek fishing boats (This charge, plus payment of crews, operation of vessels, and distance traveled, obviously makes the production of Egyptian sponges a rather costly venture).

DIFFICULTIES IN FISHING IN FOREIGN WATERS: As yet there are no permanent safeguards of Greece's rights to fish sponges in foreign waters of the Mediterranean. The North African fishing beds now under jurisdiction of the British extend from the Tunisian border to the Egyptian border, but they are centered mainly around Tripoli and Bengazi. Under Turkish domination of Libya, Greeks were allowed "free fishing" here. Under the Italo-Greek treaty of 1926, mainland Greek fishermen were granted 50 percent of the sponge fishing licenses issued by the Italian government, the other 50 percent being granted to residents of

the Italian-owned Dodecanese Islands—the residents of which, however, were primarily Greeks. Licenses were issued at a nominal price (or free in exchange for the right of Italian boats to fish sardines in Greek waters), and they were not forced to sell to Libyan buyers. During the war there was no sponge fishing by Greek vessels off Tripolitania and Cyrenaica. In 1946, a few Greek boats were permitted to harvest sponges in Cyrenaica waters provided (1) the fishermen carried fishing licenses; (2) the vessels had special licenses to operate in these for-



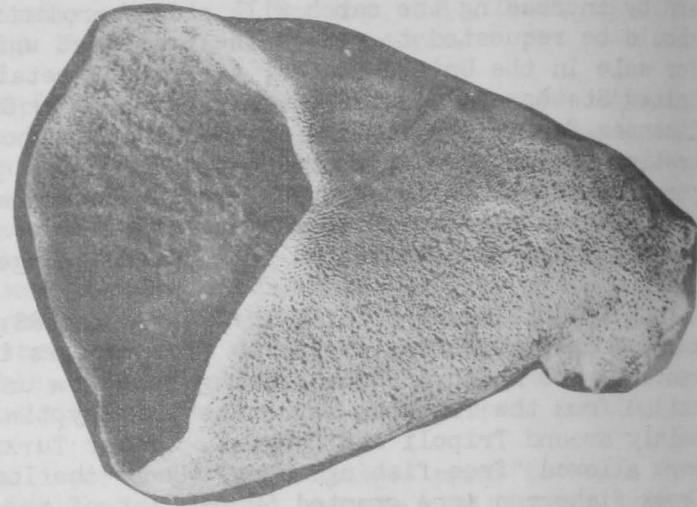
HONEYCOMB SPONGE FROM THE MEDITERRANEAN SEA.

foreign waters after payment of license fees, which varied according to the type of boat; (3) the entire sponge harvest be landed in Cyrenaican ports. Sales to Cyrenaican buyers were not required, but by landing the sponges on foreign soil, a fiction of import was established and an export tax was levied. This tax was set at 1 percent of the value of raw sponges, and 2 percent of the value of processed sponges. It is said to have usually happened, however, that after the sponges had been landed, all work done on them aboard the mothership was considered as processing, and the higher rate was always assessed.

^{2/} The Agricultural Bank of Greece can loan money to fishermen at an interest rate of 11 percent, but a merchant is not eligible for such loans, and must borrow from the Bank of Greece at an interest rate of around 25 percent.

It was at this time that a large number of the Greek boats changed their plans, and instead of fishing in the North African waters, where they would have to land their entire catch, they went to the Egyptian waters where, until then, they had been required to land only half their catch. The Egyptians in 1946 required Greek boats fishing in their waters to land their entire catch but waited to enforce this requirement until after the Greeks had completed their sponge fishing season.

Tripoli did not allow Greek fishing in its waters until 1948, and it is reported that not more than 50 Greek boats arrived there then. Fees for licenses varied according to the type of boat. The harvest had to be landed at Tripoli, and an export tax of 1 percent was based on the fiction that formal importation had occurred. Naturally, the Greek sponge fishermen resent having to pay such fees for the privilege of fishing in waters that were, as they say, "traditionally free" to them, and they are most eager to have the final disposition of these colonies



ELEPHANT'S EAR SPONGE FROM THE MEDITERRANEAN SEA.

settled in order that they may more effectively press for recognition of their "rights," and have such rights as they may be granted protected by treaties.

Beginning a few years prior to World War II, and continuing after the end of hostilities; the Greek sponge fishermen have been meeting with more and more opposition to their fishing sponges in Egyptian waters, because prior to World War II, the Egyptians began serious plans to exploit (but unsuccessfully) their own sponge beds and to enter on their own account the sponge fishing market.

The Egyptian agreement with the Greek fishermen for the 1949 fishing season provided that (1) boats carrying diving equipment and those operated with motors were required to pay \$11,358 each for licenses (the money loaned to them by the Greek government); (2) Egyptian boats were allowed to accompany the Greek fishing boats, but no observers were permitted aboard the Greek vessels; and (3) the catch was to be landed for 30 days on Egyptian soil.

However, no sponges were bought by Egyptians during the 30-day period (the agreement being that boat captains had to approve the selling prices, and these were approved at the Greek mainland rather than the Egyptian prices). The entire catch was later brought home for export by Greek merchants.

Cooperatives: There are only about three important sponge fishing cooperatives in Greece; one with headquarters in Piraeus; one with headquarters on the Island of Hydra; and the third on Kalymnos Island. The cooperatives are understood to maintain treasuries from which members may borrow money, and to provide other protective services for their participants.

Reserve Insurance Fund for Sponge Fisheries: To take care of boat operators, divers, and others who are not members of a sponge fishing cooperative, a Reserve

Insurance Fund was set up in 1949. While the provisions of this agreement may appear to be a little heavy on the borrower (particularly since the interest rate on loans from the Bank are around 16 percent), it has its advantage in that a sponge fisherman with no collateral may obtain a needed loan from a reliable source, at a rate not considered exorbitant as compared with interest rates charged by private money lenders in Greece.

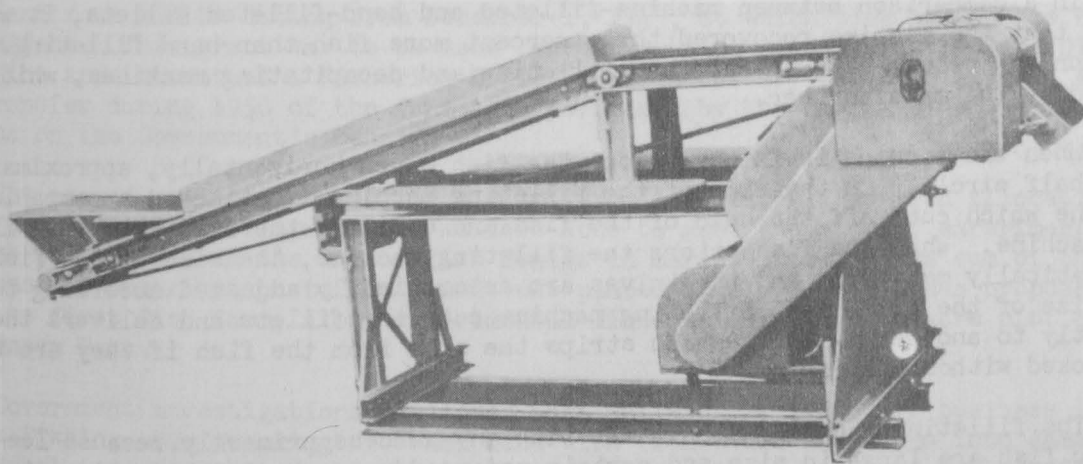
Preparing Sponges Aboard the Mothership: Diver's boats are usually caiques, and a "mothership" is usually assigned to small groups of such fishing boats. The mothership, with a crew of sailors and workmen and a captain, provides food and sleeping quarters for the divers, and skins, washes, and stores the sponges as they are brought aboard. On board this mothership, the sponges are trod upon by feet; causing the black, shiny cover of the sponge to be pressed away and the white, milky substance in the sponge to be exuded. The sponges are then strung on wires or ropes and allowed to trail in the water overnight to clean them. They are then dried in the sun and pressed into bags for storing on the mothership until port is reached.

