International

FISHING LIMITS

NORWAY AND UNITED KINGDOM RATIFY AGREEMENT:

The ratification documents containing the agreement between Britain and Norway on the fishing limits off the Norwegian coast were exchanged at the British Foreign Office, London, on March 3, 1961.

Main provision of the agreement is that British trawlers be allowed to fish in the outer six-mile zone for a period of 10 years, when Norway extends her fishing limits from 4 to 12 miles. The agreement comes into force automatically with the exchange of documents. The extension of the limits will be undertaken in two stages--from 4 to 6 miles on April 1, and from 6 to 12 miles on September 1. The 10-year period is reckoned from October 1960, when the provision was agreed upon and consequently expires in October 1970.

The Norwegian Government has hired six whale catchers to be employed as fisheries patrol vessels. (The Fishing News, March 10, 1961.)

FOOD AND AGRICULTURE ORGANIZATION

FISHERIES EXPERTS ASSIGNED ON SURVEYS IN LATIN AMERICA, AFRICA, AND CYPRUS:

Three experts in fisheries economics were nominated for Food and Agriculture Organization (FAO) assignments in Cyprus, Chile, and in the Federation of Rhodesia and Nyasaland during March 1961. The experts were the Director of the Division of Technology, Central Fisheries Experimental Station, Palermo, Sicily; a lecturer from the College of Technology, Portsmouth, England; and the Managing Director of a canning company in Cape Town, South Africa.

The Technology Director from Sicily arrived in Cyprus, March 9, for a four-months assignment as a fisheries development expert. His assignment will be to do an economic survey of the fisheries potential in the Cyprian offshore waters.

The British lecturer will be the economist member of a three-man team which will conduct a reconnaissance survey of Kariba Lake in the Federation of Rhodesia and Nyasaland. The survey will be used to prepare a plan of action for a full-scale study of the fishery potential of the reservoir. He also left March 9 for Kariba Lake and was scheduled to join the other team members consisting of a fisheries biologist with the California Department of Fish and Game, and the Chief of the Fishing Gear Section, Fisheries Technology Branch, Fisheries Division, FAO. His assignment will also be for 4 months.

The Director of the South African canning firm, who has previously visited Peru and Chile to study fishery developments, left for Chile in March where he will spend a year as a fish-marketing expert. He will advise the government and fisheries industry on problems arising from efforts to rehabilitate the Chilean fishing industry following the earthquake there last year.

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FISHERY RESEARCH VESSELS TOPIC OF FORUM IN TOKYO:

How do creatures seven miles down in the ocean's depths generate light within their bodies? Why do fish migrate; do they navigate celestially as birds do? Adult sea fish are caught, but their eggs are never found. Where do they spawn?

Questions like these are beginning to be answered by research vessels exploring the sea, which contains regions less known than the moon's surface.

Some 200 Japanese research vessels range thousands of miles from their native land, testing currents, temperatures, the concentration of plankton--gathering indicators of where the fish are. Waiting for this

International (Contd.):

information is the far-flung Japanese fishing fleet.

The fishery research vessel, which not only collects hydrographic information, but tests new fishing methods and gear, will be the major subject at a Food and Agriculture Organization (FAO)-sponsored forum on research vessels, September 18-30, 1961, in Tokyo, Japan.

"The purpose of the meeting is to compile and exchange information on the design and operation of research vessels, particularly those for fishery research," said the Chief of FAO's Fishing Boat Section, who will serve as secretary of the meeting. "It will also give oceanographers, biologists, and naval architects a chance to discuss mutual problems and accomplishments."

The necessity for fishery research can be illustrated by the fact that millions of tons of fish protein are taken from the sea each year. The amount taken has increased by about one half in the last 10 years.

"With a growing world population, the sea will have to increase its harvest. But for this increase we must know the best method of protecting and utilizing her resources," the Chief of the Fishing Boat Section stated. "Only a few kinds of fish of the large number of known varieties are caught. Many parts of the ocean, especially in the southern hemisphere, are scarcely fished at all."

Fisheries research vessels, no matter who designs them, all have one thing in common. They are expensive. For the ships must be floating laboratories.

"A small research vessel of about 500 tons will cost around 1.65 million dollars," he said. "This is expensive, but any ship of 500 tons is expensive. The reason for the high cost, is all the instruments and facilities that a research vessel must carry. The United States of America is planning to build 70 research vessels costing $210 million during the next 10 years.

"There is a need for vessels to do just basic research," he added. "The maximum economic yield of many fisheries needs to be determined. Prior to World War II, Japan was one of the few countries greatly involved in such research. Japan now depends on fish as their principal source of animal protein and the Japanese not only eat hundreds of varieties of fish, but many kinds of seaweed.

"Comparing fisheries with agriculture, we are far behind. For instance, the yield of the sea possibly could be increased by 'ploughing' the ocean bottom as one would till the soil. This would bring dissolved substances from the depths to the surface and provide more food for fish."

Fishery research vessels have already paid off in immediate results. A German vessel, the Anton Dohrn, has found several new fishing grounds. One bank located near Greenland and yielding ocean perch has been named the Dohrn Bank.

A Norwegian fisheries research vessel spotted the herring before they reached the Norwegian fjords. This enabled the herring season to be extended and the increased revenue from the larger catch paid for the boat.

FAO's Fishing Boat Section has advised a number of its member governments, including the United States and Iceland, on the designs of their fishery research vessels. The Section designed three such vessels for the Union of South Africa. Another of its jobs was saving the Swedish Government about $160,000 on refitting its fishery research vessel, the Skagerak. The Section recommended engines and winches that cut the refitting cost; the resulting saving more than equaled the Swedish contribution to FAO that year.

The Research Vessel Forum will not be just limited to fishery research ships. The Forum will also examine hydrographic survey ships, polar exploration vessels, hospital ships, lighthouse tenders, cable ships, and nonmagnetic ships.

* * * * *

INTERNATIONAL MEETING ON ROLE OF FISH IN NUTRITION:

The role of fish in world nutrition--the present abundance of fish and future potential supply--will be discussed at an international conference on Fish in Nutrition, to be held from September 19-27, 1961, in Washington, D. C.

Sponsored by the Food and Agriculture Organization (FAO), the conference will deal with the world production and utilization of fish, not only for human nutrition but also in animal feeding. The U. S. Fish and Wildlife Service is handling the conference on behalf of the United States Government.

Participants representing some 50 nations of FAO's 82-nation membership are expected

International (Contd.):

to attend, along with scientists invited from governmental and non-governmental organizations and members of the fishing industry.

"The conference is unique in that it will be the first time that scientists in the fields of nutrition, fisheries, and animal health have been gathered together with experts in fish processing to consider what is really known of the place of fish and fishery products in human and animal nutrition," the chief of FAO's fisheries technology branch and general secretary of the meeting stated.

The conference will provide an opportunity to compile and make available internationally the current knowledge on the nutritive value of fish and fishery products and on the biological factors affecting their nutritional value.

Discussion at the conference on nutritional, biochemical, and clinical research now under way on fishery products and components should provide a guide for future scientific investigation to fill in the gaps in research knowledge.

A grant given by the U. S. National Institutes of Health through the U. S. National Academy of Science will provide for a limited number of travel fellowships to enable internationally-known scientists to participate in the conference. These grants are also partly designed for the active scientist in developing countries, who can utilize knowledge gained at the conference upon his return.

The agenda calls for papers to be presented on such topics as the importance of fish protein in combating protein malnutrition, as found in weaned infants as a result of diet and poor nutritional practices; the possible role of fish fats and oils in connection with cardiovascular diseases; the effect of processing on the nutritive value of fish products.

GENERAL AGREEMENT ON TARIFFS AND TRADE

EIGHTEENTH SESSION OF THE CONTRACTING PARTIES:

The Contracting Parties to the General Agreement on Tariffs and Trade (GATT) held their Eighteenth Session in Geneva, May 15-19, 1961. A total of 38 nations have acceded to the GATT, and a number of other countries either have acceded provisionally or have other special relationships with the Contracting Parties.

The GATT, as the basic instrument guiding commercial relations among most of the principal trading nations of the world, is the cornerstone of United States commercial policy. The provisions of the GATT are designed to promote mutually beneficial international trade and thereby to raise living standards, expand productive employment, and utilize more fully the resources of the world. The various meetings of the Contracting Parties to the GATT, such as the Eighteenth Session, provide an international forum in which the Contracting Parties work to achieve the aims of the GATT, discuss trade policy problems, and attempt to resolve trade difficulties in a manner conducive to the growth rather than the reduction of trade levels.

The one-week session ran concurrently with the GATT tariff negotiations conference which began in Geneva, September 1, 1960.

Of the approximately 30 agenda items scheduled for consideration by the Contracting Parties, some of the more significant ones dealt with the Association of Finland with the European Free Trade Association; a review of latest developments on the special three-pronged program for the expansion of trade through (1) tariff negotiations, (2) an examination of agricultural protectionism, and (3) the maintenance and expansion of the export earnings of the less developed countries; and the removal of quantitative import restrictions.

The Contracting Parties heard reports at this Session on consultations the United States and other contracting parties have held with Italy and France on their remaining quantitative restrictions. Also, the GATT Committee on Balance-of-Payments Restrictions, of which the United States is a member, reported on the consultations held in April with several countries still imposing import restrictions for balance-of-payments reasons. The removal of quantitative restrictions by other countries has been a principal objective of the United States, and the work of this com-

International (Contd.):

mittee and other GATT mechanisms have been important factors in influencing the relaxation of such restrictions upon trade.

INTERNATIONAL JOINT COMMISSION

REPORT ON PASSAMAQUODDY TIDAL POWER PROJECT SUBMITTED:

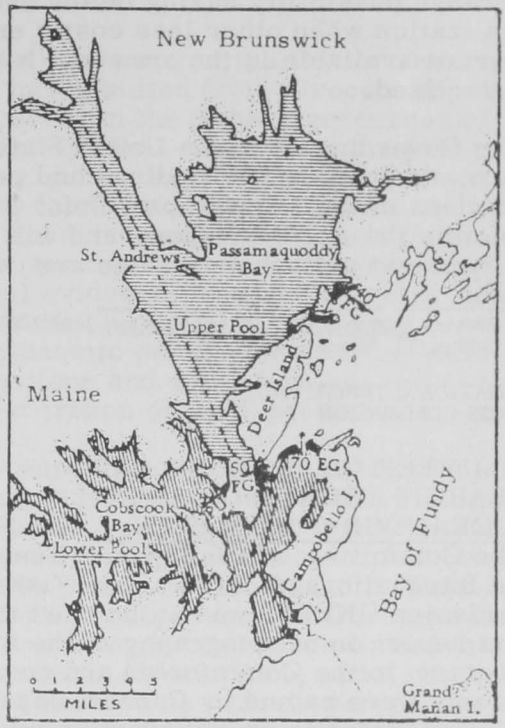
In a letter from the International Joint Commission dated April 10, 1961, the U. S. Department of State has received the "Report of the International Joint Commission, United States and Canada, on the International Passamaquoddy Tidal Power Project," dated April 4, 1961. The report released May 1, 1961, conveyed the Commission's findings that the tidal project, either alone or in combination with certain auxiliary power sources, will not permit power to be produced at a price which is competitive with the price of power from alternative available sources.

On August 2, 1956, the Governments of the United States and Canada in a Reference, directed the Commission to determine the estimated cost of developing the international tidal power potential of Passamaquoddy Bay, and whether the cost of such a development would permit the production of hydroelectric power at an economically feasible price. Passamaquoddy Bay separates the State of Maine from the Province of New Brunswick on the Atlantic Coast near the mouth of the Bay of Fundy.

The April 4 Report represents the final conclusions of the Commission in response to the Reference of August 2, 1956, which was submitted to the Commission in accordance with the provisions of Article IX of the Boundary Waters Treaty of 1909, and in light of the provisions of Public Law 401, 84th Congress, second session, approved January 31, 1956.

The Reference further directed the Commission to determine the effects which the project might have on the national and local economics in the area, as a result of the proposed construction, maintenance, and operation of the tidal power structures.

The Commission's Report determined that because of the relatively high cost of development of the tidal power potential, the project would not appreciably affect long-term industrial development in the area. This Report pointed out, however, that there would be substantial short-term benefits to the economies of Maine and New Brunswick during the six-year construction period which would result from estimated expenditures of over $200 million for goods and services if the project were carried out.



Passamaquoddy Tidal Power Projects plan.

The Commission found that the proposed project would have very little effect on the important sardine industry in the St. Croix River estuary of Passamaquoddy Bay, and only a minor effect on other fisheries. Were the project to be carried out, the Commission notes that re-location and modification of existing fisheries facilities, plus certain modifications in the design of the tidal structures, would minimize damage to existing fisheries.

The Commission's Report also noted that additional recreational facilities would be created by the formation of two large salt water lakes, and by the structures of the proposed tidal project itself. Navigation conditions in the St. Croix River estuary and at St. Andrews and other ports in the Bay area would be improved by the raising of the Passamaquoddy Bay high pool, and by the decrease in the tidal range. In addition, tidal dams, locks, and gates would provide suitable foundation on which an international highway could be built to connect present coastal highways in Maine and New Brunswick.

Nevertheless, the Commission found that the Passamaquoddy Tidal Power Project is not economically feasible at the present time when evaluated by conventional methods of economic analysis as applied to hydroelectric projects. The Commission recommended that development of the project be viewed as a long-range possibility having better prospects of realization when other less costly energy resources available in the area will have been fully realized.

The Governments of the United States and Canada are studying the findings and recommendations of the International Joint Commission in the April 4 Report, and will withhold comment until their studies are completed.

Note: Also see Commercial Fisheries Review, June 1960 p. 68, May 1960 p. 36, March 1960 p. 38.

INTERNATIONAL NORTH PACIFIC FISHERIES COMMISSION

COMMITTEE ON BIOLOGY AND RESEARCH: WORKING PARTY ON OCEANOGRAPHY MEETS:

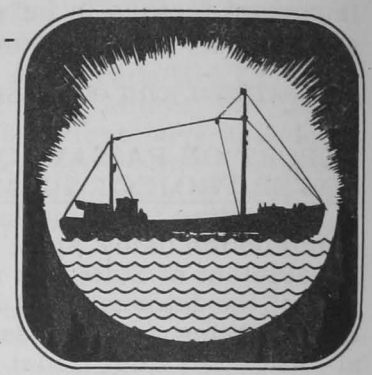
The Committee on Biology and Research of the International North Pacific Fisheries Commission (INPFC) was authorized to make a joint report on oceanography of the area of interest to the Commission and correspondents were named by Canada, Japan, and the United States to prepare such a joint report. The report has been carried on by mail since it was not possible for the Working Party members to meet in 1960. But since it was considered essential that all authors come together to coordinate their contributions and prepare the final report, the Working Party on Oceanography of the Commission's Committee on Biology and Research met in Nanaimo, British Columbia, Canada, May 15-June 15, 1961.

NORTHWEST ATLANTIC FISHERIES COMMISSION

ANNUAL MEETING HELD IN WASHINGTON, D. C.:

The 1961 Annual Meeting of the International Commission for Northwest Atlantic Fisheries was held June 5-10, 1961, in Washington, D. C. The meeting was presided over by the Commission's Vice-Chairman, the Deputy Minister of Fisheries for Canada. All sessions of the meeting were held in the U. S. State Department Building.

The Annual Meeting was directly preceded by the following meetings held at the U. S. Bureau of Commercial Fisheries Biological Laboratory, Woods Hole, Mass.:



(1) Symposium on Marking, May 24-27.

(2) A meeting of the Group on Environmental Problems on May 27.

(3) Meetings of the Standing Committee on Research and Statistics and of Advisers Groups, May 29 to June 2.

Meetings of the Continuing Working Party on Fishery Statistics in the North Atlantic Area were held on June 6-8 during the Annual Meeting in Washington.

NORTHWEST PACIFIC FISHERIES COMMISSION

JAPANESE AND SOVIETS HOLD FIFTH ANNUAL MEETING:

At the fifth annual meeting of the Japanese-Soviet Commission for Northwest Pacific Fisheries, the 1961 Japanese North Pacific salmon quota--major issue in the discussions--finally came up on the agenda in mid-April. Both sides predicted an early agreement. The Japanese Minister of Agriculture and Forestry predicted that this year's settlement would be earlier than in 1960, when the final agreement was signed on May 18, but he also indicated that there would be no decrease in the Japanese salmon quota which in 1960 was 67,500 metric tons in the Northwest Pacific Commission area.

On the other hand, reports indicate that the Soviet Union plans an increase in its North Pacific salmon catch. Russia caught 70,000 tons in 1960 and reportedly told Japanese negotiators that it planned to catch 80,000 tons this year. The Soviets demanded that Japanese catches in restricted zones be held to 50,000 tons, with catches in unrestricted zones held to 70,000 tons. Japan caught 140,000 tons in all zones last year.

On April 7 the crab quota in the North Pacific was tentatively established, with Japan allotted 260,000 cases (48 6.5-oz. cans) and Russia 195,000 cases (96 6.5-oz. cans). The 1961 quotas are identical to those for 1960.

International (Contd.):

Japan's West Kamchatka crab fleet was reported ready at Hakodate in mid-April awaiting word of agreement before sailing. Meanwhile, early in April the 5,746-ton Tokei Maru with a crew of 404 left port for crab fishing in Bristol Bay off Alaska.

The Soviet delegates early in April charged the Japanese with "obstructing" the discussions when the Japanese refused to expand the area of treaty control south of the 45th parallel. The Russians charged that up to a thousand Japanese vessels fished in that area and had doubled their salmon take compared to the catch five years ago.

After lengthy discussions, the Japanese early in the meeting agreed to use nets with larger mesh during the 1961 and 1962 gillnet salmon seasons in the North Pacific. The agreement states that half the length of salmon fishing nets to be used in all fishing areas in the North Pacific should have a mesh of more than 65 millimeters (about 2.6 inches) in size.

Japan, in the meantime, because it had not reached agreement with the Soviets regarding the 1961 salmon catch quota for the North Pacific, on April 19 authorized Japanese salmon fishing fleets (4 fleets, each consisting of one mothership and fishing vessels) to begin operations in waters outside the Soviet-Japanese fishery treaty zone. Some Japanese officials reportedly suspected that the Soviets were trying to utilize concessions on catch limits within the restricted zone as a lever to induce Japanese agreement to an expansion of the restricted area southward of the zone (south of 45° north latitude). In any event, the Japanese Government decided not to hold up any longer the sailing of the fleet even though it is recognized that such action could prejudice chances of Soviet-Japanese agreement in their current negotiations. The Japanese, however, have announced that they will exercise voluntary controls on their total catch in line with the catches of previous years.

UNITED STATES REPRESENTED AT CONFERENCE ON REGIONAL FISHERIES ORGANIZATION FOR WEST AFRICA

The United States was represented at an international conference concerning the establishment of a regional fisheries organization for West Africa. The conference was held in Dakar, May 15-20. It was called by the Food and Agriculture Organization (FAO) for the purpose of organizing the new nations and the remaining colonial governments of the African Atlantic coast into a regional council for the interchange of scientific and technical information on fisheries, similar to the FAO's Indo-Pacific Fisheries Council in southeastern Asia.

The convening of the Dakar conference by FAO has resulted from a recent rapid growth of interest in the fishery resources of the eastern tropical Atlantic on the part of the fishing industries and governments of a number of countries. The waters of the region have received comparatively little scientific study, but available oceanographic and biological evidence indicates that they are rich in fish which may contribute importantly to the economic development of the West African nations and dependencies, and to the protein nutrition of their peoples.

Of especial interest to the United States fishing industry and to the tuna biologists of the Bureau are the major developments in tuna production in the eastern Atlantic in the past few years. Tuna landed in West African ports by Japanese and European fishermen are being processed in United States canneries in Puerto Rico, and a number of United States tuna vessel operators are testing the applicability of their fishing methods to the conditions on the African fishing grounds.

WHALING

ANTARCTIC WHALING OUTPUT HIGHER FOR 1960/61 SEASON:

Whale oil production in the 1960/61 Antarctic pelagic season was up 18,000 short tons from the previous season.

Of the 5 countries participating in Antarctic whaling, larger catches were reported this year by Norway, Japan, and the U.S.S.R. The Netherlands and the United Kingdom reported smaller output.

Antarctic Whale and Whale Oil Production, 1960/61 and 1959/60

	Blue-Whale Units		Whale Oil Production	
	1960/61 1/	1959/60	1960/61 1/	1959/60
	(Units)		(Short Tons)	
Norway	5,197	4,568	124,246	109,834
Japan	5,980	5,217	111,134	103,096
U. S. S. R.	2/2,800	2,789	2/67,150	63,070
United Kingdom	1,455	1,900	37,958	44,315
Netherlands	1,011	1,038	24,176	26,323
Total	16,443	15,512	364,664	346,638

1/Preliminary.
2/Partially estimated.

International (Contd.):

Norway continues to be the world's leading producer of whale oil, but Japan is rapidly becoming a close second. In recent years, the U. S. S. R. has greatly expanded whaling operations and in 1959/60 passed the United Kingdom in whale oil output.

Twenty-one expeditions operated during the 1960/61 season--one more than in the previous year. Both Japan and the U. S. S. R. added an expedition, and the United Kingdom dropped one. Total country expeditions were Norway 8; Japan 7; U. S. S. R. 3; the United Kingdom 2; and the Netherlands 1.

Because the Antarctic pelagic whaling countries could not reach agreement on sharing of the permitted catch, no preseason catch plan was set for the 1960/61 season. The International Whaling Commission requested each country to limit the size of its catch to a level no greater than the previous season. The 1959/60 catch plan, totaling 17,540 blue-whale units, was Norway, 5,800; Japan, 5,040; U. S. S. R., 3,000; the United Kingdom, 2,500; and the Netherlands, 1,200. (Foreign Crops and Markets, U. S. Department of Agriculture, May 22, 1961.)

WORLD'S 1959 SHRIMP PRODUCTION

The world's commercial production of shrimp in 1959 was estimated at 766 million pounds (heads-off weight). The larger shrimp-producing countries are in the Asian and North American continents and landings in those areas accounted for about 80 percent of the 1959 world production. The remaining 20 percent was largely made up of production in European and South American countries.

The 1959 world production of shrimp was estimated to be about 19 million pounds more than the previous year. The more significant increase was in the United States and Mexican catches although production was up for a number of other North and South American countries. European shrimp production in 1959 increased about 5 million pounds from the previous year, but was much lower for several of the Asian shrimp-producing countries.

Estimated World Production of Shrimp, 1948, 1953, 1958, and 1959

Continent and Country	1959	1958	1953	1948
	(Million Pounds--Heads-off Weight)			
Africa:				
Egypt	7.5	7.0	2.0	0.9
Morocco	1.6	1.5	0.1	0.1
Total	9.1	8.5	2.1	1.0
Asia:				
Burma	6.8	8.7	10.3	1/
China (Mainland)	2/120.0	2/120.0	1/	1/
Hong Kong	0.8	3.8	0.3	0.1
India	85.9	111.8	119.0	48.5
Iran	1.6	0.6	2/	1/
Japan	78.3	74.1	54.1	44.0
Korea	25.7	23.0	27.7	43.3
Pakistan	19.9	19.5	18.2	3/
Philippine Republic	5.9	5.3	2.1	1.3
Taiwan	6.7	5.3	3.3	1/
Thailand	2/11.0	11.0	11.3	10.7
Vietnam	6.6	6.6	1/	1/
Total	369.2	389.7	246.3	147.9
Europe:				
Belgium	1.4	1.0	2.6	1.8
Denmark	3.1	2.2	1.2	1.2
France4/	4.1	4.6	5.1	3.9
Italy	3.9	4.2	3.3	2.2
Netherlands	17.2	14.3	21.3	10.5
Norway	12.7	9.5	5.0	2.5
Spain	18.3	17.4	12.3	14.6
Sweden	4.2	2.8	1.7	1.0
United Kingdom	2.5	2.8	2.5	3.4
West Germany	33.7	37.1	52.6	18.6
Total	101.1	95.9	107.6	59.7
Oceania:				
Australia	3.9	2.8	2.0	2/
North America:				
Cuba	1.9	1.6	1.7	1/
El Salvador	2.1	1.4	0.1	1/
Mexico	80.1	69.1	45.6	44.6
Panama	8.9	7.5	0.9	0.1
United States	142.9	127.2	154.9	99.4
Other	2/4.0	3.7	2.1	0.3
Total	239.9	210.5	205.3	144.4
South America:				
Argentina	1.1	1.8	7.2	1.7
Brazil	25.7	24.3	10.5	1/
Colombia	3.5	2.0	0.3	1/
Ecuador	7.5	6.0	0.4	1/
Surinam	1.3	1.2	1/	1/
Venezuela	2.1	1.5	0.4	0.1
Other	2/1.5	0.6	0.9	0.1
Total	42.7	37.4	19.7	1.9
Grand Total	765.9	744.8	583.0	354.9

1/Data not available.
2/Estimated.
3/Pakistan included with India.
4/Algeria included with France.
Note: Includes all countries except those with small or limited production.
Sources: Food and Agriculture Organization series, Yearbook of Fishery Statistics; U. S. Fish and Wildlife Service, Survey of Shrimp Fisheries of Central and South America, Special Scientific Report - Fisheries, No. 235 and Foreign Shrimp Fisheries Other Than Central and South America, Special Scientific Report - Fisheries No. 254; and U. S. State Department Foreign Service dispatches.

Angola

FISH-OIL INDUSTRY AND TRADE, 1959-1961:

Angola's production of fish oil increased from 4,900 metric tons in 1959 to 6,000 tons in 1961. Total production is diverted to exports, the bulk of which is shipped to Western Germany (tables 1 and 2).

Table 1 - Angola's Supply and Distribution of Fish Oil, 1959-1961

	1961[1/]	1960[1/]	1959
	(1,000 Metric Tons)		
Stocks, January 1	0.6	0.6	0.8
Production	6.0	5.0	4.9
Imports	-	-	-
Total Supply	6.6	5.6	5.7
Consumption	Neg.	Neg.	Neg.
Exports	6.0	5.0	5.1
Stocks, December 31	0.6	0.6	0.6
Total Distribution	6.6	5.6	5.7

1/Estimated.

Table 2 - Angola's Exports of Fish Oil, 1959-1960

Country of Destination	1960[1/]	1959
	(1,000 Metric Tons)	
West Germany	4.2	3.3
Denmark	0.5	-
Other	0.4	0.7
Total	5.1	4.0

1/Estimated.

The average price of fish oil in Angola was 7 U. S. cents a pound in 1959 and 1958, and 8 cents in 1957. (U. S. Foreign Agricultural Service Report, Leopoldville, April 13, 1961.)

Note: Values converted at rate of 28.52 escudos equal US$1.

Australia

DEMAND GOOD FOR NORWEGIAN FISH STICKS AND PORTIONS:

Sales in Australia of fish sticks imported from Norway trebled in the last nine months of 1960. This was stated in Sydney by the managing director of the firm which is the sole Australian agent for Norwegian fish. He said the spectacular demand for fish sticks had occurred chiefly in Melbourne and also in Adelaide and Perth.

The Australian states, "Our fish sticks are made from the choicest haddock caught in the icy waters of Norway.

"Our experience over the past three years shows that haddock is the type of fish preferred in Australia--not only in fish sticks but in other products as well.

"Cod is okay in U. S. A. but is not a good seller in Australia.

"When we switched from cod to haddock our fish sticks sales began to climb," he said. He added that a small increase in the price of haddock fish sticks had not slowed sales. On the contrary, Melbourne housewives bought more.

"We have found that provided quality is maintained the average housewife doesn't mind paying a little extra for fish. On the other hand, we have found that if you drop the price the housewife thinks there's something wrong with the product and sales go down. But you must maintain quality," he said.

A year-round advertising campaign on television and radio was helping considerably to push the sales of Norwegian fish in Australia. The present advertising campaign in Sydney is restricted to point-of-sales material (window stickers, branded cellotape, jumbo cartons, etc.). According to the Australian representative of the Norwegian exporter, the crumlets (breaded fish portions) were the biggest-selling line of any frozen fish in consumer packs in Melbourne and Adelaide.

Another product he predicts will sell almost as well is flounder cutlets (square portions of breaded quick-frozen fish), which are sold in pound consumer packs containing eight portions per pack. The flounder portions are imported from Denmark. (Fish Trades Review, February 1961.)

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FOREIGN TRADE IN MARINE OILS, FISCAL YEARS 1958/59-1959/60:

Australian imports of all marine-animal and fish oils increased in fiscal 1959/60 as compared with 1958/59. Whale-oil imports increased by 11 percent, cod-liver oil (in-

Table 1 - Australia's Imports of Marine-Animal and Fish Oils, Fiscal Years 1958/59-1959/60

Item	1959/60	1958/59
	(Imperial Gallons)	
Whale oil	1/353,677	1/317,783
Cod-liver oil (incl. refined)	64,504	58,620
Fish oils (unrefined) N.E.I. incl. penquin & seal	123,120	87,286
Marine-animal oils, N.E.I.	46,760	29,936
Total	588,061	493,625

1/Includes 272,128 gallons from Norfolk Island in 1959/60 and 256,903 gallons in 1958/59.
N.E.I. - Not elsewhere included.

Australia (Contd.):

cluding refined) by 10 percent, fish oils (unrefined) and penguin and seal oil were up 41 percent, other marine animal oils increased by 56 percent--the combined imports of these oils increased by 19 percent (table 1).

