International

BALTIC SALMON FISHERIES CONVENTION PROPOSED: A proposed convention to regulate salmon fisheries in the Baltic Sea was discussed informally between Swedish and West German government officials in Hamburg in July 1956. Only partial agreement could be reached. Germany objected to the institution of a closed season on the grounds of insufficient scientific evidence to prove its necessity, and because of fears of economic repercussions in the German salmon fishery, according to an August 29 report from the United States Consulate at Bremen.

In July 1956 two representatives of the Swedish government visited Hamburg to discuss unofficially salmon fisheries in the Baltic Sea with the West German Food Ministry.

Swedish fisheries are deeply concerned by the decline of salmon stocks in the Baltic Sea, in spite of their large-scale breeding efforts and the release of young salmon in these waters. Therefore, the Swedes are interested in establishing an international convention regulating catching techniques, minimum sizes, and a closed season. Sweden has already approached Denmark in this matter and wishes to include West Germany in the proposed convention.1/

It was found that with regard to catching techniques and the minimum size of the salmon to be caught an agreement could be reached relatively easily. However, West German opinions about the necessity and extent of a closed season differed widely from those entertained by the Swedes. West German experts assert that scientific data concerning salmon stock development in the Baltic Sea are not sufficiently complete to warrant such a step, the more so since it would have considerable repercussions on West German salmon fishery activities. The proposed closed season, which would last from December 20 until February 28, would probably cut the West German salmon catch to about half of its present volume. German fishery experts see no way of compensating such a loss.

In view of these facts it was agreed to suspend the problem of a closed season for the Baltic salmon fisheries. The Copenhagen headquarters of the International Council for Marine Research will be asked to conduct a thorough investigation of salmon stocks, their development, movements and all other questions involved. The Council's findings and final report will serve as a basis for further talks.

1/ According to the Bulletin Statistique of the Conseil Permanent International pour l'Exploration de la Mer, volume XXXVIII/1953, salmon catches in 1953 amounted to: Denmark 753 metric tons, Sweden 413, Finland (incl. trout) 350, West Germany 75; total catch 1,591 metric tons.

AGREEMENTS

ICELAND AND CZECHOSLOVAKIA AMEND 1954 TRADE AGREEMENT: Iceland and Czechoslovakia on August 14, 1956, signed a new annual Protocol to their Trade Agreement of 1954. It is beleived that total exports to Czechoslovakia will be about 25 percent over 1955 and 61 percent over 1954. Imports are expected to be 13 percent over 1955 and 51 percent over 1954. The volume of fishery products to be exported from Iceland will be 30 percent higher in 1956/57 then for the preceding year and 53 percent higher than in 1954/55. The table gives the exports since the agreement was made.

Icelandic Exports of Fishery Products Under Iceland-Czechoslovakia Trade Agreement						
Product	FY1956/57	FY1955/56	FY1954/55	FY1956/57	FY1955/56	FY1954/55
	(Metric Tons)			(US$1,000)		
Fish fillets, frozen	7,000	8,000	6,000	2,760	2,854	2,140
Herring, salted and frozen	3,500	1,000	2,000	500	185	369
Fish meal	2,000	1,000	500	360	154	77
Fish oil	500	-	-	111	-	-
Total	13,000	10,000	8,500	3,731	3,193	2,586

The figures in the table do not include frozen fillets and fish meal to be shipped to Czechoslovakia to service and repay the credit granted for purchase of hydroelectric machinery early in 1956.

Note: Values converted at the rate of 44.21 Czech crowns equal 100 Icelandic kronur and 1 Icelandic krounur equals US$0.0615.

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ITALY AND YUGOSLAVIA SIGN AGREEMENT ON FISHING IN THE ADRIATIC: The lack of a fishing agreement has been a source of irritation and incidents, with the Yugoslavs impounding Italian fishing boats when caught fishing in Yugoslav waters. An agreement permits Italian fishing from September to April in certain zones of the Adriatic near the Pelagruz and Kajol islands, westward to the island of Viz and near the Jabuka and Kamik islands. Along the upper part of the west coast of Istria, 35 "stationary" Italian vessels are to be permitted to fish from November to April at a distance of four miles from the Yugoslav coast. The Yugoslav sea area which is now open to Italian fishing vessels is almost one-half of the area fixed under the 1949 agreement and Yugoslav waters are completely protected along the entire sea board for a distance of 10 miles from the coast with the exception of the areas included in the agreement; (in addition to 6 miles of territorial waters there is also a 4 mile protective belt). The agreement extends only to October 1957, so that with most of the 1955/56 season passed it involves little more than one full season. However, prospects exist that the fishing agreement will be extended for an additional year, points out a March 12, 1956 dispatch from the United States Embassy in Belgrade. The agreement also provides for a joint fishing zone in part of the Trieste gulf, the possibility of Italian purchases of fish from Yugoslav waters, and proposes joint efforts in developing deep sea fishing.

GENERAL AGREEMENT ON TARIFFS AND TRADE

11th SESSION IN GENEVA: Recent developments in the economic field will be reflected in discussions at the eleventh session of the Contracting Parties to the General Agreement on Tariffs and Trade (GATT) which opened in Geneva October 11, 1956.

For example, proposals for the establishment of a common market or customs union for Benelux, France, the Federal Republic of Germany, and Italy are now being studied in Brussels. In Paris, a working party established by the Organization for European Cooperation (OEEC) is examining the possibility of creating a free-trade area to include the countries forming the proposed customs union and other OEEC member countries. The Contracting Parties will be concerned as to the obligations under the GATT of member countries of GATT which decide to participate in any such customs union or free-trade area.

It has been proposed that there should be a general opportunity for consultations among GATT parties on the quantitative import restrictions which they are still maintaining for balance-of-payments reasons. At this session plans for such consultations are likely to be drawn up, but the actual consultations would be started at a later date. During the session the customary consultations with certain countries on the discriminatory application of their import restrictions will be held, and developments in the OEEC's trade liberalization program will be reviewed.

Switzerland, which is not now covered by the GATT, has signified its intention to apply for accession to the General Agreement, and this request will be discussed during the session.

In the field of customs tariffs there will be an examination of questions likely to arise if the new Brazilian customs tariff is approved by the Brazilian Congress. Other questions related to customs administration will also be studied.

The Contracting Parties will examine reports received on the functioning of the waivers from specific GATT obligations that have been granted to certain countries from time to time. A short list of complaints of violations of obligations will be dealt with under the appropriate GATT procedures. The position of Japan vis-a-vis the 14 contracting parties which are not undertaking GATT obligations toward her will also be reviewed.

In the field of commodity trade, the Contracting Parties will consider the present position on the proposed establishment of an international agreement on commodity arrangements and the possibility of any alternative approach to the question of commodity trade. Developments during the past year in the disposal of surplus agricultural products will be reviewed.

It is expected that representatives will be present from about 50 countries, including 35 GATT parties and observer governments; in addition, about 8 intergovernmental agencies will be represented.

The 35 parties to the General Agreement on Tariffs and Trade--which provides a code of fair-trade rules for nations accounting for 80 percent of world commerce--are: Australia, Austria, Belgium, Brazil, Burma, Canada, Ceylon, Chile, Cuba, Czechoslovakia, Denmark, Dominican Republic, Finland, France, German Federal Republic, Greece, Haiti, India, Indonesia, Italy, Japan, Luxembourg, Netherlands, New Zealand, Nicaragua, Norway, Pakistan, Peru, Federation of Rhodesia and Nyasaland, Sweden, Turkey, Union of South Africa, United Kingdom, United States, and Uruguay.

FOOD AND AGRICULTURE ORGANIZATION

MODERN DIVING AIDS MAY INCREASE SHELL PRODUCTION: Modern diving aids (such as goggles, swim fins, exposure suits, and underwater breathing devices) may help increase the production of trochus and mother-of-pearl shells in the Red Sea, if the recommendations made in a report to the Government of Sudan by the Food and Agriculture Organization (FAO), Rome, are adopted.

Such aids, states the report, could, if the fishermen were thoroughly trained in their use, "increase their efficiency and bring under exploitation untouched shell beds beyond the depth of 30 feet, which is the practical limit of present diving activities."

This is only one of a lengthy list of recommendations contained in the report. Others are concerned with the improvement in boats, gear and methods, handling of fish, government activity, training of personnel, etc. Specifically, they cover the use of deep water lines, net fishing in shallow water, multiple trolling with artifical lures, fishing with lights at night, using floating long lines, set long lines, nylon drift nets and trammel nets, and a plan of work for a FAO expert to take up in the Sudan.

The report, on the basis of a brief reconnaissance survey made in July 1955, also includes drawings and specifications for an improved mechanized felukka.

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NEW DIRECTOR GENERAL ELECTED: Shri B. R. Sen, Ambassador of India to Japan, was elected Director-General of the Food and Agriculture Organization (FAO) on September 20, after two ballots by the 74 member nations failed to produce a majority September 18.

Before the vote was taken, the United States nominee, John H. Davis, Director of Program in Agriculture and Business at Harvard University Graduate School of Business Administration, announced that he had withdrawn from the race.

Assistant Secretary of Agriculture Earl Butz, who is the United States representative at the FAO conference, said that the United States would abstain from voting in the third ballot, and that no attempt would be made to influence those who previously voted for Davis. He said his government had the fullest confidence in the remaining candidates, and pledged full United States support to the new Director-General.

Ambassador B. R. Sen said at a press conference September 20 that he will return to Rome about the end of November 1956 to take office as FAO's Director-General.

He told correspondents that the less-developed areas of the world, in both hemispheres, "need special attention," and that FAO's work will be in that direction "without neglecting the work which is being done in the more-developed areas."

The 74-member body adopted the report of the Council, the 24-nation group which conducts the Organization's business between regular sessions of the Conference, and adopted a Cuban resolution expressing its confidence that the new Director-General will be able to find a solution to existing internal problems.

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WORLD FISH PRODUCTION RISING: Continued progress in mechanizing fishing boats and gear and in improving the marketing of fish and fish products in underdeveloped countries is forecast by the Food and Agriculture Organization (FAO) in a chapter on world fisheries in the FAO report on "The State of Food and Agriculture 1956."

The report, published early in September 1956, contains a comprehensive survey of the world food situation. The chapter on "World Fisheries; General Trends and Outlook With Examples from Selected Countries," deals with production, consumption, utilization, trade, technical development, government fishery policies, etc., and cites specific examples from Japan, Norway, Iceland, United Kingdom, Germany, United States, Canada, Union of South Africa, and South-West Africa. A section is devoted to the situation in the more-developed and the less-developed fisheries.

Amont the interesting facts and figures quoted in the report are those concerned with world production of fish, crustaceans, mollusks, etc., which has risen from about 22 million metric tons in 1938 to "a level ranging between 27 million and 29 million tons in the years 1952 to 1955."

Six of the world's biggest producers--China, Japan, Norway, United Kingdom, United States, and U. S. S. R.--account for about 50 percent of the world's total production, while seven other countries--Canada (including Newfoundland), France, India, Indonesia, Germany, Spain, the Union of South Africa (including South-West Africa)--account for about 16 percent of the world catch.

A few species of fish provide the bulk of the catch. For example, one-quarter of the grand total consists of herrings, sardines, anchovies, menhaden, pilchards, etc., "while the cods, hakes, haddocks, etc., account for approximately 4 million tons, i.e. about one-sixth of the total."

Although fish provide a natural rich source of animal protein, fish and fish products do not provide more than about 10 percent of the world's total consumption of animal protein. But this percentage varies according to the level of food consumption in various areas of the world.

"Even a low level of fish consumption represents the main part of animal protein intake in Indonesia, the Philippines, part of India, Thailand, and other countries," the report says, "while even a relatively high level represents only a small part of the animal protein intake in the United Kingdom, Germany, Norway, Denmark, etc. Japan and Iceland are exceptional cases where the main part of the animal protein intake is supplied from fish."

The report indicates that, with increased knowledge of stocks and resources and improvement in fishing boats, gear, and methods, world production of fish and fish products is likely to continue to increase and provide, perhaps, a more substantial part of the diet of people, especially in the less-developed countries.

GREAT LAKES FISHERIES COMMISSION

FIRST ANNUAL MEETING: The International Great Lakes Fisheries Commission, set up to direct sea-lamprey control, was scheduled to hold its first annual meeting at Ann Arbor, Mich., late in November.

The six-member Commission recently announced it will receive approximately $1 million to begin its work. More than $600,000 will be supplied by the United States Government and about $300,000 will come from the Canadian Government. The Commission said these amounts represent the approximate ratio of water controlled by the two governments.

The Commission will make use of the research agencies of the two nations in granting funds for research, according to James W. Moffett, who serves as temporary Executive Secretary of the Commission.

"We will continue with the electrical barrier defense against the sea lamprey," Moffett said, "and will continue working on the 'selective poisons' that are still in the laboratory state."

NORTHWEST ATLANTIC FISHERIES COMMISSION

NORTHWEST ATLANTIC FISHERIES TRENDS, FOR FIRST PART OF 1956: News from the Northwest Atlantic Convention area indicates that fishing was in general better this year than a year ago, according to the September 1, 1956, Newsletter from the International Commission for the Northwest Atlantic Fisheries.

Canada: Statistics for the Canadian Atlantic fishery for the first five months of 1956 as compared to the same period last year show a very small increase (3 percent) in cod landings. However, a very considerable increase (about 40 percent) in haddock landings was reported, due principally to increased landings in Newfoundland, but the Nova Scotian landings also show a considerable increase. The ocean perch landings decreased about 30 percent.

Denmark: The Danish factory vessel Greenland is in West Greenland waters this year producing fillets of cod, halibut, and wolffish, for direct export from Greenland to the United States. The production this year is reported to be somewhat higher than the previous year.

A fishing vessel from a Danish home port (Esbjerg) is fishing cod off West Greenland waters this year. The last year that vessels from Danish home ports (apart from the factory vessel Greenland) fished at West Greenland was in 1951.

Norway: Several of the Norwegian vessels which have been fishing in West Greenland waters this summer have returned to Norway. The fishery is reported to have been better than in 1955.

Portugal: Some of the Portuguese trawlers fishing on the Grand Banks returned to Portugal with full cargoes. In general the trawlers caught more cod this year than in 1955. The Portuguese liners also reported good catches. Some are reported to have caught within the same period about double their catch in 1955.

Argentine Republic

EAST GERMAN TRADE AGREEMENT WITH ARGENTINE FISH INDUSTRIES AND COOPERATIVES: According to a West German trade journal publication (Allgemeine Fischwirtschaftszeitung, Bremerhaven), the Government of the German Democratic Republic has prepared a trade agreement with an Argentine group of fish industries and cooperatives in Mar del Plata. The agreement will be valid for a period of five years. The total value of the commodities involved will amount to 500 million pesos (about US$66 million).

Under this agreement the contracting Argentine industries will supply to the German Democratic Republic among other things 20,000 metric tons of fish meal, 2,000 tons of "merluza" (dried cod), 50 million cans of sardines, 50 million cans of mackerel, and other types of canned fish. In return the German Democratic Republic will supply fishing gear in the value of 300 million pesos (US$40 million). These supplies will include 30 medium-size trawlers, 50 motor vessels for coastal fisheries (both types equipped with modern navigation instruments including radar), nylon fish nets, electrical sounders, radiotelegraphic equipment, refrigeration plants for canning factories, refrigerated trucks, machinery for cod drying, and several complete fish-meal plants. Further, tools for fish processing, packing material, and machinery for fish canning will be supplied.

Similar agreements are reportedly being negotiated between Argentina and Hungary and Argentina and Czechoslovakia, reports the United States Consulate at Bremen in an August 29, 1956, dispatch.

Australia

DEVELOPMENT OF FISHING INDUSTRY IN PAPUA AND NEW GUINEA PLANNED: A plan to develop the fishing industries of Papua and New Guinea was announced on August 23 by the Australian Minister for Territories. At the present time the commercial fisheries are underdeveloped, according to a September 13, 1956, dispatch from the United States Embassy in Canberra.

The aims of the Australian Government are to increase shell production and exports, to reduce imports of fish and, eventually, to export fish.