While this is a part of the processing, it is still far, in some cases, from a finished job. On shore sponges must be rid of stones, broken shell, and other foreign matter that have accumulated in them; they must be trimmed and sorted; some must be bleached, etc.



Iceland

USES GERMAN SKINNING MACHINE: At present Iceland is using one skinning machine, of German manufacture, for processing fish fillets, an April 18 American consular dispatch from Reykjavik reports.

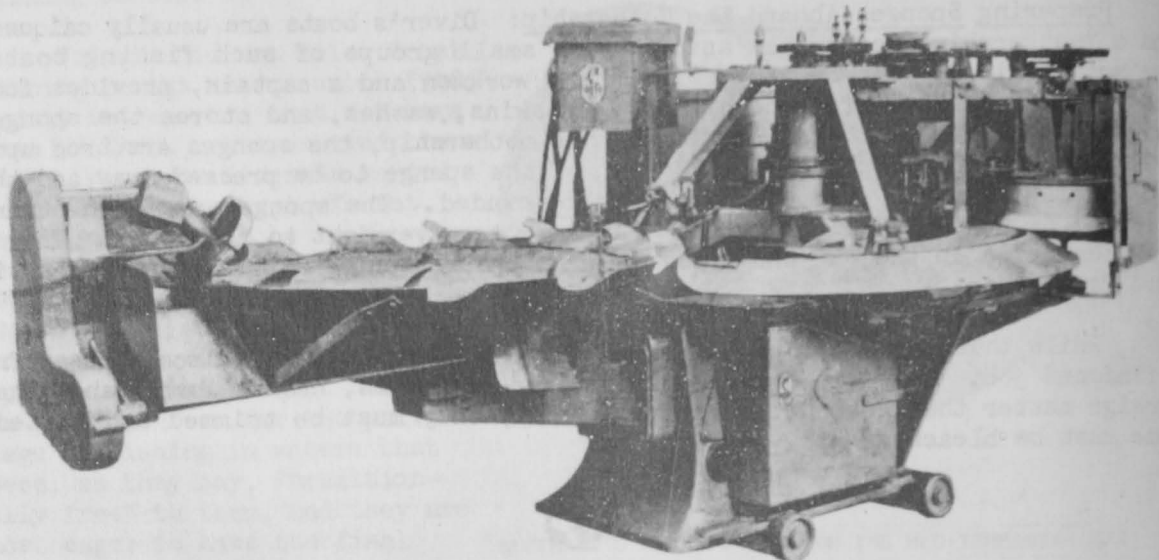


TYPE OF GERMAN FISH-SKINNING MACHINE BEING USED IN ICELAND.

The skinning machine, installed in a quick-freezing plant in Hafnarfjordur, has been employed with considerable success. Compared to hand skinning, reports indicate that it skins fillets well, operates faster and more efficiently, and recovers more fish. The machine performs the work of at least five fillet skimmers. Since it will prove to be a great savings to the industry if employed

on a large scale in the country's major quick-freezing plants, Iceland plans to rent several of these units from Germany.

USES GERMAN FILLETING MACHINE: Iceland is now leasing and using one filleting machine which was invented and constructed by Rud Baader, owner and manager of the Nordischer Maschinenbau, Lubeck, Germany.



TYPE OF GERMAN FISH-FILLETING MACHINE BEING USED IN ICELAND.

As described by the Icelandic Director of State Inspection of Fish, this fish-filleting machine is round, approximately $6\frac{1}{2}$ feet in diameter. About 20 fish per minute are filleted, which is sufficient for any freezing plant in Iceland.

In a comparison between machine-filleted and hand-filleted fillets, it was found that the machine recovered three percent more fish than hand filleting. Only two men are required to operate the filleting and decapitating machines, which are leased by the manufacturer.

When the machine is in operation, the fish moves horizontally, approximately in a half circle. On the side of the filleting machine is attached a companion machine which cuts off the head of the fish and delivers the fish into the filleting machine. When the fish enters the filleting machine, the size of the fish is automatically measured, and the knives are automatically adjusted according to the size of the fish. The filleting machine cuts the fillets and delivers them directly to another machine, which strips the skin from the fish if they are to be packed without the skin.

The filleting machine has not met with any success primarily because Icelandic fish are large in size and certain major adjustments in the equipment are required.



India

MANUFACTURE OF SHARK-LIVER OIL: In order to popularize shark-liver oil manufactured by the Government of Madras oil factory at Kozhikode (Calicut), the manufacture of capsules is proposed. It is understood a capsule-making plant for this purpose will be erected at Kozhikode, according to a March 1 American consular report from Madras. The conversion of the oil into capsules is said to have a double benefit--removing the existing fish odor and making it easier to take.

Meanwhile, a fairly large quantity of high-potency oil was sent by the Government to England to be "pressed" into capsules, which will be sent back to India. The Government plans to make an initial distribution of 100,000 English-made capsules.



Jamaica

STATUS OF THE FISHERIES: Plans to Develop Fisheries: In its endeavor to produce more food from the sea, the Government of Jamaica in 1949 introduced a scheme for the development of fisheries. The scheme was devised on the basis of various surveys of the fishing potentialities of the Island, states the American Consulate General at Kingston in a March 31 report.

The scheme, set out in two parts, falls under the headings of the establishment of the Fisheries Division of the Forestry Department and the carrying out of fisheries research. Two separate applications were to be made to the Secretary of State for the Colonies for assistance from Colonial Development and Welfare for the two-part scheme.

The first will be for a grant of \$47,662 to be spread over a period of six years and four months dating from December 1, 1949, at which time the scheme came into effect. This grant was to be used for the setting up of the Fisheries Division, the appointment of a Fisheries Officer, his necessary training abroad, and the transfer during 1950 of the functions performed by the Angling Association of Jamaica on the Government's behalf.

The second application was for a grant from the Central Research Allocation under the Colonial Development and Welfare Acts to meet the cost of experiments in fish culture and in the use of fish fences in marine waters. The sum of the Government's contribution to the scheme was placed at \$16,800. It was proposed that the first fish farm, along experimental lines, should be a 40-acre plot at Twickenham Park.