Table 2 - Australia's Exports of Marine-Animal and Fish Oils, Fiscal Years 1958/59-1959/60

Item	1959/60	1958/59
	(Imperial Gallons)	
Whale oil	3,055,652	3,372,748
Other marine-animal and fish oils	6,151	30,162
Total	3,061,803	3,402,910

Most of Australia's exports of marine-animal oil is made up of whale oil. Total exports of that oil decreased by 11 percent in 1959/60 as against 1958/59, and is expected to decrease even further in 1960/61 due to a smaller catch. Exports of other marine-animal oils and fish oils fell sharply in 1959/60 (see table 2). (U. S. Foreign Service dispatch, Canberra, April 21, 1961.)

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GOVERNMENT RULING CONFIRMS BAN ON IMPORT OF FISHING VESSELS:

In reply to a request by a United States fishing vessel owner for permission to sell his vessel in Australia, the Australian Department of Shipping and Transport states:

Under the Customs (Prohibited Imports) Regulations, the prior approval of the Minister for Shipping and Transport is required before a vessel of any description can be imported into Australia. It is the policy of the Commonwealth Government to support the Australian shipbuilding industry, both by the payment of a subsidy of up to 33⅓ percent of costs in the construction of vessels over 500 tons and by the imposition of a customs duty on smaller vessels.

Consistent with the Government's policy of supporting the shipbuilding industry, which is at present in need of additional orders, the Minister has in most cases refused to permit the importation of new or secondhand vessels into Australia, except in special circumstances such as small craft, replacements for marine casualties, or prototypes of vessels not at present built in Australia. (United States Consulate, Sydney, April 18, 1961.)

Note: Also see Commercial Fisheries Review, April 1961 p. 47.

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SHELLFISH LANDINGS, FISCAL YEAR 1959/60:

Australia's fiscal year 1959/60 shellfish landings (live weight) of 36.8 million pounds were much better than expected. The spiny lobster catch amounting to 28 million pounds topped the previous year's catch by more than 2 million pounds. Most of the increase was in the main fishing grounds in Western Australia. There was a fairly substantial increase ever the previous year in Tasmania production, and a smaller increase in Victoria and New South Wales production. The South Australian spiny lobster catch was the lowest since 1953/54.

Table 1 - Australia's Shellfish1/ Landings, Fiscal Years 1958/59-1959/60

Species	1959/60	1958/59
	(1,000 Lbs.)	
Spiny lobster2/	28,008	26,301
Shrimp:		
Greasy back	1,264	680
School	123	2,092
Tiger	3,875	679
King	1,493	2,280
Banana	662	974
Other	332	46
Total shrimp	7,749	6,751
Crab:		
Mud	359	906
Sand	685	
Total crab	1,044	906
Crayfish (fresh-water)	15	12
Total shellfish	36,816	33,970

1/Based on live weight.
2/Includes shovel-nosed lobster--39,430 pounds in 1959/60 and 25,394 in 1958/59.

The 1959/60 shrimp catch of 7.7 million pounds also increased substantially despite an earlier forecast of a lower harvest than the 6.8 million pounds landed in 1958/59.

Table 2 - Australian Spiny Lobster and Shrimp Species

Common Name	Scientific Name
Crayfish, marine (spiny lobster)	Jasus verreauxi Jasus lalandii Panulirus longipes
Lobster, shovel-nosed	Thenus orientalis
Prawn (shrimp):	
Greasy back	Metapenaeus mastersii
School	Metapenaeus macleayi
Endeavour	Metapenaeus endeavouri
York	Metapenaeus eboracensis
Tiger	Penaeus esculentus
King	Penaeus plebejus
Banana	Penaeus merquiensis
Rainbow	Parapenaeopsis sculptilis

The largest increase was in Tiger shrimp landings which were up 3.2 million pounds from the previous year, and the greasy back shrimp catch which increased 0.6 million pounds. The 1958/59 landings of other shrimp species dropped sharply from the previous year. (Australian Fisheries Newsletter, March 1961.)

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Australia (Contd.):

WHALE OIL SUPPLY, DISTRIBUTION, AND FOREIGN TRADE, FISCAL YEARS 1957/58-1960/61:

The Australian 1960 whaling season was marked by a further decline in the catch on the Western Australian coast. The 1960 baleen whale quota was set at 1,850 whales; 870 whales for the West Coast and 980 for the East Coast and Norfolk Island. The full quota was taken on the East Coast and at Norfolk Island, but the actual catch in Western Australia only totaled 545 humpback whales and two blue whales. In the fall of 1960, the comparatively small Western Australian catch reflected smaller production of whale oil and other products. The season opened on May 29 and ended on September 30, 1960. The yield of oil per whale was slightly lower than in 1959. The average yield fell from 52.29 barrels of oil per whale in 1959 to 51.13 barrels in 1960.

Australia's production of whale oil during the 1960 season amounted to 13,044 long tons as compared with 15,006 tons in 1959. Output of whale byproducts declined by 976 tons to 6,665 tons in 1960. As in previous years, the bulk of Australian whale oil production was exported. Exports during fiscal year (July 1-June 30) 1959/60 were to Western Germany, Italy, the United Kingdom, and the Netherlands, and totalled 3,055,652 Imperial gallons. In view of the smaller catch of whales in 1960, exports are likely to be somewhat smaller for fiscal year 1960/61 and may be around 2.6 million gallons. The relatively small quantity retained in Australia is largely used in the margarine industry.

Australia's total supply of whale oil (opening stocks, production, and imports) decreased from 5.1 million Imperial gallons in fiscal year 1957/58 to 4.3 million gallons in 1958/59. A further decline to 3.8 million gallons in 1959/60 and 3.3 million gallons in 1960/61 is anticipated.

Total distribution of whale oil (exports, domestic consumption, and end-of-year stocks) is also expected to decrease from an actual 5.1 million gallons in 1957/58 to an estimated 3.3 million gallons in 1960/61. The use of whale oil in margarine production has decreased since 1958; it is expected to level off at 550,000 gallons for 1959/60 and 1960/61 (table 1).

Table 1 - Australia's Supply and Distribution of Whale Oil, Fiscal Years 1957/58-1960/61

Item	1960/61 2/	1959/60 1/	1958/59	1957/58
	(Imperial Gallons)			
Supply:				
Beginning year stocks 3/	135,916	150,385	300,893	904,176
Production 4/	3,129,256	3,599,634	3,901,360	4,118,640
Imports	80,000	81,549	60,880	79,693
Total supply	3,345,172	3,831,568	4,263,133	5,102,509
Distribution:				
Exports	2,600,000	3,055,652	3,372,748	4,021,710
Domestic consumption:				
Margarine	550,000	550,000	650,000	689,706
Other	90,000	90,000	90,000	90,000
End of year stocks 3/	105,172	135,916	150,385	300,893
Total Distribution	3,345,172	3,831,568	4,263,133	5,102,309

1/Estimate, with exception of production and foreign trade data.
2/Forecast.
3/Estimated.
4/Includes Norfolk Island production.

Total exports of whale oil from Australia declined from 3.4 million gallons in 1958/59 to 3.1 million gallons in 1959/60. The United Kingdom was the main buyer of whale oil in fiscal year 1958/59--bought 57 percent of total marine oil exports; however, shipments to the United Kingdom fell off in 1959/60 and West Germany became the leading buyer -- bought 65 percent of the total whale oil exports (table 2). (U. S. Foreign Service Dispatch, Canberra, April 27, 1961.)

Table 2 - Australia's Imports and Exports of Whale Oil, Fiscal Years 1958/59-1959/60

Country of Origin or Destination	1959/60	1958/59
	(Imperial Gallons)	
Imports:		
United Kingdom	-	5,427
Norfolk Island	272,128	256,903
Cocos Islands	45,600	-
New Zealand	30,226	55,362
Other Commonwealth Countries	5,613	-
German Federal Republic	-	91
Norway	110	-
Total Imports	353,677	317,783
Exports:		
United Kingdom	280,253	1,917,200
New Zealand	440	-
Union of South Africa	-	1,892
Belgium and Luxemburg	-	92,114
German Federal Republic	1,986,232	429,235
Italy	536,121	433,675
Netherlands	252,606	479,546
For orders	-	19,086
Total Exports	3,055,652	3,372,748

Note: See Commercial Fisheries Review, January 1960 p. 61, October 1959 p. 48.

Belgium

CANNED FISH PRICES, FEBRUARY 1961:

Canned fish prices (c.i.f.) at Antwerp, Belgium, as of February 1961 are shown in table 1.

Table 1 -Belgium's Canned Fish Prices, c.i.f. Antwerp, February 1961

Product	BFrancs/ cs.	US$/ cs.
Canned pink salmon:		
Japan 96 1/4-lb. cans/cs.	671	13.42
" 48 ½-lb. cans/cs.	645	12.90
Canned tuna:		
Japan 48 7-oz. cans/cs.	385	7.70
" 48 3½-oz. cans/cs.	240	4.80
Peru 48 7-oz. cans/cs.	-	6.90
" 96 3½-oz. cans/cs.	-	8.70
Canned sardines in olive oil:		
Portugal 100 4.4-oz. 1/cans/cs.	495-510	9.90-10.20
Morocco 100 4.4-oz. 1/cans/cs.	430	8.60
Canned pilchards:		
Japan & U. S. 48 15-oz. cans/cs.	4.26	8.52
" " 96 7½-oz. cans/cs.	4.90	9.80
Canned mackerel:		
Portugal 100 4.4-oz. 1/cans/cs.	850-880	17.00-17.60
Japan 100 4.4-oz. 1/cans/cs.	535-540	10.70-10.80

1/ ¼-club, 125 grams net.

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IMPORTS OF CANNED FISH, 1959:

During 1959, Belgium imported close to 16,000 metric tons of canned fish valued at about US$9.3 million. The principal supplier was Japan with 6,303 tons valued at $3.6 million, followed by Portugal with 4,838 tons valued at about $2.8 million. Canned fishery products from the United States amounted to only 395 tons (valued at $157,100) of California sardines or pilchards, 35 tons of salmon (valued at $40,300), and 2 tons of unclassified fishery products valued at $1,200. Portugal was Belgium's principal source of true sardines and Japan the chief supplier of canned salmon.

Table 1 - Belgium's Imports of Canned Fish by Origin, 1959

Country of Origin	Sardines		Pilchards		Salmon		Other		Total	
	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value
	Metric Tons	US$ 1,000	Metric Tons	US$ 1,000	Metric Tons	US$ 1,000	Metric Tons	US$ 1,000	Metric Tons	US$ 1,000
United States	1/	0.1	395	157.1	35	40.3	2	1.2	432	198.7
Canada	23	9.2	-	-	966	881.1	-	-	989	890.3
Portugal	3,569	1,967.4	8	5.2	-	-	1,261	779.7	4,838	2,752.3
South Africa	-	-	216	67.2	-	-	-	-	216	67.2
Japan	2	1.4	1,677	557.1	3,699	2,552.6	925	515.6	6,303	3,626.7
Yugoslavia	270	123.9	1/	0.2	-	-	537	328.6	807	452.7
Netherlands	5	7.8	82	27.6	60	51.1	579	192.8	726	279.3
Morocco	90	41.8	-	-	-	-	-	-	90	41.8
Peru	-	-	-	-	-	-	468	241.9	468	241.9
Norway	5	4.5	1/	0.1	1/	1.1	564	392.8	569	398.5
Spain	51	31.2	-	-	-	-	177	116.0	228	147.2
Others	24	18.5	7	2.4	12	12.0	288	191.4	331	224.3
Total	4,039	2,205.8	2,385	816.9	4,772	3,538.2	4,801	2,760.0	15,997	9,320.9

1/Less than ½ ton.

Brazil

JAPANESE FISHERMEN HOPE TO ESTABLISH FISHING COMPANY AND FISH OFF BRAZIL:

Three Japanese fishermen from Choshi, Chiba Prefecture, are reported to be planning on forming a fishing corporation and building three large steel vessels of 240 tons each for tuna fishing off Recife, Brazil. They hope to enter into an arrangement with the Japanese-Brazilian joint company established in Brazil, to which one of the fishermen is already delivering tuna using a 250-ton vessel.

All three are reported to be excellent fishermen. They are presently seeking approval from the Japanese Fishery Agency to proceed with their plans. (Suisan Keizai Shimbun, April 26, 1961.)

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SHRIMP FISHING INDUSTRY:

Brazil's fishing grounds consist of all the coastal waters of Santa Catarina and Parana. With modern equipment, efficient shrimp fishing can be conducted several miles from the coast, but most fishermen work only in tidal areas within a few hundred yards of the shore. Shrimp are available all year round, but the catch by current primitive methods is greatly reduced during the rainy season November through March . Heavy run-off during that period brings very muddy waters into the shrimp fishing areas.

Brazil (Contd.):

There are 6 or 7 important shrimp processing plants in Santa Catarina, but none in Parana. Although 5 of these plants have some freezer equipment which is mostly old, inefficient, and of low capacity, 90 percent of the processed shrimp is either dried or canned. Canned shrimp are peeled and deheaded; dried shrimp have the heads on. There are no firms at this time known to be using modern processing equipment for peeling and deveining or removing heads. There are several firms, however, which would be interested in such equipment if they thought they could develop large markets to justify the expanded capacity.

One of the two processing plants in Santa Catarina with the biggest freezer capacity has equipment for freezing about 4,500 pounds in 24 hours, and has 80 tons of frozen storage capacity. It has no washing, deveining, peeling, or deheading equipment, and has no fishing boats of its own. The freezer capacity of the other plant is unknown. However, it does have three DC-3's in which to transport its entire frozen catch (unwashed and unprocessed) to Sao Paulo, averaging 6 to 7 tons a week. This plant's freezing equipment was installed by Japanese technicians in the last two or three years. Except for this one plant, none of the Santa Catarina firms have reliable means of shipping frozen shrimp to large markets. For this reason all of their frozen output is sold locally. The larger plant uses its freezing capacity for all types of food products including meat, and not just for shrimp, but does not use its freezer to capacity.

Reliable statistics on total annual landings of shrimp are unavailable. Both very large and small sizes of shrimp are fished. The only locally-owned and operated shrimp fishing boats are dugout canoes. It is estimated that about 12,000 of these operate from the Santa Catarina and Parana coastline. These boats fish for all species of fish, and not just shrimp. In addition, a few large and fairly efficient shrimp boats operate along the coast. These are all based in Santos and the ownership is unknown, although it is believed they are all Brazilian-owned and operated with locally-recruited crews. The large boats have no freezer capacity and preserve their catch with ice and antibiotics. They can handle 20 to 30 tons each. They only land their catch in Santa Catarina or Parana when a sudden decline occurs in the Santos-Sao Paulo or Rio de Janeiro markets. They are kept informed of market conditions by radio. As far as it is known, there are no plans for local construction or purchase of large and more efficient shrimp vessels.

Most workers in Santa Catarina fish-processing plants receive between Cr$7,000 and Cr$12,000 (US$32.63-55.94) a month, with the average between Cr$7,500 and Cr$9,000 (US$34.96-41.95) a month.

Processing firms buy fresh shrimp with heads on from fishermen on a per-kilo basis.

The total annual shrimp catch could be considerably increased if a larger number of modern, and more efficient boats were used instead of the dugout canoes now in use. However, there is little likelihood that such expansion of capacity will occur unless Santa Catarina producers are convinced that they have steady markets, either domestic or foreign, and unless they are guaranteed reliable transportation facilities for their output. Although some firms have requested the Brazilian Government to finance the purchase of large vessels, and to establish regulations limiting local coastal shrimp fishing to local firms, the Government is not likely to agree to those requests. (United States Consulate, Curitiba, April 18, 1961.)

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SAO PAULO'S FISHING INDUSTRY EXPANDS IN 1960:

Fish caught in neighboring waters is unloaded at several points along the São Paulo coast, particularly at state-run fish depots, where the fishing vessels lay in for ice. The only production statistics available, however, are those of the Santos and Ubatuba fish depots, where an estimated 65 percent of the total 1960 fish catch was unloaded. These statistics indicate that 24,336 metric tons of fish were unloaded at those depots in 1960, 6,787 tons or 38.8 percent more than in 1959.

The growth of Sao Paulo's fishing industry, which was very limited between 1944 and 1953, was increased substantially in the last few years. Two of the factors that stimulated deep-sea fishing in recent years were the operations of Japanese vessels and crews and the installation in 1955 and 1959, under state supervision, of the Ubatuba and Santos fish depots. These two depots are supplying increasing quantities of ice to fishing vessels, contributing greatly to reducing the proportion of fish that spoil between the time they are caught and unloaded. The Ubatuba depot, which supplied 500 metric tons of ice in 1955, produced 1,210 tons in 1960, while the Santos fish depot, which started operating on a commercial basis in the last quarter of 1959, supplied 1,699 tons of ice in 1959 and 9,870 tons in 1960. A chain of ice-making and cold-storage facilities which are being put up by the São Paulo State Government at Iguape, Registro, Itanhaem, Peruibe, São Sebastiao, and Ilha Bela and scheduled to go into operation between 1960 and 1962, are expected to be important factors in the continued growth of fish production in the area. Statistics of fish unloaded and stored will be maintained at these depots and within the next two years the Secretariat of Agriculture will have accurate and complete statistics on fish production in the State of São Paulo.

The yield per vessel, both per trip and per man, is still generally low as compared with other countries, although some progress is being made. Official statistics on average yields of fish per vessel are not available. However, data on the productivity of a local sardine fishing company indicate that the yield per vessel increased from a monthly average of 87.5 tons in 1959 to 176.1 tons in 1960, an increase of 101.3 percent. The increase was due in part to more favorable fishing conditions (schools of sardines lying close to the coast) and to increased ice and storage facilities of the Santos fish depot.

Brazil (Contd.):

The city of São Paulo is the principal consuming center of fish shipped from Santos and Ubatuba and other points of the São Paulo coast. Statistics prepared by the Department of Animal Production indicate that of the 21,300 metric tons of fish unloaded at the Santos fish depot in 1960, approximately 80 percent were consumed in the city of São Paulo, nearly 15 percent were absorbed by the Santos market, while the remaining 5 percent went to other cities and towns in the interior of the State of São Paulo.

The city of São Paulo also absorbs fish which is trucked in from Rio de Janeiro and other producing centers. Consumption of fish in the city of São Paulo climbed from 9,520 metric tons in 1954 to 23,916 tons in 1959 and 26,416 tons in 1960, an increase of 177 percent in 7 years.

In contrast, fish consumption in the interior of the state is limited. In 1960, 111 interior towns consumed only 1,010 metric tons of fish. Over 25 percent of that quantity, or 259 tons, were absorbed in 10 towns with large Japanese communities, who consume substantial quantities of fish as part of their diet.

Average prices of fish sold in the city of São Paulo in 1960 were 42.4 percent higher than 1959. This is 11.8 percent more than the average rise in the price of other foodstuffs.

One of the Government-sponsored programs which has given good results is the training in deep-sea fishing techniques given to young fishermen at the Maritime Fishing Institute at Santos, where the number of students has risen from 15 in 1955 to 240 in 1960. Fishing schools will also be opened at Ubatuba and Iguape in the near future. Another project under study by the Department of Animal Production is the setting up of a government fund to finance the purchase by fishermen and cooperatives of modern vessels and gear, as the general lack of modern equipment is hampering the rapid development of the fishing industry. (United States Consulate, São Paulo, February 16, 1961.)

British West Indies

BARBADOS FISHING INDUSTRY GROWING:

The Barbados fishing industry has been growing steadily in importance since 1954, when power-driven fishing launches were introduced to replace sailing vessels. Since that time, the annual fish landings have increased sixfold. During 1960, about 16 million pounds of fish were caught with an estimated value of $4 million; in 1959 a total of 6.7 million pounds valued at $1.7 million. Of the 16 million pounds caught in 1960, 62 percent were flying fish, 13 percent dolphin, 8 percent shark, 4 percent albacore tuna, 3 percent marlin, 2 percent whahoo, 2 percent red snapper, and 63 percent miscellaneous.

The number of fishing launches dropped from 463 in 1959 to 458 in 1960. The introduction of power-driven launches has resulted in a decrease in the number of people employed by the fishing industry. A total of 1,700 people was employed in the industry during 1960 (1,100 offshore fishermen, 400 other fishermen, 50 fish market employees, and about 150 peddlers).

The fishing industry is now faced with a problem of oversupply. Although funds were appropriated in the 1960/61 budget for the construction of an abbatoir and fish freezing plant, construction has not as yet started. It is expected that work will eventually begin about the latter part of 1961, and that the plant will cost $750,000. A fish freezing plant would help to stabilize the market which is presently operating on a "feast or famine" basis. There is also the possibility of developing overseas markets for frozen flying-fish fillets. (United States Consulate report from Barbados, April 28, 1961.)

Canada

BIOLOGICAL RESEARCH NOTES:

Canada's biological research was the subject of a panel discussion on April 11, 1961, at the Fisheries Council of Canada's annual meeting in Toronto.

Sea Lamprey: The sea lamprey, which reached the upper Great Lakes through the Welland Canal, has been held responsible for the virtual disappearance of the lake trout. Dr. F. E. J. Fry of the University of Toronto claimed that there has been clear evidence of the sea lamprey eliminating the

Canada (Contd.):

larger lake trout before they become ready to spawn. There is still dispute as to the extent to which the lamprey has affected the valuable food fish of the upper Lakes. Costly international efforts to control the lamprey are in progress. Dr. Kennedy of the London Station of the Fisheries Research Board of Canada considered that the success of these efforts is decidedly doubtful.

Lake Trout Crossed With Speckled Trout: K. H. Loftus, who heads up fisheries research in the Ontario Department of Lands and Forests, described a new kind of fish, obtained by crossing lake trout with speckled trout which gives some promise of being able to withstand the lamprey and to take the place of the lake trout.

Failures in Great Lakes Fisheries: There has been failure in the Great Lakes of other fisheries than that for lake trout. About 1925, the most important fish in Lake Erie, where the largest fisheries are, namely the lake herring or cisco, underwent a catastrophic decline in abundance. R. G. Ferguson, who is in charge of Lake Erie fisheries research for the Department of Lands and Forests, recounted the efforts to discover the cause of the collapse of the fishery. Evidence failed to show that this was to any extent the result of overfishing. There is as yet no inkling of what was the cause of the lack of fish. The only thing to be done was to turn to other kinds of fish, as the fishermen did. A similar event recently occurred in Northern Georgian Bay. With the lake trout gone, the commercial fishermen still had whitefish. But, then their numbers dropped and fishermen were forced out of business. Loftus said that again there was no evidence of overfishing and that some unknown cause must have been responsible for fishery failure.

Overfishing Not Responsible for Drop in Yield: The general belief that fishing is sometimes so heavy as to reduce the long-term yield of marketable fish has had slight substantiation anywhere in the world. Ferguson told how heavy fishing of whitefish in Pigeon Lake, Alberta, was definitely found to reduce the age of the fish, but if anything to increase rather than decrease the quantity available. Fry said that in the fishing experiment in South Bay, Manitoulin Island, the smelt were fished most heavily. This did not decrease the quantity, but it did decrease the size of the fish. Kennedy reported that the very heavy fishing of pike in Heming Lake increased the quantity, but reduced the size, the average age becoming 2 years instead of 4, and the fish had grown more rapidly. The general result, therefore, is that the heavier the fishing the more and better are the fish as long as they are not too small for marketing. This is a new and soundly based outlook for commercial fishing.

Smelt in Great Lakes: There was discussion of whether or not it is a good thing that smelt were introduced into Lake Michigan and spread to the other Lakes. Ferguson maintained that it is, that in Lake Erie they are much appreciated by sports fishermen, and the commercial fishermen have developed a profitable method of harvesting them. Fry argued that, at least in colder lakes, they had probably done more harm than good. If they are to be considered detrimental, Kennedy claimed that there is not the slightest chance of getting rid of them. Any conceivable measures for their removal would entail utterly prohibitive cost. Loftus was able to see that the smelt could be a great asset, provided that fishing methods are improved and markets are found for them.

* * * * *

FISH SOLUBLES USED TO STOP SOIL EROSION:

After extensive studies, the British Columbia Research Council has found how to start vegetation on previously sterile slopes. Laboratory work and practical field trials have shown that by applying grass seed and fish solubles together, followed by a spray of lime, erosion can be stopped and a vigorous grass cover established. The process is not expensive.

The problem of heavy erosion of cuts and fills on new highways has plagued highway engineers everywhere. Erosion of sandy soil clogs drainage ditches and plugs culverts, causing high maintenance costs. Difficulty has always been experienced in starting a cover of vegetation to halt such erosion.

The superiority of the process over conventional methods is clearly seen in the experimental plots on the new Upper Level Highway in North Vancouver.

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Canada (Contd.):

FISHERIES ACT AMENDED:

An Act to Amend the Canadian Fisheries Act passed the House of Commons on May 2, 1961.

12-Mile Restriction to be Relaxed: Section 55 gives the Minister of Fisheries authority to allow large Canadian fishing vessels, presently banned from fishing inside 12 miles, to fish up to the 3-mile territorial sea limit in any area off the Canadian east coast mainland. In other words, the Department of Fisheries intends to use a zoning system--authorizing the abolition of the present 12-mile restriction in some areas but probably not in others. Prevalence of foreign draggers in some areas, and intensity of inshore fishing in others, will obviously be factors considered in making these decisions.

Definition of Fishing Vessel: The Act defines a fishing vessel as follows: "fishing vessel means any vessel used, outfitted or designed for the purpose of catching, processing, or transporting fish."

Pollution Penalties Increased: Fines have been increased--up to a thousand dollars for a first offense and up two thousand dollars for second and subsequent offenses, with provisions for an imprisonment term in place of, or in addition to, a fine.

Fisheries Department Authority Broadened: Section 34 has been amplified to clarify the regulation-making powers of the Department, and to broaden them. Under this section authority can be delegated to local authorities "to vary any close time or fishing quota that has been fixed by the regulation." This will permit faster action in making such changes and will be valuable in a number of the fisheries, particularly so in the West Coast salmon industry.

Other Changes: Power of a fishery officer to act as a justice of the peace has been removed.

A more comprehensive procedure is introduced for the seizure of any vessel, vehicle, or equipment that is used in violation of the Act.

New sections make it clear that the Department has full jurisdiction over Canadian fishing vessels operating on the High Seas. (Fisheries Council of Canada, Bulletin, May 15, 1961.)

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FOREIGN TRADE, UTILIZATION, AND PRODUCTION OF MARINE OILS, 1958-1960:

Foreign Trade: Canada exported a total of 15.7 million pounds of marine oils in 1958, 35.5 million pounds in 1959, and 31.7 million pounds in 1960. These exports consisted of herring oil, crude cod-liver oil, sunrotted cod-liver oil, pharmaceutical cod-liver oil, and whale oil. When the period 1958-1960 is compared with the 5-year average for 1950-1954, Canada's exports of herring oil increased greatly; crude cod-liver oil exports declined in 1958, but since then have improved; sunrotted cod-liver oil has increased slightly, but exports of whale oil practically ceased in 1960 because there was no whaling on Canada's west coast that year. Whaling operations were discontinued because of a labor-management dispute.

Table 1 - Canada's Marine-Oil Exports, 1958-1960 and 1950-1954 Avg.

Product	1960	1959	1958	5-Yr. Avg. 1950-1954
	(1,000 Pounds)			
Whale oil	64	4,790	3,360	7,958
Herring oil	23,028	23,261	7,094	14,563
Cod-liver oil (crude)	858	509	38	1,373
Cod-liver oil (sunrotted)	7,514	6,979	5,154	6,480
Fish oil	226	4	48	1/
Total	31,690	35,543	15,694	30,374

1/Not available.
Note: Totals in this table differ with those in table 2 due to conversion of table 2 data from Imperial gallons to pounds.

A heavy increase in shipments of industrial herring oil to the United Kingdom in 1959 continued through 1960 and accounted for most of the increase in total marine oil exports. These exports of industrial herring oil accounted for two thirds of Canada's total marine oil exports. The United States received an increasingly larger amount of pharmeceutical, crude, and sunrotted cod-liver oil from Canada each year from 1958-1960--amounted to 6.8 million pounds in 1960. Purchases of Canadian industrial herring oil and whale oil by the United States dropped off in 1960. United States purchases of Canadian fish oil declined from 48,000 pounds in 1958, to 4,000 pounds in 1959, but increased to 226,000 pounds in 1960 (table 2).

Canadian marine oil imports amounted to 15.9 million pounds in 1958, 6.3 million pounds in 1959, and 12.4 million pounds in 1960. The drop in total imports in 1959 was mainly due to a sharp decline (about 9.6 million pounds) in the amount of fish oil imported from the United States. In 1960, the United States was was replaced by the United Kingdom as Can-

Canada (Contd.):

Table 2 - Canada's Marine Oil Exports by Country of Destination, 1960-1958

	1960	1959	1958
	(1,000 Pounds)		
Cod-Liver Oil, Pharmaceutical, Crude and Sunrotted:			
United States	6,829	6,484	4,261
United Kingdom	1,543	996	931
Others	-	3	-
Total	8,372	7,483	5,192
Herring Oil, Industrial:			
United States	60	564	-
United Kingdom	21,760	21,287	2,867
Netherlands	597	-	2,666
Western Germany	597	1,411	1,563
Others	14	-	-
Total	23,028	23,262	7,096
Whale Oil:			
United States	64	634	838
United Kingdom	-	1,822	2,523
Netherlands	-	942	-
El Salvador	-	815	-
Western Germany	-	582	-
Total	64	4,795	3,361
Fish Oil:			
United States	225	4	48
Others	1	1/	1/
Total	226	4	48
Total Exports	31,690	35,544	15,697

1/Less than 1,000 pounds.

ada's main source of whale and sperm oil; however, the United States still remains as Canada's leading supplier of fish oil. Canada imported an average of 5.4 million pounds of marine oils over the 5-year period 1950-1954 (table 3).