The main points of the plan, which will be implemented by the Division of Fisheries of the Territory Department of Agriculture, Stock and Fisheries, are:

(1) Introduction of improved fishing techniques to native fishermen, including distribution to them of fishing gear; (2) The training of native fishermen ashore and as crews of Administration vessels in all aspects of fishing; (3) Encouragement of indigenous people to organize their activities to increase their consumption and trade in fish; (4) The recruitment and training by the Administration of indigenous people as Native Fishery Assistants to be established in appropriate areas to assist native fishermen.

Commercial fishing enterprises by European and native fishermen would be encouraged where they would not conflict with village communities dependent on fishing. A marine biological station would be established when appropriate to support all aspects of the fisheries development plan.

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JAPANESE PEARL-SHELL FLEET OPERATES OFF NORTHERN AUSTRALIA: A Japanese pearling fleet is again operating in the northern waters of Australia this season.

The Australian Minister for Primary Industry said the fleet comprised one mothership, 21 luggers, and one Government inspection vessel. The Japanese will conform to the conservation regulations laid down under the Pearl Fisheries Act. The Commonwealth Government fixed the same maximum take as last year--1,000 tons of mother-of-pearl shell.

The Japanese vessels are allowed to operate in the waters of the Northern Territory Division outside a 10-mile radius of the mainland and inhabited islands. One particular area, however, is reserved for Darwin-based fleets and maximum catch limits are fixed for two other defined areas. The Japanese are also allowed to operate in two subareas of the Western Australian Division over 120 miles north of Broome and beyond 10 miles from the mainland or an inhabited island, and not normally worked by Australian pearlers (Fisheries Newsletter, July 1956).

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NEW CARGO SHIPS TO INCREASE REEFER SPACE: United States importers of Australian shrimp and tuna will be interested in the improved refrigerated freight facilities to North America which will become available when the two Matson ships, Monterey and Mariposa enter service.

The first ship is scheduled to leave San Francisco in October 1956. They will call regularly at Los Angeles, which will save Australian tuna exporters the present road or rail haul from San Francisco. Sydney will be the normal Australian terminal, but the ships will call at Melbourne four times a year.

Each ship will have 30,254 cubic feet of reefer space and will be equipped with modern handling gear, including conveyors running cargo direct into the reefer holds. The ships will call at Pago Pago, where one of America's largest tuna packers operates a cannery.

The freight rate for raw tuna is US$3.85 a 100 pounds, but shrimp come under the general reefer rate of US$64.90 per 40 cubic feet to either the western or eastern coast of America.

The shipping firm owns four of the leading hotels in Hawaii which are reportedly anxious to make shrimp and lobster a regular feature of their hotel and ship menus. They have been pleased with the flavor of Australian shrimp.

From Brisbane there are reefer ships for the United States by two shiplines. These ships run to the North American east coast (Fisheries Newsletter, July 1956, published by the Australian Commonwealth Director of Fisheries).

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PROGRESS IN QUEENSLAND SHRIMP FISHERY: Recent advances made by Queensland in the catching, packing, and export of shrimp are reviewed in an article by D. H. Plucknose, Secretary, Queensland Fish Board and published in the July 1956 issue of Fisheries Newsletter of the Commonwealth Director of Fisheries. The article states that in 1956 upwards of 60 boats were engaged in the fishery for banana shrimp in the Hervey Bay area (about 180 miles north of Brisbane on Australia's East Coast).

The Queensland Fish Board has provided a two-way radio station at its market at Bundaberg. In addition, a new jetty has been constructed, and special facilities provided for processing workers.

The purpose of installing the radio transmitter was to provide two-way communication between the Fish Board market and vessels so that advance notice of the catch can be obtained prior to landing to allow for more efficient use of the facilities of the port. It was considered also that with the cooperation of boat crews, congestion at the wharf could be avoided.

By arrangement between the Fish Board, Brisbane Weather Bureau, and Postmaster-General's Department, daily weather forecasts are telegraphed to Bundaberg for transmission from the Board's station for the benefit of fishing crews.

With the recent installation of the Board's second snap-freeze unit (the most modern of its type in Australia) at Bundaberg, and on completion of work on the construction of a temporary factory at this center, it is proposed to undertake all the processing of locally-caught shrimp on the spot. This will replace the method followed to date in which processing at this market has been confined to removing the heads, prior to icing the shrimp for railing to the Board's principal market in Brisbane for grading, packing, and freezing. Depending upon results achieved at Bundaberg this season, it is not unlikely that a modern permanent processing establishment will be erected there by the Board before next year's shrimp season begins.

With a view to establishing the shrimp industry in Queensland on a sound basis, the Fish Board in 1954 resumed control of shrimp. Following re-control, the Board in 1955 and again this year has offered the shrimp fishermen a stabilized price for their catch.

Present export requirements are for green shrimp which, with heads off, count no more than 40 to the pound. For green banana shrimp of the required size, delivered to its markets in first-class condition, the Board is paying 1s.10d. (about 20.5 U. S. cents) a pound heads on and 3s. (about 33.6 U.S. cents) heads off. These rates are, of course, subject to variation. The bulk of the green shrimp received by the Board this season to the time of writing have come from Bundaberg and Gladstone, although king shrimp in quantity are expected from the South Coast as the season progresses.

From inquiries made overseas it has been established that the white-meat banana shrimp (so named, though not altogether aptly, because its pale body and yellow legs have been likened to the popular fruit) compares favorably with shrimp supplied to United States markets from the Gulf of Mexico, and to United Kingdom and Continental markets from the Mediterranean and the Far East. It now remains to achieve a streamlined processing procedure which involves the least possible

handling of the product, and in which labor and overhead costs are reduced to a minimum, in order that Queensland shrimp may compete on overseas markets with those from cheaper-labor countries. The availability of machines from overseas for heading and grading is being explored.

In response to inquiries initiated by the Fish Board, numerous approaches have been made by overseas importing interests desirous of handling Queensland shrimp, including merchants in the United States, United Kingdom, South Africa, New Zealand, and Europe. The initial difficulty has been in securing firm offers of prices which, while covering the Board's processing and handling costs, would insure a reasonable return to the producer.

The availability of refrigerated shipping space also presents something of a problem. For example, there is no regular service from Queensland ports to the west coast of America, though fortunately there is a service to East Coast ports. It has not been practicable to anticipate the rate at which shipments could be effected, since a full shipment can only be built up over a period, depending on available catches. The stockpiling of frozen seafoods against possible shipment at a later date is a doubtful proposition.

In forwarding initial trial consignments to both the United Kingdom and the United States, a pack consisting of 4 pounds of cooked shrimp, snap-frozen in a small block of ice, was used, the gross weight of the pack being 6 pounds. This pack was designed essentially to meet the requirements of the catering trade, and was not attractively cartoned as it was not intended for display. From its reception in the United Kingdom it appears there is at least a possibility of establishing a market there for cooked Queensland shrimp. However, the more lucrative dollar-earning American market prefers green shrimp for cooking in a manner to suit the taste of the consumer. The first sizable consignment exported by the Fish Board comprised uncooked, headless shrimp destined for the United States.

Early in June the Pioneer Glen left Brisbane with a cargo of 13,600 pounds (272 cartons) of headless raw-frozen banana shrimp; purchased, processed and packed by the Fish Board, it was scheduled to reach United States markets in mid-July. The bulk of the consignment was offered in New York, but also included was a small sample addressed to Baltimore. Token shipments of cooked shrimp had previously been forwarded to Philadelphia and Los Angeles. Trial packs of green shrimp were recently air-freighted to Chicago, and single-pack samples have been made available to Australian agents for forwarding to their principals in the United States. Thus the American market is being probed at different points to obtain an indication of the most profitable outlets for Queensland shrimp.

The shrimp recently exported were layer-packed in attractively-printed waxed cartons, each holding 5 pounds. The cartons carry the Board's newly-adopted trade brand and each proclaims its content a product of Australia. Ten of these 5-pound cartons are packed in a master carton for shipping. Layer-packing is necessary to meet the requirements of the United States market generally, and each carton is designed to enable the species of shrimp packed in it and the count to be indicated by the packer.

It has yet to be established whether "wet" snap-freezing and cartoning after freezing is preferable from the point of view of processing economy and finished pack to bulk "dry" freezing in low-temperature cold rooms after packing into inner cartons. Glazing after freezing is, of course, desirable in both packs. This can be done by dipping the snap-frozen block before cartoning, or in the case of the pack frozen in the carton by spraying the surface. There appears little doubt that both types of pack are acceptable in the United States. The shrimp shipped by the Board on the Pioneer Glen had been "dry" frozen after packing.

There does not appear to be a firm demand at profitable prices in the United States for shrimp counting more than 40 to the pound with heads off, and the export pack has so far been confined to four grades: 15-20, 21-25, 26-30, and 31-40 count to the pound. The bulk of the banana shrimp packed by the Board so far this season (to the end of May) has been within the 21-25, 26-30, and 31-40 count, with approximately 25 percent more in the 26-30 range than in each of the other two counts. The United States importer prefers the banana shrimp to the tiger shrimp as the stripes of the uncooked tiger are considered unattractive.

There are at least three channels through which the Australian shrimp exporter can reach the United States market. He can sell through an American broker who acts as an agent handling sales to United States merchants and distributing houses on a commission basis. Alternatively, he may prefer to ship through an Australian exporting agent, or to negotiate direct with American fish-handling companies. It has been reported that certain Australian exporting interests are prepared to offer "f.o.b. Australian port" prices for shrimp and this outlet has its advantages to the processing organization in that the exporter accepts the hazards associated with overseas marketing. The merits of selling through a United States broker on a commission basis lie in the fact that the exporter gains the benefit of any increase in United States market prices which may occur when his shrimp are sold. Conversely, his return could be lower than expected should a slump in the market occur.

In addition to the purchase price paid to the fishermen, the Queensland Fish Board has undertaken that, after allowing for its costs, any profits accruing from the export of shrimp will be returned to the fishermen, to be shared on a pro rata basis according to the quantity of shrimp received by the Board from each supplier.

Note: Also see Commercial Fisheries Review, October 1956, pp. 53 & 54.

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WHALING SEASON IN 1956 EXPECTED TO EXCEED 1955 IN VALUE: In 1956 Australian whaling is expected to produce whale products estimated to be valued at over AL2 million (about US$4.5 million) derived from the 1956 quota of 1,990 humpback whales. The 1955 whaling season yielded 15,876.3 tons of oil from 1,840 humpback whales. Assuming that the whalers catch whales of similar oil yield in 1956 as in 1955, it is estimated that 16,956 metric tons of oil will be produced.

The world price (about 98,000 metric tons of 1956 Norwegian Antarctic whale oil were sold for about US$238 a long ton) for whale oil is higher in 1956 due to reduced Antarctic quotas, states the Fisheries Newsletter (July 1956) of the Commonwealth Director of Fisheries. The estimated 1956 Australian production of 16,956 tons of whale oil at US$247 a ton will be worth almost US$4.2 million, an estimated yield of 7,000 tons of meal and solubles at US$100 a ton will bring a total of US$700,000.

Note: (1) Australian pounds converted to US$ at the rate of $2.241 equal AL1.
(2) Also see Commercial Fisheries Review, May 1956, p. 39.

Canada

ANTIBIOTICS APPROVED FOR FISH PRESERVATION: It was announced on October 1, 1956, that the Canadian Department of National Health and Welfare approved the use of antibiotics in the preservation of freshly-caught fish. The drug "Acronize," a derivative of aureomycin, will be added in small amounts to the ice used on board fishing vessels and for the inland shipment of fish and is expected to greatly retard spoilage.

According to the United States makers of "Acronize," the drug is under consideration by United States authorities for use in fish preservation. Until approved by these authorities, however, it is understood that fish preserved by antibiotics may not enter United States markets, states an October 5 dispatch from the United States Embassy in Ottawa. "Acronize" has already been approved in the United States for use on poultry.

A survey conducted between 1937 and 1950 by the Fisheries Research Board of Canada showed that 40 percent of the ocean fish reaching consumers in Toronto, Montreal, and Ottawa had lost their original fresh taste and appearance, though still regarded as edible, points out the October 8 Oil, Paint, and Drug Reporter.

A test in 1954 on 4,000 pounds of cod and haddock fillets shipped 1,000 miles from Halifax to St. Catharines, Ont., in July and August revealed that the most important single thing influencing the quality of such fillets in distant retail markets is the storage period of the fish at sea.

Because it is impractical, and economically speaking impossible, to cut the time during which the fish is stored at sea, scientists at the Canadian Fisheries Experimental Station, Vancouver, B. C., began a search in 1943 for a way to halt the bacterial spoilage of fish aboard ship.

Dr. Hugh L. A. Tarr pioneered research in adapting antibiotics to the role of keeping fish fresh longer. His first tests showed that the antibiotic penicillin was without value for this purpose. As other antibiotics became available, the testing went on. By 1950 Dr. Tarr could see promise in the field and in 1955 he concluded that "Aureomycin" was five times more effective in retarding food spoilage than any other antibiotic available.

The major benefit of "Acronize," therefore, will be to reduce drastically the high deterioration factor in the fishing industry. Not only will it extend the storage life of fish aboard ship, but it will allow the fishing vessels to range farther out to sea to tap new unexplored schools of fish.

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FISHERMEN'S INDEMNITY PLAN: On July 6, 1956, the Fishermen's Indemnity Plan of the Department of Fisheries of Canada completed three years of operations. On that date a total of 3,442 vessel policies were in force, representing a total appraised value of C$7,667,186. Growth during the third year represented

Canada's Fishermen's Indemnity Plan For Vessels

Province	Vessels Insured at July 6, 1956		Net Increase in Underwritings During Year Ended July 6, 1956		Losses Paid During Year Ended July 6, 1956					
					Total		Partial		Both	
	No.	Approx. Value	No.	Approx. Value	No.	Value	No.	Value	No.	Value
		C$		C$		C$		C$		C$
Newfoundland	946	1,013,058	142	8,241	31	25,999	29	6,191	60	32,190
Nova Scotia	835	1,327,951	221	329,021	10	4,947	4	2,287	14	7,234
New Brunswick	118	213,693	25	35,540	-	-	-	-	-	-
Prince Edward Is.	168	154,334	62	58,895	6	2,647	1	149	7	2,796
Maritimes	1,121	1,695,978	308	423,456	16	7,594	5	2,436	21	10,030
Quebec	336	266,850	46	50,050	18	6,723	8	1,490	26	8,213
Atl. Coast	2,403	2,975,886	212	481,747	65	40,316	42	10,117	107	50,433
British Columbia	1,039	4,691,300	390	1,942,043	10	20,996	8	5,216	18	26,212
CANADA	3,442	7,667,186	602	2,423,790	75	61,312	50	15,333	125	76,645

602 vessels, valued at C$2.4 million. During the year, 75 total-loss claims were paid amounting to C$61,312 and 50 partial-loss claims amounting to C$15,333; total indemnities were C$76,645. The insurance in force represents annual premiums of C$76,672. During the fiscal year just closed actual premium revenue amounted to C$72,000 for the country as a whole.

As in the past, the experience in British Columbia was particularly satisfactory in the 12 months ending July 6. There was a net increase of 390 policies in that Province valued at C$1,942,043 while indemnities paid included 10 total losses for C$20,996 and 8 partial losses for C$5,216. In that Province the indemnity rate for total losses was raised from 60 to 70 percent of appraised value and the deductible in the case of partial loss was reduced from 30 percent to 15 percent.

In the Atlantic Coast provinces the total number of insured vessels increased by 212 to reach 2,403 on July 6 valued at just under C$30.0 million. During the year 65 total-loss claims were paid in this area totaling C$40,316 and 42 partial claims were settled for C$10,117.

The present volume of business has been achieved without increasing administrative costs, which while high to provide coastwide coverage, now represent only about 2.5 percent of total appraised value. In the next year it is believed that this figure will drop to 2 percent as volume expands.

In addition to the direct benefits to those fishermen who have suffered total or partial losses, the Plan has made possible the introduction of guaranteed loans to fishermen under the Fisheries Improvement Loans Act, thus reducing interest costs to the fishermen. At the same time commercial insurance rates on fishing vessels have also been reduced, reports the July 1956 Trade News of the Department of Fisheries.

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FISH STICK PLANTS ORDERED BY RUSSIANS: According to press reports, the Soviet Fisheries Minister announced at a farewell press conference in Ottawa on September 18 that orders had been placed with a firm in Toronto for C$4-5 million worth of fish stick plants. The announcement was made at the end of a three-week tour of Canada by the Soviet fisheries delegation headed by Minister Ishkov.