Government investigations disclosed that while there is no big business in marine fishing, the stocking of swamp land with fish would introduce into Jamaica a local industry that would provide much employment and ease the Island of its enormous expenditure for the importation of foodstuffs. The proper stocking of such swamps would produce fish in greater number and size than the open sea. Problems of preservation and distribution would be considerably lessened by the introduction of modern facilities throughout the Island, especially if the farms were distributed in several areas.

Marine Fisheries: Jamaica is surrounded by a coastal shelf which stretches out to about 100 fathoms and then drops off suddenly to great depths. In the terminology of the local fishermen, the hundred-fathom line where the depth increases suddenly is called "The Edge" or "The Drop." From the east end of Kingston harbor up to Pedro Great Bay, the south-east coast has a wide shelf often extending out twenty miles from the shore. Fishing in Jamaica has been confined to this shelf and to the "blue water" immediately beyond the "Edge."

The Pedro and Morant Bays are the largest fishing banks. They are half the size of Jamaica and are situated about 40 to 100 miles south of Jamaica. There are important marine fishing centers elsewhere and a multitude of small fishing beaches. The main types of fish caught are king, jack, cross bar, grunts, parrot, bonito, butterfish, groupers, and snappers.

The craft used for fishing consist almost entirely of wooden canoes, some small and some large.

There is a limited amount of shark and turtle fishing, the former for livers and meat, and the latter for turtle steaks and turtle soup.

A limited liability company, which was recently established, has been undertaking a reasonable amount of deep-sea fishing. A Diesel-engined vessel is used for the purpose. This service has added substantially to the fresh fish supply at Kingston and other Jamaican markets.

Fresh-water Fishery: The fresh waters of Jamaica do not provide much food fish. "Mudfish" and "crayfish" (shrimp) are caught in small quantities.

There is practically no pond fish culture at present.

NOTE: Values converted on the basis of one Jamaican pound equals U. S. \$2.80.

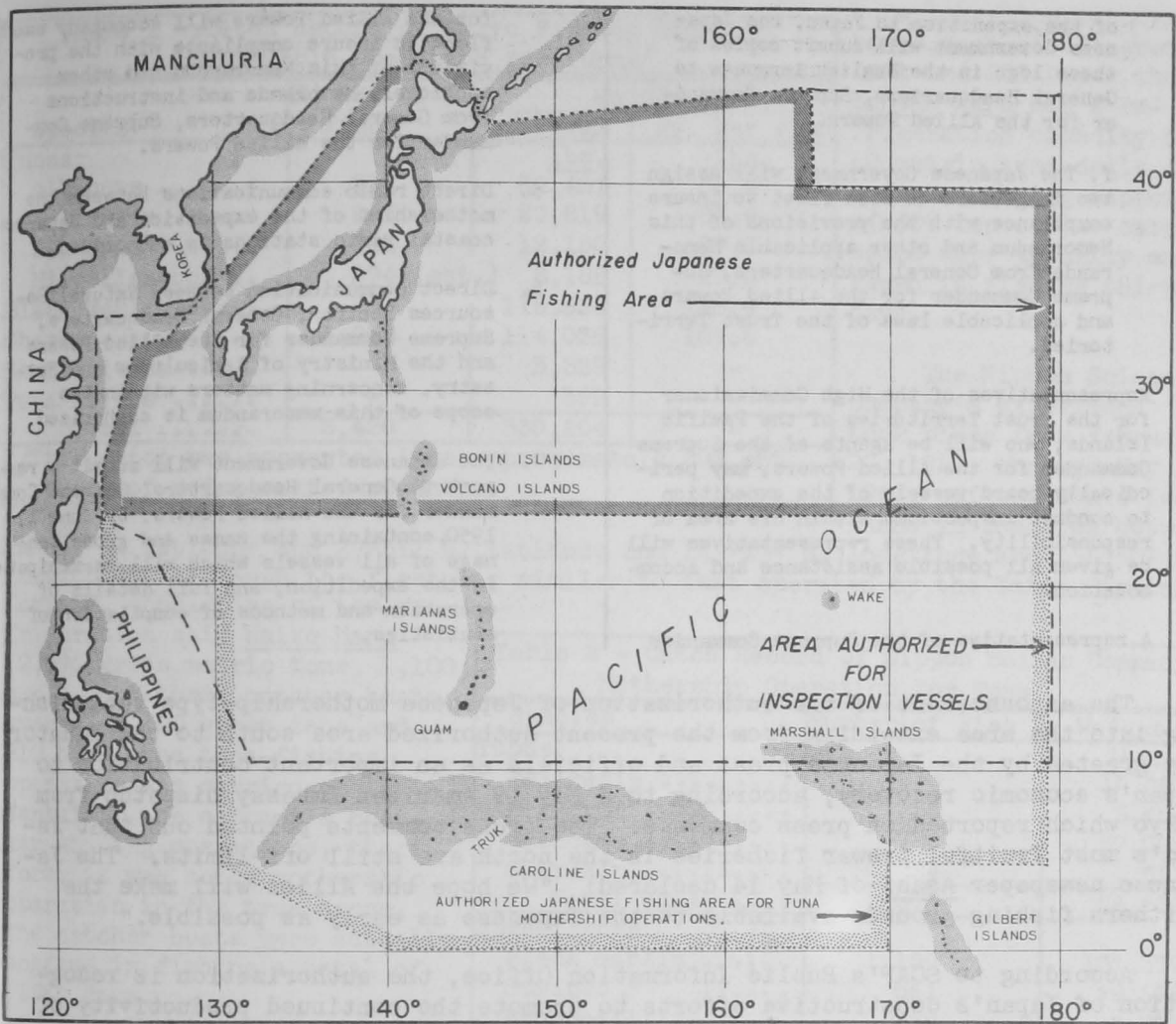


Japan

AUTHORIZED JAPANESE FISHING AREA EXTENDED FOR TUNA MOTHERSHIP OPERATIONS: Authorization for the operation of only mothership-type tuna fishing (similar to the Antarctic whaling expeditions) in the area extending south from the authorized Japanese fishing area to the Equator was granted by the Supreme Commander for the Allied Powers by SCAPIN 2097 dated May 11, 1950. This will include waters in the United States Trust Territory around the Caroline Islands, the Marianas and the Marshall Islands, but not the Gilbert Islands.

The following is the full text of the Memorandum:

1. Authorization is hereby granted for the operation of mothership-type tuna fishing expeditions in the area extending south from the authorized fishing area and bounded by a line extending from 24° N. latitude, 180° longitude, south to 5° N. latitude; thence west to 5° N. latitude, 170° E. longitude; thence south to the Equator; thence west to 140° E. longitude; thence northwesterly to 5° N. latitude, 130° E. longitude; thence north to 20° N. latitude; thence west to 123° E. longitude; thence N. to 24° N. latitude, 123° E. longitude.
2. The expeditions authorized in paragraph 1 above will operate under the following conditions:
 - a. No vessel of the expedition will approach closer than three (3) miles to any land not under the administrative control of the Japanese



THE HORIZONTALLY-LINED STIPPLED BORDER INDICATES THE EXTENT OF THE AUTHORIZED JAPANESE FISHING AREA. THE BROKEN BLACK LINE INDICATES THE AREA AUTHORIZED FOR JAPANESE INSPECTION VESSELS. THE DOTTED STIPPLED BORDER INDICATES THE EXTENSION OF THE JAPANESE FISHING AREA SOUTHWARD FOR JAPANESE TUNA MOTHERSHIP OPERATIONS.