Table 3 - Canada's Marine Oil Imports by Country of Origin, 1958-1960

	1960	1959	1958
	(1,000 Pounds)		
Cod-Liver Oil:			
United States	-	-	-
United Kingdom	1,353	2,099	2,169
Iceland	-	-	10
Norway	122	71	39
Netherlands	-	30	-
Total	1,475	3,200	2,218
Whale & Sperm Oil:			
United States	264	190	98
United Kingdom	298	40	69
Norway	67	68	37
Total	629	298	204
Fish Oil:			
United States	10,198	3,647	13,201
Japan	55	175	242
Norway	24	7	13
Total	10,277	3,829	13,456
Total Imports	12,381	6,327	15,878

Use in Margarine and Shortening: The use of marine oils in the manufacture of margarine increased in 1958 as against the average of the 5-year period 1950-1954, declined in 1959, and declined somewhat further in 1960. There has been an increase in the use of vegetable oils, especially soybean, and an increase in the use of animal oils, such as lard, for margarine.

On the other hand, the use of marine oils in the manufacture of shortening increased somewhat in 1958 as against the 5-year average of 1950-1954, fell off critically in 1959, but recovered by some 2 million pounds in 1960 (table 4). Competition from soybean in 1961 for both margarine and shortening should not be as strong, since soybean has lost its price advantage.

Table 4 - Canada's Use of Marine Oils in Margarine and Shortening Production, 1958-1960 and 1956-1960 Average 1/

	1960 2/	1959	1958	5-Year Avg. 1956-60
	(1,000 Pounds)			
Margarine:				
Production	166,641	152,473	145,607	144,015
Marine oils used	12,386	12,777	19,806	15,775
Percentage of total oils used	9.1	10.4	16.8	13.8
Shortening:				
Production	164,423	160,876	163,288	159,575
Marine oils used	7,526	5,379	16,741	15,464
Percentage of total oils used	4.6	3.3	10.0	9.7

1/Refined-oil basis.
2/Preliminary.

Production: Canadian Atlantic coast production of marine oils did not fluctuate significantly from 1958 to 1960, when compared with the 5-year average of 1956-1960. A decline was evident in 1959, but a slight recovery occurred in 1960.

Table 5 - Canada's Production of Marine Oils, 1958-1960 and 1956-1960 Average

	1960	1959	1958	5-Year Avg. 1956-60
	(1,000 Pounds)			
Atlantic Production:				
Cod Oil	8,006	8,037	5,954	7,626
Other	4,589	4,358	7,538	5,934
Total	12,595	12,395	13,492	13,560
British Columbia Production:				
Herring oil	16,489	45,564	39,626	30,481
Total Production	29,084	57,959	53,118	44,041

West Coast or British Columbia marine oil production increased in 1958 and 1959 as compared with the 5-year average of 1956-1960, but declined substantially in 1960 due to heavy stocks, labor disputes, and limited activity in the herring fisheries (table 5). (U. S. Foreign Agricultural Service Report, Ottawa, April 14, 1961.)

Note: Also see Commercial Fisheries Review, April 1961 p. 48, August 1960 p. 44.

* * * * *

Canada (Contd.):

NEW BRUNSWICK FISH MEAL PRICES, MAY 1961:

Fish-meal prices (60-percent protein) quoted by the New Brunswick producers early in May 1961 averaged about C$102 a short ton ($1.70 a protein unit) for both exports and domestic sales. Due to short supply and good demand fish-meal prices have advanced steadily since February and as of early May were up about $20 a ton from the $81-84 a ton ($1.35-1.40 a protein unit) quoted by producers in mid-February this year. (United States Consulate, Saint John, N. B., May 12, 1961.)

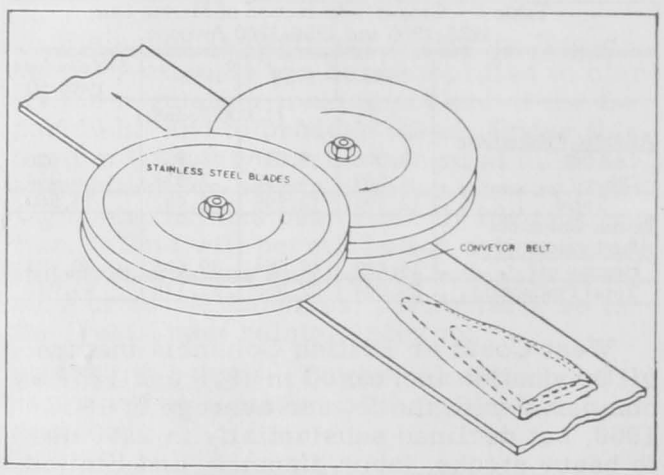
* * * * *

NEW SLICING MACHINE FOR LARGE COD FILLETS DEVELOPED:

Experiments by the Halifax Technological Station of the Fisheries Research Board of Canada have shown that a substantial increase in the efficiency of candling cod fillets for parasites can be expected if the fillets are first sliced longitudinally into slices a half inch thick before candling. A machine to perform this task of slicing the cod fillets into suitably sized slices has been designed and developed at the Station.

The first machine designed at the Station was a large machine measuring approximately 7 feet long by 10 feet wide, and was constructed of aluminum and steel.

The cutting mechanism of this slicing machine was a multiple-band knife, in which four knives were crossed to form a figure "8." Each knife made two cuts, one from left to right, and one from right to left. Thus the tendency for the fillets to be pulled to either side of the conveyor belt was eliminated.



Drawing showing blade arrangement on fillet slicing machine.

The fillets were fed to the cutting mechanism by a 24-inch wide white rubber conveyor belt. As the belt approached the knives, it turned downward at an angle of 45-degrees in order that gravity could assist the friction of the fillet on the conveyor belt in pushing the fillet through the band knives. Water sprays were used both to lubricate the band knives and to keep the conveyor belt free of particles of fish. Hardened steel guides kept the knives at the proper spacing. The bearings used were standard ball bearings for the knife pulleys and babbit bearings for the conveyor system.

Tests on the machine were carried out in various fish plants in Prince Edward Island and Nova Scotia. On the basis of the tests, it was decided that this machine was larger than desirable and that a smaller machine requiring less maintenance to the cutting mechanism would be advantageous in adapting the slicing machine to existing cutting lines. Accordingly, work was started on the design and construction of a more compact machine employing circular knives in place of the previously used multiple-band knives. This machine was the prototype for the present fillet slicing machine.

The frame of the fillet slicing machine is constructed of two sides cut from 1/4-inch-thick aluminum 65ST alloy plate, mounted side by side with front, bottom, and rear panels bolted together with 2-inch by 2-inch aluminum angle gussets. This forms a box-like structure upon which bearings, conveyor belt, and knives, etc. are mounted. All joints are sealed with an aluminum-asphalt type of cement and a drain pipe is provided in the bottom to lead off water used for lubrication of knives and clearing the conveyor belt.

The frame is supported on a single leg of 9-inch diameter aluminum tubing which is, in turn, welded to a base of aluminum plate. The height of this stand is such that the working surface of the feed conveyor belt is 36 inches above floor level. The stand is bolted to the frame with four aluminum bolts so that it can be removed for shipment.

There are two 8-inch wide white rubber conveyor belts. The first, or feed belt, feeds the fillets tail first, skin side down, into the rotating knives at a speed of 48 feet per minute. The second belt serves to remove the sliced fillets from the machine and convey them either to another belt, water trough, or other containers. The elevation angle of the discharge conveyor may be adjusted from horizontal to a maximum of 30 degrees.

Bolt belts are driven from the same 1/4-hp. totally enclosed gear motor by two $\frac{1}{2}$-inch pitch-chain drives, one going to the drive pulley of each conveyor. All shafts used in the conveyor system are 18.8 alloy stainless steel.

The bearings used for the conveyor system are of stainless steel construction, with an easily replaced, inexpensive liner of nylon forming the bearing surface. These bearings will operate satisfactorily with oil, grease, or water as the lubricant or if necessary without lubrication, with no danger of damage to shaft or bearing. Nylon bearings seem to be well suited for operation under wet or corrosive conditions such as are often found in fish cutting plants.

On the sides of the frame, the shafts and bearings for the rotary knives are bolted vertically. These consist of two cast aluminum housings supporting stainless steel shafts with two ball bearings each. Three 15-inch-diameter No. 420 stainless steel circular knives are attached to the top of each shaft with spacers fitted between the blades to keep them $\frac{1}{2}$ inch apart. The two sets of knives overlap by $3\frac{1}{2}$ inches. All the knives have single-bevelled cutting edges and are so arranged that the unbevelled sides of opposing blades rub lightly giving a cutting action similar to a pair of scissors, thus reducing the tendency of the blades to throw the fillet in the direction of rotation of the blades. The blades are lubricated with water to further reduce this tendency. The lower ends of the shafts are joined by a pair of spur gears to ensure that both blades turn at the same speed of 220 r.p.m. and in the correct direction relative to each other. One shaft is extended to accept a 12-inch-diameter V-belt pulley driven from a 1-hp. 1150-r.p.m. totally enclosed electric motor mounted vertically on the side of the machine.

Before assembly all aluminum components were degreased with trichlorethylene and given a phosphoric acid etch. This was followed by a thin coat of zinc chromate primer sprayed over the metal. The machine was then assembled and received one coat of alunimum paint and a finish coat of white enamel.

Tests have shown that approximately 80 percent of the large fillets split with this machine would be suitable for sale as fresh or frozen fillets. The remaining 20 percent, being for the most part small pieces cut from the top of the fillet, would be suitable only for use in fish blocks for use in the

Canada (Contd.):

manufacture of fish sticks. The assessment is arbitrary and would depend upon the size of package, market, and to some extent on the policy of the producer. (Canadian Fisherman, April 1961.)

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PRICES FOR BRITISH COLUMBIA HERRING OIL AT TORONTO, JANUARY 1960-MARCH 1961:

The following prices for British Columbia herring oil delivered at Toronto, Canada, were furnished on May 5, 1961, by the United States Foreign Agricultural Service in Ottawa: In Canadian cents per pound: 1960: January 8.58; February 8.32; March 8.25; October, November, and December 8.93. 1961: January 9.07; February 9.57; and March 9.67. (U. S. Foreign Agricultural Service Report, Ottawa, May 5, 1961.)

* * * * *

STUDIES INDICATE "WETNESS" IN FISH FILLET BLOCKS DUE TO POOR DRAINING BEFORE FREEZING:

Many Canadian plant operators have trouble in producing fish fillet blocks for eventual use as fish sticks. Fish stick processors claim the blocks are too "wet" and that there is too great a loss in broken sticks during frying and packing. What is the source of this "wetness"? And how does it affect the fish sticks so that they are more fragile and easily broken?

The most obvious answer to the first question is the drip which is present in varying degrees in all frozen fish. This drip is the excess water which drips out of a piece of frozen fish on thawing and which is not absorbed by the tissues. In a freshly frozen good quality fish it may be less than 5 percent, but in one stored for several months at too high temperatures, it may be as high as 40 percent or even higher. It will be less in good quality fish than it will be with poor-quality fish. Slow freezing results in much more drip than rapid freezing. It used to be thought that this was because the slower rate of freezing resulted in the build-up of large ice crystals which then allowed the drip to escape on thawing. However, the real factor is the ability of the proteins to re-absorb the fluid released by the melting of ice crystals during thawing of the muscle tissue. Most fish muscle tissue contains about 80 percent water but only about 18 percent protein. Such factors as slow freezing, long storage, storage at temperatures above about 0° F., drying out or freezer burn, all damage the protein, and decrease its capacity to hold water.

These factors are those which affect the storage quality of frozen fish. The damage to the protein results in less moisture-holding capacity with increased drip and a parallel deterioration in texture, or increased toughness. As a result, when the sticks cut from these stored blocks are fried, considerable drip may be formed. This will result in some wetness and softness but since the protein will be tougher, the only effect should be to reduce the eating quality of the sticks rather than increase the incidence of broken sticks.

Drip may be almost eliminated by giving the fillets a brine dip prior to freezing. After a few seconds in brine, half saturated or less, the fillets absorb sufficient salt to increase the affinity of the muscle proteins for water. This effect is retained in the frozen product, and the drip during thawing is reduced to less than five percent unless very poor freezing and storage conditions are used. The use of brining, however, has declined in recent years. One reason may be that since much frozen fish is now cooked without prior thawing, the disadvantages of drip is avoided. Another is its tendency to promote fat oxidation and rancidity, which may become serious on long storage, or with fatty species. Brining, however, does eliminate the drip problem and should be useful in the non-fatty species where long storage is not required.

Considering this, it is necessary to look further for the main cause of broken fish sticks. Perhaps the answer may be found by taking a look at a typical fish block processing and packing line. As the fillets come from the skinning machines, they are usually quite wet. They may be carried in flumes and may also pass through a tank of brine or antibiotic before they arrive at the packing table. Almost always they accumulate somewhere along the way in piles, and inspection will show that the fish in draining build up puddles of fluid which does not runoff. They are put into the trays, which in the case of blocks are usually about 2 inches thick, about 11½ inches wide, and 21 inches long, holding about 17 pounds of fillets. Further draining occurs at this point, and a visible development of small and large water pockets may be observed among the fish in the tray. The extent of ac-

Canada (Contd.):

cumulation of this water obviously depends on the amount of draining of the fillets prior to being packed. But it also depends on the time elapsing between packing and going into the freezer. It is influenced also by the quality of the fish, a soft fish draining much more than a good-quality firm fish.

The measures necessary to minimize this formation of water pockets in the blocks are: (1) the fillets should be allowed to drain adequately before being packed. This can only be done in single layers, probably best on screens of some type if satisfactory sanitary measures can be found. (2) the trays should go immediately into the freezer after packing so that there is no time for drip formation and water build-up to occur in the blocks. In practice, the stringency of the measures to be employed will be governed by the type and quality of the fish being processed.

A question that comes up is, what happens to this water when the blocks are frozen? If there is a lot of drip and excess water, some of the juice gets squeezed out during the freezing between the edges of the cartons, and onto the plates. Deformation of the cartons may occur; the cartons and the freezers become very messy. Examination of the forzen blocks where excess water was allowed to accumulate will show ice pockets of varying size, sometimes 2 or 3 inches square, and $\frac{1}{2}$ inch or more in thickness. This, however, is of little concern to the operator at this stage--but what of the fish stick frying operator? He saws up the blocks, ice as well as fish, breads and batters the sticks, and fries them. But now the ice melts. Some sticks will have only water in one end or the other, but more may have a layer of ice between pieces of fillet causing them to separate and the sticks to break apart. Thus a much greater loss due to broken sticks will result than if good blocks were used. This is the most important cause for the complaints about "wet" fish blocks, and why the block-producing plants must strive to lessen the accumulation of liquid in the blocks just prior to freezing.

--By W. J. Dyer, Biochemist,
Halifax Technological Station
Fisheries Research Board of Canada,
(Trade News, November 1960.)

Chile

FISH MEAL AND OIL EXPORTS INCREASED SHARPLY IN 1960:

In 1960, Chile exported a record quantity of fish meal and its first sizable tonnage of fish oil. Fish meal exports in 1960 exceeded 31,000 short tons--an increase of 60 percent from 1959. Two-thirds of 1960 exports went to the United States.

Chilean Exports of Fish Meal by Destination, 1954-1960

Year	United States	Western Europe	Other	Total
	(Short Tons)			
1960	20,971	9,928	136	31,035
1959	7,159	10,000	1,903	19,062
1958	6,958	2,424	950	10,332
1957	1,160	3,696	111	4,967
1956	1,188	3,326	-	4,514
1955	5,918	3,621	-	9,539
1954	66	1,463	-	1,529

Chile exported substantial quantities of fish oil in 1960 for the first time. Shipments totaled 6,585 tons as compared with only 65 tons in 1959. Virtually all of 1960 exports went to Western Europe, principally to the United Kingdom, West Germany, and Norway. (Foreign Crops and Markets, U. S. Department of Agriculture, April 10, 1961.)

Note: Also see Commercial Fisheries Review, May 1961 p. 45.

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PRODUCTION, AND EXPORTS OF WHALE OIL, FISH OIL, AND FISH MEAL:

Chile's production of whale oil decreased from 7,409 metric tons in 1959 to 7,049 tons in 1960. Production is expected to increase to 7,500 tons in 1961. Domestic consumption of whale oil decreased sharply in 1960 as compared with 1959, while exports were up--but

Table 1 - Chile's Production and Disposition of Whale Oil, 1959-1961

Item	1961 (Forecast)	1960 (Preliminary)	1959 (Revised)
	(Metric Tons)		
Production	7,500	7,049	7,409
Disposition:			
Exports	2,000	1,769	260
Domestic disappearance 1/	5,500	5,280	7,149
Total Disposition	7,500	7,049	7,409

1/Breakdown into edible and industrial not available; mostly used for domestic margarine production.

Note: (1) Marketing season begins January 1.
(2) Imports negligible and not listed; stocks data unavailable.

both are expected to increase slightly in 1961, (table 1). Of the total 1,769 tons of whale oil exported in 1960, 1,071 tons went to the United Kingdom, 556 tons to the Netherlands, and 142 tons to West Germany. These were Chile's largest whale oil exports in several years.

Chile (Contd.):

Total whale oil exports may amount to 2,000 tons in 1961. Chile exported 200 tons of whale meal in 1960, all of which was shipped to the United Kingdom.

Table 2 - Chile's Landings of Whales by Species, 1959-1960

Species	1960	1959
	(Number)	
Blue whale	131	80
Finback	52	70
Humpback	2	3
Sei whale	13	17
Right whale	-	1
Sperm whale	1,886	2,062
Total	2,084	2,233

The total number of whales captured fell from 2,233 in 1959 to 2,084 in 1960. A decrease in the number of sperm whales captured was the principal reason for this decline (table 2).

Table 3 - Oil and Other Products Obtained from Chilean Whale Catch, 1959-1960

Product	1960	1959
	(Metric Tons)	
Sperm oil	5,641	6,435
Whale oil	1,408	974
Total oil	7,049	7,409
Meat	200	250
Whale meal	1,400	1,500
Bone oil1/	2,000	1,900

1/Principally from whales, but includes an unspecified quantity of bone oil from other marine animals.

Chile utilized her whale catch for the production of sperm oil, whale oil, meat, meal, and bone oil, but due to the drop in the whales taken in 1960, production of those products also decreased (table 3).

Chile's production of fish oil in 1960 was estimated at 2,534 tons as compared with 1,403 tons in 1959. There were no imports of fish oil either in 1959 or in 1960. In 1960, Chile exported 3,054 tons of fish oil. The United States was the least important buyer, purchasing only 201 tons (table 4). On the other hand, the United States was by far the most important buyer of Chilean fish meal with 12,018 tons out of a total 18,435 tons exported. This was a large increase over 1959, when the United States bought only 3,508 tons (table 5).

Table 4 - Chile's Exports of Fish Oil by Country of Destination, 1960

Destination	Quantity
	Metric Tons
United States	201
Germany	1,267
Norway	911
Denmark	675
Total	3,054

Chile's 1960 production of fish meal more than doubled that of 1958, increasing from 18,779 tons to 38,686 tons. Most of this increased production was consumed domestically in 1959 and 1960; however, exports increased sharply in 1960, rising to 18,436 tons.

Table 5 - Chile's Exports of Fish Meal by Country of Destination, 1959-1960

Destination	1960	1959
	(Metric Tons)	
United States	12,018	3,508
Belgium	450	491
Bolivia	2	1
France	900	-
Germany	905	3,121
Italy	750	-
Netherland	1,750	3,227
Mexico	100	300
Spain	1,500	-
United Kingdom	60	-
Venezuela	-	1,016
Total	18,435	11,664

Table 6 - Chile's Production, Consumption, and Exports of Fish Meal, 1958-1960

Year	Production	Domestic Consumption	Exports
		(Metric Tons)	
1960	38,686	20,250	18,436
1959	30,673	19,007	11,666
1958	18,779	9,373	9,046

There were no imports of fish meal in 1960. The total amount of fish meal to be exported in 1961 is expected to amount to 20,000 tons. (U. S. Foreign Agricultural Service Report Santiago, April 14, 1961.)

Costa Rica

FISHERMEN'S COOPERATIVE ESTABLISHED:

Sixty independent fishermen at Puerto Limon on Costa Rica's Caribbean Coast have formed a cooperative to be known as the "Cooperativa de Pesca de la Zona Atlantica." The provisional President and Secretary of the cooperative are two Costa Ricans of Chinese descent.

The cooperative was formed in January this year, but only now are the members actively attempting to implement the objectives of the group. It is the intent of the cooperative to develop fishing for spiny lobster to a much greater extent and, also, to assist the Government in the enforcement of conservation measures which it has promulgated to assure that the spiny lobster fishery will not be needlessly ruined by careless exploitation.

It is probable that the members of this cooperative will constitute a potential market

Costa Rica (Contd.):

for small marine engines, vessel hardware, and other products. Each of the 60 members of the cooperative owns his own vessel, and many of them are either planning or in the process of building new and larger vessels. (United States Embassy in San Jose, April 14, 1961.)

Denmark

FISH FILLETS AND BYPRODUCTS EXPORTS, JANUARY-FEBRUARY 1961:

Denmark's exports of fresh and frozen fish fillets and blocks in the first two months of 1961 totaled 11.4 million pounds, an increase of 97 percent as compared with the same period in 1960. Exports of cod and related species during the period were up 72 percent, and flounder and sole increased 67 percent from the same period in 1960. Herring added to the increased 1961 exports as none were shipped during the comparable period in 1960. Denmark shipped 1.1 million pounds of frozen fish fillets and blocks (almost entirely cod and related species) to the United States during the first two months of 1961.

Denmark's Exports of Fresh and Frozen Fish Fillets and Blocks, and Byproducts, January-February 1961

Product	January-February	
	1961	1960
	(1,000 Lbs.)	
Frozen Fillets and Blocks:		
Cod & related species	6,356	3,700
Flounder & sole	3,033	1,817
Herring	1,862	-
Other	136	258
Total	11,387	5,775
	(Short Tons)	
Byproducts:		
Fish meal, fish solubles, and similar products	5,182	4,672

Note: Shipments from the Faroe Islands and Greenland direct to foreign countries not included.

During January-February 1961, Denmark's exports of fish meal, solubles, and similar products were 11 percent more than the comparable two months in 1960.

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FISH MEAL AND SOLUBLES PRICES, APRIL 1-8, 1961:

During the week ending April 8, 1961, the only export order for Danish fish meal was a large order from Poland at 890 kroner a metric ton (US$117.07 a short ton) f.o.b. Esbjerg, the same price as was reported early in March for a similar order.

Moderate sales of fish solubles averaged 715 kroner a metric ton ($94.06 a short ton). This price represented a substantial increase over a late February price of about $68.40 a short ton. (United States Embassy, Copenhagen, May 12, 1961.)

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FISH-MEAL PRICE JUMPS DUE TO DEFAULT ON FUTURE CONTRACTS:

Due to the sudden bankruptcy of a Portuguese supplier of Peruvian fish meal on the Dutch market, the Dutch importer who had contracted with this firm for the delivery of 180,000 metric tons of fish meal during 1961 at a price of US$0.16 per 100 kilograms per 1 percent protein content ($94.35 a short ton, 65 percent protein) is now in serious difficulties because the importer is under contractural obligation to supply that amount at that price to Dutch end-users. Dutch fish-meal prices rose in a few days following this announcement to $0.24 per 100 kilograms per 1 percent protein content ($141.52 a short ton, 65 percent protein). Local fish meal traders predict that the cancellation of this large order will be a boost for Danish fish-meal production which has been extremely low in recent years because of competition from Peruvian fish-meal supplies. (United States Embassy, The Hague, Netherlands, May 2, 1961.)

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FISHERIES TRENDS, FIRST QUARTER 1961:

Better foreign demand for herring and other fish meals has improved expectations for Denmark's industrial fisheries. First quarter 1961 exports of fish meal were about 75 percent above the exports during the first quarter of 1960, and futures prices had jumped to 850 kroner per metric ton (US$111.37 a short ton) from the 700 kroner (US$91.72 a short ton) level which prevailed in the first part of 1961. The winter herring catch was running slightly ahead of 1960, as were the catches of most varieties of both industrial and food fish. Shipments of fresh and frozen fish were up about 20 percent.

With ever-growing demand for food fish, and with prospects for some recovery in the fish meal sector, Danish fishing circles now

Denmark (Contd.):

predict that 1961 output may reach the record 1959 level. At the same time they continue to press for action that will both expand and insure a continued market for those products within the European Economic Community.

First quarter 1961 exports of Faroe Islands' fish were slightly in excess of those recorded during the same period in the prosperous year of 1960. Meanwhile, the Greenland Trade Department was readying plans for increasing output of Greenland fish and shrimp during the forthcoming summer season. However, the current transportation strike may prevent construction of shrimp processing and freezing plants in Greenland during the coming summer as has been planned. (United Embassy in Copenhagen, April 19, 1961.)

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FOURTH INTERNATIONAL FISHERIES TRADE FAIR, 1962:

The 4th International Fisheries Trade Fair is scheduled in Copenhagen for April 14-23, 1962. As of early 1961 ten nations were represented among the firms who had already booked exhibition space.

The fisheries trades and the fishing industries are still the center of a whole group of interests to be represented in the Fair. A very comprehensive display of the newest developments in vessel motors will be shown.

The Fair is backed by the Danish Fisheries Council and the Chamber of Manufacturers. Details on the Fair are available from the International Trade Fair, Puggaardsgade 10, Copenhagen V, Denmark.

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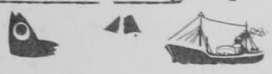
SINGLE-BOAT FLOATING TRAWL EXPERIMENTS:

The Danish fish cutter Akaroa of 90 tons arrived in Norway with two Esbjerg fishermen to initiate experimental fishing to test a new type of single-boat floating trawl. The tests, which will take place on the grounds off Egersund, Norway, are supported by the Danish Ministry of Fisheries, which, according to the newspaper Vestkysten, has made available a guarantee of Kr. 20,000 (US$2,900)--Fiskets Gang, April 13, 1961.



Ecuador

SHRIMP EXPORTS, FIRST QUARTER 1960 AND 1961:

During the first three months of 1961 Ecuador exported about 1,391,000 pounds of shrimp. This amount was about 3.3 percent higher than the 1,347,000 pounds exported in the first quarter of 1960. The exports by months for the first three months of 1961 were: January 476,000 pounds, February 452,000 pounds, and March 463,000 pounds. (United States Embassy in Quito, May 1, 1961.)

France

FISH MEAL AND OIL PRICES, APRIL 1961:

Average fish meal and oil prices reported for April 1961 by the head of the French Fish Meal Manufacturers Association were as follows:

Fish Meal	Protein Content (%)	NF/Metric Ton	US$/Short Ton
French fish meal 1/	55	500	91.92
" " " 1/	60	540	99.27
" " " 1/	65	620	113.93
Peruvian fish meal 2/	60-65	590-600	108.42-110.25
Angola fish meal 2/	65	580-590	106.58-108.42
Norwegian herring meal 2/	73	730-750	134.14-137.82
Fish Oil	**Fatty Acid Content (%)**	**NF/Metric Ton**	**US$/Short Ton**
French oil (herring):			
Dark	10	550	101.06
Light	5-6	600	110.25

1/Ex-plant loaded aboard car or truck, 15 metric tons minimum.
2/Loaded aboard car French port, customs paid, 15 metric tons minimum.
Note: Values converted at rate of 4.937 new francs equal US$1.

(United States Embassy in Paris, May 19, 1961.)

German Federal Republic

COMPANY DEVELOPS FREEZING UNIT FOR FACTORYSHIP TRAWLERS:

A West German company in Bremerhaven has developed a new belt system for the continuous freezing of fish aboard its factory trawlers. The German company claims that the new equipment will contribute significantly to the efficiency of its trawler operations.

The freezing machine is built in the form of a tunnel, about 40 feet long, 8 feet wide, and 4.5 feet high. Within the freezing tunnel, two synchronized bracket-joint chain belts are rotated by a variable gear, powered by an electric motor of 0.6 hp., which permits the adjustment of the belt speed from 27 to 216 minutes per complete revolution. The two belts carry a total of 260 compartments (each about 4 inch-

German Federal Republic (Contd.):

es wide, 7 inches deep, and 59 inches long) formed by removable aluminum plates mounted on the bracket joints of the belts. Viewed from the side, the compartments have the form of a square-cornered U.

The fish placed in these compartments freeze quickly to the walls of the aluminum plates. The rear cog wheels moving the belts are constructed to permit the compartments to retain their U-shape while changing direction. This prevents the frozen fish from dropping out. When the compartments return to the front of the tunnel, they run over round cog wheels which cause the walls of the compartments to spread and change their form from a U-shape to a W-shape, thus shaking out the frozen fish over the discharge chute.

The compartments can also be divided into two sections, each to be filled with about 10 pounds of herring emersed beforehand in an alginate solution to prevent the herring from becoming rancid and drying out. The blocs of frozen herring thus obtained are again treated with the alginate solution before storage, as a supplementary precaution.