The fish stick plants, at a cost of about C$380,000 each, will consist of complete processing equipment from the machine that handles the frozen blocks down to the frozen packaged product. The first complete plant is expected to be delivered in about six months. The others will follow subject to modifications to meet Soviet requirements.

Negotiations are under way with other Canadian firms for other types of fish-processing machinery and refrigeration equipment. In addition, the Soviets are interested in buying a fleet of trawlers built along the lines of a new experimental trawler under construction in British Columbia, according to a dispatch dated September 21 from the United States Embassy in Ottawa.

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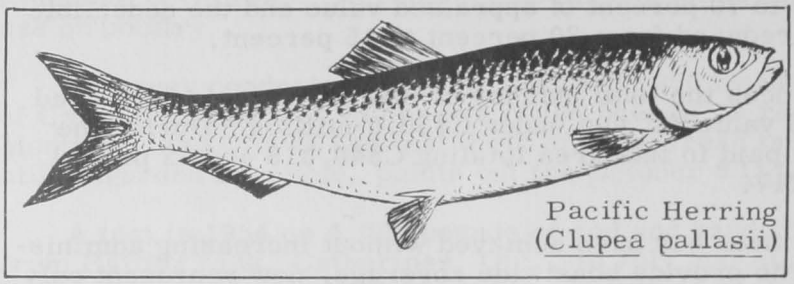
REVIEW OF 1956 HERRING FISHERY IN BRITISH COLUMBIA: Because of the phenomenal catch of 92,067 short tons in the Queen Charlotte Islands, the British Columbia herring industry experienced a record season, according to a report ("Amount of Herring Spawn Deposited in British Columbia Coastal Waters in 1956") by the Fisheries Research Board of Canada Pacific Biological Station at Nanaimo. Over 250,000 tons of herring were caught and processed. In spite of the loss of potential spawners due to the fishery, the most serious being in the south central subdistrict, it is considered that sufficient fish either escaped the fishery or other schools moved inshore after the close of the fishing season to maintain an adequate spawning population in all subdistricts to insure the maintenance of the fishery.

During the past four seasons, the data suggest that while spawning populations have been consistently decreasing in three regions, they have been increasing in the two main west coast of Vancouver Island fishing regions. Such changes in population abundance are probably due, however, to variations in the relative strengths of the contributing year-classes rather than to "overfishing" or "underfishing."



Pacific Herring
(Clupea pallasii)

Pacific herring (Clupea pallasii) spawn in shallow water along the shoreline. The majority of eggs are deposited on vegetation, in or just below the intertidal zone, i.e., between the high and low-tide levels. Spawning grounds may vary in size from a few yards to several miles, the length and width being largely determined by the distribution of the vegetation and the stage of the tide at time of spawning. The spawning grounds are not randomly distributed along the coastline but are found in certain preferred regions year after year.

The measurement of the extent and intensity of herring spawnings along the British Columbia coast is carried out annually by officers of the Canadian Department of Fisheries. Members of the Biological Station, Nanaimo, B. C., carried out more detailed spawn surveys in the west coast of Vancouver Island subdistrict from 1946 to 1954 and in the lower and middle east coast of Vancouver Island subdistricts in 1955 and 1956.

The maintenance of an adequate spawning stock in each of the major herring populations is essential to insure the perpetuation of the fishery dependent upon them. Estimates of the amount of spawn deposited in any area form an index of the size of the spawning stock and of the initial size of the new year-class. As spawning begins shortly after the close of the fishery, natural mortality in the intervening period will be negligible, and the estimate of the spawning stock will thus represent the escapement from the fishery.

In 1956, 188.1 statutory miles of spawn were recorded in British Columbia coastal waters, a reduction of about 13 percent from the 1955 level. In only two of the eight subdistricts (the upper east and west coast of Vancouver Island) was there an increase in extent of spawn over the previous year.

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TERRITORIAL SEA LIMIT OF 12 MILES ADVOCATED: The Canadian Government intends to claim the Gulf of St. Lawrence and similar bodies of water on Canada's coasts as Canadian territory, reports the Canadian Globe and Mail of August 17, 1956.

Officials said that international recognition of the claim will be sought at the U. N. General Assembly this fall. The assembly is expected to deal with the thorny problem of the limits of territorial waters.

The Canadian Prime Minister told the Commons on July 30 that the Government feels the present three-mile territorial limit of Canada should be extended to 12 miles offshore.

Authorities said that besides this the Government will claim as Canadian territory the Gulf of St. Lawrence, Hecate Strait between the Queen Charlotte Islands and the British Columbia mainland, and several bays, sounds, and gulfs, in the Arctic archipelago.

Historic fishing rights enjoyed by other countries along Canada's coasts would have to be recognized, the Prime Minister said.

The claim will not involve Hudson Bay or Hudson Strait, long recognized as Canadian territory though the entrance to them--between the northern tip of Labrador and Resolution Island--is about 32 miles wide.

Canada has never officially claimed the Gulf of St. Lawrence as Canadian territory. A 1937 government order-in-council defined the territorial limit in the St. Lawrence Estuary as a line running from Cape Rosiers on the Gaspe Peninsula to the western end of Anticosti Island and then north to the Quebec mainland.

The Prime Minister has indicated that Canada wants the territorial limit to be measured from a line running from headland to headland rather than following the sinuosities of the coast.

If this plan were followed--it was approved by the International Court of Justice in a case involving Norway several years ago--Canada could claim as its territory waters west of a line running from Cape North, N.S., to Cape Bay, Newfoundland. Cabot Strait at this point is 70 miles wide.

Chile

TERRITORIAL WATERS CLAIMS POSITION MAINTAINED: The Chilean Foreign Minister, in a press interview during his stay in Ecuador as chief of the Chilean delegation to the inauguration of Ecuador's new President, made the following statement: "I believe that the three countries (Chile, Ecuador, Peru) must jointly maintain their position in defending the wealth of their seas; to obtain recognition of their sovereignty over the marine wealth and to exploit it, and if others must be permitted to take advantage of that wealth it must be with the authorization of the coastal countries. In this matter the Foreign Offices (of the three countries) are in agreement."

The Chilean Foreign Minister stated that the position of the United States is one of a general character and that the United States is always ready to continue discussing the problem in harmony with the other countries. He also said, "We are always ready to enter discussion on a plane of harmony and cordiality."

Ecuador

CONVERSION REQUIREMENT INCREASED ON SHRIMP EXPORT EARNINGS: The amount of earnings from shrimp exports which Ecuadoran shippers must convert into sucres at the Central Bank's official rate of 15.00 sucres to the United States dollar has been increased by Monetary Board Regulation No. 178, dated August 16, 1956.

Under the new rule, US$300 a metric ton must be converted at the official rate, compared to US$100 in the past. The $100-formula remains in effect for all other fish exports. The regulation is pursuant to an Emergency-Decree Law, promulgated in the Official Register of June 30, 1956, which modified the basic fishing law to permit the Monetary Board to require the conversion of up to the entire amount of earnings from fish exports at the official rate of exchange.

The new regulation will mean a drop in earnings of approximately two U. S. cents a pound for national shrimping companies, most of which are owned by American interests. Since shrimp is currently reportedly selling for around US$1,400 a ton (about 63 U. S. cents a pound), they are still able to retain the bulk of their earnings or to convert them at the broker's free market buying rate (which averaged approximately 18.55 sucres to the dollar during July 1956). However, the companies indicated several weeks previous that any substantial increase in the conversion requirement might put them out of business. The Monetary Board, concerned with the weakness of Ecuador's monetary reserves, and responding to an appeal from the Ministry of Economy's Director of Fisheries, nevertheless has taken a step toward putting the infant fish industry more nearly on a par with other exports, according to the United States Embassy at Quito in an August 22, 1956, report.

Formosa

SHRIMP FISHERIES: Taiwan's shrimp and prawn production for 1955 amounted to 3,211 metric tons compared with 2,027 tons in 1952, 2,473 tons in 1953, and 1,987 tons in 1954. Local production is characterized by small-scale operations conducted by numerous independent producers, according to a United States Embassy report (March 6, 1956) from Taipei.

Approximately 28 percent of the 1955 catch resulted from coastal fishing operations, which involve the use of sail or manpowered sampans which catch shrimp of less than $2\frac{1}{2}$ inches (heads on) in length. Catches from deep-sea and inshore fisheries, which utilize motorized vessels ranging in size from 10-100 tons, accounted for 45 percent of the 1955 catch and consisted primarily of shrimp of about $2\frac{1}{2}$ inches in length. Output of cultured prawns, averaging 5 inches in length, accounted for the remaining 17 percent of the total production. The predominant cultured prawn species are Penaeus japonicus (Bates) and others of the same genus, while most of the shrimp caught consist of edible kinds of the Macrura family.

The most common methods of catching shrimp include the use of set nets, gill nets, beach seines, and seine and swing-bell nets. The height of the shrimp season runs from March through May, though operations are conducted throughout the year. About two-thirds of the total catch is gathered in the warm tropical waters off the southwest coast of the Island.

Production is insufficient to meet local demand and imports of dried shrimp from Japan are resorted to in order to make up the deficiency. There have been no past exports of shrimp and little likelihood exists that this situation will be changed in the future as no abundant shrimp resources are known to exist.

Outside of some sun-drying by fishermen, no processing of shrimp is undertaken nor do facilities for any type of processing exist.

German Federal Republic

SYNTHETIC NET FIBER: Successful experiments have been conducted with a new low-cost synthetic fiber of the polyvinyl-alcohol group to replace cotton in the manufacture of gill nets used to catch herring in the West German lugger fisheries, points out an August 10 report from the United States Consulate at Bremen.

The Department for Nets and Net Materials of the West German Federal Fisheries Research Institute in Hamburg is investigating the suitability of polyvinyl-alcohol fiber (this type of synthetic fiber is reported to be produced on a large scale in Japan where it is marketed under various trade names) in the manufacture of fishing nets. It was found that this fiber when submerged in water loses about 30 percent of the very high tensile strength it has when in the dry state. The Institute by experimentation has managed to eliminate this disadvantage by coating the fiber with a special type of iron-black that is also used to strengthen perlon nets.

This achievement may prove to be of great practical significance since this rot-resistant fiber is reported to cost less than other types of synthetic fiber. In Germany the price of nets made of this synthetic fiber will probably be only slightly higher than those made of cotton.

The Institute is planning a large-scale test with gill nets made of this fiber for use in fishing operations during the 1956 herring season. The development may be of special benefit to the lugger fisheries which specialize in catching herring with stationary gill nets--so far made of cotton. To date the introduction of synthetic fiber nets in this industry has been unsuccessful because of the relatively high cost of the synthetic nets.

German deep-sea vessels use almost entirely trawl nets made of manila. Synthetic fiber nets, made primarily of perlon, a product similar to nylon, are being used only on a relatively small scale aboard trawlers.

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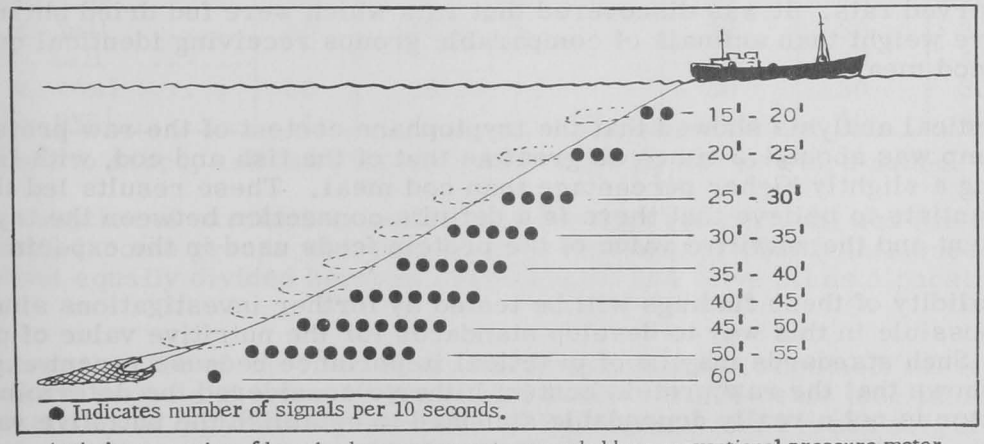
TELECOMMUNICATING DEPTH FINDER FOR MIDWATER TRAWL NETS: A new type of depth finder has been developed in West Germany to determine the movement of midwater trawl nets, points out a United States Consular dispatch (August 10) from Bremen. The device uses sound signals to indicate the depth at which the midwater net moves. Experts claim it to be an improvement over depth finders using frequency modulation.



Artist's conception of how depth measurements recorded by a conventional pressure meter attached to the ground rope of the trawl net are electrically transformed into sound signals and transmitted as such to the fishing vessel.

To make easier the adjustment of midwater trawl nets to the depth at which fish swarms have been located by echo-sounders, the German Federal Fish Research Institute in cooperation with industrial firms has developed a new device which is believed to be suitable in actual fishing operations.

The telecommunicating depth finder developed in West Germany uses the same principle as a somewhat similar United States device. It consists of a conventional pressure meter attached to the ground rope of the trawl net and measuring the

depth position of the net. These measurements are electrically transformed into sound signals and transmitted to the fishing vessel. Instead of employing frequency modulation to indicate the depth of the net, as does the United States device, the German apparatus uses groups of intermittent sound signals for various depths. It was found to be too difficult to produce Morse-code signals for this purpose. The oscillator therefore emits uniform signals of a steady frequency of 15 kc. with a speed of about three signals a second. Every period of 10 seconds from 1 to 10 signals are emitted to indicate the depth measured by the pressure meter attached to the trawl net. For example 2 signals per 10 seconds may indicate that the net is moving at a depth of about 15 to 20 feet, 3 signals at 20 to 25 feet, 4 signals at 25 to 30 feet, etc. When a depth of 60 feet has been reached, the series of signals start again with one per ten seconds. No difficulties were experienced in repeating the series of signals because the depth at which the trawl net moves can easily be determined within a tolerance of 60 feet.

The use of intermittent signals rather than frequency modulation seems to have definite advantages. The signals fortunately are for all practical purposes not affected by disturbances caused by the ship's propellor. This difficulty was reported to be one of the main obstacles in the development of the frequency-modulation method for commercial use. Recent tests conducted with the new device on board the research vessel Anton Dohrn showed an excellent reception of signals emitted from a trawl net towed with 375 fathoms of line at a depth of 450 feet.

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TRYPTOPHANE CONTENT OF FISH-MEAL PROTEIN BETTER INDICATOR OF NUTRITIVE VALUE: West German food scientists find that the tryptophane content of fish-meal protein may be a better indicator of the fish-meal's nutritive value than just the amount of protein itself, states a United States consular dispatch dated August 10 from Bremen.

In order to determine the nutritive value of dried shrimp, the Federal Research Institute for Fish Processing in Hamburg conducted a series of experiments with protein-starved rats. It was discovered that rats which were fed dried shrimp gained more weight than animals of comparable groups receiving identical quantities of fish or cod meal.

A chemical analysis showed that the tryptophane content of the raw protein in dried shrimp was about 1.5 times as great as that of the fish and cod, with fish meal having a slightly higher percentage than cod meal. These results led the Institute scientists to believe that there is a definite connection between the tryptophane content and the nutritive value of the protein feeds used in the experiments.

The validity of these findings will be tested by further investigations since it might be possible in this way to develop standards for the nutritive value of protein feed. Such standards may be of practical importance because recent experience has shown that the raw protein content hitherto considered the determining quality factor is not a really dependable standard to establish the nutritive value of fish meal.

Haiti

CANNED SARDINE MARKET: Imports of canned sardines into Haiti are estimated to vary between 157,000 and 187,000 pounds a year and represent the total consumption since there is no domestic production. The trade in canned sardines is very small but fairly well stabilized, states a June 27, 1956, dispatch from the United States Embassy in Port-au-Prince.

Consumption of all packaged foods, including sardines, is low in Haiti due to the low per-capita income which is estimated to average only US$60-70 yearly. The low-income group, which forms at least 80 percent of the population, can rarely afford packaged food of any kind.

