



## International

### INTERNATIONAL PACIFIC SALMON FISHERIES COMMISSION

1955 FRASER RIVER SOCKEYE RUN BELOW EXPECTATIONS: The July 1955 runs of Fraser River sockeye salmon did not equal expectations, but the runs contributing to the catch during the month of August were as anticipated, reports the International Pacific Salmon Fisheries Commission. The average size of sockeye



throughout the season has been from 5.2 pounds for the early fish to between 5.7 and 5.9 pounds on the later runs. These average weights are considerably less than the average weights existent for a number of years past, and the weight this season has actually been held up by a rather high percentage of 5-year-old fish. It is obvious that ocean feeding conditions were exceptionally poor for the 1951 brood which return this year. While the 1955 run is the third largest, if not the second largest, of the cycle since 1903 it is problematical what the run would have been if a more favourable ocean life had been experienced.

1955 FRASER RIVER SOCKEYE ESCAPEMENT: The 1955 Fraser River sockeye escapement to some of the tributaries in which spawning occurs was curtailed by record high-water levels prevailing during the early runs. An estimated 50,000 fish failed to reach the spawning grounds and were found distributed in the smaller tributaries from Hope, B.C., to Quesnel, B.C. No production can be expected from the diverted fish. It is obvious that the 1959 sockeye fishing season cannot start until at least July 15 in either the United States or Canada.

Escapements to spawning areas considered to be the mainstay of the cycle have not been estimated, but indications exist that these escapements will be considerably less than those of the brood year. This will be the case in spite of only a three-day fishing week on the Fraser as well as additional restrictions effective in Puget Sound and the Juan de Fuca Strait. Drastic increases in gear and fishing efficiency in the Canadian Straits fleet and the Puget Sound gill-net fleet is jeopardizing the whole management program for the Fraser River sockeye. The industry itself, which has created this condition, must suffer accordingly until some means of stabilizing the fishing is accomplished. Lengthy discussions and cooperation in the formation of an intelligent plan will be required this coming winter if the unfortunate conditions prevailing in the 1955 fishery are to be avoided in 1956 and future years.

### INTERNATIONAL LAW COMMISSION

GOVERNMENT-INDUSTRY MEETING TO DISCUSS CODE ON FISHING AND TERRITORIAL WATERS: The State Department in collaboration with the Department of the Interior has scheduled a meeting on October 14 to study the proposed

codes of the International Law Commission on fishing and territorial waters. Representatives of the fishery industries and the state conservation departments have been invited to attend.

The purpose of the meeting is to discuss the draft articles from the viewpoint of the United States fishing industry and the state departments of conservation.

The International Law Commission has asked for comments of governments on the draft articles it has prepared on the regime of the high seas and the regime of territorial waters.

### TERRITORIAL WATERS

SOUTH PACIFIC FISHERY RESOURCES MEETING HELD: Representatives of the Governments of Chile, Ecuador, Peru, and the United States met in Santiago, Chile, on September 14 for the purpose of holding conversations regarding the conservation of fishery resources of waters of the South Pacific, and to plan appropriate scientific and technical studies to that end, the U. S. Department of State announced on September 13.

The United States Government was represented at this conference by the following Delegation:

United States Delegates: William C. Herrington (Chairman), Special Assistant for Fisheries and Wildlife, Office of the Under Secretary, Department of State. The Honorable John C. Dreier, United States Representative to the Council of the Organization of American States.

Advisers: Charles R. Carry, Executive Director, California Fish Cannery Association, Inc., Terminal Island, California. Wilbert M. Chapman, Director of Investigations, American Tunaboat Association, San Diego, California. Milton J. Lindner, Technical Adviser, United States Operations Mission, Mexico, D. F., Mexico. William A. Sanders, Counselor, United States Embassy, Santiago, Chile. O. E. Sette, Fish and Wildlife Service, Department of the Interior, Stanford University, Palo Alto, California. Fred E. Taylor, Office of the Special Assistant for Fisheries and Wildlife, Department of State. William M. Terry, Office of Foreign Activities, Fish and Wildlife Service, Department of the Interior. Marjorie M. Whiteman, Assistant Legal Adviser for Inter-American Affairs, Department of State.

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UNITED STATES AND SOUTH AMERICAN GOVERNMENTS SUSPEND NEGOTIATIONS ON SOUTH PACIFIC FISHERY RESOURCES: Representatives of the Governments of Chile, Ecuador, Peru, and the United States met in Santiago, Chile, on September 14 to discuss the conservation of fishery resources of the Southeast Pacific. These negotiations were suspended on October 5 in a cordial atmosphere, the U. S. Department of State representatives advised from Santiago. A joint communique was issued by the four nations pointing to the usefulness of the conversations in clarifying the points of view of the respective governments and the progress made in determining areas of agreement. Suspension of negotiations was necessary since the stage had been reached requiring that the four delegations consult their respective governments with a view to future renewal of efforts which would lead to an agreement on the conservation of fishery resources and fishing.

### NORTHWEST ATLANTIC FISHERIES COMMISSION

REPORT ON FIFTH ANNUAL MEETING: The Fifth Annual Meeting of the International Commission for the Northwest Atlantic Fisheries was held in Ottawa, Canada, June 6-11, 1955. It was preceded by a two days' meeting of the Group of

Advisers on June 3-4. Commissioners were present from Canada, Denmark, France, Italy, Norway, Portugal, Spain, United Kingdom, and the United States. Most of them were accompanied by advisers. Observers were present from the Federal Republic of West Germany, the Food and Agriculture Organization of the United Nations, Conseil International pour l'Exploration de la Mer, International Fisheries Convention 1946, International Pacific Halibut Commission, and the Special Committee of the International Geophysical Year.

One of the main problems dealt with during the meeting was the introduction of net-mesh regulations for the trawl fishery of cod and haddock in the southern part of the Convention Area, Subareas 3, 4, and 5. The deliberations resulted in a proposal for an amendment of the regulation already in force in Subarea 5 mainly to the effect that in the future this regulation should concern not only haddock but also cod.

The same net-mesh regulation as that for Subarea 5 was recommended by the Commission for Subarea 4.

For Subarea 3 the same mesh regulation was recommended, the only difference being that the mesh size there be 4-inches or 102 mm. instead of 4½-inches or 114 mm. for Subareas 4 and 5.

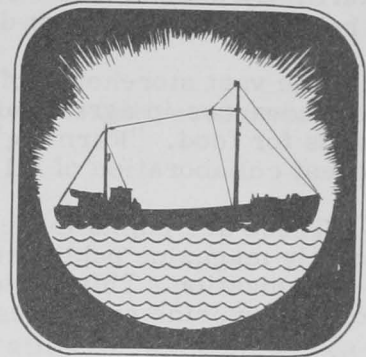
The three recommendations were unanimously agreed to by the delegates of the various member countries, and they have now, through the Secretariat, been forwarded to the Depository Government for transmission to the member governments.

The research work carried out in the five Panels during the preceding year was reviewed. Plans for future researches, especially those to be undertaken during the coming year, were discussed and decided upon. The question of the collection of fisheries statistics within the subareas was also considered. In the Standing Committee on Research and Statistics, the results of the discussions in the panels and in the various groups of advisers were considered. This Committee arrived at a series of conclusions on the research work to be carried out and on how statistics should be collected and presented in the Commission's published Statistical Bulletins. The main resolutions arrived at pertaining to statistics were that a conversion factor of 3.0 should be used for green salted wet cod in European landings and one of 2.7 for Canadian landings. A further decision was that, whereas up to now the Commission's statistics have only dealt with the more important groundfishes of the Area, they should in the future include all fishes and invertebrates fished in the area. It was decided that a special symposium on cod should be arranged for the 1956 Annual Meeting.

At the Final Plenary Session it was decided that the Commission's next Annual Meeting (1956) should take place in June of that year at the Commission's Headquarters in Halifax. It was further decided, following an invitation by the Portuguese delegation, that the Annual Meeting of 1957 should be held in Lisbon provided that the change in Convention regarding the holding of Annual Meetings in Europe had been effected by that time. It was also decided a ten-day meeting of the Standing Committee on Research and Statistics should be held in March 1956 in France.

#### UNITED NATIONS

HARNESSING THE SEA'S RESOURCES: The bounty of the sea has hardly been tapped as a means of feeding the world's hungry millions. Today its resources provide less than one percent of the total food supply, the United Nations reported in an August 15 release.



The 139 million square miles of ocean surface--about  $2\frac{1}{2}$  times the earth's land area--hold within their depths the potential additional food supply required for the future. By the end of the century, it is predicted, the world's population is expected to reach 4 billion, almost double the present figure.

The vast storehouse of marine resources must be mastered, as the most promising advances in agricultural science will not be sufficient to meet the coming demands for food. "Farming" the seas, however, will be a gigantic task calling for the closest collaboration of all branches of science concerned.

These are points made in the August 1955 issue of the Courier, the illustrated monthly magazine published by the United Nations Educational, Scientific and Cultural Organization. This issue highlights the international and national efforts to exploit new marine resources and the latest developments in oceanographic research.

The sea is not only humanity's great unused resource but a truly international one. While the land is divided among nations, the sea belongs to mankind. Comprising about 72 percent of the earth's surface, the seas are vast enough for all nations, including those without seaboard of their own, to participate in marine agriculture.

The amount of fish caught and consumed today could be increased many times, if fishing were no longer an essentially primitive method of finding food, in the manner that "our ancestors roamed the woods in search of game." In addition, the rich plant life of the sea, now serving as food only for fish, is recognized today as a potential food both for men and domestic animals. And scientists calculate that a square mile of ocean produces an average of 13,000 tons of vegetation a year, with a world total probably five times that of vegetation on land.

Many private and governmental research institutes have developed new methods of studying the ocean depths which have revealed strange forms of marine life. But, such international organizations as the Pacific Science Congress, the Indo-Pacific Fisheries Council, and the Food and Agriculture Organization have called attention to the research still required before the sea's resources can be fully tapped as a source of food supply.

In this connection UNESCO is organizing as broad an international attack on the problems of the sea as it has done for the problems of the arid lands. A program of aid to oceanographic research on a worldwide scale, prepared in accord with the FAO, was approved by the UNESCO General Conference last December in Montevideo, Uruguay.

To coordinate this program, UNESCO has organized an International Advisory Committee on Marine Sciences, which will meet for the first time in October 1955 in Tokyo. A preliminary meeting of scientists was held on this subject in Rome last May. This Committee is expected to coordinate a cooperative long-term international research program now being prepared under UNESCO auspices.

The program will include such activities as the mapping of the ocean bottom and the study of the soils and sediments, temperature variations and ocean currents, conditions governing plant growth, types of animal life at various locations, diseases and parasites of plant and animal life, and the resources of edible fish in accessible areas.