The compartments can also be removed completely and a plastic band installed to permit the individual freezing of filleted herring, which reportedly will then be vacuum-packed in transparent plastic bags. The fillets will drop from the plastic band at the end of the tunnel. They are pushed by plates mounted on the belts along the smooth bottom of the tunnel to the discharge chute at the tunnel's front.

The freezer tunnel is equipped with four steel laminar evaporators with an evaporating surface of 295 square

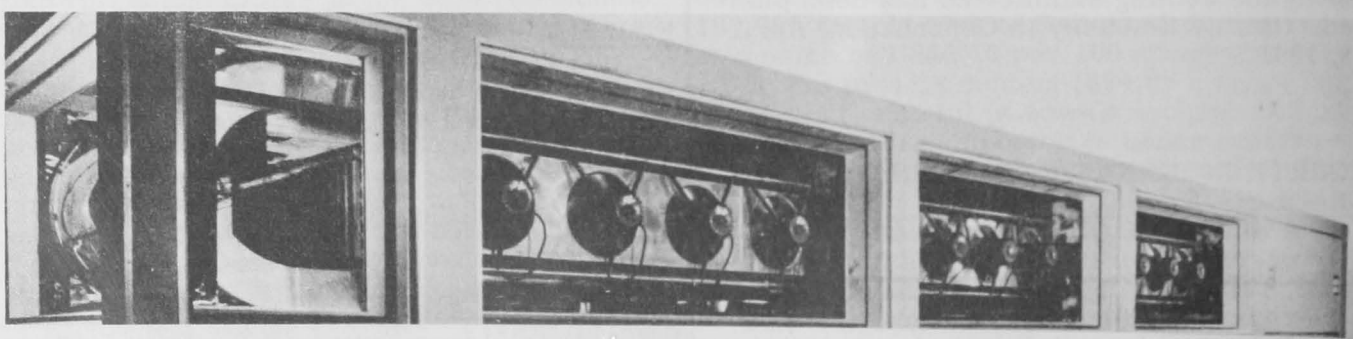


Fig. 1 - Over-all view of freezer tunnel for the continuous freezing of fish aboard factory trawlers.

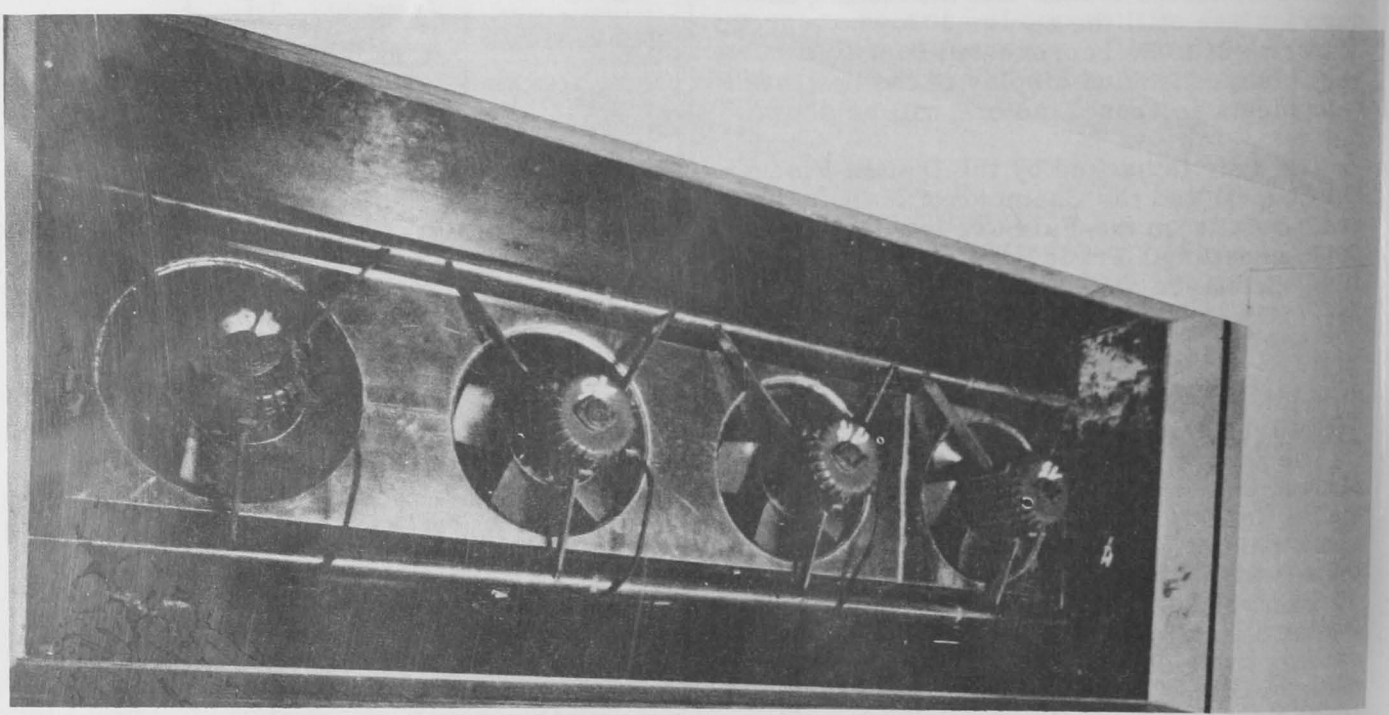


Fig. 2 - Close-up of one section of freezer tunnel.

German Federal Republic (Contd.):

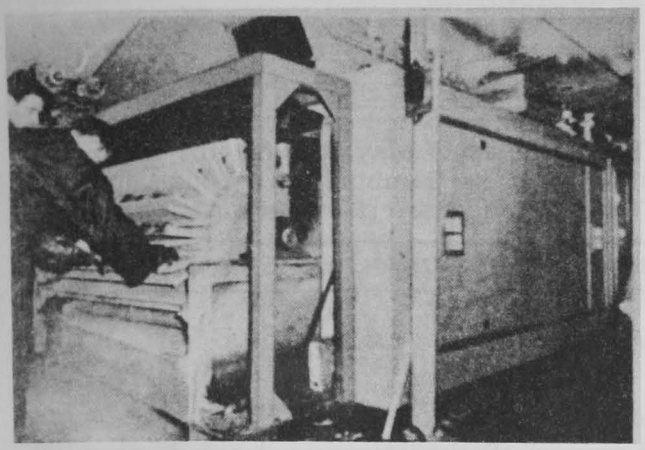


Fig. 3 - Inserting fish in removable aluminum plate compartments.

meters each, capable of reducing the air temperature in the tunnel to -30° C. (-22° F.). Four electric fans with a capacity of 7,100 cubic meters (250,737 cubic feet) per hour (required power 1.6 kw.) installed in front of the evaporators circulate the cold air around the belts carrying the fish. The maximum freezing capacity of the new equipment is stated to be 0.85 metric ton (about 1,874 pounds) of fish per hour, based on reducing the temperature in the core of the fish to -10° C. (14.3° F.).

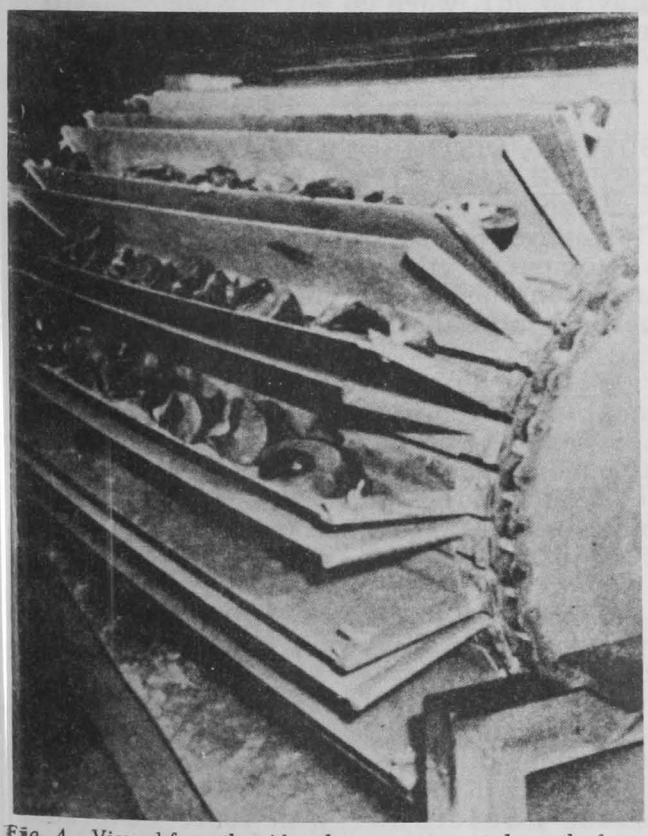


Fig. 4 - Viewed from the side, the compartments have the form of a square-corned V.

The West German company attaches much importance to the fact that the new equipment can be adapted to the freezing of herring fillets because it will permit the use of factory trawlers in the herring fishery. Previously, the trade held the conviction that factory trawlers could be operated profitably only in the white fish fishery in distant waters. Employing the new method of freezing filleted herring, however, factoryships will reportedly be able to land about 500 metric tons of high-quality herring fillets. The factoryship trawler has the added advantage of being able to process herring so fast through two filleting machines (at the rate of about 1.2 tons of round herring per hour) that it must be supplied part of the fish caught by other fishing boats.

The German company states that the cost of the new machine is about DM 330,000 (US$82,500), and that its installation aboard a trawler should amount to approximately 8 percent of the construction cost. The firm has applied for a patent on the freezer. (United States Consulate General, Bremen, April 12, 1961.)

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DEVELOPMENTS IN FROZEN FOODS MARKETING:

At the annual meeting of the German Frozen Food Institute held April 18-19, 1961, in Wiesbaden, the growing importance of food preservation through freezing was discussed. The individual working committees of the Institute discussed some of the pending problems, and prepared drafts on: (a) directives on the handling of frozen food at all trade levels; (b) directives on temperature control in frozen food storage installations; (c) foundation of a voluntary quality control committee which will supply information and advice to the frozen food trade as well as to consumers (committee will receive financial support from the German Federal Food and Agriculture Ministry); (d) extension of advertising and public relation work; and (e) establishment of quality grades and standards for frozen food products.

From experiences in the German frozen food market during recent years, future market and consumption trends predicted by the market research experts of the Frozen Food Institute were:

1. The increase in frozen food sales is no longer in conformity with the growth in the number of frozen food cabinets in stores. That means sales are now growing faster than the number of cabinets available. This development resulted from increased advertising, growing popularity, and improved and enlarged displays of frozen food products in the shops. The distribution of frozen food cabinets in store is presently undergoing a change.

German Federal Republic (Contd.):

The early development stage, when more and more retail stores newly installed one smaller or larger display and sales cabinet, is now being followed by the second stage where the shops with already existing installations are increasing their frozen food storage and display space by setting up second and third cabinets. The increased space will be primarily used for the necessarily larger supply of poultry.

2. A new development is also in sight with regard to the shipping and distribution of frozen food within Germany. A number of potent enterprises have now specialized in the general transport of frozen food and special fast plant-to-store deliveries.

3. Fish consumption is expected to increase further. With the growing capacity of vessels with deep-freeze installations aboard, more domestic first-quality, sea-fresh fish products will become available in areas far away from the coast. In addition to the growing German production, it is expected that frozen fish imports from the Scandinavian countries will increase considerably.

West Germany consumed 5,100 metric tons (5,622 short tons) of frozen fishery products valued at DM10 million (US$239,800) in 1960 as compared with 3,000 metric tons (3,307 short tons) valued at DM6 million (US$143,900) in 1959.

4. Market developments for precooked, ready-to-serve products are hard to predict. These food items are fairly new in the German market, particularly in frozen form. However, an increased number of firms has recently taken up the production of frozen "heat'n eat" products. (U. S. Foreign Agricultural Service Report, Bonn, May 4, 1961.)

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FISH MEAL PRICES, MAY 7, 1961:

Prices reported at Hamburg Commodity Exchange as of May 7, 1961, for fish meal delivered ex-Hamburg warehouse, or c.&f. West German sea port were as follows:

Type of Fish Meal	Protein Content (%)	Delivery	DM/Metric Ton	US$/Short Ton
German fish meal.....	50-55	prompt/June 1961	500	113.40
" " "	55-60	" " "	520	117.94
" " "	60-65	" " "	540	122.47
" " " Std. brands	60-65	May "	597.5	135.51
Icelandic cod meal.....	65-70	" "	615	139.48
Peruvian fish meal.....	65-70	" "	530	120.20
" " "	65-70	June-July "	540	122.47
" " "	65-70	Aug.-Dec. "	550	124.74
Danish herring meal	72-75	May "	610	138.35
" " "	72-75	June-Sept. "	602.5	136.65
Angola fish meal	65-70	May "	547.5	124.17

Note: Values converted at rate of 4.0 deutsche marks equal US$1.

As compared with April 7, 1961, fish-meal prices on the Hamburg exchange on May 7, 1961, were up sharply for domestic and Peruvian fish meal.

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SUPPLY, DISTRIBUTION, AND PRICES OF FISH MEAL, 1959-1960:

Despite a 12-percent decrease in West Germany's total fish meal production in 1960 as compared with 1959, the supply and distribution increased. This was due to a 21-percent increase in imports (see table 1).

Foreign Trade: Imports of Peruvian fish meal increased to 133,000 metric tons in 1960--about one-half more than in 1959. This amount represented more than two-thirds of total fish meal imported in 1960. Total fish meal imports increased from 156,000 tons in 1959 to 197,000 tons in 1960.

From 1959 to 1960 total fish-meal exports remained small and were mostly to the Soviet Zone of Germany.

Consumption: Consumption of fish meal in Germany increased by 14 percent in 1959, 17 percent in 1960, and is expected to increase additionally in 1961. Favorable prices have induced German hog and chicken producers to use fish meal in feed rations.

German Federal Republic (Contd.):

Table 1 - West Germany's[1] Supply and Distribution of Fish Meal, 1959-1960

Year	Supply					Distribution		
	Beginning Year Stocks	Total Production	Production[2]	Imports	Total Supply	Exports[5]	Consumption	End Year Stocks
	(1,000 Metric Tons)							
1960:	6	82	78	197	285	7	277	1
Cod meal		3/13						
Fish meal		3/52						
Herring meal		3/13						
Other meal		4/ 4						
1959:	2	93	89	156	251	8	237	6
Cod meal		3/15						
Fish meal		3/53						
Herring meal		3/21						
Other meal		4/ 4						

1/Includes West Berlin; Saarland since July 1959.
2/Production in plants with more than 10 employees.
3/Requirements:

	Minimum Percent		Maximum Percent	
	Protein	Ca Phosphate	Fat	Salt
Cod meal	60	18	3	3
Fish meal	55	15	8	5
Herring meal	55	8	12	8

4/Including production from shrimp.
5/Including exports to Soviet Zone: Approximately 4,000 metric tons in 1960; approximately 7,000 metric tons in 1959.

Prices: With the exception of the latter half of 1958, Peruvian fish meal undersold German fish meal at Hamburg from mid-1957 through early 1961 (see fig. 1). Prices for both German and Peruvian meal fell sharply after May 1959, recovering briefly in late 1960, only to decline again early in 1961.

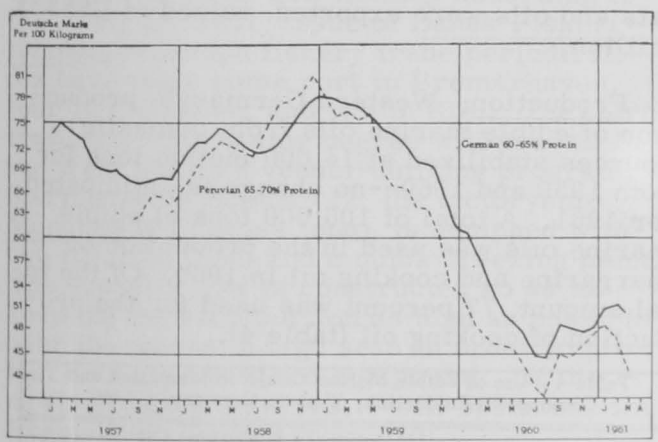

Fig. 1 - Prices of West German and Peruvian Fish Meal at Hamburg, Germany, 1957-March 1961.

Raw material available for fish meal production decreased by 14 percent from 1959 to 1960. Whole fish, herring waste, and other fish waste are used to produce German fish meal (see table 2).

Table 2 - West Germany's[1] Use of Whole Fish and Waste in Production[2] of Fish Meal and Fish Oil, 1959-1960

Item	1960	1959
	(Metric Tons)	
Whole fish	106,770	145,323
Herring waste	68,375	72,354
Other waste	170,045	176,178
Total	345,190	393,855

1/Includes West Berlin.
2/Production by plants with more than 10 employees.

Note: Also see Commercial Fisheries Review, August 1960 p. 49.

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FOREIGN TRADE, PRODUCTION, AND SUPPLY OF MARINE OILS, 1959-1960:

Foreign Trade: Imports of edible marine oils increased from 121,900 tons in 1959 to 127,700 tons in 1960. During that period, total imports of industrial marine oils decreased from 23,100 to 17,000 tons. But total imports of both edible and inedible oils remained constant at about 145,000 tons. The amount of all marine oils imported from the United States declined from 22,900 tons in 1959 to 16,300 tons in 1960 (see table 1). This total has steadily decreased since 1956, when it

Table 1 - West Germany's[1] Imports of Edible and Industrial Marine Oils[2], 1959-1960

Year & Product	Edible	Industrial	Total	Imported from U. S.[2]/		
				Quantity		Value
	(1,000 Metric Tons)			1,000 Metric Tons	Percentage of Total	US$1 Million
1960:						
Whale	69.8	9.8	79.6			
Other	57.9	7.2	65.1			
Total	127.7	17.0	144.7	3/16.3	11.3	2.6
1959:						
Whale	67.8	12.2	80.0			
Other	54.1	10.9	65.0			
Total	121.9	23.1	145.0	3/22.9	15.8	4.0

1/Includes Saarland since July 1959, and West Berlin.
2/Excludes fish-liver oils.
3/Mostly edible menhaden oil.

German Federal Republic (Contd.):

amounted to 39,000 tons. Germany's imports of marine oils from Peru have increased from 8,833 tons in 1959 to 19,200 tons in 1960. Due to the small catch of winter herring (the smallest in years), imports from Norway fell off in 1960. However, Norway was the greatest single source of liver oils in 1960, supplying 678 tons out of a total 1,510 tons. A total of 79,610 tons of whale oil and fat valued at US$16 million was imported by Germany in 1960; Japan, The Netherlands, and Norway supplied 76 percent of the imports.

Table 2 - West Germany's 1/ Imports and Exports of Specified Marine Oils and Fats, 1960

	Quantity	Value	
	Metric Tons	Deutsche Marks 1,000	US$ 1,000
LIVER OILS:			
Imports:			
Norway	678	685	164
Other	832	746	179
Total	1,510	1,431	343
Exports:			
Denmark	646	559	134
Switzerland	409	379	91
Other	1,015	967	232
Total	2,070	1,905	457
WHALE OIL AND WHALE FAT:			
Imports:			
United States	298	233	56
United Kingdom	341	346	83
Iceland	733	634	152
The Netherlands	14,515	11,788	2,826
Norway	13,951	11,718	2,809
Portugal	1,096	815	195
Soviet Union	7,489	6,260	1,501
Union of South Africa	1,150	821	197
Guayana, British	694	554	133
Peru	1,225	885	212
Japan	31,961	27,012	6,476
Australia	5,172	4,462	1,070
New Zealand	772	671	161
Other	213	378	91
Total	79,610	66,577	15,962
Exports	171	218	52
OTHER MARINE FATS AND OILS:			
Imports:			
United States	16,021	10,874	2,607
Denmark	2,921	1,873	449
United Kingdom	1,039	649	156
Iceland	1,355	889	213
The Netherlands	3,253	1,691	405
Norway	5,869	4,472	1,072
Portugal	2,578	1,505	361
Angola	5,332	3,244	778
Union of South Africa	1,334	924	222
Canada	2,232	1,629	391
Chile	1,606	995	239
Peru	19,200	12,154	2,913
Other	2,358	1,340	321
Total	65,098	42,239	10,127
Exports:			
Denmark	790	534	128
The Netherlands	2,795	1,742	418
Norway	12,126	7,856	1,883
Sweden	5,544	3,719	892
Other	429	359	86
Total	21,684	14,210	3,407

1/Includes West Berlin. Excludes Soviet Zone of Germany.
Note: Values converted at rate of 4.171 DM equal US$1.

Germany also imported 216 tons of spermaceti valued at DM 211,000 (US$50,587) and exported 23 tons valued at DM 70,000 (USR16,783). An additional 65,000 tons of other marine fats and oils were imported with a value of US$10 million (see table 2).

Germany's total exports of marine oils declined somewhat, from 27,400 tons in 1959 to 24,900 tons in 1960. During that period, exports of edible oils decreased from 26,000 to 20,900 tons, but exports of industrial oils increased from 1,400 to 4,000 tons (see table 3).

Table 3 - West Germany's 1/ Exports of Marine Oils, 1959-1960

Year & Product	Edible	Industrial	Total
	(1,000 Metric Tons)		
1960:			
Whale	-	3.2	2/ 3.2
Fish	20.9	0.8	21.7
Total	20.9	4.0	24.9
1959:			
Whale	-	0.1	0.1
Fish	26.0	1.3	27.3
Total	26.0	1.4	27.4

1/Includes West Berlin.
2/This disagrees with amount shown in table 2.

In 1960, exports of liver oils from Germany amounted to 2,070 tons, valued at US$457,000; Denmark and Switzerland were the main buyers. Germany's exports of whale oil were small in 1960, amounting to only 171 metric tons. A total of 21,684 tons of other marine fats and oils were exported, valued at US$3 million.

Production: Western Germany's production of edible marine oils from domestic sources stabilized at 14,000 metric tons for both 1959 and 1960--no change is anticipated for 1961. A total of 106,000 tons of edible marine oils was used in the production of margarine and cooking oil in 1960. Of the total amount, 77 percent was used for the production of cooking oil (table 4).

Table 4 - Use of Edible Marine Oils 1/ in Margarine and Cooking Oil Production, Western Germany 2/, 1960

Item	Margarine Production	Cooking Oil Production	Total
	(1,000 Metric Tons)		
Whale oil	8	53	61
Fish oil	16	29	45
Total	24	82	106

1/Refined oil equivalent.
2/Includes West Berlin.

Production of inedible marine oils amounted to only 1,000 tons in 1959 and 1960--no change is expected in 1961. Domestic production of total inedible marine fats and oils has remained small, accounting for only 6 percent of the total supply of those oils in 1960.

German Federal Republic (Contd.):

Total West German output of edible and inedible fish and marine oils declined from 24,325 tons in 1959 to 21,192 tons in 1960.

Supply and Distribution (Inedible Oils): Western Germany's total supply and distribution of industrial or inedible marine oils, used mostly (80 percent) for finishing leather, declined generally in 1960 as compared with 1959. Stocks were unchanged, while imports and domestic consumption dropped off. But exports increased (see table 5). (United States Embassy, Bonn, April 14, 1961.)

Note: See Commercial Fisheries Review, February 1961 p. 48.

Table 5 - West Germany's 1/ Supply and Distribution of Industrial or Inedible Marine Oils Only, 1959-1960

Year	Beginning Year Stocks	Production	Imports	Total Supply	Distribution		
					Exports	Consumption	End Year Stocks
	(1,000 Metric Tons)						
1960	1.0	1.0	17.0	19.0	4.0	14.0	1.0
1959	1.0	1.0	23.1	25.1	1.4	22.7	1.0

1/Includes Saarland since July 1959, and West Berlin.

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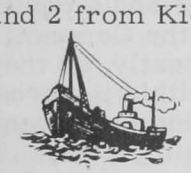
TWELVE LARGE STERN-TYPE TRAWLERS NOW FISHING:

Twelve large modern West German stern-type trawlers are now fishing, according to the April 21, 1961, issue of Dansk Fiskeritidende, a Danish fishery trade periodical. Six have their home port in Bremerhaven, four in Cuxhaven, and two in Kiel. The stern trawler in increasing degree will prevail in the West German vessel-building program. Stern trawler number 12, the factoryship Munchen (960 gross tons), is equipped with two filleting lines and a quick-freezing plant. The vessel's bow is constructed so as to keep the forward portion as high as possible over the waves in high seas in order to protect both the crew and equipment. Of the 11 newly ordered trawlers, 9 will operate from Bremerhaven and 2 from Kiel.



Greece

FISHERY LANDINGS, IMPORTS, AND CONSUMPTION, 1960:

Fishery landings in Greece in 1961 amounted to 90,000 metric tons. Of this amount, 8,000 tons was frozen fish landed by trawlers, 7,000 tons was canned or salted, and the balance of 75,000 tons was consumed as unprocessed fresh fish.

Imports of fishery products in 1960 totaled 30,000 tons and included 8,000 tons of frozen fish, 12,000 tons of salt cod, 6,000 tons of herring, and 4,000 tons of canned fish.

Apparent per capita consumption of fishery products in 1960 amounted to 14 kilos or about 31 pounds. (Alieia, April 1961.)

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SPONGE LANDINGS, 1960/61 SEASON:

During the 1960/61 sponge fishing season that ended in Greek waters on March 31, 1961, a total of 162,700 pounds were landed. The landings included 131,174 pounds from Cyrenacian waters, 25,353 pounds from Greek waters up to November 30, 1960, and 6,173 pounds from Greek waters during the December-March 1961 winter sponge fishing season. (Alieia, a Greek fishery periodical, April 1961.)

Greenland

NEW SHRIMP FISHING GROUND FOUND:

In the waters off Narssaq in South Greenland a new large shrimp fishing ground has been found. Greenland fishermen are enjoying record shrimp fishing, according to Dansk Fiskeritidende (March 24, 1961, issue). The cutters are landing up to 2,000 pounds of large deep-water shrimp daily, and an announcement over the Greenland radio directed all the shrimp cutters in North Greenland to Narssaq. Similarly, it has been necessary to hire additional shoreworkers in the shrimp plants to process the increased production. (Fiskets Gang, April 13, 1961.)

Iceland

ATTITUDE REGARDING THE COMMON MARKET AND EUROPEAN FREE TRADE ASSOCIATION:

Two interviews with Iceland's Minister of Commerce published by the newspaper Althydubladid in February 1961 show that Iceland has not reached any final conclusion as

Iceland (Contd.):

to whether she will join the European Common Market or the European Free Trade Association (EFTA). The Minister of Commerce pointed out that the very existence of these trading groups poses an increasingly serious problem to Iceland which depends very much on trade for its livelihood. He declared that Iceland's trading position would inevitably deteriorate if it continued to remain outside either group.

As the Minister explained in the interviews, many matters relating to trade in fish have not yet been definitely decided upon within either the Common Market or the EFTA. He believes Iceland should exert what influence it can within one of these organizations to obtain the freest possible trade arrangements for seafood products.

Although the growth of international trade has been far faster within the Common Market area and the population is greater than in the EFTA, the Minister pointed out that the practical possibilities for joining would be easier in the case of the EFTA than the Common Market.

He cited the fact that Icelandic Manufacturing industries are now run in large measure under the protection of high tariffs. Within the EFTA there was established a precedent for the protection of industry in small nations when Portugal received protectionary concessions upon joining the EFTA. No such precedent exists within the Common Market, however. Likewise in the case of Finland there was a precedent established for a country with a large Soviet Bloc trade in its association with the EFTA, despite its trade with the Eastern Bloc. Such an exception would likewise be necessary in the case of Iceland.

Once a member, the existence of majority rule within the Common Market and voting in proportion to size would mean that Iceland would have practically no influence within that organization. He said this was why countries such as Denmark and Norway did not want to join the Common Market. A more flexible organization like the EFTA, therefore, would appeal more to Iceland.

The Minister, in reply to a question, pointed out that in March 1957, representatives of 6 European states signed the Rome Treaty on the establishment of a Common Market. Parties to this treaty were France, Germany, Italy, Belgium, Holland, and Luxembourg. According to this treaty, all import duties and restrictions on trade among the member states are to be abolished in 12 to 15 years and a common import duty is to be set up in regard to other states. The objective of this Common Market or federation is, however, not only to create a big market, but also to promote political cooperation among the member states, it being provided that the leadership of the federation shall be able to make decisions, by a simple majority, which will be binding on individual member states.

To the question: What will be the effect of this Common Market on the foreign trade of Icelanders? The Minister stated that: "It is difficult to realize this fully as yet, because those rules which have been adopted bear first of all upon trade in manufactured goods. Agricultural produce and fish products are considered to be specially placed in many ways. It is anticipated that before the 12- or 15-year period is over, the Six-powers will have agreed upon a common policy in their agricultural and fishing matters." He pointed out that it is not yet known what that will be, but until this occurs one cannot say for sure what effect the Common Market will have on those countries which supply it with agricultural produce and fish products. The Common Market's common duty on fishery products has already been determined, and in general, is considered to be very high. Iceland's exports to the Six-power area are, chiefly cured saltfish and stockfish to Italy, iced fish to Germany, and frozen fish to France. The common duty will cause a considerable increase in the import duty to Germany, Belgium, and Holland, but a decrease in the duty to France. The import duty on saltfish and stockfish to Italy will increase. The main thing in connection with this change in duties is that Iceland's position to compete with producers in the Common Market area will deteriorate greatly, as they will be able to sell duty free within the area. Iceland and the countries outside the Common Market will have to bear a high duty. This is especially applicable to markets for frozen fish in those countries as the demand is expected to increase with expansion of frozen foods distribution. This will also be of considerable importance with respect to Iceland's saltfish exports to Italy.