Imports of sardines and similar fish (with or without oil) during the year October 1954-September 1955 totaled 157,000 pounds valued at US$32,590. Canada was the leading supplier with 108,770 pounds (value US$21,483); followed by Holland with 24,215 pounds (value US$3,813); France 12,914 pounds (value US$5,031); and the United States with only 5,319 pounds (value US$636). The balance of 5,781 pounds valued at US$1,628 came in small quantities from six other countries.

Other canned fishery products imports are included in a basket category which comprises cod, herring, haddock, mackerel, tuna, with or without sauce or oil, and salmon in sauce or in oil. Imports of this basket category during the same year totaled 7,100 pounds of which 2,500 pounds came from the United States.

About 80 percent of the canned sardines sold are $3\frac{1}{4}$- to 5-oz. flat cans, and the balance are packed in 1-lb. tall and oval cans and 8-oz. oval and tall cans. Of the sardines sold, 40 percent are in olive oil, 40 percent in vegetable oil, 12 percent in tomato sauce, and the balance brine, natural, and mustard sauce.

Table 1 - Retail Prices of Canned Sardines in Haiti in Mid-1956

Size of Can	Olive Oil	Vegetable Oil	Mustard	Tomato	Natural	Brine
	..... (U. S. ¢ a can)					
$3\frac{1}{4}$ to 5 oz.....	25	12	10	10	10	10
8 oz. tall	50	30	-	30	30	30
1 lb. tall	-	-	-	40	40	40
8 oz. oval	50	30	-	30	30	30
1 lb. oval	-	-	-	40	40	40

Consumption of sardines is confined to the high (40 percent) and the middle (80 percent) income groups with consumer preference (probably influenced by price) about equally divided between vegetable oil and olive oil as a packing medium.

The retail price of the $3\frac{1}{4}$ to 5-oz. sardines packed in vegetable oil is 12 U. S. cents; tomato sauce and brine 10 cents, and in olive oil 25 cents (see table 1). Small quantities of high-quality sardines of Portuguese and French origin enter Haiti as luxury items and retail for 50-60 U. S. cents for the 4- to 5-oz. flats.

All imports of sardines enter Haiti through regular commercial channels and any increase in the imports from the United States would be contingent on the ability of United States suppliers to meet the price competition from other importing countries, particularly Canada. The Haitian market is more influenced by price than quality, packing, or other factors and it is unlikely that this trade pattern will change in the near future. Due to the low per-capita income, the largest volume of imported fish is bulk salt cod, which can be purchased at retail in small quantities at relatively low prices.

Hong Kong

NEW NET FACTORIES: An interesting development for Hong Kong's fishing industry recently took place with the installation in one factory of several machines for the automatic weaving of fishing nets. Approximately 80 people are employed on this work and production is expected to vary from 12,000 pounds of cotton fishing nets a month up to a maximum output of 36,000 pounds. Approximately 14,000-40,000 pounds of cotton yarn are used monthly and the nets woven on these machines reportedly are much in demand, locally and for export.

Another recently-established factory has now come into full production; it is a weaving mill, employing about 30 workers for the production of net cloth (about 100,000 yards monthly) and bags for use as vegetable containers (September 27, 1956 dispatch from United States consulate in Hong Kong).

Iceland

EXPORTS OF FROZEN FISH TO U. S. INCREASE: For the first time in two years Icelandic exports of frozen fish to the United States are definitely on the increase. Shipments through September 31, 1956, were expected to reach about 12,072 metric tons in comparison with 9,153 metric tons for the same period last year. Total exports for all of 1955 amounted to 10,888.

It is not certain that shipments will hold up at an equal pace through the balance of this year, but it seems safe to conclude that total Icelandic earnings from fish exports to the United States will be considerably higher this year than last and may approach the high level of 1954 (over 19,000 tons).

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HERRING CATCH ON SOUTH COAST HIGHER IN 1956: Although daily catches of herring on the South Coast of Iceland have been only fair, the total as of September 1, 1956, was expected to exceed that for the similar date in 1955 by about 82 percent. The increase was reported to be due to an earlier start this year than last. The total catch to midnight September 1 was 10,645 metric tons as compared with 5,840 tons as of the same date in 1955. The catch as reported by the Iceland Fisheries Association is as follows:

Destined for:	1956	1955
Salted	4,498	1,952
Reduction	1,096	-
Freezing	5,051	3,888
Total	10,645	5,840

A new contract has been signed with the Soviet Union for an additional 25,000 bbls. of salted South Coast herring. This leaves a total of 85,000 bbls. under order, 75,000 for the Soviet and 10,000 for Poland.

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NEW TRADE AGREEMENT WITH RUSSIA INCLUDES FISHERY PRODUCTS: As a result of trade negotiations held between September 17-27, 1956, the Iceland Minister of Foreign Affairs and the Soviet Director of the Ministry of Foreign Trade signed a new trade agreement on September 27 that will be effective for the calendar years 1957, 1958, and 1959. The new trade agreement proposes Icelandic exports of fishery products to Soviet Russia as follows (quantities in 1956 agreement

shown in parentheses): frozen fish fillets 32,000 metric tons (20,000); salted herring 15,000 tons (15,000); frozen herring 1,000 tons (none); and unclassified commodities to the value of 2 million Iceland kroner or US$123,000 (unchanged from 1956).

The 1956 Trade Agreement was amended recently to include an additional 8,000 metric tons of frozen fillets to be delivered by Iceland to Soviet Russia this year, making a total of 28,000 tons in 1956, points out a September 28, 1956, dispatch from the United States Embassy at Reykjavik.

India

CONFERENCE DISCUSSES DEVELOPMENT OF FISHERIES: An all-India Fisheries Conference was scheduled at Madras from September 19-22. The conference was to discuss important problems relating to planned development of fisheries in India under the Second Five Year Plan. The subjects listed for discussion at the conference included ways and means of increasing fisheries production, establishment of fishing harbors, development of fishing craft industry, preservation and utilization of fish and fishery products, and transport facilities for the industry. (United States Embassy, New Delhi, report dated September 20, 1956.)

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SECOND FIVE-YEAR PLAN INCLUDES COMMERCIAL FISHERIES DEVELOPMENT: Development plans now under consideration envisage a 50-percent increase in India's fish catch in the next ten years. Every year the fisheries contribute about Rs. 270,000,000 (US$56.6 million) to the country's national income, engage about 75,000 craft of various types along a coastline of about 3,000 miles, and give employment to some 750,000 fishermen.

Technological improvement and research form a vital part of the Rs. 120,000,000 (about US$ 25.2 million) scheme for fisheries included in the second Five-Year Plan of India, states The Fishing News, August 10, 1956.

At the beginning of the first Five-Year Plan, India caught about 1,000,000 metric tons of fish a year.

Improvements effected in the means of catching fish during the first Plan period increased the yield by about 10 percent and in 1955/56 it was estimated at 1,000,000 tons. During the second Plan period the catch is expected to increase by about 33 percent, i. e. 1,400,000 tons.

India's inland and marine fisheries made appreciable headway during the first Plan period. With a Plan provision of Rs. 50,000,000 (US$10.5 million), improvements were noticed in many fields--in the method of fishing, bringing under the fish culture large bodies of water currently lying fallow; introduction of new methods of scientific fish farming; and better forms of storage, transport, and marketing.

Added to these were the application of extension methods to meet the practical needs of the industry.

The importance of fisheries to India's economy and the need for its systematic development were emphasized by the Deputy Minister of Food.

The Deputy Minister is shortly leaving on a tour of China. He said that during his stay there he would study the development of fisheries. On his way back he has planned to visit Thailand and Burma.

The Deputy Minister of Food said that there was a great scope for the development of fisheries in India. The Government of India had already made a beginning in that direction by taking up deep-sea fishing and charting fishing grounds.

The program would be stepped up in the coming years. The plan provides for the development of inland and marine fisheries to supplement the food needs of the country, which has a low per capita land holding.

According to India's fisheries development scheme under the second Plan, Malabat in South India would get an allotment of Rs.367,000 (US$76,939) for the year ending March 31, 1957.

The development of fisheries will consist of equipping modern fishing boats, providing nylon nets and bait arrangements to transport fresh fish to interior areas, starting of small-size ice plants in fishing centers, and giving subsidies to cooperative societies of fishermen.

The Government of India has sanctioned a sum of Rs.4,300,000 (US$901,468), the largest grant for any district for the development of the fishing industry in Tanjore District, South India, during the second Plan period.

A detailed programme has been drawn up for the development of coastal and inland fishing in the district which has a coastline of 160 miles. The scheme aims at mechanizing fishing craft, providing facilities for storage, etc., and training fishermen.

A Fishermen's Training Centre at Brankulam, South India, to impart academic and practical instruction in fishing has been started.

Under the second Plan, the State authorities had made considerable provision to improve the standard of living of fishermen and their method of fishing. The Training Centre was part of the many schemes now being implemented in the State.

The third of its kind to be opened in India under the joint program of the Government of India and Food and Agriculture Organization, the Centre aims at increasing fish production and improving the standard of living of fishermen.

Under the scheme, a batch of 20 fishermen selected from different areas of Travencare, Cochin, and Nalabar, and South Kanara districts will receive training for six months on principles of navigation and seamanship. They will also be helped in the use of mechanized fishing boats and fishing tackle for deep-sea fishing operations.

There are about 22,000 persons along the sea coast of Travancore-Cochin engaged in fishing. It is proposed to manufacture and issue mechanized boats to fishermen at concession rates.

The Travancore-Cochin Government has also accorded administrative sanction for the construction of a breakwater to provide landing facilities for over 3,000 fishing boats, particularly during the rough season at Vishinjam, nine miles south of Trivandrum, at a cost of Rs. 2,100,000 (US$440,252).

Preliminary investigations and a survey for the breakwater scheme will be done during the current year and the actual construction work will start next year.

The State Government has requested the Government of India to lend the services of two Swedish harbor experts who are now in India on an FAO assignment to conduct an investigation.

A boat-building yard is to be established at the fishing bay for the construction of mechanized boats for the fishermen.

A demonstration of mechanized deep-sea fishing operations was given off Mangalore, South India, to a party of officials and nonofficials. Mechanized fishing was started here under the guidance of an FAO fisheries expert.

This boat is now being operated by local fishermen on a lease basis with good results. The Fisheries Department is also conducting deep-sea fishing operations with the help of another power-driven trawler received under the auspices of the Technical Cooperation Mission to the Madras Government.

A few more trawlers of the Danish type will be allotted for leasing out to local fishermen by the Madras Government.

A scheme to give technical and financial assistance to fishermen's cooperatives and fishermen's associations has been drawn up by the Uttar Pradesh Government for improving the fishery resources and giving an impetus to fishermen in that State.

A total nonrecurring expenditure of Rs. 1,140,000 (US$239,000) is envisaged during the second Five-Year Plan period and a sum of Rs. 50,000 (US$10,482) has been earmarked for the purpose during the current financial year.

During the first year of the Plan, five parties of fishermen's cooperatives or fishermen's associations will be given aid to the tune of Rs. 10,000 (US$2,100) per party.

During the second, third, and fourth years of the Plan, financial help will be given to 20, 25, 30 and 40 fishermen cooperatives or associations, respectively. The Government of India is expected to share the cost of the scheme on a fifty-fifty basis.

Israel

SHRIMP FISHERY: The demand for shrimp is light in Israel because of religious dietary laws. However, Israel is attempting to develop the production of shrimp for the limited domestic market and the export market, a September 13 dispatch from the United States Embassy in Tel Aviv states.

A technician in the United States Operations Mission who has been working with the Israel fish industry, stated that the production of shrimp is still largely experimental and that no accurate figures are available regarding the annual production of shrimp. It is known, however, that the present volume is very small and this supply is sold through a few nonkosher restaurants and other outlets. The technician mentioned that it is hoped that within the next year the total production of shrimp will be increased to about 100 metric tons a year. If the production is increased to 100 metric tons, it is expected that 20 tons will be used for local consumption and 80 tons will be available for export.

Italy

FINANCIAL ASSISTANCE TO FISHING INDUSTRIES PROPOSED: When the Italian Senate reconvenes, it will examine a bill, presented by the Minestry of Merchant Marine, authorizing extraordinary expenditures from the budget for fiscal 1956/57 for a 300-million lire (US$480,000) program for the development of fishing activities. In particular grants will be made for the construction of new fishing boats in national yards to replace existing obsolete vessels of less than ten tons and with motors of less than 45 hp.

Grants may also be made for the repair and improvement of boats for the transportation of fish, to set up installations for processing fish and warehouses for the storage of fishing provisions, and for the construction of workshops to repair fishing equipment.

Further contributions may be granted for the construction of fishing markets and for the renewal of fishing equipment, including nets, cords, cables, refrigerators, etc.; for the development of installations to produce ice; for the installation of two-way radios; for the operation of homes for the children of fishermen; and for conducting surveys of potential new fishing grounds.

Finally, the subsidies may be granted to Italian companies to construct fishing vessels, which will use exclusively Italian crews, providing such boats weigh not less than 1,000 tons and that they operate on the high seas at long distances from the Italian coast at least six months during each year.

Note: Values in US$ based on rate of 1 lire equals US$ 0.0016.

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MARKET FOR MARINE-ANIMAL OILS: The Italian market for oils derived from fish and marine mammals is insignificant as compared to that for oils derived from vegetable sources. Production of marine animal oils in Italy is negligible and imports, principally for edible purposes, amounted to only 8,423 metric tons in 1954 and 7,889 tons in 1955. The annual consumption of edible vegetable oils is estimated at about 400,000 metric tons, according to a survey made by the Foreign Agriculture Service of the United States Department of Agriculture.

The imports of marine-animal oils for 1955 consisted of 1,292 tons of cod-liver oil (over half of which came from Norway) and 6,597 tons of other marine-animal oils (Norway supplied 48 percent of the total, followed by Australia with 20 percent). No imports were listed as coming from the United States. Only 11 tons of marine oils were exported in 1955 by Italy.

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PARTICIPATES IN GENERAL FISHERIES COUNCIL FOR THE MEDITERRANEAN: The Italian Ministries of Agriculture and Merchant Marine, responsible respectively for inland and coastal fishing matters, participated in the September 17-23, 1956, meeting at Istanbul of the General Fisheries Council for the Mediterranean. (Other participants were Turkey, France, Spain, Egypt, Greece, Yugoslavia, Israel, Tunisia, and Monaco.

The Italian Government has indicated its deep interest in this meeting since it is hoped that it will provide the means of bringing its industrial and commercial fishing installations more up to date through the application of modern techniques. (August 31, 1956, dispatch from United States Embassy in Rome.)

Note: Also see Commercial Fisheries Review, October 1956, p. 45.

Japan

ANTARCTIC WHALING FLEETS FOR 1956/57 SEASON INCREASED: The Japanese whaling fleets that leave Japan early in November for the Antarctic 1956/57 whaling season will consist of five factoryships and 54 catcher boats. Included is the Olympic Challenger fleet (a factoryship and 15 catcher boats) that was purchased in the spring of 1956 from a Greek shipping firm for US$8.5 million. The fleets for the 1955/56 season consisted of three factoryships and 40 catcher boats.

It is estimated that when the season ends in the early part of 1957 that the catch will be 30 percent greater than the 6,462 actual whales caught in the 1955/56 Antarctic whaling season (69,505 metric tons of oil reported in 1955/56). The additions to the fleet of whalers will make the Japanese fleet second to that of the Norwegians.

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BRAZIL INVITES RESEARCH SHIP TO SURVEY FISHERY RESOURCES: In response to an invitation from the Brazilian Government, the Japanese will dispatch the Toko Maru of 1,100 gross tons to survey undeveloped fishing grounds in the South Atlantic. This project was originally planned to be made in cooperation with the Argentine Government, but plans failed to materialize. The survey ship is one of the most advanced type with modern equipment and facilities and carries a 40-man crew and 8 scientists. The ship will engage mainly in trawling and if successful the Japanese Fisheries Agency hopes to form a joint Brazilian-Japanese fishing company.

The Toko Maru is scheduled to leave Japan about the end of October on a 6-10 months round-the-world survey trip. The first part of the trip will take the vessel through the Indian Ocean to Brazil for the planned survey. During the approximately 6 months' stay in Brazilian waters, the ship will operate from bases in Rio Grande, Rio de Janeiro, and Belem and report findings to the Brazilian Government. She will then proceed to the Dominican Republic and Mexico to investigate overseas fishing ventures with these countries, states a September 7 dispatch from the United States Embassy in Tokyo.