Government.

b. Each participating vessel will be marked and operated in conformity with directives from the Administrator, U. S. Naval Shipping Control Authority for Japanese Merchant Marine.

c. The master of each participating mothership will forward a daily radiogram to the Fisheries Agency, Tokyo, containing the position of his ship at 1200 hours local time on the day the radiogram is dispatched.

d. The master of each participating catcher boat will, while in the fish-

ing area authorized in paragraph 1 above, report daily to the mothership of his fleet the position of his ship at 1200 hours local time.

e. The master of each participating catcher boat will, during fishing operations, maintain a navigation and fishing log showing daily catch by number of fish and species, location of catch, type and amount of gear used, number of sets, and other data of fishing and navigational nature which may be specified by the High Commissioner for the Trust Territories of the Pacific Islands. Within thirty days after the return

of the expedition to Japan, the Japanese Government will submit copies of these logs in the English language to General Headquarters, Supreme Commander for the Allied Powers.

f. The Japanese Government will assign two inspectors to each fleet to insure compliance with the provisions of this Memorandum and other applicable Memoranda from General Headquarters, Supreme Commander for the Allied Powers, and applicable laws of the Trust Territories.

3. Representatives of the High Commissioner for the Trust Territories of the Pacific Islands, who will be agents of the Supreme Commander for the Allied Powers, may periodically board vessels of the expedition to conduct inspections within his area of responsibility. These representatives will be given all possible assistance and accommodation.
4. A representative of the Supreme Commander

for the Allied Powers will accompany each fleet to insure compliance with the provisions of this Memorandum and other applicable Memoranda and instructions from General Headquarters, Supreme Commander for the Allied Powers.

5. Direct radio communications between the motherships of the expedition and Japanese coastal radio stations is authorized.
6. Direct communication between Natural Resources Section, General Headquarters, Supreme Commander for the Allied Powers and the Ministry of Agriculture and Forestry, concerning matters within the scope of this memorandum is authorized.
7. The Japanese Government will submit a report to General Headquarters, Supreme Commander for the Allied Powers, by June 1, 1950, containing the names and gross tonnage of all vessels which will participate in the expedition, and full details of operation and methods of compilation of statistics.

The announcement of the authorization of Japanese mothership-type tuna fishing into the area extending from the present authorized area south to the Equator was greeted by the Japanese press and officials as an important contribution to Japan's economic recovery, according to a May 19 American Embassy dispatch from Tokyo which reported on press comments. The press comments pointed out that Japan's most fruitful prewar fisheries in the north are still off-limits. The Japanese newspaper Asahi of May 14 declared: "We hope the Allies will make the northern fishing grounds available to the Japanese as early as possible."

According to SCAP's Public Information Office, the authorization is recognition of Japan's constructive efforts to promote the continued productivity of aquatic resources. It was described as a marked contribution to Japan's economic recovery program.

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MOTHERSHIP OPERATIONS FOR TUNA: Two experimental operations have been conducted from Japan, especially for tuna, using so-called motherships with catcher boats, according to the April 8 Weekly Summary of SCAP's Natural Resources Section.

The first tests were carried out by the Taiyo Fishing Company in the summer of 1948; the second, by the Nippon Suisan Company in the winter and spring of 1949. The purpose of both experiments was to determine the economic feasibility of using a mothership and several catcher boats in tuna fishing. It was thought that this method might result in an improvement in the freshness of the fish due to rapid refrigeration and in a corresponding increase in the quantity of marketable fish.

The Taiyo Fishing Company conducted its experiment from July 24, 1948, through August 28, 1948, off the Bonin Islands in an area between 24° N. latitude and 26° N. latitude and 144° E. longitude and 153°25' E. longitude. The fleet consisted of the refrigeration ship Banshu Maru (983 gross metric tons, 800 h.p.), and three

Table 1 - Catch Record of Taiyo Fishing Company
Mothership Operation for Tuna

Species	Number of Fish	Weight	
		Total	Av. Per Fish
		lbs.	lbs.
Tunas:			
Albacore	912	52,457	56.9
Yellowfin	248	20,819	83.9
Big-eyed	124	12,150	97.9
Miscellaneous ..	294 (est.)	8,186	27.8
Black marlin	783	116,626	148.9
Sharks	1,059	114,038	107.6
Shark livers	-	5,329	-
Tuna livers	-	599	-
Total	3,420	330,204	-

1/This catch was converted into approximately 303,455 pounds of refrigerated products.

tuna long-line catcher boats each of 135 gross tons and 200 h.p. The Banshu Maru had a refrigeration capacity of 40 metric tons daily and a fish-carrying capacity of 500 tons. The catcher boats were actually engaged in fishing thirty days.

The Nippon Suisan Company's experiment took place from February 27, 1949, through May 30, 1949, off the Bonin Islands in the area between

24°01' N. latitude and 27°51' N. latitude and 143°13' E. longitude and 154°50' E. longitude. Although the fleet was similar to that operated by the Taiyo Fishing Company, consisting of the refrigeration ship Kaiko Maru (2,994 gross metric tons, 1,100 h.p.), and three catcher boats averaging 100 gross tons and 210 h.p., the tuna-fishing operation was carried on incidental to the company's regular whaling operations, therefore, it was not a mothership operation in the true sense. The catcher boats were actually engaged in fishing a total of fifty days.

Neither company's experiment was a commercial success. There were four main reasons for this:

1. The catch was considered poor in relation to the cost of the operation.
2. Adverse weather conditions interfered with the transfer of fish from the catcher boats to the motherships.
3. Heavy seas on the fishing grounds made operations difficult.
4. The lack of adequate refrigeration aboard the catcher boats made it impossible to keep the fish in prime condition until they could be transferred to the motherships.

Table 2 - Catch Record of Nippon Suisan Company
Mothership Operation for Tuna

Species	Number of Fish	Weight
Tunas:		lbs.
Yellowfin	238	15,545
Big-eyed	36	3,454
Albacore	780	37,028
Skipjack	24	511
Total tunas	1,078	56,538
Spearfishes:		
Black marlin	1,138	131,377
Striped "	561	29,696
Broadbill	18	2,877
Sailfish	328	10,456
Total spearfishes	2,045	174,406
Miscellaneous:		
Spanish mackerel ..	262	7,158
Dolphin	286	70,791
Shark	1,705	146,179
Wahoo	6	171
Total misc.	2,259	224,299
Grand Total	5,382	455,243

TUNA LANDINGS, 1949: It is estimated that about 51,000 metric tons of tuna were landed in Japan during 1949. Not all prefectures have reported their 1949 landings, therefore, this total is subject to change.