With regards to the EFTA, the Minister stated that shortly after representatives of

Iceland (Contd.):

the six countries signed the treaty of Rome, discussions began within the OEEC, at the initiative of Britain, to the effect that all member states of the OEEC ought to set up a so-called European Free Market. But the main difference between a Free Market and a Common Market like the one the Six-powers established is that in a Free Market the member states only abolish duties and restrictions in their mutual trade, but do not set up a common duty in regard to other countries; on the contrary, the duties remain unaltered in regard to countries outside the Free Market. These Free Market discussions within the economic cooperation organization broke up at the end of 1958; France and Britain could not agree. France did not want to weaken the strong position it had acquired within the Common Market and Britain did not want to sacrifice its autonomy in commercial matters in the measure that France considered necessary, doubtless not at least in view of its ties to the Commonwealth. As soon as discussions within the OEEC ceased, discussions began among seven European states on the establishment of a free market among themselves; i.e., Britain, Sweden, Denmark, Norway, Switzerland, Austria, and Portugal. The delegates of those states signed a treaty on the establishment of a Free Trade Association in November 1959. The establishment of the European Free Trade Association is no doubt to be considered as a counter move to the establishment of the Common Market, and possibly the objective was to force the Six-powers to resume talks and to make some kind of agreement. But the European Free Trade Association is much smaller than the Common Market. The inhabitants of the Seven-powers are 110 millions, but the inhabitants of the Six-powers are 168 millions. On the other hand, the national income and foreign trade per capita of the Seven-powers are much greater than that of the Six-powers.

In reply to the question: What effect does the establishment of the European Free Trade Association have on the foreign trade of Icelanders? The Minister replied, "the duties of the Free Market countries on fishery products are not very high, but they are lower than those of the Common Market countries. The problems of agriculture and fishing within the European Free Trade Association are the same as those within the Common Market. They are considered as being of a special character, and decisions have not yet been made regarding arrangements to be adopted for the trade with fishery products other than meal, oil, canned fish, and frozen fillets, but the duties and restrictions on trade in those products will be abolished the same as for industrial goods. A decision on trade in other fishery products is still uncertain. This decision will largely depend on what differences there will be in the relation of producers within and without the European Free Market to trade in the area. Although the Free Market provisions are considered to apply to trade in frozen fish, it was pointed out that Great Britain did not commit itself to permitting imports of more than 24,000 tons a year at the lower duty, and reserved the right not to let the decrease in duty apply to frozen fillets if a basic change should take place in the position to compete, for example, owing to increased fishery jurisdiction."

The Icelandic Minister of Commerce stated that it could be said that the establishment of the European Free Trade Association has an unfavorable influence on Iceland's export trade, especially its exports to Great Britain of frozen fish, and iced fish, if they were resumed, and on its exports of saltfish to Portugal. He said it was difficult to make an exact statement until it is known what rules will apply to trade in all fishery products within the European Free Market. It is obvious, however, that the position of those who stand outside will always be worse than that of those who are within such combinations as the European Free Trade Association and the Common Market.

The Minister pointed out that originally it was expected that in the beginning of 1970 the Six would, in general, have abolished duties and restrictions on their internal trade and have established common duties externally. When the European Free Trade Association was established in September 1959, it set itself a corresponding goal as far as the abolition of duties and restrictions is concerned. But after the establishment of the European Free Trade Association, the Six decided to accelerate the abolition of duties and restrictions. On July 1, 1960, the European Free Trade Association countries decreased duties on manufactured goods by 20 percent and then adopted special rules to ensure that finished goods shall not get into the European Free Trade Association from countries outside the area, where duties are the lowest. At the same time, the internal import quota was increased by 20 percent. Then gradually duties are to

Iceland (Contd.):

be lowered and restrictions abolished according to certain rules so that the trade in the European Free Trade Association area will become entirely free by the beginning of 1970. The decision on accelerating decreases in duties and abolition of restrictions on the same lines as had been decided in the Common Market, meant the member states of the European Free Trade Association have surely intended to facilitate agreement between the trade federations, but the decision to hasten the decrease in duties and the abolition of the restrictions within the Common Market has no doubt increased the tension. Last January 1, the Six effected an internal duty reduction of 10 percent which, according to the original agreement, was not to be effected until January 1, 1962. At the same time the first alteration in duties was made, looking towards the eventual common outside tariff. At a meeting in Switzerland last October, ministers from the European Free Trade Association countries discussed the possibilities of hastening the implementation of the decrease in duties and the abolition of restrictions, in harmony with the plans of the Common Market. Britain and Sweden were probably of the opinion that this was necessary, but Denmark and Norway were against it. The ministers will meet again in February 1962 and it is not unlikely that they may determine to hasten the next 10 percent decrease in duties and to let it take place July 1, 1962.

The reason for these measures of the Six is, no doubt, not only that they wanted to fortify their position in relation to the Seven, but also that they wanted to accelerate the political unification of the countries, which is of no less importance in the cooperation of the Six than in commercial cooperation. Another primary reason is that a great investment has taken place in the Common Market area and the sooner the Common Market becomes a reality, the sooner this great investment will start to yield profits.

The Minister stated that neither market has as yet made any final decision on those items which are of the greatest concern to the commercial interests of Iceland; i.e., what rules shall apply to trade in fishery products. It is to the best interests of Iceland that trade in fishery products be as free as possible and that its products be sold where buyers need not pay higher duty on them than on the same kind of fishery products already on the market. The Common Market is bigger, but Iceland exports to the Free Trade Association have been greater. The mutual duty of the Common Market will be higher than the present duties of the Free Trade Association countries. Iceland's trading position could be improved more by joining the Common Market than the European Free Trade Association, but on the other hand, one should not regard these matters from the viewpoint of trading interests alone. The character of the Common Market is entirely different from that of the European Free Trade Association, as there is in the Common Market not only the question of a business cooperation, but also cooperation in many other fields as well.

The reorganized OEEC, now known as Organization for Economic Cooperation and Development, in Paris, to which the United States and Canada have now become parties, will no doubt become a center for discussing the problems which arises from the formation of the trade federations. When the new organization was founded last December, a decision was made to set up a special committee within the organization to deal with fishing; this will greatly facilitate promotion of Icelandic interests in this field within the new organization. As regards our facilities to influence other nations to lower their duties on fish products, I would mention, the Minister said, that Icelanders are not members of the international duty alliance, GATT. At the same time as we look into the possibilities of our joining the trade federations of Western Europe, we must also consider the possible advantage of becoming parties to international decreases in import duties on fishery products. (United States Embassy, Reykjavik, March 24, 1961.)

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FISHERY LANDINGS IN 1960 LOWER:

Icelandic fishery landings in 1960 for all species were about 10 percent less than in 1959 despite a considerable increase in 1960 in the number of new fishing vessels and heavy investment in gear and equipment. Total landings amounted to 513,744 metric tons in 1960, compared with 565,618 metric tons in 1959. The cod catch however, increased slightly over 1959, and the 1960 haddock landings were nearly double those in 1959. Ocean perch landings in 1960 were down to only about one-half the 1959 landings. The 1960 summer herring season failed, and yielded 50,000 tons less than in 1959.

India (Contd.):

ly prepared shrimp meal contains as high as 70 percent protein. This was mixed with flour, butter, sugar, baking powder, vanilla essence, eggs, lemon juice, milk, and salt, and beaten well. It was then rolled and cut into shape, using moulds, and baked at 175° to 190° C. (347°-374° F.) for 30 to 45 minutes. In one set of experiments, fried fish meal was used, and in another set, fresh fish meal was used. The product was similar in color, flavor, and consistency to the usual biscuits, and the fish flavor was not at all predominant. The taste of sugar, and the flavor of lemon and vanilla completely hid the fish odor, and organoleptically the fish biscuits were indistinguishable from the usual grain flour biscuits. The product was presented to the public at several exhibitions and consumer acceptance was reported to be good. Although the experiment was only in the laboratory stage, it was expected that there should be no difficulty in expanding operations on a commercial scale. While the experiments were done with shrimp meal, any fish meal carefully prepared will be satisfactory for making such biscuits. Sardine meal, mackerel meal, silverbelly meal, and other types fish meal, were later investigated, and the biscuits prepared from them were found to be very tasty. No complicated technique or apparatus is involved, and the fish meal used in this preparation is inexpensive and easily produced. It was reported that even small bakery owners can produced fish flour biscuits on a large scale, and the finished product will be only as costly as the ordinary brands of biscuits sold in Indian markets. (Fisheries Station Report and Year Book, Department of Fisheries, Madras, India, 1955-1956, printed in 1959).

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INDO-NORWEGIAN FISHERIES PROJECT TO BE EXTENDED:

Extension of the Indo-Norwegian fisheries project in the State of Kerala to other maritime states of India has been under discussion in New Delhi between a visiting five-member Norwegian delegation and the Indian Government.

The move to extend the project reflects its increasing success as a means of improving the living standards of the fishing village population of a small area in Kerala through a broad approach, including vessel construction and mechanization, development of improved fish handling and marketing methods, fisheries research, and health, sanitation and water supply projects. (United States Embassy, New Delhi, May 18, 1961.)

"Chinese lift nets" used by fishermen of India at Cochin Harbor. This is a traditional fishing method in India.

Japan

BERING SEA BOTTOMFISH FISHERY CONTROLS IMPOSED:

To control the bottomfish fishery (long-line, gill net, and trawl) in the Bering Sea, the Japanese Fishery Agency early this year announced the establishment of six fishing areas in the Bering Sea and the allocation of these areas to fishing fleets on the basis of historical record and fishing objectives. The Agency's announcement also covered restrictions on vessel sizes and catches.

Following the success of four Japanese long-line fleets operating off the Olyutorski coast in 1960, fishing companies began announcing intentions of engaging in that fishery. At one time a total of 37 fleets, with a total catch target of 660,000 metric tons of fish (66,000 metric tons of fish meal and 175,000 tons of frozen fish), indicated plans to engage in the Bering Sea bottomfish fishery. Thus, the Fishery Agency was compelled to impose controls to prevent confusion on the fishing grounds.

As of March 29, 1961, ten fleets had submitted official applications, and the consensus was that by mid-April when all formal applications were expected to be in, the number would total 27 or 28 fleets.

The Fishery Agency has classified the Bering Sea bottomfish fishing fleets into two general groups: (1) fish meal factoryships and flatfish freezer factoryships, and (2) mothership-type long-line and gill-net fleets. Fish meal factoryships (limited to four) and flatfish freezer factoryships with previous records of operation in the Bering Sea, with the exception of the Tenyo Maru, which is classified as a fish meal-oil fac-

Japan (Contd.):

toryship, have been assigned fishing grounds to the east of 175° W. longitude. Tenyo Maru is licensed to fish in a triangular area extending to as far west as 180° longitude. Freezer factoryships which have not engaged in the Bering Sea fishery in previous years are restricted to grounds lying between 170° E. and 170° W. longitude. Mothership-type long-line and gill-net fleets are restricted to the area lying between 170° E. and 180° longitude.

Vessels over 3,000 tons are classified as motherships and only catcher vessels over 50 tons gross are being permitted to engage in the fishery. Catch restrictions are placed on halibut, herring, and king crab but the taking of those species is not entirely prohibited. Salmon cannot be taken at all.

The king crab factoryship Tokei Maru, 5,386 gross tons, departed Hakodate on April 1 for Bristol Bay and was expected to arrive at the fishing grounds about April 10. Her target for 1961 is 80,000 cases of king crab. The three trawlers assigned to fish with this factoryship departed Hakodate on March 29. The fleet is expected to be on the fishing grounds for 100 days and is scheduled to return home in mid-July. (Shukan Hokkai Suisan, April 3, 1961.)

The king crab freezer factoryship Shinyo Maru, 5,630 gross tons, departed Hakodate on April 5 for Bristol Bay. Her catch target for 1961 is 1.5 million crabs and 3,000 tons of frozen fish. According to latest available information, Shinyo Maru's fleet consists of 13 trawlers and that in addition to king crab she expects to pack 1,500 tons of frozen herring. (Shukan Hokkai Suisan, April 10; Shin Suisan Shimbun Sokubo, April 5, 1961.)

The freezer factoryship Kaiko Maru, 2,940 gross tons, departed Hakodate on April 7 for the fishing grounds off the Olyutorski coast. Her fleet consists of seven catcher vessels equipped with trawl, gill-net, and long-line gear. This fleet was expected to arrive on the fishing grounds around April 20. (Shukan Hokkai Suisan, April 10, 1961.)

The stern trawler No. 50 Akebono Maru, 1,470 gross tons, is presently fishing in the Bering Sea. Akebono Maru reported that on March 20 she sighted a Russian trawl fleet of about 60 vessels in the 250-300 ton class and in the 600-ton class. The Russian fleet was sighted about thirty miles northwest of Unimak Island. (Suisan Keisai Shimbun, April 2, 1961.)

The Japanese research vessel No. 19 Taiyo Maru, 276 gross tons, departed Kushiro, Hokkaido, on March 28 to locate new bottom fishing grounds along the northern section of East Kamchatka. Chartered from a large Japanese fishing company, she will be at sea for about three months. (Suisan Keizai Shimbun, April 5, 1961.)

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TWENTY-SIX FLEETS TO ENGAGE IN BERING SEA BOTTOMFISH FISHERY:

A total of 26 Japanese fishing fleets have officially announced their intentions to engage in bottomfish operations in the Bering Sea in 1961. This includes 11 vessels which recently departed for the fishing grounds or are already engaged in fishing.

The total 1961 catch target for the 26 Japanese fleets to fish in Bering Sea bottomfish fishery (in metric tons): flatfishes 398,000, halibut 34,000, cod 19,000, Alaska pollock 40,000, gin dara or silver cod 11,000, rockfish 25,000, shrimp 9,000, herring 41,000, others 8,000; total 585,000 metric tons.

In addition to flatfishes, the Japanese fleets will fish for halibut, cod, rockfishes, and herring. The fleets of two firms are also planning to fish for shrimp, and one company's factorship, Einin Maru, is reported to be equipped with one shrimp canning line. Although three firms had

Fig. 1 - Japanese factory mothership operating in Bering Sea bottomfish fishery. Processes both fish and crabs.

Japan (Contd.):

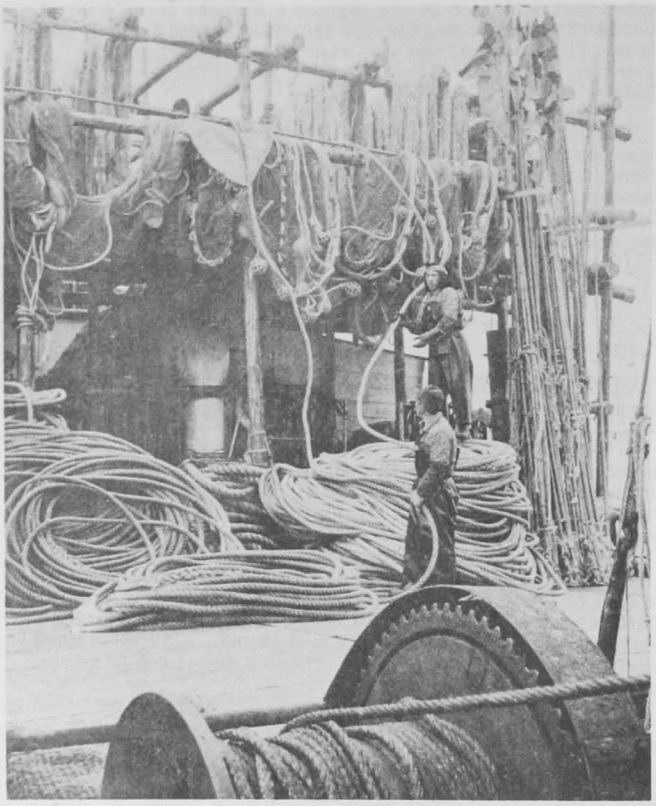

Fig. 2 - Stowage of nets and lines aboard the Japanese factory mothership Shinyo Maru.

investigated shrimp resources in northern waters for two years and were reported to be formulating plans early this year to fish commercially for shrimp, it appears now that only two are following through on their original plans.

The factoryship Einin Maru is being allowed by special permission to fish in the Bristol Bay area which the Fishery Agency had reserved for factoryships with previous records of operation in Bristol Bay. Einin Maru is permitted to fish in the area under a clause in the Fishery Agency's bottomfish fishing regulations which reads, "Freezer factoryships without previous records of operation in the Bering Sea shall be permitted to fish in Areas D and E under special conditions." Einin Maru's "special conditions" are assumed to be her intentions to fish for shrimp. (Suisan Keizai Shimbun, April 29 and March 31; Suisan Tsushin, April 24; Nippon Suisan Shimbun, April 10 and February 24, 1961.)

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FIRM HOPES TO FISH SOUTH OF ALEUTIAN ISLANDS:

A large Japanese fishery firm is reported to have obtained informal approval from the Japanese Fishery Agency to conduct experimental fishing operations for herring and bottom fish south of the Aleutian Islands. For the purpose, the firm plans to purchase a 2,000-ton vessel and convert it to a refrigerated vessel.

Two other major fishing companies have been planning to develop fishing grounds in waters south of the Aleutian Islands for some time. The Fishery Agency has not yet taken a firm stand on this matter, according to newspaper reports. (Suisan Tsushin, April 21, 1961.)

Editor's note: The above news item appears to conflict with earlier press releases. Nippon Suisan Shimbun, March 6, 1961, stated that the Japanese Fishery Agency does not intend to permit dragging in the area south of the Alaskan Peninsula. But the latest news article refers to the area south of Aleutian Islands, and states that the Fishery Agency

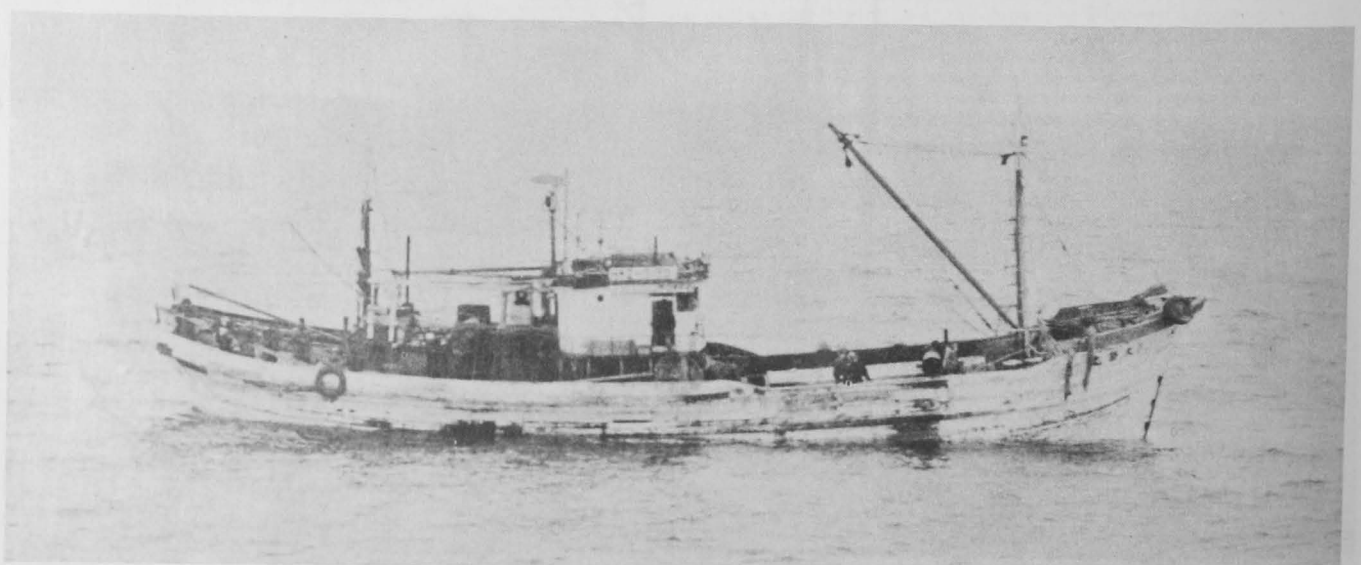

Fig. 3 - A Japanese trawler fishing bottomfish for the mothership Shinyo Maru in the Bering Sea.

Japan (Contd.):

has not taken a definite stand to prohibit fishing in that area.

The Japanese Fishery Agency often licenses vessels to operate on an experimental basis.

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BERING SEA BOTTOM FISHING FLEET'S CATCH TARGET FOR 1961:

According to Japanese newspaper reports, 28 mothership fleets with 375 catcher vessels will engage in the Bering Sea bottom fishery this season. The following catch targets by fishing area for 24 of the mothership fleets were published in Suisan Keizai Shimbun, May 11, 1961.

Catch Targets of 24 Japanese Bering Sea Bottom Fishing Fleets by Fishing Areas 1/, 1961

Species	Fishing Areas 1/						
	AB	ABC	ABCD 2/	BCD	DE	F 3/	Total
	(Metric Tons)						
Flatfish	-	100	-	-	355,914	42,640	398,654
Halibut	8,240	8,885	5,568	13,198	-	2,000	37,891
Cod	3,700	6,993	3,133	5,488	2,940	-	22,254
Alaska pollock	-	100	-	200	31,266	1,230	32,796
Gindara 4/	1,807	4,888	1,134	4,482	550	1,120	13,981
Rockfish	877	2,319	2,362	3,698	9,653	6,760	25,669
Shrimp	-	-	180	1,770	8,000	-	9,950
Herring	7,530	10,135	5,141	18,239	1,900	-	42,945
Misc.	50	220	2,350	1,898	3,897	-	8,415
Total	22,204	33,640	19,868	48,973	414,120	53,750	592,555

1/Key to fishing areas:
Area A: Between 170° E. and 175° E. longitude.
Area B: Between 175° E. and 180° longitude.
Area C: Between 180° and 175° W. longitude.
Area D: Between 175° W. and 170° W. longitude.
Area E: Area east of 170° W. longitude.
Area F: Triangular area formed by line extending from Cape Navarin to Aleutian Islands along 180°, east along Aleutian chain to Cape Sarichef, Unimak Island, and back to Cape Navarin.
2/Catch targets listed under this area represent target of one mothership fleet (Shikishima Maru, 9,700 gross tons) only.
3/Catch targets listed under this area represent target of one mothership fleet (Tenyo Maru, 11,581 gross tons) only.
4/Literally translated means silver cod.

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BRISTOL BAY MOTHERSHIP FISHERY TRENDS, MAY 1961:

The two Japanese fish meal factoryships operating in Bristol Bay, Renshin Maru (14,094 gross tons) and Kinyo Maru (9,373 gross tons), as of May 18, 1961, produced a combined total of 4,128 metric tons of fish meal, 1,048 tons of fish solubles, 10,224 gallons of fish oil, and 780 tons of frozen fish. Shinyo Maru (5,630 gross tons) which was licensed to fish on an experimental basis as a king crab freezer vessel (catch target--180 tons of king crab) is reported to have caught 473 tons of flatfish, 9.5 tons of cod, 183 tons of herring, and 50 tons of king crabs. (Suisan Keizai Shimbun, May 11 and 18, 1961.)

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EXPORTS OF CANNED PET FOOD WITH FISH DROP IN 1960:

Japan's exports of canned pet food (with fish as an ingredient) in 1960 were less than half the 1959 exports, the Japanese Canned Food Exporters' Association reports. Only 273,837 cases were shipped in 1960. Of this total, the United States received 272,487 cases, Canada 100 cases, Switzerland 250 cases, and Hong Kong 1,000 cases.

The lower exports were due to unusually poor skipjack tuna and mackerel-pike fishing. Pet food packing is a byproduct operation, and the scarcity of fish adversely affected this industry. Also, Japanese packers were faced with quality claim problems from buyers during the year which caused them to lose interest. Also, the drop in the 1960 canned pet food exports was in part attributed to the more extensive sale of canned tuna flakes on the Japanese home market during the year.

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Japan (Contd.):

CANNED FISHERY PRODUCTS EXPORTS, FISCAL YEAR 1960:

The Japan Canned Food Exporters Association reported for fiscal year 1960 (April 1, 1960 to March 31, 1961) that total exports of canned agricultural, dairy, and fishery products decreased somewhat from the previous year and amounted to 13,199,419 cases.

Fishery products made up 67 percent of total canned products exports and amounted to 8,746,314 cases. Compared to 1959 exports of fishery products, which totaled 9,828,024 cases, 1960 exports showed a decline of over a million cases. This decline is primarily the result of smaller packs of canned salmon and canned crab meat. (Nippon Suisan Shimbun, May 5, 1961.)

Japanese Exports of Canned Fishery Products, Fiscal Year 1960

Product	Actual Cases
Canned tuna:	
In oil	1/ 1,401,294
In brine	2,035,192
Others	104,822
Canned tuna total	3,541,308
Canned saury:	
In tomato sauce	339,631
Natural	472,367
Others	227,764
Canned saury total	1,039,762
Canned sardine:	
In tomato sauce	701,517
Natural	2,492
Others	14,636
Canned sardine total	718,645
Canned jack mackerel	472,378
Canned Pacific mackerel	188,168
Canned salmon	1,671,897
Canned crab:	
King crab	279,323
Kegani	163,256
Others	46,516
Canned crab total	489,095
Canned oysters:	
Smoked	190,019
Natural	156,192
Broiled	170
Canned oyster total	346,381
Other fishery products	278,680
Grand total	8,746,314

1/Export Canned Tuna Producers Association reported exports of canned tuna in oil in fiscal year 1960 as 1,083,816 cases.

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CANNED SARDINE SALES IN 1960:

Canned sardines received by the Japanese sales company during fiscal year 1960 (April 1960-March 1961) and their sales are reported (Suisan Tsushin, April 22, 1961) as follows:

Type	Carryover from 1959	Receipts	Sold
	(Cases)		
Oval No. 1 can, 48/cs.	7,836	179,848	183,020
" No. 3 " 96/cs.	12,558	164,932	162,160
Small No. 1, 100/cs.	3,727	97,155	100,308
No. 4 can, 48/cs.	1,334	5,391	6,480
Square No. 8 can, 96/cs.	-	5,415	5,388
Special No. 7, 96/cs.	1,500	47	4,607
Anchovy	47	3,181	948
Others	190	227	650
Total	27,192	456,196	463,561

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DELEGATION TO STUDY TONGA ISLANDS AS POSSIBLE OVERSEAS FISHING BASE:

Earlier this year it was reported that Shizuoka Prefecture was sending a delegation of four members to study likely sites for establishing overseas fishing bases in the South Pacific and Indian Ocean areas. Another delegation is making plans to go on a similar mission to the South Pacific. This delegation is to be composed of two Diet members from the Democratic-Liberal Party (one from Hokkaido; the other from Fukushima Prefecture) and one former Diet member from the Socialist Party. The group will leave Japan in June and spend one and one-half months studying facilities, potential resources, and fishing conditions in the Tonga Islands.

Tonga, a British possession, is situated south of Samoa and southeast of the Fiji Islands. Waters in that area are reported to abound with yellowfin, big-eyed tuna, sardines, octopus, shrimp, sperm whales, etc. Island natives are reported to be unfamiliar with fishing techniques. Awareness of Tonga as a possible overseas fishing base came about following the commencement of Japanese fishing operations in the nearby Fiji Islands.

The Socialist Party member in the delegation is reported to be interested in establishing an overseas base in Tonga as a means of revitalizing the sagging distant-water fishing fleet of Kagoshima Prefecture. (Suisan Keizai Shimbun, April 16, 1961.)

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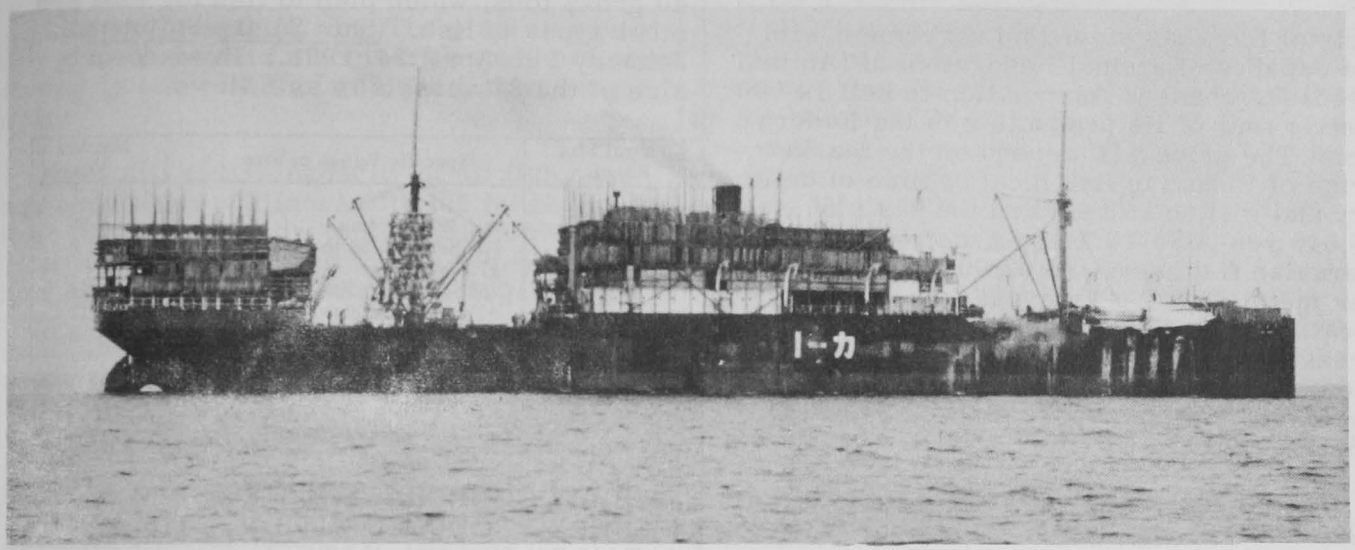
EARLY SEASON KING CRAB CATCH IN BRISTOL BAY:

The Japanese king crab mothership Tokei Maru's catch for the ten-day period April 12-22, was reported to be 104,570 crabs (5,951 cases). Tokei Maru encountered bad weath-

Japan (Contd.):



Japanese king crab mothership Tokei Maru.

er until April 17 but the weather improved after that date and fishing was reported to have picked up considerable. Tokei Maru was operating in the vicinity of 56° N. latitude, 163° W. longitude. (Suisan Keizai Shimbun, April 26, 1961.)