The idea of "farming" the seas possesses several well-defined advantages, summed up as follows:

The sea contains great quantities of nutrients which, properly directed and supplemented where necessary, could be made to increase the growth of planktonic life, and in turn stimulate the growth of marine animal life.

In marine agriculture, there can be no lack of water such as besets terrestrial agriculture.

It is believed that marine plant diseases, where they exist, can be more easily controlled in this environment.

The seas are vast enough for all nations, including those which have no seabords of their own, to participate in marine agriculture.



## Australia

TUNA CANNERY EXPANDS FACILITIES: In preparation for the coming season, the Eden (Australia) tuna cannery is extending its facilities, reports the August 1955 Fisheries Newsletter of the Commonwealth Director of Fisheries. The production manager of the Eden and Narooma canneries said that at the Eden cannery a 40 x 20 x 3 foot refrigerated brine tank was being installed to hold fish at 28° F. Fish will be discharged from the boats into this tank for holding until they can be frozen and glazed. The freezer can handle 20 metric tons at -30° F. in a 24-hour turnover. As the cannery can handle 10 tons of fish in an 8-hour shift, two shifts would keep up with the capacity of the freezer.

The cold-storage capacity at a temperature of -5° F. at the Eden cannery is also being increased to 500 metric tons. Including the 200-ton cold-storage capacity available at the Narooma cannery, a total cold-storage capacity of 700 tons is available for holding fish for canning.



## Barbados Island (British West Indies)

GOVERNMENT ENCOURAGES COOPERATIVES: The development of the Co-operative Movement and credit unions among agriculture and fisheries on Barbados Island is being pushed by the Government, a May 6 U. S. consular dispatch from Barbados reports. In July 1954 there was a total of 8 such societies--4 marketing, 1 savings, 1 consumers, and 2 credit unions. The societies are closely supervised by the Cooperatives Officer of the Government.



## Belgium

MARINE OIL IMPORTS AND EXPORTS, 1954: Belgium imported 14,728 metric tons of marine oils during 1954, mainly from Norway, Netherlands, and the United Kingdom, according to a United States Embassy dispatch from Brussels dated April 15. Exports of marine oils during the same period amounted to 2,478 tons--mostly shipped to the Netherlands.



## Bolivia

CANNED SARDINE IMPORTS: Bolivian imports of canned sardines in 1954 totaled 1.1 million pounds, valued at US\$160,000, states a United States dispatch of August 18 from La Paz.

Bolivian Imports of Canned Sardines, 1954					
Country of Origin	Quantity	Value	Country of Origin	Quantity	Value
	Lbs.	US\$		Lbs.	US\$
Holland . . . . .	580,595	73,806	Denmark . . . . .	21,780	4,404
United States . . . . .	337,078	51,907	Argentina . . . . .	3,166	3,141
Canada . . . . .	72,642	9,025	Norway . . . . .	5,080	1,707
Peru . . . . .	48,798	4,864	Brazil . . . . .	1,705	658
Spain . . . . .	17,114	7,469	Switzerland . . . . .	1,151	281
Germany . . . . .	8,422	1,066	Chile . . . . .	22	6
Yugoslavia . . . . .	5,540	1,412	England . . . . .	4	3
(Continued in opposite column)			Grand Total . . . . .	1,143,097	159,749

The dollar value of sardines imported from the United States was US\$52,000 in 1954, compared with US\$35,000 in 1953 and US\$120,000 in 1953.



### Canada

FISHERY SCIENTISTS INVESTIGATE ARCTIC WATERS: Fishery scientists of the Fisheries Research Board of Canada at Nanaimo, B. C., will penetrate waters of the Arctic this summer and early winter in an effort to determine the potentialities of the fisheries in Canada's far northern waters. They left on June 14 for the long trek which will take them to remote Mackenzie Bay located between Baillie and Herschel Islands. The object of the trip is to record the species and assess the abundance of fisheries and other marine life in these waters. Whales, seals, and fish are important multipurpose resources in the economy of the far northland, where transportation is limited. The venture is being carried out by the Fisheries Research Board in cooperation with the Department of Northern Affairs, according to the May Trade News of the Canadian Department of Fisheries.



### Denmark

REVIEW OF FISHING INDUSTRY, 1954: Number of Craft and Employment: The total number of fishermen employed in 1954 was 17,112, compared with 17,232 in 1953. The total for 1954 includes 12,383 permanently employed, or 198 full-time fishermen less than in 1953. Fishing craft totaled 14,005 in 1954 and included 10 craft over 50 gross tons; 1,324 between 15-50 tons; 2,256 between 5-15 tons; and the balance less than 5 gross tons. Vessels equipped with motors amounted to 7,840 or about 56 percent of all the fishing craft. The value of the fishing fleet was estimated at 167.2 million Danish kroner (US\$24.2 million) and the value of the fishing gear and gear-storage sheds at 74.7 million kroner (US\$10.8 million).

Catch: The total Danish salt-water fish and shellfish catch in 1954 was about 768.2 million pounds, with an ex-vessel value of 200.8 million kroner (US\$29.1 million)--an increase of 46 million pounds and 9.4 million kroner (US\$1.4 million) in value over 1953. The catch of fish and shellfish for human consumption declined by 14.5 million pounds, but that used for reduction increased 64.7 million pounds. Some declines also occurred in the 1954 catch of mussels and starfish. The decline in the quantity caught for human consumption was offset by a 3.1-million-kroner (US\$0.4 million) increase in ex-vessel value.

The 1954 catch of herring declined 4.8 million pounds below 1953. The catch of cod was about the same as in 1953, but slight declines were noted for plaice and mackerel. The production of fish by Danish vessels, except for a catch of 165,000 pounds made in 5 trips to the Barents Sea, was confined to nearby waters.

The statistics on the catch in inland lakes and rivers are incomplete, but the catch in 1954 was estimated at 2.2 million pounds, valued at 1 million kroner (US\$145,000) ex-vessel. Danish trout farmers in 1954 produced 7.3 million pounds of fish for export, valued at 20.1 million kroner (US\$2.9 million). The 1954 production of trout for export increased by 880,000 pounds and 2.9 million kroner (US\$420,000) over the production for 1953.

The Danish production of fish and shellfish was supplemented by the landings of Swedish vessels at Danish ports. These landings amounted to 51.5 million pounds, valued at 9.9 million kroner (US\$1.43 million) ex-vessel. The greater part of the Swedish landings was herring and fish used for reduction.

Of the total amount of fish and salt-water fish and shellfish landed in Danish ports in 1954, about 127.6 million pounds were used to produce products for human consumption: 63.8 million pounds were used for fish fillets; 14.1 million pounds for smoking; and 27.3 million pounds for canning; and the balance as fresh and salted fish. A total of 418 million pounds was utilized for reduction into fish meal and oil, and 154 million to 165 million pounds of fish and fish offal were used for fur farms, fish farms, and ensilage.

In 1954 the Danish fish-reduction industry produced 35,000 tons of fish meal and about 11,000 tons of fish oil.



Ecuador

Item	Destination	Quantity	Value
		Metric Tons	US\$
Fresh and frozen fish	United States..	1,870	118,871
	Costa Rica.....	6	606
Total .....		1,876	189,477
Spiny lobsters, live	United States .	282	28,698
	Panama .....	32	3,487
	Peru.....	7	1,325
Total .....		321	33,510

**FISH AND SHELLFISH EXPORTS, 1954:** Ecuadoran exports of fish and shellfish in 1954 totaled 2,197 metric tons, valued at US\$222,987. The bulk of these exports consisted of fresh and frozen fish and the remainder was live spiny lobsters. The United States received almost all Ecuadoran fish and shellfish exports in 1954 with the balance going to other Latin American countries.



French Morocco

**SARDINE INDUSTRY TRENDS, SEPTEMBER 1955:** The opening months of the sardine fishery have substantiated earlier predictions that 1955 production, although better than 1954, would be below normal, states a September 26 dispatch from the United States Consulate at Casablanca.

The French Moroccan canning industries prepared to face these unfavorable prospects with more efficient operation. The French Director of Commerce decided that the 600,000-case duty-free import contingent for the French metropolitan market for the period 1955/56 would be distributed among local producers on the

basis of their average exports during the years 1949, through 1953. It was also decreed that the system of allocation of this production would be continued another five years, subject to review at the end of three years. The French Moroccan canners came to an agreement with sardine importers in France that the number of importers entitled to receive canned sardines from Moroccan factories would be limited and regulated. In recent weeks French sardine fishermen and canners on the Basque coast climaxed their repeated protests against the allocation of the duty-free quota to the French Moroccan sardine industries by suspending their fishing and canning activities for a period. French fishing and canning interests have long considered the advantage enjoyed in the French market by the Moroccan canners as unfair competition.

The owners of the industrial fishing boats in the principal sardine ports of French Morocco embarked upon the unpromising season, relying somewhat on the measures recently promulgated by the Director of Commerce to enable them to pay their debts and repay the loans encumbering their boats from other years.

It should be borne in mind that sardines, whether destined for canning purposes or the byproduct industries, will not be subject to controlled prices in the Northern French Moroccan ports, but will be sold at auction. It appeared that many boat owners in the three southern ports of Safi, Agadir, and Mogader were advocates of an auction system in those ports as well, but that canning factory owners were primarily responsible for the retention of the controlled prices. In this connection, it was reported that, owing to the accumulated financial problems besetting fishing boat owners as a result of high costs and a poor fishing season in 1954, a growing number of boats have passed from private hands to ownership by canning enterprises which are willing to sustain fishing losses in order to obtain an independent means of supplying raw materials for the operation of their plants.

The repayment of loans and other debts contracted by units of the industrial fishing fleet became increasingly problematic as the season advanced. The situation of the fleet has been especially serious in the port of Safi, where beginning in June a political strike movement made its appearance among Moroccan crewmen of the sardine boats.

SARDINE INDUSTRY HURT BY FISHERMAN'S STRIKE: The intermittent strike carried on by Moroccan crewmen of the sardine fleet at Safi, French Morocco, caused serious losses to the fishing and fish-processing industries of that center in June-August. Although fishing began again on August 12 after a ten-day interruption, the strike was resumed almost immediately thereafter, reports the United States Legation at Tangier in a dispatch dated September 7. An accurate resume of the strike situation at Safi to date reads as follows: In June the fleet fished on 12 days, was on strike 14 days, and idle on four Fridays; in July the fleet fished on 19 days, was on strike for 7 days, and idle on five Fridays; and during the first 23 days of August the fleet fished on two days and was on strike or idle for 21 days.

Note: See Commercial Fisheries Review, September 1955, p. 97.