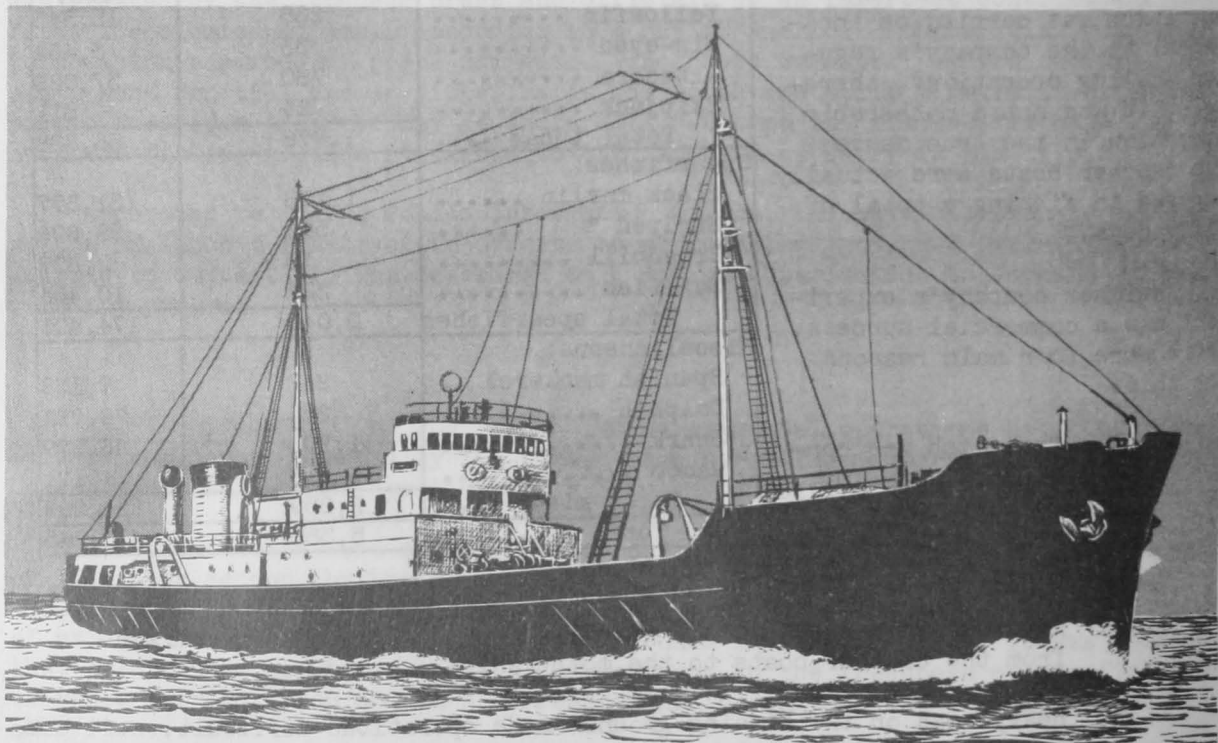
The tuna landings consisted of skipjack, 40,000 metric tons; albacore, 8,000; yellowfin, 2,000; and bluefin, 1,000. From this tuna, 173,058 cases of tuna were packed and exported (about 92,000 cases were light meat and about 81,000 cases were white meat). An estimated 80 percent of the exported tuna was sold to United States buyers. In addition, about 1,500 metric tons of tuna were frozen for export to the United States.

Japan expects to export about 500,000 cases of 48 half-pound cans of tuna and about 2,900 tons of frozen tuna during 1950.

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FISHERIES PRODUCTION, 1949: Over-all fisheries production in Japan during 1949 was reported to have reached 3.1 million metric tons, according to an April 15 American consular dispatch from Tokyo. This was almost twice the 1945 production and is indicated to be almost the maximum production practicable within Japan's existing fishing area.

This increased production permitted the removal of price and distribution controls over all types of fish on April 1, according to a Government announcement.



TYPE OF LARGE JAPANESE DIESEL TRAWLER.

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JAPAN TO REDUCE EAST CHINA SEA TRAWLING FLEET: Under the Law for the Prevention of Exhaustion of Marine Resources, enacted by the Diet on May 1, 1950, the Japanese Government has announced its intention to cancel the licenses for approximately 7 large otter trawlers and 240 medium otter trawlers operating west of 130° E. by June 30, 1950; and the licenses for approximately 4 large otter trawlers and 39 medium otter trawlers operating west of 130° E. by December 31, 1950.

The new legislation grants the Minister of Agriculture and Forestry the authority to reduce the number of fishing boats to prevent exhaustion of a certain fishery after public hearings have been held and the Central Fisheries Adjustment Council has voiced its opinion on the proposed reduction. The Law also requires the Government to give financial compensation to the owners of vessels eliminated from the fishery, according to the May 6 Weekly Summary of the Natural Resources Section of SCAP.

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ROLE OF AQUATIC PRODUCTION IN FOOD AND ECONOMIC LIFE OF JAPAN: Aquatic production plays a larger part in the food and economic life of Japan than in that of any other major nation, reports the April 22 Weekly Summary of SCAP's Natural Resources Section. About 90 percent of the animal proteins in the Japanese diet are supplied by fisheries production. Before the war aquatic products were major items in Japanese exports, the most valuable being canned crab meat and canned salmon. Such products as agar agar and dried fish of various kinds were important also.

In the years before World War II (1935-39), most of Japan's production (4,214,000 metric tons) came from the coastal waters of the four main islands. Since the surrender, Japan's fishing activities have been limited to the area authorized by the Supreme Commander for the Allied Powers. In prewar years, this area supplied about 85 percent of Japan's catch; nine percent came from north of the present area and six percent from southern waters and the East China and Yellow seas. In 1949, Japanese production reached about 3,113,000 metric tons. Production of miscellaneous species, excluding sardines and herring, was about 173,000 metric tons greater than before the war, while production of sardines and herring was about 634,000 tons less, primarily as a result of the scarcity of these fish in Japanese coastal waters.

Japanese requirements for aquatic products cannot be determined precisely because such requirements depend to a large extent on the price of these products compared to the price of other foods and materials. Late in 1949 and early in 1950, production reached a level which satisfied most requirements at price levels set by government controls. This was demonstrated when market prices of most fish dropped to or below the official prices. However, if price decreases continue, the amount which will be used for food can be increased considerably, and it will again become practical to convert the cheaper grades of fish into meal for livestock feed and fertilizer and to oil for various commercial purposes. The amount required for these purposes is relatively unlimited if the price is sufficiently low.

Requirements of aquatic products for export also are impossible to specify with any precision in that they depend on foreign markets and the price at which Japan can process them for export. Through better handling and preservation facilities, a much larger proportion of tuna, albacore, and sardines can be made available for canning so that the pack can be increased greatly. Production of

canned crab meat will remain limited to about the present level, unless additional areas to the north are opened to Japanese fishing. Canned salmon will be limited to pink or chum salmon unless northern areas are opened, because no red salmon comes from Japan. Agar agar, as well as other seaweed products, now is available in greater quantities than are being taken by the export market. The quantities of other canned products can be increased should the market justify it.