Note: Also see Commercial Fisheries Review, March 1956, p. 42.

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CANNED SARDINE PACK FOR 1955: The Japanese pack of canned sardines for the calendar year 1955 amounted to 899,122 actual cases, according to a September 25, 1956, dispatch from the United States Embassy in Tokyo. Although sardines

Table 1 - Japanese Canned Sardine Pack by Can Size and Style of Pack, 1955

Style Pack	Size of Can								Total	Percentage of Total
	3-4 oz.	4-5 oz.	5-6 oz.	8 oz.	12-13 oz.	24 oz.	54 oz.	Other		
	(Number of Cases)									%
Boiled	2,035	54,536	-	-	-	6,103	-	113	62,787	7.0
In oil	5,125	-	-	-	-	-	-	1,215	6,340	0.7
Tomato sauce	-	35,064	165,383	3,677	264,415	-	-	226	468,765	52.1
Brine (seasoned)	9,309	-	273,539	-	69,628	-	2,374	2,205	357,055	39.7
Broiled	3,375	-	-	-	-	-	-	-	3,375	0.4
Unclassified	-	-	-	-	-	-	-	800	800	0.1
Total	19,844	89,600	438,922	3,677	334,043	6,103	2,374	4,559	899,122	100.0
Percentage of Total %	2.2	10.0	48.8	0.4	37.2	0.7	0.3	0.5	100.0	

Table 2 - Japanese Canned Sardine Pack by Case Size and Style of Pack, 1955

Style Pack	Number of Cans to Case						Total
	6	24	48	96	100	Other	
Boiled	-	6,103	-	2,035	54,536	113	62,787
In oil	-	-	1,450	-	3,675	1,215	6,340
Tomato sauce	-	32,725	297,944	137,870	-	226	468,765
Brine (seasoned)	2,374	3,021	207,066	142,389	-	2,205	357,055
Broiled	-	-	-	-	3,375	-	3,375
Unclassified	-	-	-	-	-	800	800
Total	2,374	41,849	506,460	282,294	61,586	4,559	899,122
Percentage of Total %	0.3	4.7	56.3	31.4	6.8	0.5	100.0

were packed in five or more different styles, sardines in tomato sauce (52.1 percent) and in brine (39.7 percent) were the principal packing mediums. The number of cans to the case varied mostly from 24 to 100, but cases with 48 cans to the case and 96 cans to the case accounted for 87.7 percent of the total pack. The pack in terms of ounces to the can (original data in grams, calculated to nearest ounce equivalent) varied between 3 and 54 ounces, but packs of 5- to 6-ounce (48.8 percent) and 12- to 13-ounce cans (37.2 percent) were the principal sizes packed.

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CRAB CANNING INDUSTRY OF HOKKAIDO ISLAND: Three different crab canning plants in Northeast Hokkaido were visited the latter part of June 1956 by members of the United States Embassy at Tokyo, and this is a report on their observations:

In every case the installations were very simple and inexpensive, consisting of boiling pits, cooling pits, work tables, can-sealing machines, and sterilizers. The plants all had about the same annual canning capacity, 85,000-90,000 cases of 48 cans of $6\frac{1}{2}$-oz. each. The total cost of the equipment probably did not exceed US$75,000-100,000 in any of the plants exclusive of fishing vessels.

Hairy crab (kegani crab) is canned chiefly in shore canneries; the king crab is canned on ships in the area of catch. Some king crab, however, are caught in the traps which are placed at 20 to 30 miles offshore. Cannery officials said that the large number of king crabs caught this season in traps set for hairy crab at latitudes considerably to the south of the king crab's normal habitat indicates that the stock of king crab in the North Pacific and the Okhotsk Sea is large and that the pelagic catch this year should be good.

Nevertheless, out of a total Japanese crab catch by land-based operations in 1955 of 152.1 million pounds, only 26.5 million pounds were king crab, the remainder, hairy crab. The king crab catch in the area around Habomai and Kunashiri Islands, now held by the Russians, was once very important, but has declined in importance to Japan because crab boats are fearful of being seized, as many have, by the Russians. King crab catches in the Kuriles in 1956 were only 10 percent of the 1955 catches.

For the most part, cannery owners purchase crab from independently-owned crab boats, although a few canneries operate their own crab fleets. The price of crab in Hokkaido is set before the season begins by the boat owners. This year's price, ¥15,000 (US$41.70) a metric ton, was the same as last year's.

It would appear on the basis of information gathered that the crab canning industry in Hokkaido operates on a fairly high profit margin with a minimum of investment. For example, with everything operating smoothly, one of the small plants visited could produce 200 cases of 48 $6\frac{1}{2}$-oz. cans in one 8-hour shift. Production costs for an 8-hour day for this amount, based on information gathered, would be approximately as follows:

	¥	US$
Crab 1/ - 8.8 tons @ ¥15,000 (US$41.70)	132,000	367
Labor 2/ - 200 workers @ daily rate of ¥400 (US$1.10)	80,000	221
Operating costs, fuel, electricity, etc.	20,000	56
Depreciation on investment 3/	45,000	125
Materials costs	40,000	111
Managerial wages (2 @ Y5,000)	10,000	28
Total	327,000	908

1/ 200 cases contain 3,872 lbs. of crab meat. Approximately 20 percent of the crab is recoverable meat. Thus the weight of live crab for 200 cases is 3,872 times 5, or 8.8 metric tons (19,360 lbs.).

2/ There were two hundred employees at this plant, 75 percent of which were female. The rate for female labor in the cannery was ¥200 (55 U.S. cents) per shift, plus food and lodging.

3/ Total investment in the plant is estimated at ¥27 million (US$75,000), amortized over a 10-year period, i. e. ¥2.7 million (US$7,500) per year. But the work period is only about 60 days, thus the depreciation rate is ¥45,000 (US$125) per working day.

The total cost to produce 200 cases of canned crab meat is approximately ¥330,000 (US$917). The f.o.b. Yokohama price of hairy crab per case of 48 6½-oz. cans is US$12.50 or ¥4,500. Total receipts from 200 cases would be ¥900,000 (US$2,500). This would mean a profit for the cannery of ¥560,000 ($1,556) for one day's operation.

It is possible that some of the cost items were underestimated, but the two principle ones, cost of live crab and labor, are accurate. However, it is understood that selling and transportation costs in Japan are high.

The question of perpetuating the stock of hairy crab is one which is of concern to the industry although little is being done about it. The only conservation measures on crab are the limits on the season and the number of boats, which are controlled through a licensing system. But some observers fear that the stock is diminishing although this opinion is not based on a thorough scientific study because none has been made. The problem of controlling fishing activities in Japan is a very difficult one. Many factors account for this: (1) the Japanese are aggressive and efficient fishermen; (2) there are hundreds of small fishing boats independently-owned in Japan and there are pressures ever present to utilize the equipment and realize a return on it; (3) employment (or unemployment) is an ever-present problem--there are people always ready to share the risk of unauthorized fishing; (4) the coast line is long, making patroling difficult.

The crab industry on the Eastern tip of Hokkaido, facing the island of Kunashiri, was reported to have had a very poor season this year, chiefly because crab boats were fearful of venturing into the area over which the Russians have jurisdiction. The March 23, 1956, announcement by the Russians restricting salmon fishing and the seizure of a Japanese fishing boat coincide with the opening of the crab season, and even though the Russian restrictions for 1956 did not include crab, many boat owners were wary of going into the restricted area. It was reported that crab canners in the Eastern area of Hokkaido feel that the industry might be facing a difficult period because of the Russian attitude and some are converting their equipment so that it can be used for vegetable canning.

The 1955 crab pack (both land-based and high-seas) was approximately 690,000 cases (48 6½-oz. cans) of which 480,000 cases were canned in Hokkaido canneries (kegani crab) and 210,000 on cannery ships (king crab).

Owing to bad weather in the early part of the 1956 season (April and May), the catch was poor and there is some doubt that the kegani crab target of 300,000 cases can be reached. Some observers believe that the total kegani crab pack will not exceed 200,000 cases.

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THE CRISIS IN THE TUNA INDUSTRY: A panel discussion held at Misaki, Japan, on August 23, 1956, considered the problems which might be taken up by the Tuna Fishery Investigative Committee recently established by the Japanese Fisheries Agency. The following report on the discussion appeared in the Suisan Shuho (September 5, 1956), a fishing industry weekly:

Participants: M. Teramoto, Member of the Tuna Fishery Investigative Committee, President of the Kanagawa Prefecture Tuna Fishermen's Association; S. Sugano, President of the Kanagawa Prefecture Tuna Society; K. Mito, Secretary of the Kanagawa Prefecture Tuna Society; N. Hayashi, Managing director of the Kanagawa Prefecture Tuna Fishermen's Association; M. Kojima, Owner of the Daikoku Maru; W. Mabune, Assistant Manager of the Misaki office of Taiyo Gyogyo Co.; T. Okamoto, Official of the Kanagawa Prefecture Tuna Society.

Tuna Resource Problems: Moderator: The Establishment of the Tuna Fishery Investigative Committee as a consultative body for the Minister of Agriculture and Forestry means, I think, that the tuna fishing industry has at present come to a period when changes must be made. We would like, therefore, to have all of you here at this tuna fishing center of Misaki talk freely about the present situation in the industry and about what you hope for from the Investigative Committee, after which I hope that we will be able to draw some conclusions as to what the Committee should do. Will you speak first, Mr. Sugano?

Sugano: Well, it is my personal opinion that the tunas represent the largest resource among all fishes, followed probably by the salmon and the bottom fishes. Their range of occurrence stretches from 40° on the north to 30° or 40° on the south, with its center on the equator, and up to the present the fishing fleet has been operating freely with the center of its efforts likewise placed in the equatorial region. Thus the resource is extremely large, and I think that we have come to a period when we must consider whether or not we are actually utilizing it to the full. Therefore, first of all we must find out how large the resource is. We cannot go forward into an era of free competition unless we build ships and put them into productive operation. And for that we need a reasonable price for fish. Assuming that there is a limit to the resource, we will have to study the question of whether to restrict the catch by regulation or to get reasonable prices by improving our product. I would like to have the government take up these points.

I hope that Mr. Teramoto will inform the government that we would like to have these points studied, or that we are studying them, and that they will take thought for the future prosperity of the tuna fishing industry. Furthermore, since the fishing grounds are so extensive, there may be friction with foreign countries, and I think that we must take into consideration working together with other countries in the future to conserve and build up the resource.

Hayashi: I have little to add to what Mr. Sugano has said, but I too am most hopeful for action on the problems of the resource. I am a businessman and am not directly concerned with technical or scientific matters, but in the old days, when I first got involved in the tuna business, the small boats used to put out from Misaki and return in 3 or 4 days. And that was not so very long ago. Now the ships are being built larger and larger and the fishing grounds are becoming more distant. This trend has been particularly conspicuous since the war. After the MacArthur Line was done away with, the fishing grounds expanded suddenly, and at that time big catches were made in a few days of fishing on the new grounds, but after a little time had passed the catch per day gradually declined and the number of days of operation increased. In the old days it was said that the resource was inexhaustible, but I feel, as a layman, that this was a mistake. I particularly hope that the Committee will study this point.

New Fishing Grounds: Kojima: Well, I have been going to sea for over 20 years, and back in the period from 1929 or 1930 to 1937-38, when the southern fishing grounds were being opened up, we fished with boats of 30 to 100 tons. Around 1937 this development came to a standstill, but thereafter good catches were made in the Mandated Islands area and they continued until 1940-41. At that time catches ran around 1,000 kan (8,300 pounds) a day. In the same Trust Territory area at present, using 100- to 150-ton boats, the catches have decreased to about half that, or 400 to 500 kan (3,300-4,100 pounds). As Mr. Sugano has said, the range of the tuna is from 44°-45° north to 30°-35° south, but it can be broadly divided into three grounds--the Indian Ocean, the Pacific, and the Atlantic. Two of these--the Indian Ocean and the Pacific--are being fished at present, and on these two grounds the catch rates are dropping year by year. I don't know whether the resource is still there or not, but there is no mistaking the fact that the catch rates are dropping, and if the producers do not take that into consideration, it is clear that the development of the business will be stymied.

Mabune: I, too, as one directly concerned in the fishery, am most worried about the problem of the resource, as mentioned by Mr. Hayashi. The Taiyo Company has operated 13 mothership expeditions, usually on fishing grounds in the Fiji area. Formerly catches were 1,000 to 2,000 kan (8,300-16,500 pounds) per day, but last year they declined to 500 to 700 (3,300-5,800 pounds) and the expedition had a hard time. If this condition continues, it will be difficult to plan operations. I also hope that the Committee will take up the investigation of new fishing grounds.

Mito: I hope for a great deal from the Investigative Committee. From the production angle, it is a fact, as you have all said, that there has been some thinning out of the resource. The scientists may be right in saying that the fish aren't disappearing, but it seems to be a fact that they aren't being caught. We have no clear basis for saying what is happening to the resource. On this point, I hope for studies that will make clear the life of the tuna. I think that if this is not done, it will be hard to find fundamental solutions for the problem of marketing and the other problems which are based on the biology of the tuna.

The marketing field at present is handled by a branch of the Fisheries Agency, but I wonder whether policies can be set up adequately in this way and I would like to have the Investigative Committee take part in basic talks on this problem. I would also like to see them extend their interests to business management. If they get into management problems, there is a danger of their also getting involved in financing problems, but I would like to see them work out some basic lines on such questions as what type of management to use with what type of vessel. At any rate, I hope that they will set up a basis as suggested above.

Clarify Thoroughly the Increases and Decreases in the Tuna: Moderator: We have heard various opinions, but Mr. Teramoto, what do you, as a member of the Investigative Committee think?

Teramoto: If you ask me what I think as a member of the Committee, I think that the most important point is the resource from the point of view of the production field, and I think that we must investigate it thoroughly at this time. Bigger vessels have been coming off the ways since 1951 and the tuna have been fished farther and farther out from the bases, until at present, as you know, there is no part of the Pacific where they don't fish, and the fishery has also developed into the Indian Ocean and even to Madagascar and the Arabian Sea. As for conditions on those grounds, at first catches ran 5,000-6,000 kan (41,000-49,600 pounds) per day, whereas at present they will go 3,000 kan (24,800 pounds) at best and average around 1,000 kan (8,300 pounds). That is in the Indian Ocean, but when we come to look at the Pacific, we can say that the grounds are already fished down, with daily catches of 500-1,000 kan (3,300-8,300 pounds) regarded as highly successful.

We think, therefore, that the resource problem has got to be investigated from various angles. To put it briefly, we can say that 4 or 5 years' statistics show a gradual decline. There are those who, from academic theories or hypotheses, say that the fish are not decreasing but may be increasing, however, this is a knotty problem. I think that we, as a committee, must come up with some solution.

In brief, the decline of the catch is a fact. It is not easy to show this clearly, but I hope that even if it takes considerable time we will be able to get a thorough solution of the problem of the resource. One school of thought is that it is actually declining gradually. However, one tuna spawns tens of thousands of eggs; how many of these survive and grow is a question which we must ask the scientists to study, for at present the growth rate is not clearly known. Until this is known, the problem, I think, cannot be solved. There are probably several methods, but thinking about it as a layman, I wonder if it might not be possible to find the spawning ground, capture some of the young fish, and rear them to study the growth rate. I hope that the scientists will do some basic work on this point.

Make More Use of Tagging Experiments: Sugano: Still talking about the resource problem, I think that there are various species of fish which are not decreasing in numbers, but it is a fact that the tuna are declining. It is a question, however, whether they are among the species which can be completely fished out or whether they will just decrease down to a certain limit and then continue at that level.

For instance, I think that the following can probably be said. In the Indian Ocean daily catches of 4,000 to 5,000 kan (33,100-41,300 pounds) were the usual thing, but now if 2,000 kan (16,500 pounds) is taken it is top fishing. However, when catches of 5,000 kan (41,300 pounds) were being made it was a yet unknown ground and Japanese boats were fishing there for the first time, so naturally the fish took to the bait well. That's why they could catch 5,000 kan. Then when they went there subsequently the catches dropped to 2,000 kan. It might be that the fish have become more knowing, and I wonder whether we can say right off that the resource has diminished. I'm afraid that we may hear the argument that if the resource has declined we had better not go fishing there. If we can't operate on the 5,000-kan level, then it becomes our duty to try to operate on 2,000 kan, and I think that we need to carry on our business with this idea in mind. There is need for persistent investigation of the scope of occurrence of the tuna, and for this purpose good use should probably be made of tagging. We of the Tuna Investigation Society have been tagging tuna, under the direction of the Kanagawa Prefectural Laboratory, by tying vinyl tags on their tails. However, with this method the fish die, and we must find a simpler method which will keep the fish alive so that we can investigate their migrations, spawning, and so forth under natural conditions, and perhaps, if it is necessary, we might even set aside a certain area as a preserve in order to protect the resource. I certainly don't want things to reach the point where we will be told that we must not catch the fish because they are decreasing in numbers.