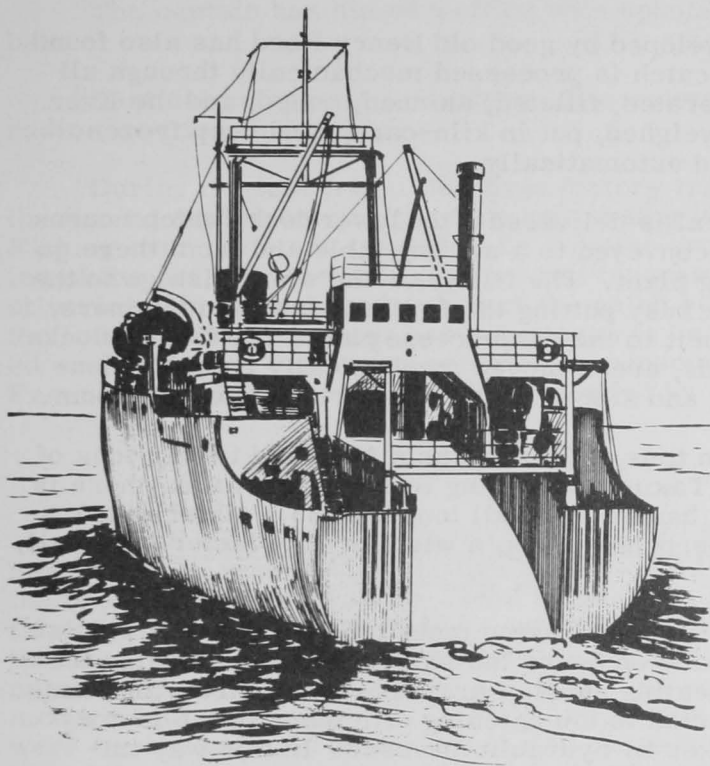


## German Federal Republic

TRAWLERS MAKE GOOD TRIPS OFF GREENLAND: A total of 19 large West German otter trawlers made trips to the Greenland cod banks the latter part of July 1955 and returned with good catches, according to the September 16 issue of Dansk Fiskeritidende, a Danish fishery trade paper. In addition to cod, the trawlers caught large quantities of ocean perch on the outer edge of the banks. The total catch for 17 of the trawlers amounted to 9.8 million pounds.



**RUSSIAN FACTORY TRAWLERS BUILT IN WEST GERMANY:** In 1954 the Russian state trading organization Sudo-Import, Moscow, placed an order for 24 fishing vessels equipped with fish-processing installations with a shipyard in Kiel, reportedly at an aggregate cost of 180 million Deutsch marks (US\$42.7 million). Early in 1955 the first vessel, Puschkin, went with a German crew on a trial trip in the Barents Sea before it was delivered to the Soviet Union.



Trawler Puschkin, one of 24 equipped with fish-processing installations which a West Germany shipyard is building for Russia. Note the construction to permit shooting and hauling the net aboard from the stern.

states:

"Six weeks ago the Russian motor trawler Puschkin left Kiel with a German crew to go on a four weeks' test trip to the Arctic Sea. It was the first one of 24 fishing factory trawlers. . . .

"The placing of the order was quite a surprise. The issuance of a license to build these vessels was negotiated in Paris (!). Experts discussed in detail the unexplored problem of the efficiency of this completely new type of vessel which was first developed in England. At the end of 1954 the first vessel--named "Puschkin--was finally launched. . . .

"The description of the ship starts with the stern, because that is where the catch is hauled aboard. It is the most striking characteristic of the ship compared with conventional types of fishing vessels.

"A specially constructed net, which stood up well under preliminary tests in the Baltic Sea, is hauled aboard over a slanting slide cutting into the stern of the ship. This procedure guarantees a smooth and continuous flow of the work in the factory part of the ship which is spread over the larger part of the main deck.

"The net winch. . . is equipped with two wire drums, each for 1,200 fathoms of 3-inch cod line. Furthermore, 4 capstan drums are installed to operate wires necessary for the various net maneuvers. They are driven by an electric motor geared directly to the net winch. For the first time equipment is used which allows for winding mechanically and separately the cod lines on each drum.

In its June 1955 issue the West German monthly periodical Die Seekiste published an article describing the factory trawler in some detail and the trial trip. The article was written on the basis of information gleaned by the publisher from German crew members who attended the test trip. A translation of this article was transmitted by the United States Consulate at Bremen.

On July 6, the second factory trawler, Gogol, was delivered to the Soviet Union. The third vessel, Nekrasov, was delivered on August 17, 1955. Two more vessels are presently under construction.

The article in Die Seekiste

"The fish is transported from the quarterdeck by a conveyor belt through the hatches to the factory deck where it is processed in various stages to frozen products. No hand touches the fish during this transport.

"The assembly line technique developed by good old Henry Ford has also found its way into the fishing trawler. The catch is processed mechanically through all stages. The fish are beheaded, eviscerated, filleted, skinned, boned, and the liver removed. The fillets are portioned, weighed, put in kiln-carts, and deep frozen. Afterwards they are glazed and packed automatically.

"Thereby nothing is lost. The offal is delivered to the lower deck, which houses the fish meal factory. The livers are conveyed to a sorting table and from there go into the oil extractor or to the canning plant. The fillets or the whole fish go to the packing room, where eight women are busy putting the fish into freeze containers, which are whisked off on a conveyor belt to the deep-freeze plant. The frozen blocks of fish, which weigh about seven pounds, are removed mechanically from the containers, packed into cardboard boxes, and stored in the deep-freeze storage room.

"Twenty tons of frozen fillets, ten tons of frozen whole fish, and twenty tons of fish meal can be processed per day. Taking everything into consideration, there is not much space left on a vessel which has an over-all length of 85.5 meters (280 feet), 75 meters (246 feet) between perpendiculars, a width of 13.4 meters (44 feet), and a draft of 5.2 meters (17 feet).

". . . a Berlin firm designed the fish processing installations with a particular view to the ever-prevailing lack of space on board the ship. By special design the firm succeeded in installing a large heating surface in relatively small drying plants. Thus, the plant capacity could be adjusted to the catching efficiency of the factory vessel. Fish meal is pressed into cakes by hydraulic presses. In this way important storage room is saved.

"The vessel also carries its own ice factory. Space is required for the engine-room, for crew quarters, for the engine operators as well as for the fish processors, for whom two full sets of quarters had to be built because the ship works two shifts. For the designers this meant that the use of every square inch had to be planned very carefully, in order to provide the necessary space for approximately 100 men. Hence, there is not much space left among the numerous engines.

"Since the vessels, which measure 2,555 gross registered tons and 1,000 net registered tons, will be tossed about quite a bit in the Barents Sea, safety belts have been installed at all working places. The belts can be buckled on in the same manner as an airplane safety belt.

"Working on this vessel will mean a hardship both for the crew on deck and for the workers below deck. Therefore an attempt has been made to make leisure time for personnel as pleasant as possible.

"The hull is isolated; cabins accommodating four crew members have central heating and are equipped with seats upholstered with leather and beds with inner spring mattresses.

"For insulation use was made of . . . a light-weight, flexible and elastic insulating material made out of plastic sheets. This material has been used for many years in ship construction and in coachbuilding for the German Federal Railway. Its weight per room is about 22 pounds.

"Each vessel will be propelled by a . . . Diesel engine of 1,900 hp. which will give the ships a speed of 12 knots.

"The ship also has its own laundry which is operated by four women especially employed for this job.

"The captain has his own office with upholstered furniture, as well as a private bath.

"Nautical equipment is modern. It consists of an echo-sounder, gyrocompass, radio direction finder, etc.

"During the test trip of the first factory trawler Puschkin in the Barents Sea, the fishing equipment and the fish-processing installations proved to be excellent. Fishing over the stern proved to be a better and simpler method than the usual hauling of the net over the side of a normal trawler. The scepticism which was heard at various times that the hauling of the catch aboard over the stern slide would crush the fish or damage the net has not proven to be true. The factory installations worked well, although they were operated by personnel not yet acquainted with them. Freezing requirements were even exceeded by 12 percent. . ."

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FISHERY RESEARCH VESSEL RETURNS FROM FIRST TRIP: West Germany's new research vessel Anton Dohrn has returned from its first trip to the North Sea, the Shetland Islands, and the banks off Iceland, according to Dansk Fiskeritidende (May 27, 1955), a Danish fishery periodical. During the cruise of about three weeks, the usual hydrographic and biological research was conducted and a substantial amount of fillets were prepared and frozen on an experimental basis with the vessel's modern equipment. A total of 42.5 metric tons of iced haddock, cod, and ocean perch were landed and sold at auction in Bremerhaven. Each year the Anton Dohrn's commercial catch is expected to bring in about 40,000 German marks (US\$9,500) to offset its cost of operation.



## Greenland

FACTORYSHIP "GREENLAND" INCREASES PRODUCTION: The floating factoryship Greenland filleted 300 metric tons of wolffish (ocean catfish), cod, halibut, and salmon taken by fishermen off Greenland from April to mid-August. This is a 50 percent increase over the production during the same period in 1954. The increase was due mainly to improvements in equipment made last winter.

During the April-August 1955 season, the vessel carried a crew of 25 and no fishing was done. All fish used for filleting were purchased from the fishermen. Most of the fillets produced in the first half of the season, were exported to the United States and the remainder will be taken to Denmark by the Greenland, according to the September 9 issue of Dansk Fiskeritidende, a Danish fishery trade paper.

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DEVELOPMENTS IN FISHING OFF GREENLAND: A large fleet of European vessels fished the banks between West Greenland and Northern Labrador this summer with excellent results, according to observations by the Executive Secretary of the International Commission for the Northwest Atlantic who traveled to Greenland during mid-June to mid-August.

About 70 Norwegian vessels were fishing in Greenland waters this summer, including six halibut vessels. These halibut boats tried fishing the west Greenland

banks but as the catch was rather poor, they moved west and found rather rich halibut areas in deeper water off the northern part of Labrador. The catch of cod was satisfying everywhere; however, the cod caught (mainly belonging to the year-class 1947) is still a little too small for the Norwegian demand. In addition to the traditional long-lining for cod, the Norwegian vessels tried pelagic drift-net fishing this year. The Portuguese cod fishing in Greenland waters was also satisfying. However, bad weather conditions, storms, and heavy seas often hampered the dory fishing. About 20 German trawlers were fishing on or close to the west Greenland banks for fresh fish (mostly cod and ocean perch). The English trawl fishery in Subarea 1, which up to now was mainly restricted to the southern part of the Greenland coast, has this year been extended north, up to the area around and north of Fyllas Bank.

The fishing activity of the Danish-Faroes-Norwegian company "Nordafar" from Faeringehavn (South Greenland) was considerably expanded this year. Ten 30-foot long fishing boats from Norway were added to the fleet. This summer around 130 vessels worked out of Faeringehavn.