The possibility for increased aquatic production generally has been greatly overestimated by the Japanese, unless sources of supply or fishing methods not now known are discovered. The present fishing area is being exploited almost to the maximum so that, except for sardines and herring, little over-all increase can be expected except through further development and implementation of conservation and management programs. Extension of the fishing area to the north and restoration of Japanese fishing there to the prewar level would increase production about 370,000 metric tons. Extension to the south at the prewar rate of exploitation would produce only 25,000-50,000 metric tons, but present information indicates that this might be expanded considerably. Extension on the west might add 25,000-50,000 metric tons annually to the catch but it is questionable whether this could be done without overfishing the area. Return of sardines and herring to their prewar abundance would make it possible to increase the catch another 630,000 metric tons.

The over-all expectation is that in the immediate future Japan will be relatively independent in the field of aquatic products. Imports will be limited to luxury or semi-luxury products such as laver and possibly "tai" (sea bream) and dried shrimp, while exports will be principally swordfish, tuna, agar agar, shark fins, dried seaweed, sardines, crab meat, salmon, and vitamin oil.

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STATUS OF FISHERIES TECHNOLOGY: The following information on general conditions in the fish canning and refrigeration industries in Japan was prepared for the Scientific and Technical Division of SCAP's Economic and Scientific Section and was summarized in the Weekly Summary of April 8:

1. The level of technology in the fish canning and refrigeration industries is low compared to that reported in the United States. No improvements have been made in basic processes for about the past 20 years. Equipment in use in the refrigeration industry is generally obsolete. The canning industry, being a later innovation in Japan, has more modern equipment. At present there is a need for the importation of equipment for the refrigeration industry in particular.
2. Some canneries are well designed, but generally the organization is poor and is a detriment to the attainment of high production levels. An excessive amount of hand labor is used in the canning industry in comparison to United States practices. Refrigeration plants are poorly designed, and practical changes are needed in order to speed up the flow of fish through the plants.
3. Plant inspection and control practices are inadequate in most cases. Central laboratories are practically non-

existent. Equipment salvage and housekeeping practices are poor compared to United States standards, but do not affect production to an appreciable extent. Safety practices, such as enclosed gears and belting, are wholly inadequate.

4. Canned fish and frozen products intended for export are excellent in regard to appearance. More attention is paid to the appearance of the products than to quality and flavor. Frozen products for domestic use were usually of low grade when distribution and price controls were in effect, since the incentive to improve the quality was lacking. Byproduct extraction and utilization are high.
5. Production engineers are employed in nearly all plants but are not so effective as they might be owing to lack of knowledge of advanced methods employed in these industries in other countries.
6. Because of the lack of knowledge of modern designing and technological improvements, Japanese operators of the canning and refrigeration industries are doing very little to effect improvement. Nearly all of the new plants constructed are of identical design in building and equipment to those already in operation. Experiments are being made in the improvement of design of refrigerated rail cars for the transportation of fish from distant areas to large consuming areas. Investigation is being made to design and equip refrigerated trucks for local distribution of fish.
7. Advice and recommendations are given by representatives of the Supreme Commander for the Allied Powers in order to improve techniques. The Japanese Government is encouraging the formulation of plans to improve techniques and facilities in the refrigeration industry.
8. Techniques in the fishing industry could be improved by:
 - a. Making available more technological publications.
 - b. Redesigning the existing refrigeration plants and equipment.
 - c. Sending technical personnel abroad to study modern methods and design.
 - d. Establishing adequate plant inspection and control practices.
 - e. Making available the findings and programs of technical research laboratories in other countries and coordinating and disseminating the work of Japanese scientists.
 - f. Establishing adequate control laboratories.
 - g. Importing more modern equipment.

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JAPANESE FISHERIES LEADERS VISIT UNITED STATES: Two Japanese fisheries leaders are visiting the United States for three months to observe and study administration and research related to the conservation and management of resources. Japanese research is being reoriented along these lines in accordance with advice and guidance from personnel of General Headquarters, Supreme Commander for the Allied Powers, according to its April 15 Weekly Summary.

The two Japanese specialists now touring the United States, Masao Sogawa and Hiroshi Kasahara, will discuss with American researchers and leaders of the fishing industry the various phases of fisheries research, administration, and enforcement. Their visit is part of a program authorized by SCAP to permit Japanese leaders to obtain first-hand knowledge of United States institutions and administration which can be applied in rebuilding Japan into a democratic nation.

Masao Sogawa is Chief of the Production Department of the Fisheries Agency. He is studying the organization and procedures of national and state fishery departments for law enforcement and prevention of overexploitation or overfishing of resources.

Hiroshi Kasahara is a fishery biologist and statistician. The purpose of his visit is to become acquainted with the methods used in collection and analysis of fisheries statistics on production and biology. He is especially interested in those phases of research dealing with fish population studies, determination of depletion of fisheries stocks, and the application of effective conservation measures.

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OPENING OF JAPANESE OVERSEAS AGENCIES ANNOUNCED: Japanese Government officials arrived in the United States the first week in May to open agencies in five key American cities for the purpose of promoting trade between the United States and Japan and the handling of citizenship and property problems relating to Japanese residing in the United States. The agencies will be located in New York, San Francisco, Los Angeles, Seattle, and Honolulu, the United States Department of State announced on May 1.

The United States Government two months previous, after consulting with other Far Eastern Commission countries, transmitted through General MacArthur's Headquarters an invitation to the Japanese Government to establish agencies in this country--an invitation which was approved by General MacArthur and accepted by the Japanese Government. The main objectives behind the invitation to establish the agencies were to provide means for making information available to American businessmen on trade opportunities in Japan and on Japanese laws and regulations concerning import-export trade, as well as to permit Japan, which is unusually dependent on overseas trade, to conduct research on market conditions and trade opportunities in the United States. It is believed that the latter function will tend to eliminate instances of underpricing of Japanese exports by giving the Japanese Government and Japanese businessmen a better understanding of United States and world market conditions.

JAPANESE GOVERNMENT



Korea

MARINE LANDINGS, 1949: Total marine landings for the Republic of Korea (South Korea) in 1949 amounted to 300,391 metric tons, compared to 286,592 tons in 1948

and 301,952 tons in 1947, according to an April 3 Seoul joint dispatch from the Department of State and ECA. Of the total marine landings, fish production totaled 246,951 tons; shellfish, 7,319 tons; sea weed, 9,104 tons; and sea animals (spiny lobsters, crabs and whales), 37,017 tons.

Republic of Korea Marine Landings, 1946-49

Type	1949 ¹ /	1948	1947	1946
 (in metric tons)			
Fish	246,951	225,917	264,281	236,748
Shellfish ..	7,319	6,423	5,336	21,318
Sea weed ...	9,104	7,812	7,683	24,541
Sea animal .	37,017	46,440	24,652	23,441
Total ..	300,391	286,592	301,952	306,048

¹ November and December data included in this total are preliminary.

Outlook: No major increases in the fish catch are currently anticipated mainly due to a decline

in the number of boats in the fishing fleet. Unless additional boats are forthcoming, it is expected that the fish catch will decline. Fishermen are unable to finance the cost of construction of new boats and equipment under present circumstances. For this reason, the Economic Cooperation Administration Mission has programmed \$2,000,000 during fiscal year 1951 for the purchase of new fishing vessels (also see p. 15 of this issue). It is also currently planned that all fishery supplies on hand, many of which have been in storage more than six months due to financing difficulties, will be sold directly to the various fishery guilds and associations.