Regulation Must Come: Teramoto: I sympathize with the views that have just been expressed, but I hardly think that the vessels in operation at the present time will be told to cease because the resource is declining. However, I do think that it may be a poor idea to increase the fleet above the present level. Therefore I believe that some degree of regulation is unavoidable. The problem, of course, is in the method . . .

We have to study beforehand how far the resource has declined; it isn't enough just to squawk about the decline. What we are worried about is the business operations based on that resource--and I think that there is a need to study to find out how long the present state of affairs can last and whether really stabilized operations are possible. I believe that the Committee must, in cooperation with the industry, work hard and from every possible angle on the resource, the management of the industry, and marketing in order to lay out a course and attain its first objectives.

Guidance and Direction are Prerequisites: Moderator: What is the business situation among the tuna boat operators?

Teramoto: Business conditions are difficult. An outsider might think that because boats have become bigger, the business has also become bigger, but the boats have become bigger because it has become more difficult to catch fish and the operators are plunging ahead in competition with one another. That is why the boats are being built larger. The question is whether or not we can continue in business indefinitely with things going along as at present. The government has got to think up some thorough-going measures to keep our business going, because if it is left to go along the way it is now, we will go broke. I think that various regulatory policies could be devised, but the first thing to consider is the "guidance vessels," the government-owned ships. These vessels don't pay any taxes nor do they have any trouble raising capital. Some of the privately-owned boats, meanwhile, are operating on borrowed money. Although the resource is drying up and fish are getting hard to catch, the price of fish doesn't go up at all, and that is why our business is in

trouble. When we consider what to do about it, well, it looks as if we have to cut down the number of boats. However, for the privately-owned boats operating at present, this is their life and their vocation, and they must keep at it until they drop. The government has got to do everything it can to protect them and foster them. One of the ways in which they can be helped that naturally comes up for discussion is the control of the research ships.

Hayashi: These "guidance vessels" are really a problem, aren't they? There are probably about 90 of these government ships in all. Perhaps half of them are so-called guidance vessels, and even prefectures which have no fishing industry are building them to catch tuna, indeed, putting all of their efforts into catching fish, which is a little too much for the private boat owners to stomach.

Government Boats Take Away the Best Fishermen: Moderator: Is there any directly apparent damage from the guidance vessels?

Kojima: There is. First of all, they pick up the best fishermen, because the government boats give a fixed salary and a share of the catch on top of it, so they give a more stable income than the private boats. That is why they can pick the best fishermen and therefore they are cleaning out the fishing grounds in a way that we can't compete with.

Sugano: This word "guidance vessel" sounds good, but in actuality they are far from providing any guidance. It's generally the privately-owned boats that search out the grounds and then the government boats come nosing along afterward. It's really more than we can stand for!

Kojima: They don't do any guiding, and the name is a bit presumptuous. (All agree.)

Moderator: I suppose that this matter of guidance vessels will come to be a problem of administration in the future, but now I would like to hear from Mr. Hayashi on the fish price problem as another one affecting business.

Establishment of Reefers as a Measure to Help Prices: Hayashi: I am always thinking of ways to help the price situation. In addition to propaganda for the consumption of fish and expansion of markets, large refrigerator plants should be built, especially for tuna, so that when big catches are made or when fish are overabundant in a certain district, they could be stored. Then they could be sold when fewer vessels were coming into port. Don't you think that this sort of management would stabilize the price of fish? I would like to have the government finance the construction of refrigerator facilities in a base like this. Our association is selling fish cooperatively, so we feel this need very keenly.

Mabune: With frozen fish we don't have the sort of instability we have with fresh fish. At present the amount of frozen fish is increasing, which means that the amount of fresh fish is declining, but the decline in the amount of fresh fish has not brought about as much of a general price drop as was feared. This is the good effect of refrigeration. Refrigeration on shipboard is still a problem, but on my vessel we have got used to handling it and we are getting just about the kind of prices we plan on. At first, before we were used to it, we sometimes landed poor quality stuff, but now . . . .

Mito: Looking at the figures, frozen fish began to increase sharply around 1953. According to our survey, 1953 was up 50 percent over 1952, it doubled in 1955, and there was another 50-percent increase in 1956. In connection with this rapid increase, if we look at the price situation mentioned by Mr. Mabune, there was a temporary drop in 1952 at the time of the Bikini incident, but since then the price has gone up despite the increased catch, and this year even the price of unfrozen fish has increased.

In other words, this means that by using frozen fish the price can be maintained above a certain limit. This is not to say that it can be increased, but frozen fish can play an important role in stabilizing it within certain limits. Therefore, in response to this stabilized price, must we not hereafter think of ways to improve the pattern of business operations in the fishery? For example, up to now we have been finished with the fish after they have been sold at the auction and have not been concerned with the price thereafter at all. What kind of a marketing structure will give the least spread between the final price and the price to the producer? What kind of a price will keep the consumers from turning away from tuna and at the same time overcome the low state of the resource? These are the questions to which, within the capabilities of the present situation, I would like to get scientific answers. I hope that the Committee will get into these matters.

Moderator: We have put in a lot of time here, and now I wish that Mr. Teramoto, as a member of the Tuna Investigative Committee, would present his views as to what the Committee may do in the future to solve these various problems.

The Fishing Grounds are Overexploited: Teramoto: We have heard may worthwhile comments from all of you, and they are valuable to me as a member of the Committee. I will try to do all I can for you from now on. Various matters have been discussed, but the point is that there is money being made in the tuna fishery and everyone has been trying to get in to share it, so that it can probably be said that the industry is at a peak at present. If it were to continue as it is now it would be fine, but there is no assurance that it will. As has always been said in the past, if a thing gets real good, there is bound to be a reaction, and since the tuna fishing industry is today at the top, we must consider that there is bound to be a day when the reaction will set in and things will get bad. Then those of us who have been in the business for many years and those newcomers who have come into the fishery because there is money to be made there will all go down to ruin together. In that eventuality I hope the government will think very seriously about whether to save those who were already in the fishery or whether to rescue the new operators. I think that there have got to be some real regulatory measures here. Those who have been fishing tuna for 30 or 40 years have been through hard times at least two or three times, and I think that these people who have specialized in tuna fishing must be protected. If it comes to regulation, I would like to have it start with the 90 guidance vessels. The problem is how much actual guidance they are doing under the name of "guidance vessels." This

year is already the peak--will it continue thus for years, or is the fishery already in a dangerous condition? I have just heard various views concerning the resource, and my opinion is that it is playing out. The reason I think so is that, as several of you have stated, the catch rates are actually going down with every cruise. Even though we knew about the increase in juvenile fish that the scientists talk about, we don't know about the increase in growth after that stage, and if it cannot be affirmed that the tuna are decreasing, neither can it be affirmed that they are increasing. Therefore at this time we must investigate these things thoroughly and construct a basic foundation so that, just because there is money to be made in tuna fishing now, everyone won't be allowed to get into the fishery with the result that the old established operators will go broke along with the newcomers.

Moderator: Thank you all for your valuable views and for the time that you have devoted to this discussion.

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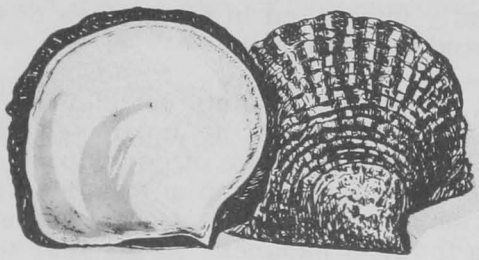

Pearl Oyster (Avicula margaritifera)

CULTURED PEARL INDUSTRY AFFECTED BY HOT SPELL: The most important cultured pearl farms in Japan are located in the Nagoya District at Ago and Matoya Bay in Mie Prefecture. As a result of unusually hot weather in early August the temperature of the water rose suddenly from a normal high of 26° C. (78.8° F.) to 33° C. (91.4° F.) causing an estimated loss of $1,219,280 or 25 percent of the total value of existing pearl oysters (Sources: Local press and Mie Prefecture Office; United States consular dispatch dated September 10).

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FISH NET KNITTING MACHINES AND OPERATORS TO GO TO CANADA: It is reported that one of the seven largest Mie Prefecture (Nagoya District) manufacturers is concluding arrangements to send its machines and technicians to Canada under a technical cooperation agreement to make synthetic fiber fishing nets for salmon and trout fisheries. Japanese authorities fear that this move will induce Japanese manufacturers to offer their products at unprofitably low prices in order to sell their stocks before Canadian production commences.

Mie Prefecture has long been a center of one of Japan's oldest industries, the manufacture of fishing nets. Until 1950 all nets were made of cotton or hemp but since then synthetic fibers have become increasingly important. In 1951 only 98,000 pounds of synthetic fiber fish nets were produced; in 1954 production had increased to 894,000 pounds and in 1955 it reached 1,283,000 pounds while in that year 2,182,000 pounds of cotton and 69,000 pounds of hemp fish nets were produced. The Canadian market has always been of major importance to this industry. (United States consular dispatch dated September 10, 1956, from Nagoya.)

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FISHERY PRODUCTS EXPORTS RANK FOURTH IN VALUE: For the first 9 months of 1956, Japan's exports of fishery products ranked fourth in value, or 5 percent of the total value of all commodities exported. Total exports of fishery products from January-August 1956 amounted to 131,481 metric tons (value US$78.3 million), up 79 percent from the 95,889 tons (value US$43.7 million) exported in the same period in 1955.

Note: Values converted at the rate of 360 yen equal US$1.

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OVERSEAS FISHING VENTURES PLANNED: In an effort to develop new fishing grounds to relieve overfishing in the coastal waters of Japan, the Japanese Fisheries Agency has asked for appropriations in the next fiscal year to station a fisheries

officer at Singapore. Also planned is an overseas fisheries promotion association which will be subsidized by the Government. (United States Embassy Dispatch from Tokyo dated September 7, 1956.)

The fisheries officer planned for the office of the Japanese Consulate General in Singapore will supervise fishermen operating in the Indian Ocean and surrounding waters, promote joint fishing ventures with Singapore and Malayan authorities, and develop markets for Japanese fisheries products. The proposed Japanese overseas fisheries promotion association will be an advisory organ to the Government in overseas fisheries development and planning. In addition, the association will take an active part by conducting surveys, opening overseas consultant offices, and developing overseas markets. The undeveloped fishing grounds which the Japanese are currently interested in are waters of the east coast of South America, the Persian Gulf, and the Red Sea.

A later report points out that the Japanese fisheries industry has formed an association known as the Japanese Overseas Fisheries Cooperative Association Agency for the purpose of developing cooperative arrangements with foreign countries for the exploitation of fisheries resources in their coastal waters. The Association has applied for a government subsidy of ¥34 million (about US$95,000) during the next Japanese fiscal year to help it carry out its main objective, which is to relieve overcrowding in Japanese waters by finding substitute employment abroad for Japanese coastal fishermen. The Association will study offers by foreign countries relating to fisheries resource development and will set up overseas branches for the purpose of conducting fisheries resources surveys in various areas of the world in cooperation with the Japanese Government.

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NORTH PACIFIC FACTORYSHIP KING CRAB MEAT PACK THROUGH JULY 1956: The Japanese fleet of six factoryships and 18 attached catching vessels had packed a total of 269,999 cases of king crab meat (48 ½-lb. cans) through July 31, 1956, according to the August 1956, Monthly Statistical Report of Japanese Fisheries.

The pack by area is as follows: Eastern area of Bering Sea, 53,000 cases; Western area of Bering Sea, 31,000 cases; Sea of Okhotsk, 185,000 cases. The pack for the entire season in 1955 made by three factoryship fleets was 206,850 cases. In 1955 the last factoryship left the fishing grounds on September 10.

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NORTH PACIFIC FACTORYSHIP SALMON CATCH FOR THE 1956 SEASON: The 1956 Japanese salmon catch by factoryship-type operations in the North Pacific amounted to 52,015,731 fish as compared with a 1955 catch of 64,043,900 fish. The catch for 1956 includes 28,270,000 fish (47,776 metric tons) from the Russian restricted area (Aleutians and Okhotsk Sea) and 23,745,731 fish from unrestricted areas (Aleutians and Bering Sea), a United States Embassy dispatch dated September 17, 1956 from Tokyo reports.

In addition to the salmon factoryship operations, the catch by the shore-based drift-net fishery in the restricted area was estimated at 5,918,000 fish (mostly pinks) or approximately 8,004 metric tons.

Japanese North Pacific Salmon Factoryship Catch, 1955-56

Area & Year	Sockeye	Pink	Chum	Coho	Chinook	Total
	(1,000 Fish)					
North Pacific Area:						
1956	9,620	11,981	17,165	3,750	136	42,652
1955	12,164	16,508	18,573	3,184	74	50,503
Sea of Okhotsk:						
1956	656	5,366	3,224	116	1	9,363
1955	330	9,412	3,404	392	2	13,540
Grand Total:						
1956	10,276	17,347	20,389	3,866	137	52,015
1955	12,494	25,920	21,977	3,576	76	64,043

Operations by the factoryships in the Russian restricted area fell short 15 percent of the catch limitation of 54,831 metric tons imposed by the Russians.

A summary of the 1956 North Pacific high-seas salmon fishery with comparative data for 1956 is presented in the table.

The pack of canned salmon from the 1955 factoryship catch of about 64 million fish was 1,450,000 cases, total pack from all sources was 1,780,000 cases.

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NORTH PACIFIC WHALING, 1956: Two Japanese whaling expeditions operating in the North Pacific this summer produced 24,922 metric tons of baleen and sperm oil as compared with last year's 19,026 tons, an increase of 31 percent.

Table 1 - Production of Whale Products by Japanese North Pacific Whaling Fleets, 1955-56

Year	Baleen		Sperm		Total	
	Oil	Other 1/	Oil	Other 1/	Oil	Other 1/
	(Metric Tons)					
1956	12,343	13,957	12,579	3,980	24,922	17,937
1955	10,882	11,272	8,144	1,569	19,026	12,841

1/ Mostly frozen and salted.

The total catch in numbers of whales was 3,168 whales (1,570 baleen and 1,598 sperm) as compared with 2,652 whales (1,568 baleen and 1,084 sperm) in 1955. The catch of baleen whales remained at the same level as last year because of the Fisheries Agency's conservation measure of restricting the catch to 800 blue-whale units. The catch of sperm whales increased nearly 50 percent as compared with the previous year. Japanese fishermen belive this is evidence of abundant stocks in the North Pacific.

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REPORT ON TUNA FISHING OFF TAHITI: The Shizuoka Prefecture's fisheries guidance vessel Daifuji Maru (470 tons) with a crew of 51 has been investigating fishing grounds in the South Pacific in the vicinity of Tahiti since June 28, 1956, reports the Nippon Suisan Shimbun (September 7, 1956), a Japanese weekly periodical. The vessel has now concluded its operations after taking 45,000 kan (372,000 pounds) of yellowfin, big-eyed, and albacore tuna at 36 fishing stations. The vessel sent in by radio the following report concerning the fishing grounds around Tahiti and a new fishing ground 1,000 miles ESE. of Hawaii.

On the Tahiti grounds the catch was mostly albacore, but because the season was inappropriate the schools were small and the fishing was not up to expectations. However, it is thought that this will be rather promising ground in the albacore season.

On the new grounds 1,000 miles ESE. of Hawaii, the catch was big-eyed and yellowfin tuna and the schools were extraordinarily concentrated, with as much as 2,000-3,000 kan (16,500-24,800 pounds) taken per station. This area is thought to show more promise for the future than the Indian Ocean.