Several English trawlers, fishing mainly cod on the Greenland banks, landed their catches in Esbjerg (Denmark). Their fishery has been highly satisfactory, and the captains reported that they found exceedingly large quantities of big cod on and around the Danas Banke.

Norwegian vessels (about 17) returned from Greenland to Norway during June and early July with catches averaging 90-190 metric tons of cod and 1-1½ tons of halibut.

The French cod fishery in the Northwest Atlantic Convention Area this year yielded exceptionally good catches. This especially held true for the fishery carried out on the west Greenland banks. Some of the vessels got their holds full in trips of only half the usual length.

Two new large research vessels were added to the fleet carrying out researches in the North Atlantic. The new German vessel Anton Dohrn (over-all length 204 feet) started its work, and Greenland waters were included in its first cruise. The new Scottish vessel, the 202-foot Explorer, was launched in June. It is specially built for research work in the North Atlantic.

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NEW OCEAN PERCH GROUNDS OFF WEST COAST: A scientist aboard the Icelandic fishing research ship Aegir reported the discovery of promising new ocean perch grounds off the Greenland coast at 62° north 41° west. He urged Icelandic trawlers to try the area, saying that the most opportune time would be from July to August when the sea was warmest there. The bottom, for the most part, is even and good for trawler fishing. He made it clear that the area was untried but said it showed great promise, points out an August 10 United States Legation dispatch from Reykjavik.



### Guatemala

SHRIMP EXPLORATIONS OFF PACIFIC COAST: The Ministry of Agriculture reports that it approved several months ago an American businessman's application for permission to employ two Mexican fishing vessels to explore the banks off the Pacific Coast of Guatemala, according to a September 9 dispatch from the United States Embassy. The initiative for this act came from the businessman. The license to undertake the survey did not require the submission of a report, nor were

the results of the survey disclosed. The Ministry believes there may be sizable shrimp beds although it does not have supporting data to indicate the location or size.

Provided the problems of distribution (such as refrigeration and transportation) could be solved, a considerable domestic market could probably be developed for seafood products. At the present time a small amount of shrimp and fish are brought from the Atlantic Coast and weekly shipments are flown in from the neighboring country of Honduras.



## Haiti

DEVELOPMENT OF COMMERCIAL FISHERIES STUDIED: Five places on the north coast of Haiti are suitable for the development of commercial fisheries, states a September 15 dispatch from the United States Embassy in Port-Au-Prince. Fisheries experts assigned to Haiti by the United Nations have investigated both the existing facilities and the coastal fishing grounds. They estimate the number of people engaged in the fishing industry to be 6,000, which is higher than previous estimates. As there is no registration of fishermen, employment figures are variable and many are only part-time operators.

Imports are estimated to be valued at \$600,000 and enter Haiti from Canada.



## Hong Kong

FISHING INDUSTRY VITAL TO BASIC FOOD REQUIREMENTS: The fishing industry, the first in importance in the colony in the production of primary products, yielded a catch valued at more than US\$8 million in the fiscal year ended March 1955. However, its significance to the economy of the colony is greater than the value of the end product would indicate. In addition to providing an above-average income and an important part of the dietary requirements for more than 53,000 persons, the industry supplies much of the food needs of the colony as a whole. Almost 95 percent of the fishing fleet is owner-operated, the remainder belonging to fish dealers and fishing companies.

The fishing fleet consists of about 6,000 junk-type fishing craft of various sizes and 22 deep-sea vessels. Although mechanization of the fleet is spreading, most of the craft are sail-driven, with 702 vessels at present being motor-propelled. The Government assists in the development of mechanization by allocating money from the Colonial Development and Welfare Fund for loans to fishermen for the installation of motors in junk-type vessels. Private sources have also advanced such loans, the World Trade Information Service of the U. S. Department of Commerce reports.



## Iceland

HERRING FISHING INDUSTRY SUBSIDIZED: The Icelandic Government has announced an increase in the tobacco tax from 10 percent to 15 percent, effective August 8 and the increase in revenue will be used to subsidize the Icelandic herring fishing industry, according to The Fishing News (August 12, 1955), a British periodical.

After a pay award to the herring fishermen in March, owners said it was uneconomical to fish for herring and there has been no herring fishing this summer.

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Icelandic Fish Sales to the Soviet Union			
Product	Agreement		
	1955	1954	1953
	. . . . . (Metric Tons) . . . . .		
Frozen fish fillets . . .	20,000	23,333	21,000
Salted herring . . . . .	15,000	10,000	10,000
Frozen herring . . . . .	-	1,333	3,000
Total . . . . .	35,000	34,666	34,000

SALES OF FISH TO SOVIET UNION, 1953-55: The sales of frozen fillets, frozen herring, and salt herring have ranged between 34,000 and 35,000 metric tons for the 1953-55 period. The quantities shipped to the Soviet Union for the three years are given in the table.



## India

FISHERIES EXPANSION PLANS: A review of the operations of the Indian fishing industry and plans for its expansion under the Second Five-Year Plan appeared in the Times of India (New Delhi) on July 4, 1955. According to this article India's export of fish has increased considerably since Independence: from 16,000 metric tons, valued at 19 million rupees (US\$4 million), in 1949/50 to 27,000 tons, valued at 42 million rupees (US\$8.8 million), in 1953/54. However, with the introduction of new fishing techniques, better canning and freezing facilities, it is believed this can be increased considerably more.

According to the article transmitted by the United States Embassy at New Delhi, one fish that has not been properly exploited by Indian fishermen is tuna, of which large schools are reported in the Bay of Bengal in the area around the Andaman Islands. The Government is reported as planning to add 12 mechanized, deep-sea fishing vessels to the existing fleet of 4, which will enable the fishermen to go out further than the present 40-fathom limit and fish for tuna, as well as for shrimp, mackerel, and sardines. At present India's production of tuna is estimated at 250,000 metric tons.

The Fisheries Research Committee of the Ministry of Food and Agriculture is reported to have recommended also the increased raising of carp in inland waters and the culture of tilapia (described as an African fish much in demand in the Orient) in the sea off the west coast of South India.

According to the article there are more than 1,800 distinct species of fish in the waters off the Indian coast, of which there are 15 commercially-important varieties, including elasmobranchs, eels, catfish, silver-bar fish, herrings, and anchovies, Bombay duck, mackerel and perch, silver bellies, pomfrets, Indian salmon (described as being not a "true" salmon), crustaceans, and minor shellfish.

Fresh-water fish in India with commercial possibilities are listed as: catfish, mullet, carp, prawns, murrel, featherbacks, eels, herrings, and anchovies.

The present annual per capita consumption of fish in India is estimated at 3.98 pounds, with the greatest consumption in the South along the coast. About 92 percent of the total production is used for human consumption and the remainder for industrial products.



## Ireland

HERRING MEAL AND OIL INDUSTRY DEVELOPED: Plans to develop the herring industry as a source of fish meal and oil have been initiated by the Government of the Republic of Ireland, according to the July 23 issue of Foreign Trade (Canada). A plant is to be erected at Galway at a cost of £55,100 (US\$154,000).



## Israel

NEW DEVELOPMENTS IN FISHING INDUSTRY: The freezing of shrimp on a commercial scale for foreign and possibly domestic markets will be started at a pilot plant, reports the International Cooperation Administration Mission to Israel. In addition, arrangements have been made for research on the cultivation of sponges. Exploratory fishing in the deeper waters off the coast of Israel continues and several new fish grounds have been discovered.

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SALT-WATER FISHERY CATCH INCREASES: The catch of salt-water fish in Israel during the last 12 months has doubled and retail prices in fish markets have fallen considerably, according to a report in Fiskets Gang (July 7), a Norwegian fishery trade periodical. The improved position is a result of the eight new modernly-equipped trawlers which have been put into operation. They have not only increased the size of the fleet but also, to a great degree, made it more effective. One of the first achievements was the discovery of new coastal banks from which rich catches have been landed. The fleet now numbers 25 craft of all types--10 equipped for ocean fishing, the remainder for the coastal waters.



## Japan

JAPAN BECOMES FULL MEMBER OF GATT: As two-thirds of the contracting parties to the General Agreement on Tariffs and Trade cast favorable votes by August 11 on accession of Japan, that nation will therefore become a contracting party on September 10. The President of the United States has notified the U. S. Secretary of the Treasury to place in effect the tariff rates resulting from the recent negotiations with Japan and other countries that were announced June 9. The new rates will be made effective September 10.

Concessions on certain dried and unsalted fish, and whole or beheaded hard dry-smoked herring are being withheld until further notice because the countries to which they were made have not given notice of the effective date of their concessions to Japan.

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HIGH-SEAS SALMON CATCH EXCEEDS EXPECTATIONS: The 14 Japanese high-seas salmon-fishing fleets ceased operations on August 26 and the catch exceeded the most optimistic preliminary estimates.

Preliminary figures, based on telegraphic reports and subject to revision, are as indicated in the table.

Last year's catch was 20,493,645 fish, and the preliminary estimate for this year's catch, made in March, was 47,590,000 fish. These impressive results may be attributed to the increased number of fishing fleets (14 as against 7 last year), first post-war access to the Sea of Okhotsk, and fisherman's luck.

Species	N. Pacific Area	Sea of Okhotsk	Total
	(No. of Fish)		
Sockeye . . . . .	12,163,949	329,879	12,493,828
Chum . . . . .	18,573,457	3,404,107	21,977,564
Pink . . . . .	16,507,827	9,408,778	25,916,605
Coho . . . . .	3,183,813	392,014	3,575,827
Spring . . . . .	74,023	2,398	76,421
Total . . . . .	50,503,069	13,537,176	64,040,245

The Japanese record catch of more than 64 million salmon this year will increase the canned salmon pack to an estimated 1,450,000 cases. The Japanese trade press reports that the salmon catch off Canada and Alaska has been poor this year, and hopes are therefore high that the entire 1955 pack will be sold at profitable prices. Recent reports claim great success in convincing the British that imports of Japanese canned salmon should be stepped up, and the current sales plan is to allot 800,000 cases to Great Britain and 550,000 cases to other foreign countries, leaving only 100,000 cases to be disposed of on the domestic market.

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SALMON EXPORT AGENCY ASSOCIATION ESTABLISHED: In an effort to prevent this year's greatly increased production from wreaking havoc with salmon price levels, the nine companies controlling most of Japan's canned salmon have organized an export control agency to be termed the Japan Salmon and Trout-Salmon Export Marine Industry Association. The Association will have ¥2,150,000 (US\$5,972) at its disposal. The main tasks of the Association will be to fix prices, adjust sales volume, and arrange financing for companies which would otherwise have to dispose of stocks at sacrifice prices.