Norway

NORWEGIANS URGED TO SEEK MARKETS FOR FISHERY PRODUCTS IN THE UNITED STATES:

Through a press interview with the former Norwegian Commercial Attache at San Francisco, Norwegian exporters were again urged to spend more time on the attainment of an intelligent comprehension of the American market. The former attache pointed out that where products had been adapted to American demand and taste, marketing had been quite successful. He stated that there were good opportunities for increasing frozen fish sales in the United States, but called attention to the necessity of transporting frozen products on ships with deep-freeze compartments.

It is also reported that the Norwegian Government has urged the canning industry to unite and seek markets in the United States under one trade name and one jointly-sponsored advertising campaign. Large factories with established markets were accused of refusing to cooperate with smaller factories which seek to enter American markets.

The problem of packing Norwegian export sardines in olive oil instead of herring oil, with a resulting increase in price to the consumer, was the subject of a lively press debate with, however, no conclusive results, reports a May 3 American consular dispatch from Oslo.

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ALBUMIN FROM FISH AND FISH WASTE: Norwegian chemists have discovered a satisfactory method of producing albumin (egg white) from fish and fish waste, according to a May 20 report from the Norwegian Information Service.

Before World War II, the Germans were producing a similar product, but it was not sufficiently pure to compete in the world market with albumin produced from milk, peanuts, coconuts, soy beans, etc. The German product tasted and smelled too much of fish.

The pure Norwegian product now achieved is the result of cooperation between two firms--E. O. Collett & Co. of Oslo, and Astrup & Co. of Kristiansund. Trial production has been started at the rate of some 600 pounds of dried albumin a day, equal to the egg white contained in the daily output of eggs by 100,000 chickens. The production of one pound of this dried albumin in the form of a dry white powder requires 10 to 12 pounds of fish waste (mostly cod). Production is carried out by a completely chemical-mechanical process.

One gram (about one-thirtieth of an ounce) of this powder is sufficient to produce three to four pints of meringue ("cream") which whips and mixes easily. In several respects, the artificial product is claimed to be better than natural egg white, and one pound of it is equivalent to that contained in about 150 chicken eggs.

This product contains 80 to 90 percent pure protein and can be used in baking, in the manufacture of ice cream, puddings, cheese, soup powder, mayonnaise, pharmaceutical products; in paints and varnishes; in the textile industry; as well as in paper, cosmetics, and soap. A price of about \$2.50 per pound is indicated for the best quality product. For industrial use, a less refined product would be needed and the price would be correspondingly lower.

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FLOATING HERRING OIL AND MEAL FACTORY A SUCCESS: The first Norwegian floating herring oil and meal factory, which went into operation in January this year, has been a great success according to all reports. The factory has a capacity of some 370 metric tons of herring per each 24-hour period, and 85 men are employed in the factory part of the vessel, states an April 4 American consular dispatch from Oslo.



LOFOTEN ISLES, NORWAY.

LOFOTEN COD CATCH POOR: The Norwegian Lofoten cod catch is expected to be even poorer this year than last. As of March 13 it totaled 11,500 metric tons compared to 17,800 tons for the same period last year.

The small catch caused considerable speculation in fish prices, with producers of salted fish outbidding producers of dried and frozen fish. A ceiling price of 3 cents per pound was imposed. Fish processors agreed to adhere to this price in their purchases.

The Ministry of Fisheries, given authority to formulate regulations on the production and marketing of cod in the Lofoten district, prohibited the salting of cod there at the end of March. However, it is anticipated that some freezing plants may be forced to suspend operations in the middle of what is normally their most busy season.

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PURSE-SEINING FOR COD TRIED: Purse-net fishing was tried this season in the Norwegian Lofoten cod fisheries for the first time on a small scale, reports the Norwegian Information Service. The production for the season, which ended the week of April 22, amounted to 71,839 metric tons, and purse-net fishing accounted for 12 percent of this total. This, according to the Norwegians, proves the superiority of purse-net fishing for cod. The largest catch in one day by this method was over 1,000 metric tons.

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NORWAY PLANS TO DEMONSTRATE FISHING METHODS TO FOREIGN COUNTRIES: It is reported that western Norway's Boatbuilders Association plans to send a fishing vessel completely equipped with trawl nets and lines to demonstrate fishing methods to foreign countries in an attempt to stimulate interest in Norwegian wooden vessels.

The Norwegian shipbuilding industry appears to be in a rather serious situation, reports an April 4 American consular dispatch from Oslo. Only one-half of the shipyards for wooden vessels are operating at the present time and they are employing an average of 6 to 7 men each as compared to the usual average of 20 men.

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NORWEGIAN ANTARCTIC FLOATING WHALE CANNERY: The 20,000-ton Norwegian tanker Kosmos V returned to Sandefjord after a very successful experiment as a floating whale cannery, according to the May 6 report from the Norwegian Information Service. No less than 160,000 cans of meat cakes and 40,000 cans of liver paste were canned at sea from freshly-caught whales. The whole of this amount was canned in 24 working days.

The whale meat had to be transported to the Kosmos V from other factory ships. Bad weather sometimes held up supplies. Because of the limitation imposed by the Norwegian Government on the number of whale refinery ships, Kosmos V was not allowed to act as a processing ship for the whales caught by catcher boats. It was dependent on other expeditions for the supply of meat. Experts are of the opinion that in the future canning plants should be installed on the actual refinery ships.



Republic of the Philippines

UNITED STATES VESSEL TRANSFERRED TO PHILIPPINE BUREAU OF FISHERIES: The David Starr Jordan, a research and exploratory vessel of the Philippine Fishery Program of the United States Fish and Wildlife Service, was transferred to the Philippine Bureau of Fisheries on May 2, 1950. The vessel was accepted by the Acting Director of the Philippine Bureau. This vessel, which was acquired outright by the United States Mission, represents a monetary value of ₱82,000 (approximately \$41,000) and is equipped with a wide variety of equipment.

The vessel is one of a fleet of three vessels that have been exploring Philippine waters for the past two-and-half years in conjunction with the Philippine rehabilitation program of expanding the Philippine fisheries.

It is 50-ft. long over-all, has a gross tonnage of 30 tons, is powered with a 125 h.p. Diesel engine, and has had mechanical refrigeration installed in the Philippines.

This vessel has been used by the Mission for research and exploration. There is a definite need for the continuation of these functions by the Philippine Bureau of Fisheries if the fishing industry of the country is to keep abreast of the development of the Philippines.

UNITED STATES FISHERY MISSION PLANS DEPARTURE FROM THE PHILIPPINES: Prior to the final closing of the Philippine Fishery Program of the U. S. Fish and Wildlife Service and the return of the personnel to the United States, the Mission is closing its office and laboratory, according to a May 15 announcement by the Administrator of the Program. The Program has been operating in the Philippine Republic for the past three years under the authority of the United States Philippine Rehabilitation Act of 1946.