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SALMON INDUSTRY OF HOKKAIDO: A salmon canning plant at Kushiro in Hokkaido, operated by the Hokkaido Economic Agricultural Cooperative Association (organized by coastal fishermen) was visited by members of the United States Embassy at Tokyo the latter part of June 1956. This is a report on their observations:

The labor force at the plant was about 100, most of whom were females and the capacity of the plant is 800 cases a day, which requires about 50,000 pounds of raw fish. The plant cans only salmon (chums and pinks) caught in coastal waters by small boat owners and the salmon cannery operation lasts only about one month (June) out of the year. During part of the remaining months, other species of fish and some vegetables are canned.

In 1955, Japanese fishermen caught 387 million pounds of salmon of which 268 million pounds were from factoryship-type high-seas gill-net fishing and 119 million pounds were from coastal fishing and inshore fixed-net fishing. The latter type of fishing yielded a catch of 2.4 million pounds. In 1955, the Japanese Government licensed 1,700 sets of fixed nets and 1,800 coastal and high-seas fishing boats.

The coastal salmon catch is important both for canning and for domestic consumption as fresh and salt fish. The high-seas factoryship-type catch is canned, chiefly for export, while the drift-net catch by small boats (nonmothership type fishing) is almost all consumed as salt fish on the domestic market. The industry is of considerable importance both as a source of needed protein for the Japanese and as a source of foreign exchange in addition to its importance in supplying employment for some 65,000 fishermen, points out the August 9 report from the United States Embassy in Tokyo.

Some of those interviewed in Hokkaido seemed to have first-hand knowledge about Russian salmon fishing in the Okhotsk Sea and the Kamchatka peninsula area and all stated that Russian methods are primitive (mainly fixed-net fishing) and that the industry is of insignificant importance to the Russian economy. Furthermore, the Russian contention that the salmon stock is decreasing because of heavy Japanese hauls was said to be entirely unfounded.

Republic of Korea

MARKET FOR MARINE-ANIMAL OILS: Trade in marine-animal oils, both in terms of domestic production and imports, is of minor importance to South Korea, according to a survey made by the Foreign Agriculture Service of the United States Department of Agriculture.

Domestic production consisted of 270 metric tons of fish-liver oil and 30 tons of whale oil. The fish oil is produced in small quantities at a few scattered fish-processing plants. It is possible that the production of oil from marine-animals will increase in the future due to the program now under way to develop latent fishery resources.

The only exports of oils and fats reported in 1955 were 73 tons of marine-animal oils to Japan. Prices at the wholesale level in 1955 were US$30 for a 180-kilogram (about 398 pounds) drum for fish-liver and fish-body oils and US$40-50 a drum for sperm oil.

No imports of marine-animal oils were listed as such in 1955 and 1954. However, some small quantities may be included in unclassified groupings of fats and oils.

Note: Values converted at the rate of 500 hwan equal US$1.

Norway

CANNED BRISLING SARDINE EXPORTS LOWER, JAN.-JULY 1956: During the first seven months of 1956 Norwegian exports of canned brisling sardines have been reduced to only one-half of normal, or to about 20 million kroner (US$2.8 million) in value, points out an October 5 report from the United States Embassy at Oslo.

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FINDINGS IN STUDY OF ARCTIC-NORWEGIAN COD: A comprehensive report on the Arctic-Norwegian cod, published by the Norwegian Fishery Directorate's Ocean Research Institute, contains several noteworthy findings. It reveals that such fish species as cod and haddock, until now considered typical groundfish, probably spend most of their life at higher levels, suggesting the need for a radical revision of Norwegian fishing methods. The study also indicates that the notable decline in the catch of mature cod on the Lofoten banks of North Norway is, in all likelihood, caused by the heavy international trawling in the Barents Sea, feeding grounds of the young cod.

The report presents scores of echographs which conclusively show that cod and haddock to a large extent occur pelagically in big schools. And, contrary to previous notions, they move mostly at upper levels of the sea, not along the bottom. In author Saetersdal's opinion, it is possible that these species are found at the bottom, where they can be caught by trawls, only in relatively short periods. In view of the discovery that cod and haddock spend most of their time at upper levels, he emphasizes the urgent need of developing new fishing methods. Towards that end, the Ocean Research Institute will dispatch an expedition this fall to test the efficiency of float-lines and midwater trawls in pelagic fishing. Meanwhile, the experimental depth-sounding studies of cod and haddock will continue.

A substantial part of the report deals with the wide fluctuations in the stock of the Arctic-Norwegian cod. Since 1860, total landings in the annual Lofoten fisheries have varied between 6 and 40 million mature cod. Comparisons between the Lofoten landings and the number of young cod caught in the subsequent Finnmark fisheries indicate a direct connection, for every fluctuation in the Finnmark fisheries is invariably repeated in the Lofoten fisheries three years later. On the basis of available data, the author offers tentative forecasts for the next two years. The Finnmark fisheries, which were "very good" this year, will be "good" in 1957 and "not so good" in 1958. For the Lofoten fisheries, the catch will be "medium" in 1957, and "above medium" in 1958 and 1959. These predictions do not take into account the extremely high mortality to which the cod spawn are exposed on the banks off the Lofoten islands.

Perhaps the most important chapter in the report is that dealing with the impact of international trawling on the stock of young cod in the Barents Sea, a shallow part of the Arctic Ocean lying northeast of Norway, between Spitsbergen, Franz Joseph's Land, and Nova Zemblia. In this connection the author notes that no less than 700,000 metric tons of gutted Arctic-Norwegian cod was landed by the four leading fishery nations in that area in 1955, an increase of about 100,000 tons compared with 1954. The catch was distributed among the various countries as follows: Soviet Union 350,000 tons; Great Britain 180,000 tons; Norway 160,000 tons; and Germany 10,000 tons. The Soviet catch is estimated on the basis of a few meager data. Thus, it is known that in the spring of 1955 the Soviets were fishing in the Barents Sea with 560 trawlers, including 14 modern factory vessels. In the following five years, the Soviet fishing fleet in these waters was scheduled to be expanded by 75 more factory trawlers. Commenting on these developments, Saetersdal observes: "There is every reason to ask whether the stock of young cod in the Barents Sea can stand being taxed so heavily, and even more, whether it will be able

to endure the further increase in the taxation that can be expected, especially from the fast-growing Soviet fishing fleet."

The Norwegian fishery consultant points out that in recent years the Lofoten fisheries have yielded notably poorer annual catches than indicated by known data on the stock of young cod and the former relationship between young and mature cod. According to Saetersdal, the drop in the Lofoten landings is very likely a result of the heavy increase in the Barents Sea trawling. As this trend will probably continue, he suggests that Norwegian fishermen should in coming years devote more attention to catching the young cod, which are less vulnerable to overfishing than the mature cod found in the Lofoten waters.

Although it can not be asserted that the Barents Sea cod stock is as yet being overtaxed, the question of regulating the trawling operations there is, nevertheless, being considered by Norwegian and British experts. With the present 11-centimeter (4.3-inch) wide mesh, trawls can catch 40-centimeter (15.7-inch) long fish. As these have no commercial value, they are thrown overboard. The salt-fish trawlers even reject most of the fish under 60 centimeter (23.6-inch). If the width of the trawl mesh were to be enlarged, it would spare the younger generations of cod. The Soviet Union, however, is not a member of the international group which seeks to assure the biggest possible fish yield in the North-East Atlantic. And without Soviet participation, says the report, protective measures will have little effect. (News of Norway, September 20, 1956, of the Norwegian Information Service.)

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FOREIGN MINISTRY REQUESTS NORWAY FISHERY PACT WITH RUSSIA: The Norwegian Foreign Ministry through the Norwegian Embassy in Moscow has approached the Soviet authorities with the suggestion that negotiations should be started with the aim of securing agreement on a frontier between Norwegian and Russian sea territory, it was announced in Oslo in September.

According to the Oslo newspaper Arbeiderbladet, it is hoped to establish a joint-fishing belt where Norwegian and Russian fishing vessels can operate side by side. Such an arrangement already exists between Norway and Sweden at the outer reaches of the Oslo Fijord.

Last week four Russian trawlers were discovered within Norwegian waters. Damage was done to Norwegian fishing gear. The Norwegian Embassy in Moscow has asked the Soviet authorities to draw Russian trawler skippers' attention to the Norwegian regulations so that similar contraventions can be avoided in the future. (The Fishing News, September 14, 1956.)

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PELAGIC PURSE-SEINING FOR COD BEING TESTED: The Norwegian fishing vessel Longva recently left the west Norway port of Aalesund to test the superefficient purse seine on the banks off western Greenland. According to the findings of Norwegian ocean researchers, these waters are teeming with cod for about three weeks every summer. If the pelagic purse-seining experiment is successful, it may persuade Norwegian fishermen to consider a radical change in their methods, states the Norwegian Information Service in its August 23 News of Norway.

According to Dr. Birger Rassmussen, of the Norwegian Fishery Directorate's Ocean Research Institute, the waters west of Greenland constitute one of the richest fishing grounds in the world in relation to the effort required. As to the enormous concentration of cod that occurs each summer, he says it is directly caused

by the sinking of cold melt water from the drift ice. To get away from it, the cod follows the warmer water to the surface. "They go in dense shoals, just like herring," he reported on the return from his last study cruise.

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PLAN TO ADVERTISE FRESH FISH: The Norwegian National Association for the Marketing of Fresh Fish agreed at its recent annual meeting to urge the Ministry of Fisheries to effect an advertising campaign to sell more fresh fish in the domestic markets. The sale of fresh fish has declined in recent years. To finance the campaign, the payment of a tax of ½ øre per kilo (about 32 U. S. cents a hundredweight) on all fresh fish sold in the domestic market is proposed. The distributors and not the consumers would pay the tax, according to a September 7, 1956, report from the United States Embassy at Oslo.

Pakistan

FROZEN FISH EXEMPTED FROM EXPORT DUTY: Fresh fish frozen in cold storage under low temperatures before export is exempted from export customs duty, according to Customs Notification in the Gazette of Pakistan dated August 31, 1956. Under Item 10 (i) of the Second Schedule of the export tariff fresh fish was chargeable at the rate of Rs. 5/- per maund (82 pounds).

In a previous notification dated March 4, 1955, the Government of Pakistan in an effort to expand the country's export of fish withdrew the duty on fresh fish processed and frozen before export.

The effect of the present notification means, therefore, that all frozen fresh fish, whether processed or not, is permitted to be exported free of export duty, points out a September 7 United States Embassy dispatch from Karachi.

Portugal

COD FISHING FLEET REPORTS GOOD CATCHES ON NEWFOUNDLAND AND GREENLAND BANKS: The fish catch by the Portuguese fleet on the Newfoundland and Greenland banks has been unusually large this year, points out a United States dispatch from Lisbon (September 6, 1956). Modern equipment for locating schools of fish was mentioned as an important aid, as well as quick work in fitting out dories and the greater speed by which motor-powered vessels are able to follow the fish. Better catches were made because of the use this year of better and more expensive bait purchased from suppliers in Nova Scotia, Newfoundland, and Norway. It was reported that fresh mackerel, as well as squid and herring were used with special success as bait.

Almost all vessels of the cod fleet were reported returning fully loaded this year a month or so ahead of the usual schedule and many units of the fleet of 70 to 80 vessels were expected to return to the banks for further fishing. Fish have not been as abundant on the banks for many years, according to returning fishermen. Both trawlers and hand-line fishing vessels have met with considerable success.

An abundant cod catch should be of substantial assistance in increasing Portugal's protein food supplies and assisting the Government in efforts to maintain

stable prices at a time when the cost of living had risen. The demand for cod since last year to fill the gap in meat supplies resulted in substantial imports of cod from Norway and other supplying countries with a corresponding loss in foreign exchange.

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FISHERIES TRENDS, JUNE 1956: Sardine Fishing: Sardine catches in Portugal during June 1956 improved over the very low landings for May but were still well below normal. The catch of sardines for June 1956 amounted to 1,522 metric tons (value US$329,000) as compared with 5,917 tons (value US$655,000) in June 1955. Sardines purchased by the packing centers during the month amounted to only 655 tons (valued at US$169,600). The balance was absorbed for immediate public consumption. The principal sardine ports in June were Portimao, Olhao, Matosinhos, and Villa Real Santo Antonio. About 53 percent of the catch was landed at Portimao. The port of Matosinhos had about 138 tons, the August 1956 Conservas de Peixe reports.

Other Fishing: Landings of fish other than sardines totaled 5,879 metric tons (valued at US$974,713 ex-vessel) and consisted principally of anchovy (1,995 tons) and chinchard (3,008 tons) and 876 tons of mixed (mostly tuna and mackerel).

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CANNED FISH EXPORTS, JANUARY-JUNE 1956: Portuguese canned fish exports in June 1956 totaled only 2,173 tons (114,000 cases), valued at US$1.3 million, as compared with 4,480 tons, valued at US$2.1 million, for the same month in 1955.

Portuguese Canned Fish Exports, January-June 1956

Species	January-June 1956	
	Metric Tons	1,000 US$
Sardines in olive oil	13,838	7,274
Sardinelike fish in olive oil	2,125	1,840
Sardines & sardinelike fish in brine	562	108
Tuna & tunalike in olive oil	470	383
Tuna & tunalike in brine	124	69
Mackerel in olive oil	680	421
Other fish	236	111
Total	18,035	10,206

For the first six months of 1956, canned fish exports amounted to 18,035 tons (949,000 cases) valued at US$10.2 million as compared with 27,292 tons valued at US$14.0 million for the same period in 1955. Sardines in olive oil was the leading product exported.

In June 1956 France was the principal buyer of Portuguese canned fish, followed by Germany, the United Kingdom, and the United States.

For January-June 1956, the leading canned fish buyer was Germany with 3,217 tons (valued at US$1.7 million, followed by the United Kingdom with 2,024 tons (valued at US$1.1 million), the United States with 2,004 tons (valued at US$1.6 million), and Italy with 1,883 tons (value US$1.1). Exports to the United States consisted of 843 tons of sardines, 997 tons of anchovies, and 10 tons of tuna.

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CANNED FISH PACK, JAN.-APRIL 1956: The Portuguese canned fish pack (811 tons) in April 1956 continued very light and consisted of principally sardine-like fish. The canned fish pack for January-April amounted to 1,740 tons (91,600 cases), the August 1956 Conservas de Peixe points out.

Portuguese Canned Fish Pack, Jan.-April 1956

Product	Net Weight	Canner's Value
	Metric Tons	1,000 US$
In Olive Oil:		
Sardines	574	348
Sardinelike fish	1,035	1,055
Tuna	45	48
Other species (incl. shellfish)	28	20
In Brine:		
Sardinelike fish	32	9
Other species	28	6
Total	1,740	1,486

Note: Values converted to US$ equivalent at rate of 28.75 escudos equal US$1.

South-West Africa

SKIPJACK TUNA NETTED NEAR WALVIS BAY: The South-West Africa fishing vessel Kittywake reported catching 150 oceanic bonito or skipjack tuna with lampara seines during July. The school of skipjack tuna was encountered, while the vessel was under way from Luderritz to Walvis Bay. Unprepared for fishing, most of the school disappeared by the time the net was set. The crewmen on the Kittywake thought that if the net had been set more quickly that a larger catch would have been made.

The fish averaged about 15 pounds each. When gutted, it was found that their stomachs were full of small white shrimp about three-quarters inch long. The fish apparently did not see the twine while the net was being pursed. It is claimed that the type of synthetic fiber twine used in the net creates very little disturbance in the water. The report also stated that a number of companies at Walvis Bay have inquired about the use of same type of nets used by the Kittywake for such fish as bonito and yellowtail. The skipjack is reported to be uncommon in South Africa, but is fairly abundant off Angola. (South African Shipping News and Fishing Industry Review, August 1956.)

Spain

FISHERIES TRENDS, AUGUST 1956: Fishing: Fish catches sold on the Vigo fish exchange during August 1956 totaled 11.7 million pounds valued at US$1,074,148, a decrease in quantity of about 12.7 percent as compared with July and 23.7 percent below August 1955. Average prices for first sales in August were 9.1 U. S. cents a pound as compared with July and 23.7 percent below August 1955. Average prices for the first sales in August were 9.1 U. S. cents a pound as compared with 10.9 U. S. cents in July and 5.5 U. S. cents in August 1955.