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MONTHLY FISH MEAL PRICES, 1960 AND JANUARY-MARCH 1961:

Average monthly wholesale prices for various types of domestic fish meal in Japan for 1960 and January-March 1961 are found in table. (United States Embassy, Tokyo, May 23, 1961.)

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FISH MEAL FACTORYSHIP COMPANY AGREES TO DELIVER 14,000 TONS OF MEAL:

The Japanese fishery firm which hopes to produce about 26,000 metric tons of fish meal with its two fish-meal factoryships, Renshin Maru and Kinyo Maru, presently operating in

Japanese Domestic Fish Meal Wholesale Prices, 1960 and January-March 1961

Year and Month	Protein 65%					Protein 45%
	Saury	Atka Mackerel	Launce	Jack Mackerel, Sardine, and Mackerel	Factoryship Flatfish	Cod and Pollock Waste
	(US$ Per Metric Ton)					
1960						
January	153.33	152.78	-	-	-	109.44
February	143.33	143.06	-	-	-	108.89
March	135.83	133.33	-	-	-	94.17
April	129.72	123.61	-	-	-	81.11
May	131.39	123.61	132.50	126.39	-	81.11
June	-	-	132.50	126.39	-	88.06
July	-	-	132.50	120.56	-	87.78
August	119.17	-	-	-	-	89.44
September	121.94	111.11	-	-	-	91.11
October	139.17	129.17	-	-	147.22	96.39
November	157.50	145.28	-	-	147.22	116.67
December	158.06	151.11	-	-	154.72	116.67
1961						
January	161.67	-	-	-	156.94	125.00
February	165.00	-	-	-	-	123.61
March	168.06	165.28	165.83	-	-	123.61

Source: Japan Aquatic Oil Association.

Japan (Contd.):

Bristol Bay, has signed an agreement with the Japanese National Federation of (Animal Feed) Purchasers Association to sell 14,000 metric tons of its production to the Federation. The price will depend on the market price of Peruvian fish meal at time of delivery and will be adjusted on the basis of 43,000 yen (US$119.44) per metric ton for Peruvian fish meal and 52,000 yen (US$144.44) per metric ton for Japanese factoryship fish meal. Should Peruvian fish-meal prices increase, as they have already, then Japanese factoryship fish-meal prices will be raised accordingly on the basis of these two base prices.

The 43,000 yen is the price paid in late 1960 for Peruvian fish meal delivered to Japan. Peruvian fish-meal imports now run about 57,000 yen ($158.33) per metric ton, delivery Japan. (Suisan Tsushin, May 1, 1961.)

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FISH SOLUBLES IMPORTS CLASSIFIED UNDER ANIMAL FEEDS:

The Japanese Ministry of International Trade and Industry (MITI) announced on April 28, 1961, that henceforth fish solubles will be placed under the category of animal feed. This means that those who wish to import fish solubles must now submit applications for import licenses to the joint panel composed of the Fishery Agency and Bureau of Animal Husbandry which acts on all requests to import items covered under animal feed, such as fish meal, instead of submitting them to MITI.

The Ministry has been flooded with a number of requests for licenses to import fish solubles and has instituted this new procedure for license application to eliminate further confusion in handling such requests. (Nippon Suisan Shimbun, May 3, 1961.)

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FISHERY AGENCY APPROVES CONSTRUCTION OF 496 FISHING VESSELS:

For January 1 to April 24, 1961, the Japanese Fishery Agency has approved the construction of 496 fishing vessels, most of which are vessels under 40 gross tons.

Tuna long-line vessels approved for construction total 87. This figure does not include a number of vessels, almost all under 40 gross tons, which plan to fish for tuna and other types of fish. (Shin Suisan Shimbun, January 1 to April 24, 1961.) Breakdown by size of the 87 vessels is as follows:

General Size Range	Specific Range or Size	Number of Vessels
Gross Tons		
Under 40	All 39 gross tons	38
41 to 100	All between 65 to 99 gross tons	9
101 to 200	179 gross tons	1
201 to 300	All between 239 to 289 gross tons	24
301 to 400	All between 309 to 389 gross tons	11
401 to 500	408, 434 & 480 gross tons	3
Over 1,000	1,495 gross tons	1

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FISHERY COOPERATIVE TO SHIP FISHERY PRODUCTS WITHIN JAPAN BY VESSEL RATHER THAN RAIL:

The Japanese National Federation of Fishery Cooperatives and a Japanese fishing firm have exchanged memorandums concerning the transportation of items such as frozen fish and fish meal within Japan. According to the memorandums, the fishing firm agrees to use its vessels to transport frozen fish and fish meal to different points in Japan from October to December at rates comparable to or lower than existing rail freight rates. October to December are slack months for the fishing firm and it plans to use its two freezer vessels, Seifu Maru, 8,693 gross tons, and Shichifuku Maru (size unknown) as carriers. These two vessels will be engaged in the Bering Sea bottom fishery during the summer of 1961.

The National Federation of Fishery Cooperatives benefits from this arrangement since its member cooperatives will be able to ship commodities, mainly saury products, at rates equivalent to or lower than existing rail freight charges. The Japanese Government recently raised rail freight rates and this association hopes to check the rise in saury meal prices by resorting to this new shipping arrangement. (Suisan Keizai Shimbun, April 28, 1961.)

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NEW FISH SAUSAGE PLANT COMPLETED:

The completion of a new fish sausage-ham plant in Nagoya in Central Japan was the subject in the Japanese periodical Suisan Keizai Shimbun of April 23 of two full pages. The firm operating the plant is affiliated with the largest Japanese fishery firm, and the new sausage plant is reported to be the largest of

Japan (Contd.):

its kind in Central Japan. The plant is equipped with up-to-date machinery capable of producing an equivalent of 100,000 fish sausages a day.

Daily productive capacity of all fish sausage companies affiliated with the large Japanese fishery firm now totals 1,590,000 pieces of sausages. Compared to this, daily productive capacity of the second largest fishing company's sausage plants is said to total 700,000 pieces of fish sausages a day.

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SOVIETS SAY JAPANESE SHOULD REDUCE NORTH PACIFIC SALMON CATCHES:

The chief Soviet negotiator at the fifth meeting of the Japanese-Soviet Commission for Northwest Pacific Fisheries on April 29, 1961, said that there was "no reason why the Soviet Union alone must be concerned with the preservation of salmon resources" in the face of Japan's "execessive" fishing.

The statement was made at a special interview with Kyodo News Service held at the Soviet Embassy in Tokyo. He indicated that he gave the interview in view of the continued impasse in the fishery talks, which opened in early February in Tokyo.

The Soviet side has increased its planned salmon haul for this year by 10,000 metric tons to 80,000 tons and demanded that the Japanese side reduce its catch correspondingly, although 1961 is a cyclically rich year for salmon migration, he said.

The Japanese, through "excessive" fishing outside the restricted zone off Kamchatka, are yearly increasing their over-all hauls, he claimed.

The 10,000-ton increase in the Soviet haul should be covered by an equivalent cut in the Japanese haul, he insisted.

The Soviet negotiator had earlier proposed a 50,000-ton ceiling for the Japanese North Pacific salmon catch this year in the area covered by the Convention, or 17,500 tons less than in 1960. The Soviet negotiator said he was opposed to a "political compromise" through channels outside the fishery talks.

Meanwhile, the chief Japanese delegate to the fishery talks charged that the Soviet negotiator was considering only the interests of his own country.

The Soviet negotiator has "deliberately distorted" the conclusion of the scientific and technical subcommittee to the effect that the salmon migration this year is better than last year but not as good as in 1959, the Japanese delegate said. In addition, he said the Japanese side has at least agreed to discuss the problem of restriction of Japanese fishing outside the present controlled areas, as the Soviets proposed, "in view of the importance of the free area for conservation of the salmon resources."

But the Japanese have not yet agreed to expansion of the restricted zone, the Japanese delegate insisted. The Soviet negotiator has twisted this Japanese stand too, he added. (The Japan Times, April 30, 1961.)

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THIRD LARGEST FISHING FIRM BUILDS SALMON MOTHERSHIP AND OTHER VESSELS:

The third largest Japanese fishing firm in Japan has constructed its first postwar salmon mothership (Meisei Maru, 8,335 gross tons). The vessel has an over-all length of 502 feet, a beam of 65 feet, and is equipped with three canning lines, two of them high-speed lines capable of packing 240 cans a minute.

The same company also has under construction one 1,500-ton trawler to be used in the Bering Sea bottomfish fishery and scheduled for completion in July 1961; one freezer factoryship of 5,500 gross tons (scheduled for completion in November 1961) for use in winter whaling and the summer Bering Sea bottomfish fishery; and 2 freezer-carriers of 1,500 gross tons each to serve as carriers for salmon and bottomfish fishing fleets and scheduled for completion in June and August 1961.

Other fishing vessels owned and operated by the same company include 17 tuna fishing vessels (total of 9,144 gross tons), 3 salmon motherships (total 24,400 gross tons), 2 king crab motherships (10,900 tons), a freezer vessel (1,400 tons), 9 trawlers (4,242 tons), and 4 miscellaneous vessels (396 tons). (Suisan Keizai Shimbun, April 29, 1961.)

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AGREEMENT CONCLUDED FOR EXPORT OF FROZEN TUNA TO CZECHOSLOVAKIA:

A subsidiary of a large Japanese trading firm together with an exporting firm recently concluded an agreement with Czechoslovakia to export 1,050 metric tons of tuna to that country. Plans call for exporting the amount between late June and September via Hamburg, West Germany. Price is $285 a ton delivered at Hamburg.

Czechoslovakia is represented by the Czechoslovakian Government's trading corporation handling agricultural and marine products. In view of this, Japan hopes to have an arrangement, such as that already in effect with Yugoslavia, whereby all exports to Czechoslovakia would be funneled through one Japanese firm.

Czechoslovakia, by concluding the trade agreement, now ranks as the third largest importer of frozen tuna in Europe.

Annual consumption of tuna in Czechoslovakia is not known but the fact that Czechoslovakia is importing over 1,000 tons at one time shows that a great latent demand exists in that country. However, the Czechoslovakian trading firm is expected to withhold concluding further trade agreements until the first shipment of tuna is brought in the country and the products carefully inspected.

Trade between Japan and Czechoslovakia is on a barter basis. Japan has imported more products from Czechoslovakia than she exported to that country so no difficulties are foreseen in exporting Japanese products to Czechoslovakia at

Japan (Contd.):

the present time. However, in view of the fact that Czechoslovakia has few commodities to export, she will probably not be able to rapidly increase her imports under the present system. Czechoslovakia is reported to have imported small amounts of tuna from Norway and Yugoslavia in the past, most of which were canned and a small portion smoked. (Suisan Tsushin, April 19, 1961.)

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FROZEN TUNA PRICE TRENDS:

The market for Japanese exports of frozen tuna to the United States has firmed considerably, with albacore selling for $300 a short ton and yellowfin selling for $250 a ton and up f.o.b. Japan.

In a March 31 issue of Nippon Suisan, a Japanese periodical, the following prices f.o.b. Japan for frozen tuna for export to the United States were shown: Line-type products: yellowfin $260 a short ton, albacore $280 a ton; high-seas-type products: yellowfin $230 a ton, albacore $270 a ton. This same issue listed the price of tuna for export to Yugoslavia as $280 a metric ton for yellowfin and $290 per ton for albacore, both c.i.f. prices.

Small amounts of summer albacore were being landed in April at Shimizu and Yaizu by the Japanese domestic tuna fleet. Due to scarcity of fish, albacore was reported selling for around $350 a metric ton ex-vessel price and are all being canned. Frozen tuna buyers are unable to compete at present high prices, which are expected to prevail for some time, and buyers are not expected to compete for fish until mid-May when the albacore season reaches its peak. (Suisan Shimbun Sokuho, April 13; Nippon Suisan Shimbun, April 7 & March 31, 1961.)

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FROZEN YELLOWFIN TUNA EXPORTS TO SPAIN APPROVED:

The Japanese Fishery Agency recently approved the application of a large Japanese fishery firm to export about 500 metric tons of frozen yellowfin tuna to Spain by June through an Italian firm. The Italian firm will sell the tuna to Spanish canners.

Exports of frozen tuna to Spain have not been licensed in the past since Spanish canned tuna in brine competed directly with Japanese products sold on the United States market. However, the Spanish Government has given its assurances that canned tuna produced from Japanese-caught tuna will not be exported to the United States, and it is with this understanding that the Japanese Fishery Agency has authorized exports to Spain. (Suisan Tsushin, May 1, 1961.)

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EXPORTS OF CANNED TUNA IN OIL FOR FISCAL YEARS, 1958-60:

Data from the Japanese Export Canned Tuna Producers Association shows that exports of canned tuna in oil for 1960 (April 1, 1960 to March 31, 1961) amounted to 1,083,816 cases. This represents a reduction of 393,300 cases for the same period in 1959 when exports totaled 1,477,116 cases. Exports in 1958 totaled 803,814 cases. (Suisan Tsushin, April 24, 1961.)

Japanese Exports of Canned Tuna in Oil by Principal Destination, Fiscal Years 1958-1960

Destination	1960	1959	1958
	(Cases)		
Germany	438,906	484,808	220,224
Canada	151,754	160,385	137,365
Lebanon	70,260	114,744	40,941
Switzerland	63,573	36,918	28,783
Netherlands	62,999	85,863	59,258
Belgium	53,197	92,360	63,743
England	18,489	105,135	41,291
Italy	15,337	26,584	71,668

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CANNED WHITEMEAT TUNA PACKERS FACE PROBLEMS IN 1961:

A gloomy picture of the Japanese canned albacore tuna industry, as it faces the 1961 canning season, is presented in an article which appeared in the Japanese fisheries newspaper Suisan Keizai Shimbun (Fisheries Economic News), dated April 14, 1961. Canners face two major problems in 1961, according to this article. They are: (1) high ex-vessel prices and (2) labor shortages.

The high cost of fish is due to a shortage of fish, a condition which has prevailed for three years. It does not appear that canners will get any relief from this problem until the summer albacore season is well under way, for according to recent information, small amounts of albacore are now being landed in the principal Japanese tuna ports but these fish are selling at premium prices of 140 yen a kilogram (US$353 a short ton). The price which canners can pay for raw ma-

Japan (Contd.):

terial and yet realize a profit is in the range of 110 yen a kilogram (US$277 a short ton). If so, this then means that albacore canners are presently operating in the red.

The labor shortage which has developed is due to the wave of general economic prosperity which is reported to be sweeping Japan. In the fishing industry, this wave of prosperity has been reflected in the upsurge of new vessel construction, new plant construction, and plant expansion programs over the past six months. Japanese firms are reported to be offering various kinds of inducements to attract new employees, and tuna canners are hard put to compete with offers made by other industries.

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FISHERY AGENCY ANNOUNCES NEW REGULATIONS FOR TUNA MOTHERSHIP FISHERY:

On April 18, 1961, the Japanese Fishery Agency announced new separate regulations for tuna motherships employing regular catcher vessels and tuna motherships fishing with portable catcher vessels. Significant features of the new regulations are the establishment of two categories of tuna motherships; increase in catch quota to 22,900 tons for the "regular" tuna motherships; and elimination of restrictions on the carrying of portable vessels.

Regular Tuna Motherships: This term applies to motherships over 3,000 gross tons employing regular catcher vessels. Under the new regulations, vessels which have engaged in mothership-type tuna fishing for the past two years fall under this category. They include four fleets of three of the largest fishery firms in Japan.

In the past, mothership fleets have been allowed to augment their total catch quota of 13,600 metric tons with an additional 9,300 metric tons by agreeing to lay up tuna fishing vessels for specified lengths of time. These two catch figures, 13,600 and 9,300 tons, have now been combined into one over-all quota of 22,900 tons, which will be distributed to each of the four fleets on the basis of past records. However, the old system of augmenting the established quota by agreeing to lay up fishing vessels for specified lengths of time is still in effect. The primary difference is that more teeth have been put in this clause. Tuna mothership fleets, if they wish to augment their regular quota, must make definite arrangements to actually take out fishing vessels from the tuna fishery. Length of time that a particular fishing vessel would be laid up would depend on its size, and the equivalent amount of tuna which that vessel theoretically could catch but did not because of being laid up would represent the amount by which that tuna mothership fleet could increase her established quota.

Fishing areas are the same as before. Fleets are restricted to the following areas: North of the equator--area east of 170° W. longitude; equator to 25° S. latitude--area east of 170° E. longitude; and south of 25° S. latitude--area east of 160° E. longitude. However, in the authorized fishing area lying to the west of 170° W. longitude, which would be the area below the equator, only two fleets will be allowed to operate at any one time.

As before, medium-class tuna vessels (over 40 gross tons but less than 100 gross tons) and distant-water fishing vessels less than 200 gross tons are permitted to engage in this fishery. However, motherships fishing in the area to the east of 170° W. longitude can employ catcher vessels up to 240 gross tons. Use of portable fishing vessels is not permitted for motherships in this category.

Motherships are required to report their daily noon position and daily total landings (catch by species, pieces, and pounds for the fleet), as well as numbers of vessels which landed fish during the day, to the Japanese Fishery Agency Director without delay. Catcher vessels must submit daily reports to the Fishery Agency inspector on board the mothership showing their noon position, effort (amount of gear set), and catch (by species, pieces, and pounds).

Portable-Vessel-Carrying Tuna Motherships: Motherships in this category are limited to authorized distant-water tuna fishing vessels which will be allowed to carry two or more portable fishing vessels of not more than 20 tons each. For each portable vessel one distant-water fishing vessel must be withdrawn from the fishery and for every two portable vessels 50 tons of distant-water fishing vessel rights must be put up as replacement. The unused tonnage of distant-water fishing vessels withdrawn from the fishery for replacement purposes can be used to enlarge medium and distant-water fishing vessels. It is believed that this unused tonnage available for replacement purposes will help accelerate the conversion of medium-class tuna fishing vessels to larger distant-water fishing vessels. Even if motherships in this category carry only one portable fishing vessel, they must still retire one distant-water fishing vessel and put up 50 tons as replacement.

Under the old regulations, distant-water fishing vessels were allowed to carry only one portable fishing vessel. Such vessels as may have operated with portable fishing vessels in the past are covered under special provisions whereby they are required to retire one distant-water fishing vessel from the fishery and put up 25 tons of this vessel for a second portable vessel. The unused tonnage would be disposed of in the manner stated earlier. According to the Fishery Agency, about 15 vessels are affected under this ruling. Tuna motherships in this category will be permitted to fish in the Atlantic Ocean, Indian Ocean, and Eastern Pacific (east of 130° W. longitude). Catch cannot be transported by vessels other than the mothership itself, and applications to engage as portable-vessel-carrying tuna motherships must be submitted by May 15. Use of portable fishing vessels is expected to greatly increase the efficiency of distant-water fishing vessels, as was clearly shown by No. 21 Kuroshio Maru, which was specially licensed to fish on an experimental basis for tuna with six portable fishing vessels. Special regulations will likely be drafted for Kuroshio Maru since the new regulations do not fit that vessel.

Nippon Suisan Shimbun, April 24, states in its editorial that it is very possible that the elimination of restrictions on portable vessels might well herald a day in the future, possibly two years hence, when tuna motherships will be carrying as many as 17 or 18 portable fishing vessels. It is interesting to note that on April 6 even before the new regulations were announced, one of the large Japanese fishery firms was proceeding with plans to construct a 3,800-ton portable-vessel-carrying tuna mothership and eight portable fishing vessels in the ten-ton class. Construction was to have begun on April 1; target date of completion is September 15. (Nippon Suisan Shimbun, April 24; Suisan Keizai Shimbun, April 19-21; and Suisan Tsushin, April 6, 1961.)

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TUNA LANDING AT YAIZU, JANUARY-APRIL 1961:

April tuna landings at Yaizu, a major Japanese tuna port, amounted to 13,417 short

Japan (Contd.):

tons valued ex-vessel at over 1,226,850,000 yen (US$3,407,917). Landings for January to April 1961 totaled 43,193 tons valued at over 3,840,520,000 yen ($10,668,111). This represents a decline in landings of 3,524 short tons from the same four-months period in 1960, but an increase in value of over 679,560,000 yen ($1,887,667).

Tuna Landings and Ex-Vessel Values at Yaizu, April 1961

Species	Landings	Values		Avg. Price/ Short Ton
	Short Tons	¥1,000	US$	US$
Bluefin	265	90,077	250,214	942
Indian bluefin	4,529	357,853	994,936	219
Big-eyed	1,037	91,437	253,992	245
Yellowfin	1,346	135,171	375,475	279
Albacore	1,339	137,403	381,675	285
Skipjack	2,122	214,749	596,525	281
Pacific mackerel	1,489	75,352	209,311	141

Bluefin, yellowfin, and big-eyed tuna landings made up over half of the total landings for April, and amounted to over 7,000 tons. Albacore landings totaled slightly over 1,300 tons, about 300 tons more than in the same period a year ago. Skipjack and Pacific mackerel landings were down compared to April 1960 and continued to bring high prices. (Suisan Keizai Shimbun, May 7, 1961.)

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FIRST SUMMER ALBACORE LANDED:

The first landing of summer albacore was reported at the Japanese port of Shimizu on March 27. One-pole-vessel Kotohira Maru (120 tons) of the prefecture landed 3.5 metric tons of large albacore and 11 tons of large skipjack, which were caught around Nishinoshima, Bonin.

On about the same date, a landing of summer albacore was also reported at the port of Yaizu. Japanese differentiate between winter and summer albacore on the basis that the albacore live in greater depths during the winter and in the summer rise closer to the surface layer. (Japanese periodical dated April 10, 1961.)

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COASTAL SKIPJACK AND ALBACORE TUNA FISHING TRENDS, APRIL 1961:

Skipjack and albacore tuna fishing in areas near Japan started 10 days later than usual. Fishing began in mid-April. Fishing for skipjack was concentrated around 20 or 30 miles off the coast of the central part of Honshu, and the principal fishing ground for albacore was also in nearby waters. It was reported that 7-10 metric tons a day was the average catch of each vessel fishing.

The schools of skipjack appeared in the fishing area after April 15. Fish of 3-4½ pound size were being caught by hook-and-line boats. The biggest haul was more than 20 tons a day and the daily average 7-10 tons.

The number of vessels fishing for albacore was still small in April and some of them were reported to have caught some 40 tons a day. Good fishing was expected.

Off the coast of the Izu Peninsula where bait is sought by fishing vessels of Yaizu and Shimizu, poor sardine fishing was experienced this year, and the small sardine used for skipjack hook-and-line fishing could not be found. Some of the boats had to go to the southern part of Kyushu to get their bait.

Towards the end of April, 121 tons of skipjack were landed by 9 vessels and 43 tons of albacore by 2 boats at the Yaizu market, and ex-vessel prices were reported maintaining their high level. Processors and canners have been complaining about the shortage of raw tuna for processing. (Fisheries Economic News, April 26, 1961.)

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SKIPJACK TUNA FISHERY LANDINGS IMPROVED IN APRIL 1961:

Japanese skipjack tuna fishing, which had been erratic since the beginning of the fishing season, was reported to have picked up considerably in the latter weeks of April 1961. New schools of skipjack were located off Wakayama and Mie Prefectures in Central Japan in late April and about 30 vessels from Mie Prefecture were reported concentrated in that area. The vessels were reported catching from 4 to 7 tons per day, with a high of 20 tons a day, of fish averaging 2.2 pounds in the area 32°30' N. and 136°40' E. Most of the fish were landed in Yaizu, and the vessels averaged 20 to 30 tons per trip.

Fishing vessels from Shizuoka Prefecture, numbering over 20, were reported to be concentrated on the fishing grounds near the Ogasawara Islands (27° N., 142° E.). The vessels were also making excellent catches of 3- to 4½-pound fish, catching from 5 to 10 tons of skipjack per day.

Japan (Contd.):

Due to increased landings, the price of skipjack for the last ten days of April on the Tokyo Central Fish Market fell 20 to 30 percent from the previous ten days and sold for as low as 80 to 120 yen per kilogram (US$202-303 per short ton). During this same period, Pacific mackerel sold for 53 to 60 yen per kilogram ($133-$152 a short ton); jack mackerel for 50 to 60 yen per kilogram ($126-$152 a short ton); and sardines, due to their poor quality, for 40 to 53 yen per kilogram ($101-$133 a short ton). (Nippon Suisan Shimbun, May 3 & 5, 1961.)

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THREE NEW CANNED TUNA PRODUCTS TO BE MARKETED:

A Japanese firm is reported to have completed experiments on three new kinds of canned tuna products which are to be sold in competition with the canned "Tender Tuna" placed on the market during 1960.

The three new products packed in vegetable oil with additional ingredients are called: (1) "curry tuna" which contains curry powder as an ingredient, (2) "vegetable tuna" to which tomato soup and potatoes have been added, and (3) "sandwich tuna," a paste for sandwiches.

The new products were scheduled to appear on the market the latter part of April 1961. Packed in flat No. 2 or half-pound cans, they will sell at retail for ¥60 (16.7 U. S. cents) a can. Production of the new tuna products at this time is planned on a trial basis only. (Suisan Tsushin, April 19, 1961.)

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TUNA MOTHERSHIP FLEET SAILS FOR SOUTH PACIFIC:

The Japanese tuna mothership Tenyo Maru No. 3 (3,700 tons) and its catchers sailed from Tokyo for the South Pacific fishing ground as this year's first mothership-type tuna fishing fleet. The fleet consists of 45 catchers and 8 carriers and its catch target is 8,000 metric tons from which 7,150 tons of products are expected to be processed. Operations were to begin immediately after the fleet's arrival at the fishing ground around May 2, and at the end of August it will leave the sea area for a Japanese port, arriving there in mid-September. (Fisheries Economic News, April 24, 1961.)

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METHOD DEVELOPED FOR EXTENDING "SHELF-LIFE" OF TUNA SASHIMI:

A Japanese from Kesennuma, Miyagi Prefecture, is reported to have developed a method of preserving tuna sashimi (thinly-sliced raw tuna) for a period of over a week. Ordinarily sashimi does not last more than 2 or 3 days when the weather is mild but his product is said to retain its freshness for over a week. He has achieved this by slicing tuna into sashimi size and treating it with a desiccant (substance for drying food). Each slice is packaged separately and flavored lightly with soybean sauce. The product can be eaten directly as is and can be taken along on long trips or served at parties. The Japanese developer has had considerable success in food-drying techniques with saury, oyster, Pacific mackerel, etc., which he sells commercially. He hopes to improve the quality of his "instant sashimi" by conducting further experiments to improve its flavor. (Nippon Suisan Shimbun, May 5, 1961.)

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ANTARCTIC WHALING PRODUCTION FOR 1960/61 SEASON SETS NEW RECORD:

The seven Japanese Antarctic whaling fleets during the 1960/61 season set a new production record with 238,801 metric tons of whale oil and meat, exceeding that of the previous year by 37,000 tons. Fish whale oil production amounted to 101,225 tons; frozen whale meat, 121,211 tons; and other products, 16,365 tons. (Suisan Tsushin, April 6, 1961.)

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NORTH PACIFIC WHALING OPERATIONS BEGUN IN MAY:

Whaling operations in the North Pacific by the Japanese began about May 21, 1961, with the departure of two mothership fleets. Operations are to be centered in the vicinity of the Aleutian Islands and both north and south of the Alaskan Peninsula. There is a quota of 1,800 sperm whales for the sperm whale fleet and 800 blue-whale units for the baleen whale fleet. The two mothership fleets will be operated jointly by five Japanese fishing companies.

Japan (Contd.):

Typical Japanese whaling vessel operating in North Pacific.

The season will end for the sperm whale fleet with the return of the sperm whale mothership Kinjo Maru (11,000 tons) on August 13 and the blue whale mothership Kyokuyo Maru (11,500 tons) on August 26. (United States Embassy in Tokyo, May 19, 1961.)

Liberia

TUNA FISHERY TRENDS:

An agreement (announced in Taipei on March 30, 1961) between the Republic of China and Liberia provides for technical cooperation on agriculture, fisheries, and industry.