As of August 10, 1955, the 1955 Japanese high seas salmon catch had passed the 61 million fish mark; final figures for the season, which ended about August 31, will probably be about 65 million fish. This compares with last year's catch of 20.5 million fish and the preliminary estimate for this year's catch of 47.6 million fish. The original production estimate of the floating salmon canneries was 1,000,000 cases (96 8-oz. cans), but it now appears that production will reach at least 1,250,000 cases, plus some 200,000 cases canned by shore canneries. Total production for 1954 was about 700,000 cases, an August 19 United States Embassy dispatch from Tokyo points out.

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GOOD CANNED TUNA SALES REPORTED: Japanese exports of canned tuna to the United States are reflecting the active movement of stocks from April to August, with sales at the rate of 150,000 cases per month, according to Nippon Suisan Shimbun of September 15. Including carryovers from last year, about 700,000 cases have already been loaded aboard ship, and large-scale traders are taking the optimistic view that sales this year will continue good from September on. However, stocks on hand in Japan as of the end of August amounted to 670,000 cases, including 125,000 cases of B grade (75,000 white, 50,000 light meat), and if the 85,000 cases remaining in the production quota are added, the total is about 755,000 cases. But others indicate that in view of the fact that most years sales come to a halt from September to around November, it does not look as if sales prospects can be said to be bright the balance of this year.

The good sales since April were due basically to the fact that the Tokyo tuna sales cooperative attracted buyers with a large assortment of various types of white-meat and light-meat canned tuna that United States buyers could choose from.



At present, however, there is a great disparity in the amounts of different types of canned tuna available, with little light meat and a great deal of white meat, so it can hardly be expected that sales will be good, especially as the season is also unfavorable, reports the Japanese newspaper.

Consequently, the increase in the production quota for next year's winter albacore which some of the packers are seeking just because sales are good right now is thought to be premature. It is considered essential to wait for the situation to settle down, and to clear out all inventories by the end of the year, particularly the troublesome B-grade stock. The packers must get together with the exporters and make a concerted effort to work out policies, points out the newspaper.

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ALBACORE TUNA EXPORT ALLOCATION: The Japanese Association comprising the producers and exporters of albacore tuna met in Tokyo on August 23 to decide their policies for the next several months, states a United States Embassy dispatch (dated August 26). The producers proposed a goal of 5,000 metric tons of frozen albacore for the August-September period, while the exporters, apparently having in mind the present difficult market conditions in the United States, proposed that this amount be spread over the August-November period instead. The final compromise was a new allocation of 5,000 tons for the four months from August through November, plus 3,737 tons allocated but not exported under the 15,000-ton quota for June and July. Total possible sales during the four-months' period, therefore, may reach 8,737 tons.

The Cooperative Sales Association, which handles all export sales of albacore, reports that 2,551 tons have been contracted for since August 1, which leaves 6,186 tons left to be produced and sold before December 1, by which time the heavier winter catch will be landed.

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FROZEN TUNA EXPORT CHECK PRICES REDUCED: The Japanese Frozen Food Export Association has requested the Ministry of International Trade and Industry (MITI) to reduce check prices on frozen tuna for export by \$40 per ton in line with reductions recently made in California tuna prices, a September 2 dispatch from the United States Embassy in Tokyo reports. MITI does not publish check prices, and therefore no official announcement will be made of the acceptance or rejection of the Association's recommendation, but the Japanese trade press reported on August 29 that MITI, with the concurrence of the Ministry of Foreign Affairs, had put the reduced check prices into effect. New check prices per short ton are as follows, with old check prices in parentheses; yellowfin (under 80 lbs.) US\$195 (\$235); yellowfin (over 80 lbs.) US\$175 (\$215); skipjack US\$155 (\$195). No request for reduction in the albacore check price was requested, because little if any albacore is available for sale at this time. In the late fall, however, when the winter albacore season gets under way, it may be expected that the current albacore check price of US\$270 a short ton will be reduced by up to \$40 if such a reduction is necessary to meet American domestic prices.

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SALMON MOTHERSHIP TO FISH FOR TUNA: The Japanese salmon mothership Koyo Maru has been making preparations to operate as a tuna mothership in southern Pacific waters during the off-season in the northern salmon fishery. After receipt of Japanese Fishery Agency authorization, the ship sailed from Tokyo on September 12 and headed for the Fiji area, where the mothership Tenyo Maru is operating at present. The production goal is 5,356 tons, and the fleet will comprise about 50 vessels, the September 12 issue of Nippon Suisan Shimbun points out.

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NEW FISHERIES TRAINING SHIP COMPLETED: The Tokyo University of Fisheries' new training ship Umitaka Maru (1,378 tons), said to be the most modern in the world, was completed August 15 at an Osaka yard. The cost of building was 300 million yen (US\$830,000).

The vessel has a trawl bridge and a slipway in the stern, reminiscent of a whaling mothership, and providing for the most modern way of handling trawls and other types of gear, reports Nippon Suisan Shimbun of August 29. In the wheelhouse the ship's heading, speed, engine revolutions, and so forth are fed into an electronic device which automatically records the course made good on a time scale. In cruising on the open sea the vessel's course can always be held accurately by an automatic steering engine. The ship is also equipped with a gyrocompass. The collection of water samples and bottom samples and temperatures, which hitherto was possible only to about 2,000 meters (6,560 feet) can now be carried to about 10,000 meters (32,800 feet).

The Umitaka Maru is 68 meters (223 feet) long, 11.3 meters (37 feet) in beam, and 5.5 meters (18 feet) deep. Her planned draft fully laden is 4.5 meters (14.8 feet). It has a Diesel engine with 2,000 brake hp. at 225 r.p.m., giving a speed of 13 knots. Equipped to fish trawls from the stern, drift nets, or long lines, the ship has a 120-hp. trawl winch. Refrigerated holds measure 35.5 cubic meters and freezing compartments have a capacity of 43.5 cubic meters. There are two laboratories. The refrigeration machinery comprises two 40-hp. and one 3-hp. units, all freon. The ship's complement will be 15 officers, 7 professors, 36 crew, and 60 students, a total of 118. All living spaces, even the students' quarters, are air-conditioned. The ship left early in September for her maiden voyage to Hawaii.

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OVERSEAS FISHERY VENTURES: The Chiba Prefecture fisheries guidance ship Boso Maru (405 tons) is to be sent to Venezuela under a contract with the firm Productos Mar to engage in a tuna survey, trawling, and tuna long-lining, points out Nippon Suisan Shimbun (September 5, 1955). Venezuelan entry permits have been granted, and the signing of a final contract is waiting upon granting of travel permits by the Japanese government. The vessel will be based in La Guayra or Cumana, and will operate from July 15 to May 31 of next year. Productos Mar will take all of the catch. If good fishing grounds are discovered, boats from Chiba Prefecture will be admitted to the fishery with priority.

A Japanese company also has received permission to operate 8 tuna boats of 50 to 100 tons out of Esperitu Santo in the New Hebrides. The vessels have been selected and the permission of the Japanese government is being awaited. A refrigeration plant (30-ton ice-making and 600-ton freezing and cold-storage capacity) will be built at Esperitu Santo, the capital to be supplied by the Export-Import Bank. The employment contracts call for entry permits of workers ashore to be renewed every three years and for those of vessel personnel to be renewed each year.

With the increasing number of Japanese tuna boats operating in the Indian Ocean, it appears inefficient to carry their fish all the way back to Japan, with an inevitable drop in quality, then to process the fish and send it back to markets in southeast Asia. A plan has therefore been advanced to build a cold-storage plant and cannery in Singapore; However, after examining this plan the Fishery Agency of the Japanese Government has decided that it is not feasible at the present time. They appear to be of the opinion, however, that an intermediate fueling base should be established there.

Japanese overseas fishery ventures of various kinds involving the following countries have either been completed or are under way at present: Costa Rica, Chile, Viet Nam, Macao, Pakistan, India, Iran, Argentina, Ceylon, Burma, Hong Kong, Taiwan, Ryukyus, and Samoa.

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ARGENTINE COASTAL FISHERIES TO BE SURVEYED: The Japanese Fishery Agency's new 1955 project is a fishery survey of the Argentine coast. The research ship Toko Maru (1,098 tons), which recently returned from patrol duty in the North Pacific and Bering Sea, will be used, states Nippon Suisan Shimbun (September 12) Plans are for the ship to sail from Tokyo around November 5 and circumnavigate the globe, taking about 9 months for the cruise.

After leaving Tokyo, the Toko Maru will put in at Singapore and Colombo, cross the Indian Ocean, investigate fishing grounds south of Madagascar, put in at Capetown, and then cross the Atlantic to Buenos Aires, where it will arrive in January. After conferring with Argentine authorities, the party will proceed to Ushuaia in Tierra del Fuego, which port will be the base for bottomfish investigations. On the way back up the coast other types of fishing will also be tried. The Toko Maru will return to Buenos Aires around May 15 and sail for home on May 20. Depending on next year's budget, calls may be made at Rio de Janeiro and in Venezuela, and if time permits, fishing grounds off other South and Central American countries may be investigated. The ship will put in at Hawaii on its return voyage.

The following types of fishing will be tried: bottom fishing with trawls, shrimp nets, and crab tangle nets; surface and midwater fishing with lift nets, pole and line, and tuna long lines. The main area to be investigated will be the continental shelf off Argentina south of 35° S. latitude.

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OPERATING TIME EXTENDED FOR TRAWLERS FISHING FOR SOLE AND COD IN NORTH PACIFIC: The Japanese Foreign Office extended until the end of October 1955 the term of operations of the trawler Asama Maru fishing for sole and cod in the North Pacific. Also, permission was granted to the other two vessels Ikoma Maru and Taiyo Maru, in similar operations to continue fishing until the end of November 1955.

All these vessels will operate under the same restrictions as previously--to use a trawl net only; to return crab, salmon, and halibut found in the trawl; not to fish in territorial waters; and not to enter any foreign port without authority.

JAPANESE GOVERNMENT



## Republic of Korea

FISHING INDUSTRY EXPANSION: Improvements in both the Republic of Korea's fishing fleet and cannery equipment during the period of September 1, 1954-June 30, 1955, were reported on September 5 by the United Nations Korean Reconstruction Agency.

With the help of UNKRA funds and technical assistance sixty-three new boats were added to the fishing fleet. Ten of the vessels were 77-ton, 75-foot modern trawlers, built in Hong Kong, which will enable extension of operations to deep-sea fishing grounds offshore. UNKRA-imported lumber was used for the other vessels, built in Korea, and 16 of them were financed through the UNKRA fisheries loan fund.

Installation of UNKRA-supplied cannery equipment was completed in three plants, and UNKRA machinery and materials were used in expanding ice production, cold storage, and fish-marketing facilities.