The administrative office will remain open until June 20 for the final settlement of affairs. Disposition of property and effects of the program have been going on for the past month. Approximately \$300,000 worth of scientific equipment, fishing gear, and other paraphernalia has been transferred to the Philippine Bureau of Fisheries in accordance with the law.

The Theodore N. Gill, one of the Program's three exploratory and research vessels, departed for the United States May 5. The David Starr Jordan, another of the exploratory vessels, was transferred to the Philippine Bureau of Fisheries for its use. The Spencer F. Baird, the flagship of the rehabilitation fleet, returned to the United States on January 10.



Union of South Africa

MARINE RESEARCH PROGRAM: For at least the next two years the South African Division of Fisheries will use the Africana II, a new research vessel completed in January this year, and the two smaller vessels, Schipa and Palinurus, for intensive investigations into the pilchard resources off the west coast of Africa, according to the March 1950 issue of The South African Shipping News and Fishing Industry Review.

In the past seven years pilchards have become the most important fish in South African waters and over \$11,200,000 is now invested in the pilchard processing industry.

Since the industry started, scientists have been aware of the urgent need for pilchard research. The Division has now drawn up a comprehensive program covering an area of 710 sq. miles of sea centered on St. Helena Bay.

Twice a month the Africana II will sail a "N"-shaped course, starting out to sea and finishing inshore. A network of stations has been marked out along this course and the ship will stop at each of them to observe weather conditions, take water temperatures and samples from varying depths, and make plankton hauls.

While the Africana II is working out to sea, the two smaller patrol boats will operate inshore along St. Helena Bay, taking fish samples from the nets of commercial fishing boats, making plankton hauls in the immediate vicinity of a shoal, observing weather conditions, and taking water temperatures. Two officers, one at Lamberts Bay and one at Stompneus Bay, will collect and examine the samples from the boats and, in addition, will twice weekly take 50 fish from five different commercial boats and record the weight of each fish, its length, sex, condition of sexual organs, and will examine and record its stomach contents.

From the data collected it is hoped to assess the potentialities of the fishery, discover where the pilchards spawn and die, why they concentrate in certain areas, and where they can best be fished.

The new vessel, Africana II, was launched in October 1949. It is a steam trawler with 1,300 h.p. triple-expansion reciprocating engines, an over-all length of 206 ft., a breadth of 33 ft., a depth of 16.2 ft., and a sailing range of 25 days. It is 882 gross registered metric tons and will carry a complement of 10 officers, 4 scientists, and a crew of 21 men.



U. S. S. R.

ENFORCEMENT OF TWELVE-MILE ZONE OFF THE BALTIC COAST: A de-facto 12-mile zone off the Polish- and Soviet-occupied German Baltic coast has been created by Soviet Russia, according to Bremen newspaper reports. Soviet naval units in large numbers are patrolling the Baltic Sea, and no week passes without the capture of fishing trawlers (regardless of nationality) that allegedly sailed the waters within the 12-mile-zone limit. The only purpose for which vessels are permitted to enter Baltic sea ports occasionally is for coaling, states an April 17 American consular dispatch from Bremen.

It is believed that the pursuits of Scandinavian and West German fishing vessels is carried out partly for the reason of enforcing respect of the Soviet's newly created 12-mile-zone limit and to keep foreign vessels out of these waters.



United Kingdom

BRITISH DEVELOPING NEW RADAR DEVICE WHICH INDICATES SPECIES OF FISH: Tests with a new radar device which enables fishermen to tell what species of fish they have located are being carried out at the British Ministry of Agriculture Fisheries Research Station at Lowestoft, reports the April 8 British fishery periodical, The Fishing News.

Tests are not yet complete, a Ministry spokesman stated in April, but results so far obtained are said to be promising. At present, only experts using the Hughes apparatus (as the new device is called) can tell what species of fish have been located from the image appearing on the radar screen. However, experiments are continuing in an attempt to discover how the radar image can be more easily interpreted. Success should enable trawler skippers to decide if they can "shoot" for prime fish and if the catch is likely to prove profitable before beginning a drag.

Other English manufacturers, expert in radar development, are claiming to have evolved similar devices, but the Ministry states: "Our experts tell us that none of these firms can tell us anything we do not know already."

The Ministry believes that the new apparatus may be ready for general use by the end of this year.

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RESULTS OF DECONTROL OF FISH PRICES: Great Britain's price controls on fish were discontinued on April 15, 1950. The immediate results of decontrol were some sensational price increases, in many cases prices more than doubling, reports an April 18 American Embassy dispatch from London. However, members of trade have stated that this is just a temporary situation and that a more moderate price situation will prevail shortly when consumers refuse to pay high prices and when more fish are available. The catch in the last few weeks has been adversely affected by stormy weather.

Later reports indicate that prices have already receded from their high levels of April 15, and in some cases have even been reported lower than controlled prices.



Venezuela

SPINY-LOBSTER-FISHING CLOSED SEASON LENGTHENED: The closed season on spiny lobster (Palinurus argus) fishing is fixed as May 15 to September 15 in Venezuela, according to a May 9 American consular report from Caracas. This new closed season was announced by the Bureau of Agricultural Economics of the Ministry of Agriculture in Gaceta Oficial of May 5, 1950. Since 1947 the closed season has been lengthened from two months to the currently established four-month period.

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Venezuelan Fish Production (Marketed or Processed Weight), 1945-49 ^{1/}				
Year	Fresh	Salted	Canned	Total
	... (in metric tons).....			
1949	33,968	10,237	6,552	50,757
1948	39,380	13,440	9,280	62,100
1947	29,080	11,777	7,479	48,336
1946	22,968	13,541	7,791	44,300
1945	15,353	13,089	6,023	34,465

^{1/} Issued by the statistical service of the Venezuelan Ministry of Fomento.

FISHERIES PRODUCTION, 1949: Production of fishery products in Venezuela dropped from 92,281 metric tons (landed weight) in 1948 to 75,449 tons (landed weight) in 1949, according to the Venezuelan Development Corporation. The drop in 1949 is attributed partly to the loss of markets for canned sardines, which resulted in the fish canners drastically curtailing their purchases of sardines, reports a May 3 American consular dispatch from Caracas.



FISHING INDUSTRY IN BRAZIL

Fishing in Brazil is little developed as an industry, and is of relatively small economic importance. There is much subsistence fishing, wherever there is water; but fish is imported into all parts of Brazil, both canned and salted. The value of fish caught in Brazil in 1942 amounts to less than one-half of one percent of the Brazilian national income for 1942, and to about one-tenth of the value of U. S. fisheries products in 1939.

Primitive methods of fishing prevail throughout the country. The tropical coasts abound with fish, but the varieties are so numerous that large schools of a single species are rarely encountered; thus it is difficult if not impossible to employ large-scale methods. In the sub-tropical waters off the southern coasts, roughly from the Federal District to the Uruguayan border, it is possible to use the trawler and purse seine which are found so profitable in the northern oceans. Such an industry would be based on sardines and shrimp.

Efforts to develop the fishing industry during the past ten years have been sporadic and, usually, fruitless. The number of motor-powered fishing boats is small and so is the average horsepower of their engines. Few of them have any refrigerating equipment, and fuel is expensive.

--Fishery Leaflet 329