For fisheries, according to the agreement, China will send to Liberia a team of specialists to work out a plan for the two countries to establish a joint tuna long-line fishing industry. Liberia is interested in the employment of "skilled and proficient" Chinese crews to help develop trawling and purse-seine fisheries.

A Liberian periodical of March 20, 1961, reported that Japanese fishing interests under the firm name of "The Fishing Company of Liberia" completed an agreement with the Liberian Government to fish for tuna and construct a freezing plant at the Free Port of Monrovia.

Until the freezing plant is constructed, the firm will use a ship equipped with freezing facilities for storage of fish at the Free Port. Already six fishing vessels have arrived and according to company officials up to 20 additional vessels will be brought in consistent with the planned expansion of this enterprise (United States Embassy in Monrovia, May 3, 1961.)

Malaya

TUNA CANNING FACILITIES IN PENANG:

The Fisheries Department of the Federation of Malaya reports that there is only one fish cannery in the Federation of Malaya. Other facilities are very small village-type operations and include shrimp paste operations and fish salting.

The one cannery, located in Penang, is a joint Malayan-Japanese venture. The cannery was organized in 1959 with pioneer status from the Government and began operations in February 1960. It is reportedly considering the establishment of another cannery in the Federation of Malaya. Its present output is limited to tuna products. The main canning line is 5,000 cases of tuna in soybean oil, 10 percent of which is flakes and 30 percent chunks. It also produces about 400 pieces of tuna sausages per day. The company has

Malaya (Contd.):

leased the facilities of two other canneries in Penang. Those two canneries are under contract to process the tuna output of the Malayan-Japanese firm at least until the new canning facilities are erected. The two leased factories, however, are believed to be engaged in the canning of their own products, chiefly fruits, in part of their facilities and on their own account.

All of the pack of the Malayan-Japanese firm is sold for export to European countries. The management reports that it has not been successful in developing a market for tuna products in the Federation of Malaya. (U. S. Embassy, Kuala Lumpur, April 24, 1961.)

Morocco

FISHERY TRENDS, FIRST QUARTER 1961:

The first quarter of the year is not a particularly active time for the Moroccan fishing industry. During this period in 1961, a law defining maritime terms and regions was published, and various groups met to discuss Moroccan fishery problems. Efforts to increase fishery products exports appeared to meet with some success as indicated by the higher 1960 exports.

Morocco's 1960 marine fish catch amounted to 161,680 metric tons[1/] valued at 61 million dirhams (US$12.1 million). The catch increased 10 percent over the previous year, but was less than the 1958 production. The leading species was sardines, of which 119,250 metric tons were landed, compared with the 1959 catch of 103,880 tons. Safi was the leading port with sardine landings of 77,290 tons. The species which followed in importance on the basis of value were mackerel and tuna. Landings in Agadir dropped 40 percent due to the earthquake that destroyed most of the city in February 1960.

As in the past, about 70 percent of the commercial fish catch was canned. Most of the remainder was processed into byproducts, except for small amounts frozen for export. Only about 9 percent of the total catch was consumed on the local market.

Exports of fishery products in 1960 showed general improvement as compared with previous years, but were lower for fish meal and tuna. (See table.)

A law published in February 1961 modified the basic maritime and fishery regulations by setting up nine coastal districts, and by defining types of navigation according to ports called and distances traveled. These modifications have little significance except that it is anticipated that they will form the basis for later regulations.

Two groups interested in the fishing industry met during the first quarter of 1961. A Casablanca committee of fishing boat operators met with Government officials in February to discuss topics of current interest. The percentage of foreigners in the crews was to be kept at an absolute minimum; and it was asked that fishing vessels aiding boats in distress be paid more to compensate for the catch lost. It was recognized that the outfitter had the right to choose the captain of the vessel. A meeting of all groups in the country concerned with fisheries met at the end of March. Among the problems discussed were the price of fuel, and the modification of the contracts between the boat owners and the factories.

Efforts to expand exports, particularly of canned fish, are continuing through trade agreements and publicity. Canned fish have figured in the bilateral trade agreements concluded during the quarter, including one made with Cuba. In addition, a publicity campaign to help sell sardines in the United States is being con-

Moroccan Fishery Products Exports, 1958-1960

	QUANTITY			VALUE					
	1960	1959	1958	1960		1959		1958	
	(Metric Tons)			1,000 Dirhams	US$ 1,000	1,000 Dirhams	US$ 1,000	1,000 Dirhams	US$ 1,000
Fresh fish	14,437	14,755	11,952	14,956	2,956	14,542	2,874	11,377	2,248
Fish meal	14,587	17,143	21,795	6,231	1,231	14,587	2,883	11,065	2,187
Fish oil	5,047	4,074	3,818	2,931	579	5,047	997	2,784	550
Canned fish:									
Sardines	34,070	29,907	26,653	93,668	18,515	71,704	14,171	62,401	12,332
Tuna	2,867	3,215	3,175	10,126	2,001	9,950	1,966	10,218	2,019
Others	5,408	3,665	2,042	8,436	1,667	4,094	809	2,230	441
Totals	76,416	72,759	69,435	136,348	26,949	119,924	23,700	100,075	19,777

1/Revised.

Morocco (Contd.):

ducted, although shipments fell off from 50,675 cases in 1959 to 46,196 cases during 1960. With the high price received for Moroccan sardines in France under a duty-free quota system, lower prices on sardines shipped to the United States can be accepted. Also, when foreign currency is earned, the Moroccan Government grants licenses for the import of United States goods which generally bring higher profits. (United States Embassy in Rabat, April 27, 1961.)

Norway

COD FISHERY TRENDS, JANUARY-APRIL 1961:

Norway's landings of mature and young cod this year through April 22 totaled 97,212 metric tons as compared with 87,839 tons in 1960. Most of the landings were dried unsalted, with the balance sold fresh or salted.

Norwegian Landings and Utilization of Mature and Young Cod

Utilization	1961 to 4/22	1960 to 4/23	1959 to 4/25	1958 to 4/19
	(Metric Tons)			
Drying (unsalted)	51,513	41,155	70,895	47,120
Salting	24,686	29,810	15,877	27,811
Fresh market and for fillets	21,013	16,874	22,284	14,882
Total Landings	97,212	87,839	109,056	89,813

The Lofoten cod fishery season ended officially on April 24 with 41,664 metric tons with an ex-vessel value estimated at about Kr. 45 million (US$6.3 million). This was considerably better than in the 1960 season when fishermen landed a total of 37,387 tons.

At the height of the season only 8,878 men took part in the Lofoten fishery. This is the lowest participation since the State inspection service was started in 1880. Only once before, in the record year of 1947, have crews on fishing vessels received a larger share per man, mainly because of a surprisingly big catch, record high prices, and low participation.

The Lofoten season provided a good start for producers of sun-dried cod. With continued good landings, exports of sun-dried cod this year may reach a value of Kr. 39 million ($5.4 million).

The spring season off the coast of Finnmark looked quite promising in April. The catch from that fishery through April 24 was well over 27,000 tons, including 24,000 tons of cod. At the same time last year the catch was less than 20,000 tons of which cod accounted for 16,000 tons. (News of Norway, May 11, 1961; Fisket Gang, April 27, 1961.)

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EXPERIMENTAL TUNA FISHING OFF WEST AFRICA FAILS:

The six Norwegian fishing vessels which left Alesund last fall for West African fishing grounds to attempt tuna fishing on a large scale, have abandoned their project and returned home.

The fleet included the fisheries research vessel Johann Hjort, and the refrigerated transport vessel Caribia.

It is learned that the voyage, which was a trial run guaranteed by the Norwegian Government to owners and crew, was a failure.

Tuna were scarce and the owners expressed themselves as "disillusioned as to the prospects."

The Government guarantee has therefore been terminated. (Fishing News, April 7, 1961.)

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FIRST FACTORYSHIP TRAWLER DELIVERED:

Norway's only factoryship trawler, the M/S Havkvern II, was delivered in December 1960 to her owners in Bergen.

Built in Holland during the last war for the German Navy, the ship was sunk, salvaged after the war, converted for trawling, and given the name of Kelt. After an engine breakdown the trawler was sold to her present owners and has now been completely reconstructed into a modern factoryship trawler. The vessel is 202.4 feet over-all in length, has a 30.0-foot beam, and a depth of 15.8 feet.

Havkvern II is a starboard trawler and equipped with a 4-stroke, 8-cylinder Diesel engine, developing 1,250 hp. at 325 r.p.m. In addition, two auxiliary engines have been installed, plus a hydraulic winch and a steering engine. The trawler has two echo sounders, radar, and navigator. It is also equipped with machinery to manufacture fish meal and oil.

Norway (Contd.):

The factoryship trawler has a fresh-water generator and a skinning machine.

The freezing equipment (Freon 22) makes it possible to reach low temperatures with one stage. In the brine-cooled fillet freezers a temperature of -40° C. (-40° F.) is used, while the refrigerating room is based on direct evaporating and holds a temperature of -20° C. (-4.0° F.). The refrigerating room has a capacity of 125 metric tons of fish fillets. (Norwegian Fishing and Maritime News, vol. 7, no. 4, 1960.)

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GOOD PROSPECTS FOR DEVELOPING TUNA FISHERY:

Considerable shoals of bluefin tuna visit Northern European waters for about three months every summer. Details of recaptured specimens originally tagged in Norwegian waters indicate that the schools come from the Mediterranean, and that their visit to northern waters is merely a wild hunt for food. There migratory tuna prey on schools of fish like herring, sprat, and mackerel, and are also a dangerous enemy of the salmon.

Norway catches most of the tuna landed by North Sea countries. According to the Food and Agricultural Organization's fisheries statistics, Norway's landings were 3,004 metric tons in 1958, while Denmark landed 200 and Germany 400 tons.

Before 1947, the Norwegians caught about 200 tons of bluefin a year by harpoon handguns. In 1948, successful experiments with tuna purse seines persuaded several fishermen to take up this method, which resulted in landings of 2,563 tons in 1949. The bright reports of good earnings encouraged many skippers, and a record gross take of 11,480 tons was landed in 1952, while a record value was reported in 1955, when 352 purse-seine outfits divided 10,423 tons and almost Ł850,000 (US$2.4 million) between them. The peak period, which ended in 1955, was succeeded by a decline which has been due to the peculiarities of tuna behavior rather than scarce stocks.

The following table showing Norway's rather short tuna fishing history suggests it might be relatively simple to maintain a stable tuna fishery.

Norway's Tuna Landings, 1949-1960

Year	Landings	Value		Outfits Making Landings
	Metric Tons	1,000 Kroner	US$ 1,000	
1960	3,240	6,000	839	86
1959	2,491	4,136	578	97
1958	3,004	4,307	602	157
1957	5,009	8,188	1,145	218
1956	4,135	6,899	965	244
1955	10,423	16,971	2,374	433
1954	9,451	14,725	2,059	1/
1953	7,951	9,707	1,358	1/
1952	11,480	16,126	2,255	1/
1949	2,563	3,707	519	1/

1/Data unavailable.

Differing results between vessels are common to all fisheries, but in Norway, tuna fishing has been subject to violent fluctuations. The table shows a decrease in participation from 433 outfits in 1954, to 86 in 1960. (An "outfit" consists of the three boats necessary for tuna purse-seining.) Persevering owners have, however, bought several of the big seines for repair with the result that no new tuna purse seines have been made in recent years.

Since 1955, the weather has been a limiting factor, as the shoals have remained in the open sea instead of driving into sheltered waters as they did during the peak period. The main difficulty is, however, the behavior of the tuna itself.

The tuna usually arrive in Norwegian waters in July. They appear anywhere within the 800 nautical miles between Haugesund and Tromso, where the shoals may stay in an area for a day, moving on again the next--faster than any vessel can steam.

Considering the impossibility of hunting the fish over such a vast field, and also because of the idle days due to bad weather or no fish, the fishermen have found it best to operate from central bases. The experience gained during these years shows that certain areas offer better possibilities than others, and it may be mentioned the tuna catch off Sogn og Fjordane and Hordaland amounted to 65 percent of the total landings in 1958, and 90 percent in 1960. The fishing north of this area has, with a few exceptions, been generally poorer, and in the south, along the Skagerrak coast and in Oslofjord, it has been only incidental. Several schools have, however, been seen every year.

In 1960, 86 purse-seine outfits landed 3,240 tons of tuna; 9 were without any catch

Norway (Contd.):

at all. Of the mentioned outfits, 34 were based south of Stad, or in the vicinity of the season's main fishing field. Their average catch was 56 tons valued at $14,560, which indicated reasonable average earnings, but the catch varied between boats--one had less than 5 tons. The most successful outfit caught 240 tons valued at US$61,600. After deduction of operational costs, the crew were entitled to 50 percent of the proceeds which means that each member would receive $2,800--a good income for less than 3 month's work. (The 1960 season began on July 16 and ended on October 8.)

To get within fishing distance of the schools is a difficult part of tuna purse-seining. The fish are always moving at a speed governed by the type of food for which they are hunting. They are said to swim comparatively slow when after herring, faster for mackerel, and the fastest when their prey are few, or none. The end of the season is usually characterized by the virtual impossibility of getting within fishing range. This is a natural phenomenon as in the autumn the bait shoals are few and take to deep water because their food source--the plankton of the surface layers--is exhausted.

The Norwegians use a tuna purse-seine net of about 350 fathoms in length, 40 fathoms in depth on the wings and 50 fathoms in the center of the bag. Mesh size is 7.9 inches. An outfit consists of a deck purse-seine vessel of 60 to 70 feet, and an auxiliary vessel of about 50 feet, with a powerful engine. The purse seiner has also an open motor boat ("arm" or "ear" boat) for making the purse, and the auxiliary's task is to hold the purse seiner against the wind or clear of the net. The complement for both the vessels is 10 to 12 men.

Speed and precision are highly essential in shooting and hauling the net. The difficulties end when the net has been retrieved since the shoals can only swim in the bag.

As all tuna scouting is by eyesight, the purse seiners are fitted with a foremast lookout nest. A plane is also chartered for scouting and costs the fishermen only about a fraction of a cent per pound landed. (World Fishing, December 1960.)

Note: Kroner values converted at rate of 7.15 kroner equals US$1.

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MULTIPURPOSE FISHING VESSELS PLANNED:

A new type of combined stern trawler-mid-water trawler-purse seiner is to be built in Norway after nearly two years' research in cooperation with fishermen, the Trondheim model testing tank, and a Scottish firm, pioneers of stern-type factory-trawlers. For purse-seining, the vessel will be fitted with power blocks.

These triple-purpose vessels will be 151 feet long over-all, with a moulded beam of 28 feet and loaded draught of 14 feet 6 inches. Fish hold capacity will be 10,000 cubic feet, meal tanks 2,000 cubic feet, and 30 tons of fish oil will be carried in the double bottom. Two continuous decks will provide sheltered space for sorting, cleaning, and gutting the catch, and there will be access to all parts of the vessel without crossing the open deck. A crew of 20 will be accommodated in single or double cabins, and facilities will include two large drying rooms for the crew.

The vessels will be fitted with a variable pitch propeller encompassed by a nozzle rudder. Estimated cost of building these vessels in Norway is about US$497,000. (Australian Fisheries Newsletter, March 1961.)

Peru

FISH OIL PRODUCTION AND EXPORTS, 1955-60:

If Peruvian fish oil production in 1961 reaches 67,000 short tons, as tentatively forecast, almost 60,000 tons will be available for export this year.

Exports of a record 38,584 tons in 1960 were twice the previous record of 18,921 tons in 1959 and 7 times the 5,503-ton average of 1955 through 1959. Data on 1960 exports by destination are not available. In prior years, however, Western Europe received practically all of Peru's fish oils.

Peru's Production and Exports of Fish Oil, 1955-1960

Year	Production	Exports
	(Short Tons)	
1960	44,000	38,584
1959	26,120	18,921
1958	11,322	1,811
1957	8,454	4,781
1956	3,338	1,897
1955	1,354	102

Peru (Contd.):

The rapid rise in exports of fish oil reflects a similar increase in production. Domestic consumption has increased but more slowly than exports. In 1960, domestic consumption was estimated at about 8,000 tons against 1,200 tons in 1955. (Foreign Crops and Markets, U. S. Department of Agriculture, April 10, 1961.)

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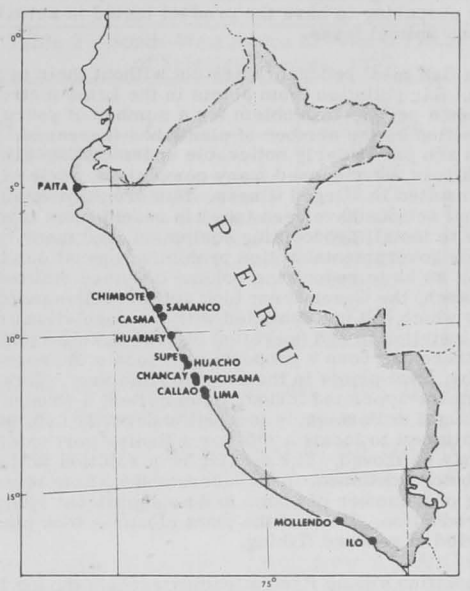
FISH MEAL INDUSTRY TRENDS, FIRST QUARTER 1961:

The improvement in fish meal prices was the most important development in Peru's fishery industry during the first quarter of 1961. From an average of about US$56 per short ton in January f.o.b. Peruvian ports, prices rose to nearly $72 in March. There were reports that so-called "floating parcels"--shipments en route to Europe, whose buyers were willing to sell--were being quoted at $117 a ton in early April. There were also rumors that speculative elements of the fish meal trade which made forward sales of Peruvian fish meal at the low 1960 prices were having difficulty covering their contracts.

A Peruvian marketing organization, whose membership consists of fish meal producers representing approximately 90 percent of the total Peruvian fish meal production, began operations on February 15, 1961. All fish meal exports from Peru except those of the non-member producers are handled by the newly formed organization on a quota basis, and the recovery of prices would appear to indicate that its operation has exercised a favorable, steadying effect on the industry. Information has not been made public regarding quotas assigned to each producer, nor the quarterly division of the 600,000 metric ton limit placed on Peru's fish meal exports for the current year as a result of the international meeting of fish meal producers in Paris last October. It is understood that the quarterly quota is related to the seasonal availability of anchovy, that is, it would be larger during a season of heavy fishing. Further, quarterly quotas for individual producers, particularly during the initial period of the organization, are understood to be flexible enough to take care of forward contracts.



Fish-reduction plants.

Two new fish meal processing developments have occurred in Peru. Two producers, one at Supe, the other at Chimbote, are using steam-drying equipment in new installations, which

Table 1 - Peruvian Exports of Fishery Products, 1960 and 1959

Product	1960 Quantity	1960 Value 1/		1959 Quantity	1959 Value 1/	
	Metric Tons	Million Soles	US$ 1,000	Metric Tons	Million Soles	US$ 1,000
Frozen Fish:						
Skipjack tuna	10,527	28.1	1,029	7,928	23.9	871
Other tuna	7,053	21.0	769	17,466	53.3	1,942
Swordfish	137	1.7	62	347	4.4	160
Shrimp (langostinos)	132	3.2	117	88	2.0	73
Total frozen fish	17,849	54.0	1,977	25,829	83.6	3,046
Canned Fish:						
Bonito	14,202	142.8	5,231	16,745	174.2	6,346
Tuna	797	7.9	289	776	6.4	233
Total canned fish	14,999	150.7	5,520	17,521	180.6	6,579
Fishery Byproducts:						
Fish meal	507,042	1,056.4	38,696	277,600	860.5	31,348
Fish oil	35,008	99.2	3,634	17,165	44.7	1,628
Sperm oil	13,500	46.3	1,696	10,004	33.9	1,235
Whale meal	2,783	4.7	172	3,317	9.7	353
Total byproducts	558,333	1,206.6	44,198	308,086	948.8	34,564
Grand Total	591,181	1,411.3	51,695	351,436	1,213.0	44,189

1/F.o.b. values, converted at rate of 27.30 soles equal US$1 in 1960, and 27.45 soles equal US$1 in 1959.
Source: Statistical Department, Callao Customhouse.

Peru (Contd.):

is considered to result in a better product than that from flame-drying equipment. A large new plant on the shore just north of Callao, which installed equipment to recover residues from stickwater, previously wasted, is now making "whole" fish meal--dry solubles are added to ordinary fish meal to increase protein content to a guaranteed minimum of 70 percent. The producer is preparing to have the product tested in actual use in poultry and animal feeds.

Peruvian fish meal producers are not without their problems at this time. Air pollution from plants in the Lima metropolitan area has been a perennial problem for a number of years, and it has intensified as the number of plants has increased. The odors which are particularly noticeable under certain atmospheric conditions, have caused many complaints, some of which have even resulted in alleged illness. Numerous governmental and municipal actions have been taken in recent months to require plants to install deodorizing equipment, and many have done so. One governmental action prohibited operations between 5 and 9 a.m., so as to reduce the volume of fumes emitted. About mid-March, the Government took action to fine and/or close plants which had not complied with the regulations requiring the installation and operation of deodorizing equipment. Moreover, there has been a proposal to relocate the approximately 35 fish meal plants in the Lima-Callao area. Employed by a Government-appointed industry committee, a French expert was brought to Peru early in April under a $7,000, 90-day contract to attempt to locate a site for a fishing port to which the plants may be moved. The search for a solution to the problem is being continued. It is understood that the temporary closing of a number of plants had no significant effect on fish meal production. Many of the plant closures took place during a period of reduced fishing.

In third position among Peru's leading exports during the first nine months of 1960, fish meal was displaced by sugar which ranked third for the full year, as a result of increased sugar exports in response to the expanded United States sugar quota. For the full year of 1960, fish meal exports of 507,000 metric tons were valued at 1,056.4 million soles ($38.7 million), an 83-percent increase in quantity and a 23-percent increase in value over 1959. The 1960 exports of other fishery products varied in comparison with 1959. There was a 33-percent increase in exports of frozen skipjack tuna, but a 60-percent drop in shipments of other frozen tuna. Peru's shrimp exports increased 50 percent, but canned bonito was down 15 percent. (United States Embassy in Lima, April 11, 1961.)

Philippines

U. S. FRESH-WATER FISHERY EXPERT TO ASSIST IN ORGANIZING LIMNOLOGICAL LABORATORY:

The Chief of the Lake Erie Fishery Investigations for the U. S. Bureau of Commercial Fisheries was at the Food and Agriculture Organization (FAO) headquarters during March 1961 for briefing before beginning a year's assignment as an FAO fishery expert in the Philippines. He was scheduled to leave for Manila early in April.

As a limnologist, he will assist the Philippine Government in organizing the work for a limnological laboratory which is under construction. He will also conduct fishery and limnological investigations of inland Philippine waters. Limnology is the study of the physical, chemical, and biological conditions of fresh waters.

Portugal

FISHERIES TRENDS, FIRST QUARTER 1961:

By April 15, 1961, practically all of Portugal's cod handline sail and motor vessels had departed for the Newfoundland Banks. Most of the cod trawlers had left in late January and early March. Preliminary reports received from the trawlers on the Banks indicated that fishing may be better this year than in the 1960 season.

Sardine fishing was in its closed season from January 15 to April 15. Exports of canned sardines during January-February 1961 were about 20 percent less than in the first two months of 1960, with Portugal's three principal customers, the United States, Germany, and the United Kingdom, all taking less. Total canned fish exports also fell off, although exports of anchovies showed some improvement in both quantity and price.

Table 1- Portuguese Canned Fish Exports, Jan.-Feb. 1960-61

	January-February 1961			January-February 1960		
Product	Qty.	Value 1/		Qty.	Value 2/	
	Metric Tons	1,000 Escudos	US$ 1,000	Metric Tons	1,000 Escudos	US$ 1,000
Sardines	6,886	113,427	3,929	8,593	121,512	4,221
Anchovies. . .	806	20,046	694	717	17,027	591
Tuna	224	5,123	177	211	4,769	166
Other	178	2,956	102	251	3,429	119
Total	8,094	141,552	4,902	9,772	146,737	5,097

1/Values converted at rate of 28.87 escudos equal US$1 for Jan.-Feb. 1961.
2/Values converted at rate of 28.79 escudos equal US$1 for Jan.-Feb. 1960.

Landings in 1960 of sardines and anchovies, and production and exports of canned fish reflected a good production year for sardines, but production of anchovies fell off from 1959. Exports of canned sardines in 1960 declined from the 1959 level, but prices paid were higher. Anchovy exports in 1960, as compared with 1959, declined in both quantity and value.

Exports of canned tuna from Portugal have been increasing in the past few years, but remain small, with 224 metric tons exported in January-February 1961 as compared with 211 tons during the first two months of 1960.

An innovation in the Portuguese sardine canning industry will be the introduction of aluminum cans within the next year or so. Two Portuguese canneries and a Canadian aluminum company are establishing a plant near Matosinhos which will have an initial production of 12 million cans. The new firm is capitalized at US$35,000. The aluminum sheet for these cans may eventually come from a rolling mill to be built near Lisbon.

Late in 1960 Lisbon's new fishing dock (now under construction at Pedroucos) was leased to a new firm. Some further details on this dock, recently published, give the total enclosed area as 17,940 square yards, of which 8,372 will be for sorting, displaying, and salting of fish and the remainder for commercial, administrative, and other installations. A separate covered area of 1,435 square yards will be for unloading sardines and other fish. The unloading quay running in front of the building will eventually be 622 yards long and there will be an additional 837 yards of quay for other purposes. The cost of installations at the dock is estimated at US$1.4 million and the number of personnel to be employed is estimated at 700-800. (United States Embassy in Lisbon, April 17, 1961.)

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South-West Africa

FISHERY TRENDS FOR 1960:

South-West Africa's 1960 fishing season at Walvis Bay and Luderitz was very successful. The total pilchard and maasbanker catch quota of 310,000 short tons landed in 1960 yielded 55,122 short tons of fish meal, 14,905 long tons of fish oil, and a record pack of 4,713,474 cases (48 lbs. each) of canned pilchards. The total value of the 1960 production at the manufacturers' level was estimated at over 25 million S. A. rands (US$35 million), compared with an estimated 16.6 million rands ($23.2 million in 1959). The entire 1960 fish meal and fish oil production was sold. Fish meal production, however, still is not profitable due mainly to Peruvian competition, but profits from the sale of fish oil were reported to closely balance the fish meal losses. The real profits in 1960 came from the canneries. The year 1961 is expected to be another good year in sales of canned fish.

Table 1 - South-West Africa's Production of Sardine (Pilchard) and Spiny Lobster Products, 1959-1960

Item	Production 1960	1959
	. . . (Short Tons) . . .	
Pilchard:		
Canned	114,034	41,943
Fish meal	55,122	60,852
Fish oil	16,694	19,377
	. . . (1,000 Lbs.) . . .	
Spiny lobster:		
Canned	399.4	502.7
Frozen tails	1,060.0	2,478.3
Meal	2,029.4	2,386.5

The South-West African pilchard industry is not affected by the drop in world fish meal prices to the same extent as the pilchard industry in the Union of South Africa. The reason is that the fish are caught so close to the factories that they can be landed with very little spoilage, and are of good enough quality for canning. By contrast, in the Union of South Africa, the fish are caught so far from the factories that by the time they are landed, only a small amount of the catch is suitable for canning, and the bulk is processed into meal and oil.

The 1960 spiny lobster season was not as good as the previous year. The canned and frozen spiny lobster production for 1960 was down 51 percent as compared with 1959. In addition to the pilchard-maasbanker catch, about 15,000 tons of spiny lobster, snoek, and other fish was landed. The whitefish catch amounted to only 2,700 tons valued at 230,000 rands ($322,000), or less than 1 percent of the total catch. The most important single species was snoek of which 1,043 tons was landed. The 1960 spiny lobster catch amounted to 4,324 short tons. Prices paid to the boats in 1960 are shown in table 2.

Table 2 - South-West Africa Ex-Vessel Prices of Selected Species, 1960

Species	Rands/ Short Ton	US$/ Short Ton
Pilchards/maasbanker	9.20	12.88
Snoek	100.00	140.00
Spiny lobster	92.00	128.80
Cape hake	50.00	70.00
Soles	250.00	350.00
Kabeljou	67.27	94.18
Kingklip	250.00	350.00
Steenbras	67.27	94.18
Shark, skate, & others	55.00	77.00

The South-West African 1961 quota for pilchard and maasbanker was set at 275,000 tons, and it is expected that as much as 100,000 tons more will be added as a supplementary quota for the year.

The sixth pilchard cannery at Walvis Bay was scheduled to start operations during May 1961. (United States Consulate, Cape Town, March 30 and May 29, 1961.)

Note: One South African rand equals about US$1.40.

Spain

BILBAO FISHERIES TRENDS, FIRST QUARTER 1961:

Landings were so heavy during the anchovy fishing season which opened March 1, 1961, in the Bilbao area of northern Spain that members of the fishermen's association agreed to limit their catches, and insisted on minimum prices which ranged from 1.75 pesetas a kilogram (about 1.3 U. S. cents a pound) in Guipuzcoa and Vizcaya to 3.75 pesetas a kilogram (about 2.8 U. S. cents a pound) in Oviedo.

The problem stemmed from inadequate preserving and processing facilities. During the 1960 fishing season, many anchovies were dumped back into the sea when the price threatened to drop below one peseta per kilogram (75 U. S. cents a 100 pounds). It was hoped that a new fish-meal processing plant with a capacity of 50 tons a day will be completed next year near Bermeo in time to alleviate the situation. Additional plants and refrigeration facilities are needed, however.