## Malaya

FISHERIES RESEARCH VESSEL: The Singapore Regional Fisheries Research Station has received delivery of the research vessel Manihine, which will be used to investigate the distribution, migration, and natural history of the more important food fish in Malayan-Borneo waters. The vessel, provided by the United Kingdom Government under a Colonial Development and Welfare grant, is 109 feet long, displaces 213 tons, and has a cruising range of 4,000 miles. The ship carries scientific equipment, including laboratory accommodations for three scientists, a hydrological davit and winch for operating fine plankton nets, water-sampling apparatus, and an anemometer.

The arrival of the Manihine provides additional facilities for the expansion of fish production in Malaya, especially through a scientific study of available resources in this area. Research undertaken by the ship is expected to be of special value in assisting deep-water fishing--until now comparatively undeveloped in Malaya.



## Mexico

VERACRUZ FISH-FREEZING PLANT: In the July 1955 issue of Commercial Fisheries Review (page 67), it was reported that the Mexican Navy Department had indicated that the capacity of the Veracruz fish-freezing plant was 20,000 metric tons of fish daily. However, later information indicates that the capacity should have been reported as 20,000 kilograms (44,000 pounds).

The plant has: (1) a refrigeration room capable of bringing 40,000 pounds of fish to 32° F. in 24 hours. The equipment handling the product load consists of a 15-horsepower compressor operating in conjunction with two 5-ton floor-type product coolers; (2) a quick-freeze room 14 by 15 feet in size with temperature of 20° F., and the refrigeration is provided by 2-ton low-temperature unit coolers hooked up to a 15-horsepower compressor; (3) a zero storage room (45 by 14 feet) equipped with a 10-horsepower compressor and a 5-ton product cooler evaporator; (4) a 5,000-pound automatic ice-making machine; (5) a room for storage of ice, either in blocks or crushed.

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NEW FISH-MEAL PLANT: A fish-meal plant producing meal for human consumption is being constructed in Salina Cruz, Oaxaca, Mexico, with the owners planning for an October 1955 opening date, according to a report from a U. S. Fish and Wildlife Service representative currently in Mexico. The plant will use an azeotropic process for fish meal on which a United States company holds several patents. The initial capacity will be 40 metric tons daily of raw fish, with facilities for expansion. Sharks and trash fish caught by shrimp trawlers will be the raw material used in this plant.



## Norway

NEW SPIRAL PRESS FOR FISH MEAL DEVELOPED: The new spiral press for the manufacture of fish meal invented by Knut Dahl of Oslo, Norway, has many advantages over the common screw-type press, according to a report (August 29) from the U. S. Embassy at Oslo.

Among the advantages of the new spiral-type press over the screw press are savings in space and cost. The spiral press takes only one third the space used by the screw press. Prices f.o.b. Oslo, Norway, are reported to be 85,000 kroner (US\$11,900) for the spiral press with a rated capacity of 300 tons per 24 hours and 55,000 kroner (US\$7,700) for a smaller spiral press with a rated capacity of 100 tons per 24 hours. The cost of the screw-type presses with similar capacity are about 125,000 kroner (US\$17,500) and 100,000 kroner (US\$14,000). The rated capacities of the two spiral presses are conservative. Practical tests indicate that the presses will easily exceed the rated capacity by 50 metric tons per 24 hours. Other advantages of the spiral press over the screw press include higher quality fish meal due to lower oil content.

During the Norwegian winter herring season of 1955, the new spiral press was tried in a herring-oil factory on the west coast of Norway. This press was the first of its kind and was designed for a capacity of about 150 tons per 24 hours, but during the operation a capacity of about 200 tons per 24 hours was obtained.

The total weight of the press exclusive of driving motors is 6,160 pounds and the space occupied is 2 x 1.8 meters (6.56 by 5.9 feet)--the greatest height 1.8 meters (5.9 feet). The press is driven by two motors with a total nameplate effect of 25 hp. This proved to be ample.

The press is at the inlet end fitted with a relatively short feeding screw with a low compression ratio. The feeding screw is surrounded by a basket with perforated stainless steel plates. In addition to the feeding action of the screw, this section of the press also serves as a strainer, where some of the free water is removed from the material. The feeding screw is fitted with a separate drive.

The pressing section consists of two rotary strainer wheels with gear teeth on the periphery. The wheels rotate on a horizontal shaft. The distance between the two wheels is relatively small,  $1\frac{1}{4}$ - $1\frac{1}{2}$  inches, and this distance determines the thickness of the press cake. Between the wheels a stationary spiral with several coils is provided. The distance between the coils of the spiral diminishes towards the periphery of the strainer wheels, whereby a continuous channel with diminishing area from the center outwards is obtained.

The material is fed by the feeding screw into the center of this channel, and by means of the rotative movement of the strainer wheels the material is carried forward through the converging channel, whereby the pressure is obtained. Owing to the fact that a strainer wheel is arranged on both sides of the press cake, the removal of oil and water takes place on two sides. By the rotation of the wheels, any sludge that may be pressed out is continuously washed off the strainer plates so that these are always kept clean and open, whereby a very effective straining is obtained. The compression ratio may be regulated during the operation between wide limits. This important feature is obtained by hinging the last section of the spiral so that it may be screwed in against or out a way from the adjacent wall of the spiral. With this arrangement, it is possible to regulate the degree of pressure and to adjust the press to suit the material which is being handled.

The first spiral press was installed in the Norwegian whaler Cosmos III and will be used in its next voyage to the Antarctic. The manufacturer expects to produce 5 large and 5 small spiral presses for the coming fishing season. Four of the larger and one of the smaller presses have been sold. Patents have been granted in Norway and South Africa and applied for in the United States and other countries.

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MEAL-AND-OIL FACTORYSHIP: A German shipyard has under construction for a Norwegian account a factory vessel which will trawl for herring and also be

equipped to manufacture the catch into herring oil and meal. The Havkvern, as the experimental vessel has been named, is the first of its type. It will carry a crew of 25 and was expected to begin operations late in October when it was to trawl for herring in the North Sea. It will have a production capacity of 100,000 pounds of herring per 24 hours, the August 10 Fiskaren reports.

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VOCATIONAL TRAINING FOR FISHERMEN: Norway is pioneering in the field of vocational training for fishermen, states the October 18 News of Norway of the Norwegian Information Service. The five State-operated vocational training schools for fishermen, widely recognized to be among the most up-to-date in the world, have started a new year with full enrollment. Providing intensive courses, lasting from 5 to 10 months, the schools are located at Aukra, Florø, Laksevåg, Langstranden, and the fast-growing fishing port of Honningsvåg, in the northernmost province of Finnmark. Altogether, the five boarding schools have 240 students.

Arctic Model School: The Honningsvåg school, officially opened last July, is the most modern of all. The city of Oslo has donated Kr. 1,635,000 (US\$228,895) toward the Kr. 2,315,000 (US\$324,094) cost. The rest was appropriated by Parliament. Located on the weatherbeaten Finnmark coast, the school comprises three structures--the Machinery Hall, equipped with a variety of motors and electronic instruments used in fishing vessels; the Maine Building, with a large kitchen for training cooks, a command bridge on the roof for navigation practice, plus dining room and recreation facilities; and the dormitory which accommodates 60 students.

The 10-months Head Fisherman course, which has 40 students each term, lays the groundwork for passing the Fisheries Examination and the Coastal Master's Examination First Class. This course also includes instruction in radiotelephony and the use of such electronic instruments as sonar (asdic) and depth sounders. The 5-months cooking course, which takes 10 students at a time, is designed to train galley crews for the fishing fleet. The motor course, having the same duration, trains engineers each term. All students selected for the three courses receive free room and board, as well as free tuition and free travel between their homes and school. Text books are the only things purchased by students.

Postwar Development: The development of schools to furnish vocational training for fishermen was started after Norway's liberation at the end of World War II. Since then, the increasing economic importance of the country's fisheries, coupled with the introduction of complicated gear and electronic devices, such as purse seines and sonar, has made it necessary to build more schools. According to Dr. Trygve Braarud, professor of marine biology at Oslo University, the fisherman's training provided in Norway is on a higher level than in any other country.

Dr. Braarud observes in part: "To conduct profitable fisheries is today a question of technical know-how. That requires knowledge of fishing vessels and their motors, radiotelephony and other electronic devices, winches, purse seines and trawls, as well as the mechanical aspects of fish transport. Such know-how is invaluable for the men who participate in our large-scale herring and cod fisheries every winter and spring. The education provided at Norway's five vocational training schools for fishermen is of direct use on the fishing banks. But, perhaps almost as important is the introduction to the natural basis for our fisheries. For the budding fishermen learn not only about motors, navigation, and cooking, but also about marine-plant life, the biology of the various fish species, fish migrations, and fluctuations in the supply of fish.

"Our scientists, who for several generations have pioneered in ocean research, have all along realized the importance of passing on trade information to the fishermen. . . .

Museum of Fisheries: "Another new project in this field is the program for advanced education of university graduates who have to deal with fisheries questions, either in an administrative capacity, in industry or in research. This program was launched on the initiative of the Society for the Promotion of Norwegian Fisheries, which also sponsors a broader educational program to acquaint the general public with the fisheries. Thus, the society runs the Bergen Museum of Fisheries, one of the most modern of its kind in any country. This is another case of fruitful collaboration with the research institutes of the Norwegian Directorate of Fisheries, also located in Bergen. The Science Museum in Trondheim, too, features a novel fisheries section."

Dr. Braarud concludes with these words: "The natural conditions for Norway's fisheries are good, and the industry is in the process of rapid development. By continually relaying the latest research results to the working fishermen, the vocational schools and other educational schemes will be able to stimulate further growth of the industry... ."

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NORWEGIAN FISHERIES TRENDS APRIL-JUNE 1955: Production of cod by the end of June 1955 by Norwegian vessels amounted to 123,000 metric tons or more than 50 percent greater than the 1954 catch, according to an August 8 dispatch from the United States Embassy in Oslo. The catch of cod on the Lofoten fishing grounds was disappointing. But the West Coast yielded good catches and the Finnmark areas set a new postwar record of 60,000 tons--100 percent more than in 1954.

Results of the spring herring fishing were mixed. A record catch of 396,000 tons of capelin off the Finnmark coast was made during the season lasting from late March to early May. This was an increase of 40 percent over last year. A more efficient marketing system and the erection of new plants resulted in a considerable increase in the number of purse seiners although weather conditions were unfavorable. On the other hand, the results of the fishing for sprats (brisling) were disappointing in June. As of June 18 less than 20,000 tons had been landed, about one-half of the catch in the corresponding period of 1954.

Considerable quantities of haddock, saithe, pollock, cusk, and ling were caught, but the quantity of mackerel was off slightly. This spring's catch of prawn (shrimp) was heavy, but lobster fishing was hampered by cold sea temperatures.

As the quarter ended, prospects for the sales of fresh fish were uncertain. It is reported that the demand for haddock and halibut has declined in England, and that the catches of halibut by the Aberdeen line fleet have tended to drive prices downward. Nevertheless, several ships left Norway in June for the grounds off Western Greenland and the Davis Strait with gear intended exclusively for the catch of halibut.

Exports of fish other than canned increased substantially. A decline of over 30 percent in the exports of oils is attributable almost entirely to the fact that whale oil was sold this year directly from the whaling grounds, whereas in 1954 a substantial amount was processed in Norway. Another factor was the reduced exports of herring oil due to a smaller catch this year.

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LARGE LOT OF FROZEN FISH SHIPPED TO AUSTRALIA: The first shipment of 10 metric tons of frozen fish was shipped from Norway to Australia early in July by the leading association of Norwegian frozen fish producers, reports a July 1 U.S. Embassy dispatch from Oslo. For the past two years small quantities of frozen fish

have been tried on the Australian market and this recent shipment is viewed in Norwegian fishing circles as the first step in opening up a large new market.

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WHALE MEAT TO U. S. FOR MINK FEED: Since small whales have been abundant in northern Norway, it was expected that previous catch records would be broken but bad weather curtailed hunting. The price for small whale meat has remained the entire season at 10 U. S. cents a pound delivered because of considerable demand. Large shipments have been sent to the United States to mink farmers. It appears that the meat of small Norwegian whales is coming into the picture in a serious way as a mink food, states the August 10 Fiskaren, a Norwegian fishery periodical.

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MACKEREL FILLETS: About 3.1 million pounds of mackerel had been filleted by five Norwegian plants by early August 1955, according to Fiskaren (August 10), a Norwegian trade periodical. By the end of the season it is expected the total will reach 4.4 million pounds with a 40- to 50-percent yield of fillets. Most of the fillets are shipped to East European countries to fulfill contracts. However, mackerel fillets will soon be introduced to the Norwegian market.



### Pakistan

FISH OIL IMPORTS: Imports of fish oils (hardened) into Pakistan for the five trade years (July 1-June 30) declined steadily from 1950/51 through 1953/54 (see table).

Pakistan's Fish Oil Imports, Trade Years 1950/51 - 1954/55														
1954/55			1953/54			1952/53			1951/52			1950/51		
Qty.	Value		Qty.	Value		Qty.	Value		Qty.	Value		Qty.	Value	
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Lbs.	R.	US\$	Lbs.	R.	US\$	Lbs.	R.	US\$	Lbs.	R.	US\$	Lbs.	R.	US\$
80	139	42	365	162	49	715	386	116	841	568	170	494	500	150



### Portugal

CANNED FISH EXPORTERS ORGANIZE TO PROMOTE SALES IN U. S.: A group of 30 south Portuguese canners and exporters of sardines and other canned fish have met under the auspices of the Chamber of Commerce of the United States of America in Portugal to consider measures for the promotion of their products in the United States. At the suggestion of the Chamber they are considering the appointment of joint representatives in distribution centers other than New York, notably Chicago, New Orleans, and San Francisco. They are also considering the possibilities of marketing their products under a joint trade name. Two representatives of the group are being sent to the United States on an investigative and promotional tour, according to a September 22 dispatch from the United States Embassy in Portugal.

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**FISHING TRENDS, APRIL 1955:** The catch of sardines in Portugal during April 1955 continued light at most fishing ports, except at ports in Algarve Province, reports the July 1955 Conservas De Peixe, a Portuguese trade magazine. Sardine landings at Algarve fishing ports (including very light landings in Lisbon) totaled 1,337 metric tons, valued at 4.9 million escudos (US\$170,000), as compared with landings of 1,797 tons, valued at 6.5 million escudos (US\$225,000), in April 1954. Only 567 tons of the April 1955 catch was canned.

Portimao was the leading fishing center in Algarve during April, producing 632 metric tons, valued at 2.3 million escudos (US\$80,000). Landings at the ports of Lagos, Olhao, and V. R. Sto. Antonio averaged between 200-250 tons in April.

There was practically no tuna fishing in Portugal during April. The landings of all fish, other than sardines, in April totaled only 2,898 metric tons, valued at 6.7 million escudos (US\$231,000), mostly chinchards and the remainder biqueirao, bonito, and mackerel.

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**SARDINE FISHING TRENDS, MAY 1955:** The new sardine fishery season in Portugal opened during May 1955, and results were encouraging. In May 1955 sardine landings in the main fishing centers of Portugal amounted to 5,399 metric tons, valued at 15.3 million escudos (US\$0.5 million ex-vessel). During May 1954 the sardine landings amounted to only 3,412 tons, valued at 12.7 million escudos (US\$0.4 million).

Fishing for sardines out of Matoshinhos, which is one of the most important fishing centers, was poor. Only 129 metric tons were landed during the month, points out the August 1955 Conservas De Peixe.

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**CANNED FISH EXPORTS, JANUARY-MAY 1955:** Portuguese canned fish exports totaled 4,229 metric tons, valued at 60.7 million escudos (US\$2.1 million), during January-May 1955.

Portuguese Canned Fish Exports, May 1955				
Species	May 1955		Jan.-May 1955	
	Metric Tons	1,000 US\$	Metric Tons	1,000 US\$
Sardines in olive oil	3,397	1,627	18,745	9,268
Sardinelike fish in olive oil	403	230	2,007	1,368
Sardines & sardinelike fish in brine	86	19	442	81
Tuna & tunalike in olive oil	187	138	718	537
Tuna & tunalike in brine	75	34	219	114
Mackerel in olive oil	58	37	319	208
Other fish	23	11	361	197
<b>Total</b>	<b>4,229</b>	<b>2,096</b>	<b>22,811</b>	<b>11,773</b>

Portugal's export of canned fish in May 1955 was good, according to Conservas De Peixe, August 1955. During January-May 1955 Germany was the leading receiver with 61.4 million escudos (US\$2.1 million) of canned fish (principally sardines), followed by Italy with 55.5 million escudos (US\$1.9 million), principally sardines, Great Britain with 43.1 million escudos (US\$1.5 million), and the United States with 37.5 million escudos (US\$1.3 million), principally 876 tons of sardines in oil or sauce, 10 tons of tuna and tunalike fish in oil, and 775 tons of anchovies.

\* \* \* \* \*

**FISHERIES TRENDS FOR 1955:** Commercial fishing in Portugal benefited from generally favorable conditions this year. The total cod catch should be as good as last year, when 65,237 metric tons (wet basis) were caught. The sardine catch has been at about the same level as in the previous season, which was the best in years, and sardine prices are higher than last year. Other offshore fishing also has been as good as last year, points out a United States Embassy dispatch (September 29, 1955) from Lisbon.

Of the 70 Portuguese cod-fishing vessels, 20 hand-line fishing vessels have returned loaded this season and 13 more are reported to be on the way to Portugal completely loaded. Another 13 remain at the Grand Banks to complete their loads. These vessels encountered cyclonic storms, and some were forced to put into St. Johns.

Modernization of the cod fleet and the addition of new and larger units contributed to the larger catch in 1954 and 1955. The Portuguese cod fleet in 1937 comprised 51 small sailing ships, totaling 17,300 gross tons, with a total complement of 5,000, which is more than double the 1937 total. Despite the increase in Portuguese cod consumption since 1937, when population increased by more than a million, imports of cod (34,945 metric tons in 1937) decreased in 1954 to 13,548 metric tons, valued at 105 million escudos (US\$3,700,000).

\* \* \* \* \*

**MARINE-OIL PRODUCTION AND EXPORTS, 1954:** Production: Portuguese production of marine oil in 1954 totaled 8,079 metric tons (table 1), an increase of

Table 1 - Portuguese Production of Marine Oils, 1954

Products	1954			1953			1942-51 Avg.		
	Metric Tons	1,000 Escudos	US\$	Metric Tons	1,000 Escudos	US\$	Metric Tons	1,000 Escudos	US\$
Whale oil <sup>1/</sup>	3,279	2/	2/	2,544	7,925	274	2,550	11,658	403
Cod-liver oil	3,000	18,000	622	3,115	18,361	634	574	3,443	119
Fish oil (principally sardine)	1,800	2/	2/	1,164	2/	2/	<sup>3/</sup> 1,163	2/	2/
Total . . . . .	8,079	-	-	6,823	-	-	-	-	-

18 percent over 1953, reports an April 19 United States consular dispatch from Lisbon. The 1954 production included 3,279 tons of whale oil, 3,000 tons of cod-liver

Table 2 - Portuguese Exports of Marine Oil, 1954

Product	1954			1953		
	Metric Tons	1,000 Escudos	US\$	Metric Tons	1,000 Escudos	US\$
Whale oil . . . . .	3,352	15,745	544	4,821	20,475	707
Cod-liver oil . . . . .	2,833	18,120	626	2,541	15,592	539
Sardine oil . . . . .	2,636	11,943	413	1,674	6,551	226
Total . . . . .	8,821	45,808	1,583	9,036	42,618	1,472

oil, and 1,800 tons of fish oils (principally sardine).

Exports: Portuguese exports of marine oils in 1954 totaled 8,821 metric tons, a decrease of

2 percent from 1953 shipments of 9,036 tons (table 2). Of the total amount of cod-liver oil exported in 1954, 191 tons were shipped to the United States as compared with 282 tons in 1953.



## Singapore

**PRAWN CULTIVATION IN SWAMPY AREAS:** Interest in the cultivation of prawns or shrimp in the swampy areas within the Colony of Singapore has increased in recent years, states a dispatch from the United States consulate at

Singapore. At the present time it is estimated that 1,200 acres of swamp ponds, or about 10 percent of the available area, are used for the cultivation of prawns. Production at the present time averages about one-half ton per acre per annum, or 600 metric tons a year. It is believed that if additional swampland is cleared that the annual production could be increased to 6,000 tons. This production would be a valuable supplement to the food supply.



Spain

VIGO FISHERIES TRENDS, AUGUST 1955: Fish Canning: Cannery purchased 5.4 million pounds of fish in August 1955 and operated at the highest level since September 1954, states a September 12 dispatch from the United States consulate at Vigo. Purchases for July 1955 were 1.7 million pounds and 3.0 million pounds in August 1954. Bonito and agujas (needlefish) produced the largest income for the cannery. Agujas were sold on the local market as a substitute for sardines.

Fishing: The total catch for all varieties was 15.2 million pounds, but the value was relatively low because of large catches of low-value agujas (needlefish) and jurel (*Trachurus trachurus*). The catch of the more valuable bonito increased moderately, but the catch of cod and hake declined.