Spain (Contd.):

General dissatisfaction was reported among the Bermeo fishing fleet on its return in March 1961 from the tuna fishing grounds off Dakar. Catches ran from 65 to 125 tons per boat, but the fish brought low prices because of their smaller average size. Reports were that the fleet may not return next year unless more satisfactory handling methods can be developed, and refrigerator fishing vessels were used. (United States Consulate dispatch from Bilbao, April 19,1961.)

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UNITED STATES AND JAPANESE TROPICAL ATLANTIC TUNA ACTIVITIES AFFECT TUNA CANNERS:

An article "The Paradox of Spanish Tropical Tuna," which recently appeared in two fishing industry trade journals, Industrias Pesqueras and Industria Conservera, deals with the concern of the Spanish tuna interests over recent activities of the Japanese and United States tuna interests in exploitation of the Atlantic tropical tuna. The article describes reported attempts by the Japanese to operate directly in Spain and recent United States purchases of tuna from Spanish fishing vessels as prejudicial to the Spanish fish-canning industry.

According to recent news items, a large United States canning firm with headquarters in California purchased during the winter of 1960/61 the catches of the Spanish tuna fleet fishing in West African waters. Normally the fleet's catches are purchased and processed by Spanish canning plants in the Canary Islands. These sales to the United States firm are regarded as representing a loss to Spain of potential wealth from exclusive Spanish exploitation of these tuna catches.

A translation of the article published in the Spanish fishery publication Industrias Pesqueras, April 1, 1961, follows:

"The increase in the production of species of the tuna family is a phenomenon of our times. The development of the tuna industry--fishery and processing--which started about twenty years ago with the spectacular operation of California tuna clippers in the equatorial zone, has been on the increase. World War II, when the United States (fishing) fleet became temporarily inactive, helped the development of the Peruvian fleet, which had overlooked its privileged position near the Galapagos--an inexhaustible source of supply. At the end of the war, the resumption of operations by the Japanese contributed to the development of the tuna industry in the Balboa Ocean which has reached an undreamed-of level.

"Unexpected also were the reactions of the consumer to the increased supply of canned tuna. The United States market for canned foods underwent a great change, and the results were highly satisfactory for the development of the new industry. Consumers in the United States, Cuba, Switzerland, welcomed the new food product.

"This movement has affected almost exclusively Pacific tuna. The Atlantic industry, mainly the European industry, kept to its traditional routine for over 15 years after the start of the development of United States and Japanese tuna fisheries. The importance of the massive resource and its future possibilities have been grasped only after a long time, and the Atlantic tropic included in the usual fishing zones.

"However, quality was represented by white meat tuna, which roams our coasts. There were no large-scale operations, so much to the United States taste, but there was always the possibility of increasing consumption, in the event of increasing catches. It seems that this moment has arrived, and it is a good idea to foresee the possible turn of events.

"For some years now the Japanese have been trying to introduce themselves into the area of Atlantic tuna. Their fleet based in Recife (Brazil) is one of the more evident results of the Japanese industrial development, in a field that seemed to be reserved to Western countries. It is no secret that an important Japanese firm has contacted the Consorcio Almadrabero and other Spanish industrial groups in connection with the use of modern units in the capture of tropical tuna and to process it in factories in the South of Spain.

"These first Eastern steps have not been overlooked by the large United States canneries. The latter control most of the Californian fleet, and buy in advance their landings of frozen tuna, but they have not abandoned the Atlantic and since 1954 have extended their plants to Puerto Rico, considering no doubt the convenience of obtaining close

Spain (Contd.):

to the source of supply catches of tuna from the Caribbean and the Gulf of Mexico.

"The Puerto Rican canning industry is now receiving important supplies of tuna catches off Dakar by Spanish 'tuna clippers.' And the large United States firms, with which the Spanish canneries should compete on the basis of quality, have started an intensive publicity campaign on the product processed from the raw material bought from the Spanish fleet from Bermeo, at prices and in conditions agreed upon at the beginning of the last fishing season.

"This episode should not be ignored. Its economic importance cannot be denied, both now and in the future. The Spanish canning industry has reasons to feel uneasy about this situation.

"Tropical tuna, which was captured during the fall-winter period by the small tuna boats from the Cantabrian, used to be absorbed by the fish canning plants in the Canaries. These plants were for the most part branch factories of plants established in the Peninsula (Spain).

"Foreign competition started at the beginning of the present season, and the large United States canners secured a new source of supply for Atlantic tuna. At the same time they forced Spanish canneries in the islands into inactivity by depriving them of a source of supply that they could not replace.

"There is no doubt that a difference in prices influenced this change. Perhaps the possibility of foreign competition in the national market should have been foreseen. In any case, it is now a question of considering the consequences that a recurrence of this situation in future years might have on the interests of the Spanish fish canning industry.

"It is true that the Americans pay in dollars and pay higher prices than those paid in other years by the canneries in the islands. But we cannot ignore that the difference is not insurmountable from the point of view of the income of ship owners and crew members. Even less, the fact that the dollar income for the Public Treasury would be much greater if, instead of selling tuna in its original state, the finished product were exported. The latter would, in addition, provide other advantages such as a greater employment, the use of national raw materials, etc.

"It will be seen that the subject is an interesting one from the point of view of the Spanish industry. Because, whatever the eventual advantage to the fishermen, other interests should also be kept in mind since they represent worthwhile enterprises."

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VIGO FISHERIES TRENDS, JANUARY-MARCH 1961:

Fish Exchange: Landings at the Vigo Fish Exchange for the first quarter of 1961 amounted to 14,387 metric tons, an increase of 2,419 tons over the first quarter of 1960. The value of the catch was 156,191,000 pesetas (US$2,603,000), an increase of 14 percent over the value for the corresponding quarter of 1960. Catches for the fourth quarter of 1960 were 19,141 metric tons with a value of 170,647,000 pesetas (US$2,844,000). The average price per kilo for the first quarters of 1961 and 1960, and for the fourth quarter 1960 were 10.84 (8.2 U.S. cents a pound), 11.63 (8.8 U.S. cents a pound), and 8.90 pesetas (6.6 U.S. cents a pound), respectively.

The sardine catch, which represented the largest landings in the fourth quarter of 1960 with 7,026 metric tons, was minimal during the first quarter of 1961 because of a closed season

Table 1 - Vigo Landings and Average Ex-Vessel Prices for Selected Species

Species	1961			1960					
	January-March			January-March			October-December		
	Qty.	Avg. Price		Qty.	Avg. Price		Qty.	Avg. Price	
	Metric Tons	Pesetas/ Kilo	US¢/ Lb.	Metric Tons	Pesetas/ Kilo	US¢/ Lb.	Metric Tons	Pesetas/ Kilo	US¢/ Lb.
Small hake	4,519	16.81	12.7	2,498	20.28	15.3	2,434	24.00	18.1
Pomfret	1,984	7.46	5.6	3,248	8.45	6.4	72	9.30	7.0
Faneca (Phycis phycis)	879	6.29	4.8	604	7.16	5.4	648	6.73	5.1
Hake	91	60.63	45.8	85	58.74	44.4	125	70.35	53.2
Horse mackerel	753	5.88	4.4	1,198	5.57	4.2	3,430	3.66	2.8

Spain (Contd.):

during half of the quarter. Pomfret landings increased substantially after the disappointing level of the fourth quarter in 1960 but did not approach the level of the previous year. The past winter's low landings were, in some instances, attributed to the system of catch division between vessel owners and the crew known as "a la parte." Under this system the individual crew members keep for themselves, in addition to their share of fish netted, all they catch with lines individually. It was reported that during the previous fishing season, individual landings by crew members amounted to 80 percent of the total pomfret landings which made it uneconomical for the vessel owners to send out the fleet for this species. According to those sources, the crews, having made relatively good money during the earlier albacore season, felt no economic pressure to agree to vessel owners' demand for a change in the catch division system in a manner more favorable to the owners.

Small hake prices, as indicated in table 1, were substantially lower than those in the previous quarter because of very plentiful supplies. Industry requests for permission to export frozen small hake to relieve the downward trend of domestic prices were reportedly refused. It was understood that the Government prefers that plentiful fish supplies continue to result in lower fish prices to counteract consumer pressure from causing price rises in meat.

Fish Canning and Processing: The first quarter of 1961 was a period of seasonally light activity for the fish canning industry as is normal between the end of one sardine season in December and the beginning of the next in April. Recent price increases of 15 to 20 percent for most species of canned fish sold in the domestic market have reportedly further reduced sales, already feeling the effects of consumer resistance to high prices. Canners claim, however, that higher raw material costs--principally for imported tinplate, but also for some species of fish and shellfish and for olive oil--made the increased prices mandatory.

Exports of Canned Fish: A questionnaire concerning fish products exports was circulated during the first quarter by the Ministry of Commerce to various organizations with an interest in the subject. Replies submitted from Galicia recommended various measures to develop Spanish exports, including: (1) renovation of the coastal fishing fleet which supplies most of the species processed; (2) adoption of modern fishing methods common in other countries; (3) importation of up-to-date equipment for the fleet including nylon nets, electronic sounding devices, mechanical net haulers; (4) modernization of canning plant and equipment; (5) formation of a single exporting-organization; (6) importation of such species as tuna for the canning industry when domestic landings fall short of the industry's needs; and (7) establishment and enforcement of regulations for both containers and quality control. Also included in the responses was acknowledgment of the need for a thorough study of the fishery products industry in Spain as a basis for any Government assistance and export promotion program.

Although there was general agreement among the responses to the questionnaire as to what general measures should be taken, there was some disagreement as to certain specific steps. For example, one reply recommended the establishment of minimum export prices to prevent Spanish exporters from competing among themselves for export markets, while another organization regarded such a step as contrary to principles of free trade and to current international tendencies against price-fixing. While there was general agreement as to the importance of some sort of single export organization, there still existed a wide range of views within the canning industry as to how far such an organization should go in attempting to market under a single brand name, or whether its activities should be limited to advertising to gain acceptance of Spanish canned fish. (United States Consulate, Vigo, April 19, 1961.)

Note: Values converted at rate of 60 pesetas equal US$1.

Table 2 - Distribution of Landings at Vigo, First Quarter 1961, and First and Fourth Quarters 1960

	Shipped Fresh to Domestic Markets	Canning	Other Processing (smoking, drying, fish meal, etc.)	Local Consumption
	(Metric Tons)			
1st Quarter 1961	10,637	1,045	1,888	817
4th Quarter 1960	10,336	4,601	3,179	1,025
1st Quarter 1960	9,821	829	389	929

Sweden

FUNDS ALLOTTED FOR ADVERTISING OF FISHERY PRODUCTS:

The Swedish Central Office for Fish Propaganda has been granted 100,000 crowns (US$19,300) for advertising fish during the fiscal year beginning July 1, 1961. Import fees levied on fishery products will be used to obtain the money. The fund will be administered by the Swedish Board of Agriculture.

The Board of Agriculture originally proposed that the money be paid out direct to the Central Office for Fish Propaganda from the price regulation fund. This plan, however, was not supported by the Council of State, the United States Consulate in Goteborg reported on May 8, 1961.

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SHRIMP PRICES DROP DUE TO INCREASE IN LANDINGS:

Prices for shrimp in Sweden have for some time been declining. The reasons are: (1) increased supplies in late years; and (2) imports of shrimp from Norway.

During the past two years shrimp fishing has been intensified and carried out in a completely different way than formerly. The vessels are larger and more powerful and the equipment has been improved.

Sweden (Contd.):

In addition, the number of vessels engaged in shrimp fishing has increased considerably. For example, in the Gravarne district on the west coast, there were about 25 shrimp trawlers two years ago; there are now 54 trawlers. In the Smogen area there were previously about 45 shrimp trawlers compared with 63 at present. With one exception all of the trawlers in the Smogen district now fish for shrimp. This same tendency is also apparent in the Gravarne district, where more and more herring trawlers are changing over to shrimp fishing.

The result of this trend has been that by reason of the increased capacity of the vessels, shrimp fishing has been extended farther out to sea and to a greater depth. Consequently, landings of shrimp have grown in number and quantity and prices have dropped.

There is a control, however, which prevents shrimp fishermen from landing as much shrimp as they might be able to or wish to land. A vessel with a 2-man crew may land a total quantity of 270 kilos (about 595 pounds) of cooked shrimp per week, while a vessel with a 3-man crew is limited to 375 kilos (about 827 pounds) of cooked shrimp per week, and a vessel with a 4-man crew is restricted to 480 kilos (about 1,058 pounds).

In the case of raw shrimp for industrial canning purposes, a 4-man vessel may land a maximum quantity of 600 kilos (about 1,323 pounds) per week; a 3-man vessel may land 450 kilos (about 992 pounds); and a 2-man vessel 300 kilos (about 661 pounds). A maximum of 50 percent of the fixed weekly quantity may be landed during one fishing trip.

Despite these limitations, as much as 20 metric tons of cooked shrimp were landed recently in one week at the Gravarne fish auction. Only a couple of years ago a weekly supply of 9 tons was considered very large.

Total landings by Swedish fishermen of shrimp in Sweden in 1960 amounted to 3,563 tons valued at 15,387,000 crowns (US$2,970,000). Import figures covering shipments of shrimp from Norway are not available at this time.

An indication of the relative importance of the Swedish centers is gained from the following statistics relating to Swedish shrimp landings in 1960: Stromstad leads with 1,168 tons of shrimp valued at 5,041,000 crowns (US$973,000), followed by Smogen with 968 tons valued at 4,141,000 crowns ($799,000), and Gravarne with 768 tons worth 3,396,000 crowns ($655,000).

The growing importance and attraction of shrimp fishing is evident when it is realized that out of the 88,700,000 crowns ($17,119,000) worth of fish landed in 1960 by Swedish fishermen on the west coast, shrimp accounted for one-fifth of the total value.

There are no minimum or guaranteed prices for cooked shrimp. For other shrimp there is a minimum price of 1.75 crowns per kilo (15.3 U. S. cents a pound).

Shrimp are no longer considered a table luxury in Sweden, according to fish auction officials. Consumers have discovered they can buy this delicacy at a reasonable price and sales are increasing.

Despite this wider and growing market outlet, imports of Norwegian shrimp are worrisome to Swedish shrimp fishermen.

At the annual meeting of the Gravarne division of the West Coast Fishermen's Central Association, it was stated that difficulties for Swedish shrimp fishermen have arisen out of the European Free Trade Association (EFTA) in the form of the large quantity of shrimp imported from Norway. It was also asserted that Norwegian shrimp are cheaper because of a high subsidy. A decision was made at the meeting to introduce a motion at this year's fisheries congress pointing out that Norwegian shrimp imports should be restricted for the benefit of the Swedish shrimp catch, and that Norwegian shrimp sells at lower prices with the result that prices of Swedish-caught shrimp drop accordingly.

Recent cooked shrimp prices at the Gravarne fish auction have fluctuated between 2.90 crowns and 4.75 crowns per kilo (25.4-41.6 U. S. cents a pound). At the Smogen auction, prices have ranged between 2.50 crowns and 6.75 crowns (21.9-59.1 U. S. cents a pound). This latter variation, however, was partly due to the poor quality of a large part of the offerings. (United States Consulate, Goteborg, April 19, 1961.)

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STEEL TRAWLERS PURCHASED FROM EAST GERMANY:

As of May 1961, a total of 13 steel trawlers were on order with a Brandenburg, East

Sweden (Contd.):

Germany, shipbuilding yard, according to a statement made by the Managing Director of a newly established Goteberg agency firm. The Swedish firm said it had sold the 7 trawlers which are to be delivered in 1961, and that while no definite sales have been made of the other 6 trawlers scheduled for delivery in 1962, interest in these was indicated from a number of sources.

The reported cost of an East German-built steel trawler is approximately 450,000 kroner ($86,900). These trawlers are about 102 feet long and 22 feet wide. They measure 263 gross registered tons, and will carry about 94.5 metric tons of fish. The motor is a 560 hp. Diesel engine giving the trawler a calculated speed of 10 knots. It is reported that some 450 of these series-built steel trawlers have been constructed for Soviet Russia.

At a press conference which the East German delegation to the Goteborg Swedish International Trade Fair held on May 8, 1961, the East German Acting Minister for Commerce and the counselor of the Ministry of Commerce both emphasized the importance of fish in Sweden's trade with East Germany. In the 1961 trading arrangement, fishery products represent 18 million kroner (US$3.5 million) of the total value of the trading list. Deliveries amounting to 11 million kroner (US$2.1 million) in value have been made to date. The East German officials said that if fish deliveries over and above the remaining 7 million kroner (US$1.4 million) were to be contracted, it would depend on whether East Germany could increase exports to Sweden, and that steel trawlers play an important role in those exports. In principle, they said, East Germany wishes to purchase from Sweden in order to balance their sales to Sweden, the United States Consulate in Goteborg reported in May 9, 1961.)

Thailand

COMMERCIAL FISH PRODUCTION INCREASES:

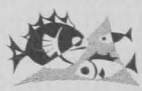
Fisheries are important in the economic life of Thailand since fish is the principal supplement to the people's rice diet, and constitutes the only important protein element in their food. The rivers are very productive and yield a considerable variety of fresh water species. In addition, the fishing grounds along the 1,500 miles of sea coast have sizable resources.

Thailand's commercial fresh-water fish production, which had been holding steady at about 50,000 metric tons a year through 1958, rose to 60,000 tons in 1959. All was used for home consumption. The total salt-water catch in 1959 was 150,000 tons, of which about 10 percent was exported, mostly as cured fish to Indonesia. The commercial catch of Pla-thu ("Rastrelliger" species), the common daily food of the poorer classes, is estimated at 50,000 tons a year. In addition to the commercial marine catch, there is a substantial catch by anglers for their own direct consumption.

Tilapia being netted from a pool in a Thai rice field.

In 1958, Thailand had a fishing fleet of about 2,200 boats with a total tonnage of 22,000 tons. The marine catch landed at Bangkok in recent years has been estimated at from 30,000 to 40,000 tons annually.

In addition to finfish, shrimp production has gained importance, particularly since the semigovernmental Cold Storage Organization has been providing cold-storage facilities at the port of Bangkok. The United States has become the largest customer for Thai shrimp since the first shipment to that country in April 1959. The 1959 United States imports of frozen shrimp from Thailand amounted to 176,000 pounds valued at $180,000. Through April 1960, Thai shipments amounted to 220,000 pounds.



Union of South Africa and South-West Africa

LANDINGS SET NEW RECORD IN 1960:

As expected when the pelagic shoal fish catch at the end of July 1960 reached the outstanding figure of 453,387 short tons, the total Union of South African fish landings also reached a new record in 1960. In addition to the large pelagic shoal fish landings a record 135,206 tons was landed by trawlers, an estimated 30,000 tons from line-fishing boats, and 10,000 tons of spiny lobster. The catch soared from 491,717 tons in 1959 to 628,593 tons in 1960--the largest single rise in any year in the history of the Union of South Africa industry. This figure does not include 28,243 tons of mackerel and maasbanker caught during the special November-December season on the West Coast, which brings the total catch to 656,836 tons.

Combining Union of South Africa and South-West Africa catches, the landings in 1960 totaled 981,836 short tons--a record total almost 180,000 tons more than the 803,113 tons landed in 1959, and almost 300,000 tons above the 546,951 tons landed in 1958. The pelagic shoal fish industry contributed the bulk of the South-West and Union of South Africa total.

The South African shoal fishing season in 1961 opened with a January catch nearly three times higher than the best in the same month of any previous season. This was followed by landings in February which were expected to exceed 90,000 tons to set another record for the industry, and to produce 170,000 tons of pilchards, maasbanker, and mackerel in only two months' fishing. The brightest feature of this good fishing is that the shoals appeared in the area from which they had all but vanished 4 or 5 years ago--around St. Helena Bay. The fish were reported to be fine, fat and mature, good for canning (both because of their condition and because of the short haul to the factories), and with a high oil content. Most of the factories had, during February 1961, to call for a slow down in fishing so that plants could handle the fish. Despite this, one boat--the 69½-foot long Bellevanti, brought in 2,180 tons during the month. (The South African Shipping News and Fishing Industry Review, March 1961.)

Note: Also see South-West Africa in this issue on p. 87.

Union of South Africa

PILCHARD-MAASBANKER FISHERY, JANUARY 1961:

The Union of South Africa Cape west coast fish catch in January 1961 comprised 69,879 short tons pilchards, 6,745 tons of maasbanker (jack mackerel), and 3,821 tons mackerel. The total catch was 80,445 tons. This compares with 23,162 tons pilchards, 5,694 tons maasbanker, and 2,147 tons mackerel, a total of 31,003 tons in January last year; and with 10,452 tons pilchards, 49 tons maasbanker, and 6,139 tons mackerel, a total of 16,640 tons in January 1959.

The January 1961 catch yielded 17,286 short tons of fish meal, 1,342,460 Imperial gallons of fish body oil, 2,312,272 pounds canned pilchards, 1,763,416 pounds canned maasbanker, and 819,366 pounds canned mackerel. (The South African Shipping News and Fishing Industry Review, March 1961.)

U.S.S.R.

FACTORYSHIP TRAWLERS FISHING OFF SOUTH-WEST AFRICA:

Research and large factory trawlers of the Soviet fishing fleet, in their far ranging operations to boost the Russian catch to 4,626,000 metric tons in 1965, have been moving steadily south off the coast of Africa. For some months now there have been reports of trawlers off the Congo, Angola, and South-West Africa.

In February 1961, the research trawler Muksun (which had previously visited Cape Town) and the factory trawler Izumrud called at Walvis Bay for stores; and three more vessels, the Radichev, the Atiubinsk, and the Taras Schewtchenko, were sighted 3 to 4 miles off Pelican Point.

Some of these ships are among the largest and most modern of their type afloat. They are stern-trawling factoryships, freezing or canning their catch and producing fish meal. Their visit has caused some concern in the South African fishing industry. It has long been known that the U. S. S. R. has had a massive program for the building of factory trawlers. German yards have built 24 ships of the Pushkin class; the later Majakowski class is being built in a shipyard at Nikolajewsk on the Black Sea; and, at the Second World Fish-

U. S. S. R. (Contd.):

ing Boat Congress held in Rome in 1959, a U.S.S.R. delegate stated that his country had been operating stern-chute factory trawlers since 1955. He also said that a further improved type of factory trawler had been designed for construction in Russia. He said emphasis had been placed on preserving catches by means of ice cooling and/or freezing.

Since that Congress, there have been indications that these latest trawlers have been developed for long-range operation in tropical or subtropical waters, disposing of their processed catch direct to export markets, and perhaps carrying part of it back to their home port of Kaliningrad in the Baltic.

It was predicted that the Russians would follow the example of the Japanese and find part of their huge yearly catch in west and southern African waters. A trawler of the Pushkin class had earlier been reported in South African waters about 100 miles offshore that had caught and processed tons of shoal fish. The fact that she was there was an indication of Russian "interest in those fishing waters and also of the wide range of the latest Russian fish factoryships."

In a report published early last year a Russian trade paper emphasized the importance of Atlantic fishing and said that, to help expand operations, more trawler-type exploratory and fishery research vessels should be made available. Kaliningrad, home port of the visiting ships, was mentioned as one of the bases allotted four research ships of the "Ocean" type.

The research trawler Muksun probably ranges ahead of the factoryships trying out trawling banks and locating large concentrations of fish. That she was in Cape Town indicates that Russian South Atlantic fishing may not stop at Walvis. There have been rumors in Walvis Bay since December of Russian vessels off the Angola and South-West Africa coast.

Muksun is a deep-sea trawler fitted with port and starboard side-trawling gallows, Diesel-powered, 189 ft. 9 in. long with a 30-ft. beam, and a cruising speed of 10 knots. She was built in Britain in 1956 and is well equipped with fish-finding and navigational instruments, including radar. She carries several scientists aboard and has been away from her home port of Kaliningrad for about a year.

Three days after the Muksun was berthed, the Majakowski class factory trawler Izumrud docked. The 3,700-gross ton stern trawler is powered by a Diesel and was built in the U. S. S. R. She is 269 ft. long between perpendiculars and has a 40-ft. beam. Built a little more than a year ago, she left Kaliningrad three months before calling at Walvis Bay. According to members of her crew of 94 men and 6 women, she fished in the North Atlantic and in the Gulf of Guinea before moving south. The vessel is a well-equipped modern factory with deep-freezing plant, refrigerated holds, gutting and cleaning rooms, and a fish meal and oil plant. (The South African Shipping News and Fishing Industry Review, March 1961.)

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MOTHERSHIP FLEET PRODUCTION OF NORTH ATLANTIC HERRING, WINTER 1961:

The Soviet mothership Iokhannes Vares during three months in the North Atlantic herring fishery this winter processed 1,740 metric tons (about 3.8 million pounds) of herring, and serviced 100 fishing vessels with supplies and technical assistance. Of the processed catch, 4,000 five-kilogram (about 11 pounds) containers consisted of "special salted herring." After a short period in port, the mothership was scheduled to go to the banks off Newfoundland to take part in the ocean perch fishery, according to the March 14 issue of Sovjetskaja Estonija.

At the same time Sovjetskaja Litva stated that, in addition to the large freezer trawler Ljudas Gira and six medium trawlers, six other vessels, which had participated in the North Atlantic herring fishery, were ordered directly to the Newfoundland banks without first going into port. (Fiskets Gang, April 20, 1961.)

United Kingdom

FISH MEAL PRICES, APRIL 1961:

Fish meal prices reported by a British trade periodical on April 29, 1961, were as follows:

United Kingdom (Contd.):

Type of Fish Meal	Protein Content	Date Quoted	£/s./d. per Long Ton	US$ per Short Ton
S. Africa (white fish)	65	4/29/61	50/7/6	125.94
Peru (branded)	65	4/29/61	46/0/0	115.00
Peru (average quality)	65	4/29/61	44/10/0	111.25
Iceland (white cod)	70-73	11/26/60	42/0-48/16	105.00-122.00
Iceland (herring)	70	4/29/61	51/12/6	129.06
Denmark (herring)	73	4/29/61	54/15/0	136.87
Domestic (white fish)	66	1/ 4/29/61	53/10/0	133.75
Domestic (herring) 2/	68-71	4/29/61	53/0/0	132.50

1/Effective March 1, 1961; in bags.
2/In bags ex-warehouse, 8-11 percent oil.
Notes: Imported fish-meal prices are c.i.f. current shipments, and domestic meal prices (net cash) are ex-plant, in 6 long-ton lots and bagged, unless otherwise reported.
Values converted at rate of £1 equals US$2.80.

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GRANTS AND LOANS FOR SCOTTISH FISHING VESSELS RESTRICTED:

The British White Fish Authority has decided to suspend until September 1961 approval of applications for the building of further trawlers for the Scottish fleet under their grants and loans program. A brake is also to be put on the expansion in numbers of inshore boats and the policy will be to maintain the seine-net fleet at its present strength. These decisions were made known to Aberdeen trawler owners at a meeting of members of the Aberdeen Fishing Vessel Owners' Association late in February this year.

Towards the end of 1960 the Scottish Committee of the White Fish Authority met the directors of the Aberdeen Fishing Vessel Owners' Association when the size and composition of the Scottish fishing fleet was discussed.

On February 9, this year, the chairman of the association and two other directors had consultations with the White Fish Authority in London, when they advised a temporary suspension of building so far as the Scottish fleet was concerned.

The Secretary of the Scottish Committee of the White Fish Authority states that the Authority has been giving considerable thought to their future policy regarding the administration of the grants and loans program.

At a meeting which took place on February 9 it had been tentatively agreed that in view of the uncertainty over future international fishing limits, particularly at Faroe Islands; the substantial measure of replacement and modernization which had already taken place in the fleet; the present "crewing" position; and certain recommendations in the Fleck report, it seemed necessary to slow down to a considerable extent the rate of new building in order that a reappraisal of the whole situation might be made over the next 15 to 18 months.

The Committee had therefore decided to accept the Association's advice and decided to to suspend the issue of any further approvals for near- and middle-water trawlers for Scotland until September 1961 when the position will be reviewed in consultation with the industry.

The Scottish Committee had taken note of the Aberdeen owners' request that appropriate allocation under the grants and loans program should be reserved against a possible resumption of building after September, and that the grants and loans should be issued under the same terms and conditions as applying at present.

The Committee added that the seine-net boats required under the Government's training program for the fishermen of the Outer Isles would not be affected by the standstill. Continued assistance would also be given for the re-engining of vessels and the provision of boats for creel fishing.

The owners would lose nothing by the standstill. Appropriate funds would be reserved in the interval for Aberdeen use. Thirty Aberdeen applications were pending

United Kingdom (Contd.):

approval by the authority and these were deferred until September. (Fish Trades Gazette, March 4, 1961.)

Yugoslavia

TECHNICIANS MAY GO TO JAPAN TO STUDY TUNA PROCESSING TECHNIQUES: Yugoslavia has contacted Japanese tuna packers concerning a proposal to send two technicians to Japan to study tuna processing techniques, including the utilization of tuna waste products. It seems Yugoslavia hopes to go into full-scale production of canned tuna, utilizing Japanese frozen tuna, and wants to learn all there is to know about tuna processing methods. (Shin Suisan Shimbun Sokuho, May 2, 1961.)

PRODUCTION OF FISH MEAL, BY MAJOR PRODUCING COUNTRIES, 1948, 1953, 1958, AND 1959