South-West Africa

REVIEW OF FISHERIES, 1954: Fishing is the second most important activity in South-West Africa's economy; the two principal sources are the pilchard (*Sardinia pilchardus*) and the spiny lobster (sea crayfish). Capital invested exceeds the equivalent of US\$11.2 million. Employment is provided for over 200 whites and 3,500 nonwhites. As of January 1955, 217 motor vessels were licensed to fish, manned by 570 whites and 711 nonwhites. Pilchard landings are centered at Walvis Bay, where there are six processing plants, while the spiny-lobster industry is located at Luderitz, which has four canning and freezing factories.

The South-West Africa Administration vigorously endeavors to prevent the

Table 1 - South-West Africa's Catch of Fish and Shellfish, 1955

Species	Quantity
	1,000 Lbs.
Spiny lobster . . . . .	20,020
Pilchard (sardine) . . . . .	552,954
Snoek . . . . .	3,885
Kabeljou . . . . .	1,468
Steenbras . . . . .	285
Sole . . . . .	48
Kingklip . . . . .	47
Stockfish (cape hake) . . . . .	394
Shark . . . . .	81
Skate . . . . .	69
Others . . . . .	421
Total . . . . .	579,312

Territory's fish resources from disappearing. To that end it has set a minimum size for spiny lobster which may be taken and has proclaimed areas which may not be fished. Further protection is provided by limiting the number of factories licensed to process spiny lobster and setting a ceiling on yearly production and export of canned products and frozen spiny lobster tails (the only edible part of the animal). No restrictions are placed on the manufacture of spiny-lobster fish meal except that only offal, the dumping of which is prohibited, may be used. Six factories are at present licensed to process spiny lobster, and additional licenses are unlikely unless the explorations being conducted by the Territory's laboratory and

modern survey ship show that the fishing grounds can stand a heavier drain without detriment to resources.

While the existence of pilchard shoals off Walvis Bay was known for many years, no attempt to exploit them commercially was made until 1950. Since then six processing plants have been licensed at the port and the industry expanded rapidly until conservation steps were decided necessary. At present no further factory licenses are being granted, only a total of 250,000 tons may be caught annually, and a closed season between November 15 and February 28 has been declared. A survey ship is conducting extensive explorations with a view to determining future restrictions. Strict control is

Table 2 - South-West Africa's Production of Spiny Lobster Products, 1954 and 1948

Product	1954	1948
	(Million Lbs.)	
Canned spiny lobster . . . . .	2.5	2.9
Frozen spiny lobster tails . . . . .	.6	.2
Spiny lobster fish meal . . . . .	4.5	3.4

Table 3 - South-West Africa's Production of Pilchard Products, 1955 and 1951

Product	1955	1951
	(Million Lbs.)	
Canned pilchards . . . . .	34.1	5.2
Pilchard fish oil . . . . .	37.4	16.0
Pilchard fish meal . . . . .	108.2	74.6

exercised over the canning and preservation of fish products (including spiny lobster) by the Administration and minimum standards have been established and are enforced for all export fish products.

Table 4 - Value of South-West Africa's Fishery Products Exports, 1953-54

Product	1954	1953
	(1,000 US\$)	
Spiny lobster tails, fresh and frozen . . . . .	485	624
Other fresh fish and shellfish . . . . .	196	196
Dried, salted, and cured fish . . . . .	3	3
Preserved fish . . . . .	7,198	4,155
Fish meal . . . . .	4,629	5,728
Total . . . . .	12,511	10,706



## Turkey

FISHING INDUSTRY CENTERED IN ISTANBUL REGION: The Istanbul region, comprising the Bosphorus and the Sea of Marmara, is the most important fishing center. It benefits from the seasonal migration of fish to the Black Sea for spawning and their return to the Aegean and Mediterranean Seas. The principal migratory fish are bonito, pelamid, mackerel, tuna, anchovy, pilchard, Spanish mackerel, and swordfish.

Attempts are being made by the Turkish Government to increase the return from the fishing industry by setting up cold-storage and packing plants. United States economic aid has made available a research vessel for the fishing research center at Istanbul, equipment for the private fishing vessels, and machinery and equipment for the Government cold-storage plants.



## United Kingdom

BRITISH FIRMS NOW PRODUCING FISH STICKS: Fish sticks have been successfully introduced to the British market by four firms located in the Grimsby area of England, states The Fishing News of August 5. These firms report excellent sales. New equipment is being installed to keep pace with the orders. Both cooked and uncooked fish sticks are sold in 6-oz. overwrapped packages to retail trade outlets equipped with frozen food cabinets. Expansion of distribution to the retail outlets without frozen food cabinets is expected as production increases.

Production has been confined to consumer packages containing four and six portions, each package six ounces net weight. The uncooked 6-oz. package is reported to be selling at retail for approximately 21 U. S. cents (British 1s. 6d.).

Fish sticks are being produced from boneless cod, but producers expect to use other varieties as soon as possible. Producers predict a rapidly expanding market for this product.

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RECORD HALIBUT TRIPS LANDED AT GRIMSBY: Record trips of frozen Greenland halibut were landed at Grimsby, England, during the week ending August 19, 1955, according to The Fishing News. The Norwegian refrigerator ships Bemar and Kolistand landed 300 tons valued at £100,000 (US\$280,000).

The catches were stored in cold-storage warehouses to be sold when supplies of fresh halibut are low. Shipments of quick-frozen halibut to England from the Greenland fishing banks started in 1954.

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EXPERIMENTS IN PRESERVING FISH BY VACUUM-DRYING: Successful experiments in vacuum-drying or dehydrating fish have been reported by a small factory in Aberdeen, Scotland, states the August 13 issue of Fish Trades Gazette, a British fishery periodical. The new method of preserving fish reduces it to an easily packed and lasting state.

The man behind the Aberdeen experiments is a Norwegian, who has been working on this method of processing fish for 15 years.

It is believed that the new process will be invaluable to the British fishing industry as a means of absorbing surplus catches without incurring heavy cold-storage costs or loss through deterioration. The complete product is a small "block" of fish measuring only a few square inches and weighing a few ounces. Placed in water for 8 or 9 hours it becomes a slab of fresh fish. Fresh or salted fish, filleted or unfileted, can be reduced to the vacuum-dried product.

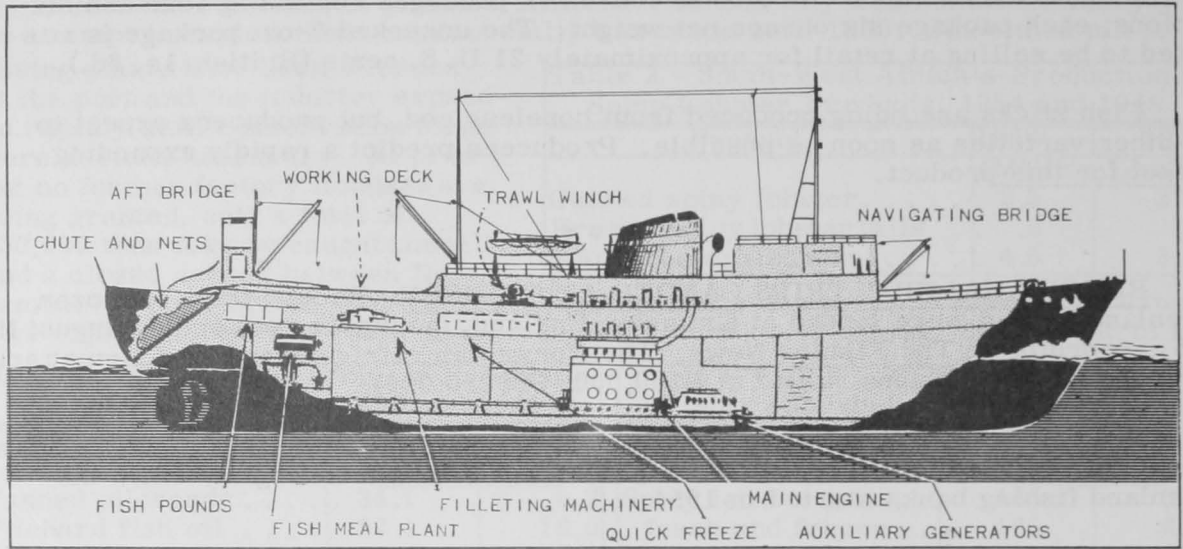
Whether moved by sea, air, road, or rail, the fish can be treated as ordinary dry cargo. They can be stored for an indefinite period of time, even in the tropics.

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"FAIRTRY" LANDS CAPACITY LOAD OF FISH: The British factory trawler Fairtry after an 82-day trip docked at Hull, England, on September 9 with a capacity load of fish. The vessel's trip consisted of 1,460,000 pounds of frozen fillets, 122 tons of fish meal, and 350 gallons of fish-liver oil. Haddock, halibut, cod, and flounder made up the trip.

Fishing was conducted in waters off Greenland and Newfoundland. Good weather prevailed throughout the trip and there was not a single day on which fishing was not possible, reports The Fishing News (September 16, 1955), a British fishery periodical.

A whaling firm of Leith, Scotland, owns the factory trawler, which is manned by a crew of 80. Up to a 25,000-pound haul can be pulled aboard by the winches. If there is too much fish in the net, a hole is cut and some of the catch is permitted to escape.



Factory trawler Fairtry. Sketch showing arrangement of the facilities on the vessel.

The task of unloading the capacity load was expected to take 5 to 6 days and the vessel expected to sail on another trip about September 17.

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**FROZEN FISH PRODUCTION ALMOST DOUBLED IN 1954:** Quick-frozen fish which utilized nearly 7 percent of Great Britain's total landings in 1954 became a

	Am't. of Fresh Fish Used	Quick-Frozen Fish Produced	Sales in Home Mkt.	Exports
	(Tons)			
1954	54,612	25,929	17,320	8,008
1953	26,910	13,007	10,643	3,410

significant factor in fish marketing, the September 2 issue of The Fishing News points out. "There is a likelihood that this trade will grow further with important effects upon production and distribution," says the fourth annual report of the White

Fish Authority for the year ended March 31, 1955.

A remarkable increase in the production and sales of quick-frozen fish in 1954 is indicated by the data in the table.

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**NUMBER OF FISHERMEN:** A steady decline in the number of persons engaged as fishermen in Great Britain during the last few years was disclosed by the Parliamentary Secretary of the Ministry of Labor. The number of fishermen employed in sea fishing regularly dropped from an estimated 28,063 in 1952 and 27,414 in 1953 to 26,244 in 1954, reports The Fishing News (July 29), a British fishery periodical.



**CORRECTION**

In the September 1955 issue of Commercial Fisheries Review, page 30, the listing of the fifth article ("Weight Range, Proximate Composition, and Thiaminase Content of Fish Taken in Shallow-Water Trawling on Northern Gulf of Mexico") should have been deleted; it is listed correctly in the second column on that page.

On page 27 of the same issue the number of the Federal Specifications "Sardines, Canned" should have read PP-S-51b.