The lower average prices in August were probably due to smaller catches of high-priced varieties, such as albacore tuna (Germo alalunga) and to a greater abundance of the low-priced needlefish (Ramphistoma belone) and horse mackerel (Sciaena aquila lacep). The catch of albacore decreased from 5.6 million pounds in July to 1.8 million pounds in August. The average price for albacore was 14.5 U. S. cents a pound in July and 16.8 U. S. cents a pound in August.

Fish Canning: During August the fish canneries in the Vigo area purchased 3.7 million pounds of fresh fish at the Vigo fish exchange as compared with 4.9 million pounds in July and 5.4 million pounds in August 1955. The decrease in purchases by comparison to July was attributed in part to the lower catches of albacore. Other varieties purchased by fish packers wore needlefish, which is packed in oil as a substitute for sardine (Sardina pilchardus W.) and horse mackerel.

Reports indicated that some fish packers were curtailing purchases of fresh fish on account of the difficulties encountered in obtaining an adequate supply of tin plate and olive oil. The fish canning industry regards this as its main problem at the present time, and little seems to have been done officially toward a satisfactory solution (September 11 dispatch from United States Consulate in Vigo).

Note: Value converted at one pesata equals 2.56 U. S. cents.

Sweden

CARE OF FROZEN FOODS STRESSED BY HEALTH AUTHORITIES: Frozen foods and the so-called "freezing chain" were discussed thoroughly by the Swedish General Health Association at a three-day conference held in September at Halsingborg, Sweden. The Association membership consists of Swedish health authorities, district physicians, and veterinary surgeons, according to a September 17 report from the United States Consulate at Goteborg.

The Association considers that quick-frozen foodstuffs should be better taken care of by wholesalers and retail dealers and recommends more rigorous regulations regarding sanitary conditions in shops.

Dealers, the Association stated in a resolution adopted at the conference, must learn to measure the temperature of the quick-frozen goods. The importance of shipments in wholesale lots was also stressed. The resolution also said that shop freezing, whereby fresh foodstuffs are placed in freezing counters in retail shops, must be prevented. It was also held to be desirable that the manufacturers should date-stamp foodstuffs particularly shrimp, fatty types of fish, etc.

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IMPORTS FROM THE DOLLAR AREA LIBERALIZED: The Swedish State Agricultural Marketing Board (Statens Jordbrukensnamnd) in a circular announcement of August 7, 1956, corrected the dollar-free list and the transit-dollar simport lists. The dollar-free list (commodities within the jurisdiction of the Board which can be admitted to Sweden without import license from dollar-area countries) includes the following fishery and related products (statistical number precedes the commodity in parentheses): (33) fresh halibut; (38) fresh rayfish; (46,50-51) salted and dried fish, excluding sprats, anchovies, mackerel, herring and Baltic herring (stromming); (54) spiced or sugar-cured fish, excluding sprats, anchovies, herring and Baltic herring; (55) dried fish (fresh-dried fish), excluding ling; (56) smoked fish; (57-59) fish roe, salted or prepared in another manner; (60) oysters; and (62, ex 63) crustaceans (as well as unspecified mussels), excluding lobster and deep-sea shrimp; (76) tortoise shell, mother-of-pearl, also mussel and snail shells, unworked; (315-317) canned fish and shellfish.

The transit-dollar list (commodities originating in the dollar area for which import licenses are granted) includes (251) fish-liver oil; (252:2) fish oil, other kinds; (ex 253:2) lard oil and sperm oil; and (ex 281) crayfish tails (United States Embassy dispatch dated August 31, 1956).

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LOAN PROGRAM FOR COMMERCIAL FISHERMEN: A program for the granting of loans to Swedish fishermen and owners of commercial fishing vessels has been in existence for about 50 years. Loans are granted for the purchase of vessels, motors, or other machinery, gear, and for shore-side equipment, such as packing buildings, vehicles, and fish culture.

Funds for loans are controlled by the Swedish Board of Fishery. The Board does not make loans directly to fishermen or owners of fishing vessels but to economic associations and county councils throughout the country, who in turn extend loans to the fishermen or owners of vessels within their jurisdiction or membership.

No installments or interest are required during the first two years, but thereafter an interest rate of 3.6 percent is charged on the amount of the outstanding loan. Loans must be repaid within a period of 12 years, with equal payments each

year after the first two, plus accrued interest. When yearly installments are not paid within the specified time, an interest of 6 percent is charged from the due date, until payment is made, according to a September 18, 1956, dispatch from the United States Consul General in Goteborg.

The maximum amount that may be granted in a single year by rural economic associations or county councils to an individual fisherman or to an individual owner of a vessel is US$23,000. The Swedish Government contributed US$387,000 annually to the fund during 1950-53, US$580,000 in 1954, US$ 773,000 in 1955 and US$503,000 in 1956.

The average loan extended by the economic associations and county councils amounts to between US$1,900-3,900. The demand for loans has steadily increased during the past few years. The restrictive credit policy established by the Swedish Government in 1956 has reduced the amount made available to the fishery fund in 1956.

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NEW FISH FREEZING FACILITIES PROPOSED FOR GOTEBORG: The Swedish West Coast Fishermen's Fish Processing Association has applied to the Swedish government for a loan of 1.5 million crowns (US$291,000) for the erection of a building for the processing and quick-freezing of fish. In considering this loan application, the Fishing Board is reported to have suggested that the amount of the loan be reduced to 700,000 crowns (US$136,000), states a September 19, 1956, dispatch from the United States Consulate in Goteborg.

It is calculated that the total cost will amount to about 6.5 million crowns (US$1,260,000). The building itself is estimated to cost 4.35 million (US$843,000). The structure is to be built at the western end of the fish harbor and it is expected that about 200,000 crowns (US$38,000) will be contributed by the Goteborg harbor authorities for pulling down the buildings at present occupying this area. The Association hopes that it will be possible to raise about 5 million crowns (US$989,000) among the fishing industry organizations.

The buildings to be erected will contain five floors. It will be 171 feet long and 85 feet wide and will have a roof garden. It will contain a deep-freeze plant, premises for the processing of fish, including filleting machines, cold-storage rooms, and office quarters.

It is planned that the deep-freezing capacity will be 50 metric tons a day. If this capacity is utilized 120 days a year, this would mean that 6,000 metric tons annually would be frozen. It will be possible to keep about 1,200 metric tons in cold storage, corresponding to an average storage period of two months.

According to the chairman of the Association, it is essential for the continued existence of the Swedish west coast fishing industry that this building be erected. At present, the possibilities of freezing fish landed in the port of Goteborg are very limited, and the fish often have to be transported long distances for this purpose, for instance to Malmo which is about 186 miles from Goteborg.

Another reason why the realization of this project is considered so important is that Swedish imports of quick-frozen fish have increased enormously during the last few years. In 1954, about one-half of the frozen fish consumed in this country was Swedish, while in 1955 only one-third was of Swedish origin.

The consumption of fresh and frozen fish totaled approximately 80,000 metric tons in 1955, expressed in terms of the weight of the fish when landed.

A striking development in the consumption of fish in Sweden during recent years has been the increase in the consumption of quick-frozen fillets. From an insignificant part of the total fresh fish consumption in earlier years the quantity reached 10 percent of total consumption in 1954 and approximately 20 percent in 1955, which means that in that year about 16,000 metric tons of quick-frozen fish was consumed.

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WORKMEN'S COMPENSATION ACT COVERS FISHERMEN: The commercial fishing vessels of Sweden are predominately operated by their owners on a share basis, and seldom have hired crews. While there are about 12,000 full-time and 7,000 part-time professional fishermen engaged in sea fishing, only a few worked for wages in 1955.

The few hired fishermen are covered by the Workmen's Compensation Act of 1954, generally referred to as "The Occupational Injuries Insurance Act," which went into effect on January 1, 1955. Insurance under this Act is compulsory for all persons employed in Sweden (Swedish citizens and aliens, private and public employees). The cost is met by employers' premiums which are set in relation to the work hazards of the plant or industry concerned. Occupational injuries insurance is coordinated with general compulsory sickness insurance, the sickness insurance funds taking care of cases of occupational injuries (work accidents and occupational diseases) causing disability up to 90 days. Sickness insurance is financed by policy holders' State subsidies, and employers' premiums (1.4 percent).

The general rules governing insurance of the self-employed also apply to the self-employed fishermen:

1. Under the General Compulsory Sickness Insurance Act the self-employed are entitled to compensation for the cost of medical treatment and hospitalization to the same extent as employees, and to a basic daily allowance of about 58 U. S. cents which can be increased by a supplemental insurance. For employees, supplemental insurance is compulsory.

2. Under the Occupational Injuries Insurance Act they may take out voluntary insurance providing the same benefits as the compulsory insurance of employees. Voluntary insurance may also cover accidents off the job. Voluntary insurance policies are written by those companies administering compulsory occupational injuries insurance, primarily the National Insurance Office, either individually, or collectively for the members of Swedish professional organizations or trade unions.

Prior to the coming into effect of the new legislation in 1955 there was a Royal Decree of 1918 enabling fishermen to take a voluntary State-subsidized individual accident insurance with the National Insurance Office. This insurance was cheaper than the voluntary insurance under the Occupational Injuries Insurance Act of 1954 and benefits were lower--10,500 fishermen held such insurance policies in 1954.

According to information furnished by the National Insurance Office 6,071 fishermen are at present holding occupational injury insurance policies through their professional associations. Eleven fishermen's associations have signed insurance contracts on behalf of their members, one of them, the Swedish West Coast Fishermen's Association representing 5,191 policyholders. In addition, there are fishermen taking individual insurance policies, but they are few.

Turkey

MARKET FOR MARINE ANIMAL OILS: From the standpoint of both production and foreign trade, marine oils are of minor importance to Turkey's economy, according to an April 27, 1956, dispatch from the Foreign Agricultural Service of the U. S. Department of Agriculture.

The only marine oil produced in Turkey is that derived from the Dolphin (marine mammal). Production from this source totaled 2,500 metric tons in 1954 and the 1955 production was estimated at 1,500 tons. Exports of marine-animal oil were not classified as to type and consisted only of 464 metric tons, principally to Czechoslovakia, Somaliland, and Bulgaria. No marine animal oils were imported.

Union of South Africa

CENTRAL SALES ORGANIZATION FOR CANNED FISH SET UP: Production and sales of canned fish by nine companies, representing four of the largest groups in the fishing industry of South and South-West Africa, have formed a central sales organization to be known as Federal Fish Packers Ltd. Announcing this merger, the South African Shipping News and Fishing Industry Review says its information is regarded by the South African fishing industry as "one of the most significant developments yet in the eventful history of fish canning on the West Coast. It represents the culmination of a number of previous attempts to achieve some forum of coordination in the sales of canned fish from the inshore fishing industry.

"It is no secret that the fish canners of South and South-West Africa have been feeling the pinch of intense competition on the world markets for their products," says the paper. "This in turn has revealed obvious weaknesses in the present system whereby each of several companies has acted on its own in markets abroad."

Although several companies remain outside the new combine, the organization represents a very substantial section of the fish canning industry with 7 spiny lobster canneries. The combined firms' investment in factories, boats, and other equipment is nearly half the total investment in the inshore fishing industries of South and South-West Africa.

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ECHO-SOUNDERS IN DEMAND BY FISHING FLEET: Echo-sounders for locating fish in Cape waters were in such demand in the Union of South Africa that they were being flown from Europe to Cape Town for the fishing fleets. These sounders were then installed in vessels fishing off the Cape's west coast. In six weeks from June to the end of July, one Cape Town firm alone received orders for 60 echo-sounders; while others were able to sell every instrument in stock. Reportedly, the sudden demand was so insistent that many instruments were flown to Cape Town from overseas, principally from Germany.

According to fishing concerns in Cape Town, this surge towards echo-finders is the start of a new era in scientific fishing. Fishermen in South Africa reportedly to date relied primarily on their skill and experience to reap their catches while the fish were plentiful, but for the past two seasons the movement of the shoals has been erratic and elusive, states a dispatch (August 2) from the United States Consulate at Cape Town.

Factory operators and fishermen on the Cape west coast in investigating more exact methods for locating shoals of fish now are finding the answer to some of

their problems in the echo-sounder. It is understood that echo-sounders have been in use for some years now in the trawling fleets and in the live-fishing boats of Natal and the Cape east coast and have been a most worthwhile investment.

Echo-sounders currently being sold are principally from Kiel, Germany, marketed at approximately £300 (US$840) each.

In 1952, when the Cape West Coast is said to have reached a peak of 300,560 tons of fish, a few fishermen reportedly tried out the echo-sounders with marked success. By the end of August this year, it was estimated that about 70 Cape Shoal fishing boats would be equipped with echo-sounders.

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PILCHARD-MAASBANKER CATCH THROUGH JUNE 1956 POOR: A poor pilchard-maasbanker (jack mackerel) season has hit the 16 factories and 220 fishing boats of the Union of South Africa's west coast. This year the fish have not been running and for six months boats have searched, too often in vain, for the elusive pilchard and maasbanker. The total catch of pilchards and maasbanker from January until the end of May 1956 was only 70,869 short tons and June did not add very much to this total.

Union of South Africa's Maasbanker and Pilchard Catches, January-May 1956 With Comparisons

Period	Maasbanker	Pilchard	Total
	(Short Tons)		
1956:			
January	23	3,634	3,657
February	593	7,316	7,909
March	690	24,089	24,779
April	3,382	20,179	23,561
May	7,993	2,970	10,963
1955:			
January	4,730	35	4,765
February	15,546	22,468	38,014
March	2,324	47,905	50,229
April	23,129	9,032	32,161
May	25,539	17,080	42,619
January-May 1956	12,681	58,188	70,869
January-May 1955	71,268	96,520	167,788
12 Months 1955	86,885	134,424	221,309
12 Months 1954	130,228	97,336	227,564
12 Months 1953	93,140	150,987	244,127

Some relief has come from a better than average catch of mackerel which, by the end of May, had reached 28,740 tons. Mackerel does not count in the 250,000-ton quota for the Cape west coast and so the industry has nearly 180,000 tons of pilchards and maasbanker to catch from the beginning of June until the end of the year. The former closed season is no longer enforced and the boats fish until the quota is reached or the year ends.

By early July there were fair indications that the worst period may well be over. One hopeful sign has been a slight rise in the sea temperature.

Warmer water might well bring them back. In the meantime factories and fishermen are eking out the season as best they can. A constant search is going on and the familiar areas have been thoroughly combed. In addition, the fishing companies engaged the services of a light aircraft which made a number of spotting trips over St. Helena Bay and further south, but results up to the end of June had been "negative."

Another and even more practical way of easing the shortage was found by a number of the larger and more powerful boats. Big shoals of fish appeared in False Bay and so these boats traveled south, rounded Cape Point, and went in and caught them. The furore subsequently raised by False Bay fishermen resulted in the closing of the Bay to pilchard and maasbanker netting.

With catches low, some of the factories are reported to have temporarily closed canning lines. But these would soon come into full operation if the fish return with a rush.

The most significant figures are those for maasbanker. In the first five months of this year, usually the best maasbanker months, the catch was 12,681 tons, compared with 71,268 tons during the same period last year.

In the first five months of this year, 58,188 tons of pilchards were caught, compared with 96,520 tons over the same period last year.

The total catch of pilchards and maasbanker until the end of May this year was, therefore, less than half the total of 167,788 tons for the same period last year (see table).

But while the Cape fishery is having a poor season, Walvis Bay in South-West Africa has had excellent catches. In the season which started in February, a total of 122,222 tons of pilchards had been caught by the end of May as compared with 80,878 tons landed by the end of May last year. The season last year did, however, start a month later, in March. As in the Cape, Walvis Bay has a quota of 250,000 tons and fishing stops when this figure is reached, which is likely to be well before the end of the year, states the July 1956 issue of The South African Shipping News and Fishing Industry Review.

A later dispatch, dated September 7, from the United States Consulate in Cape Town states that fishing in Union waters improved during July and August. Canned fish production was also high; demand for canned fish particularly in the United Kingdom, remained firm and large quantities were exported.

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FISHERIES TRENDS, AUGUST 1956: Overseas demand for South African fish oil was strong during August and exports of fish oil were limited due to heavy commitments of the South African fish-oil industry

Canned and frozen spiny lobster production was seasonally low due to very unfavorable weather; however, with a strong overseas demand, particularly from the United States, stocks of canned and frozen spiny lobster held by South African companies were quickly liquidated.

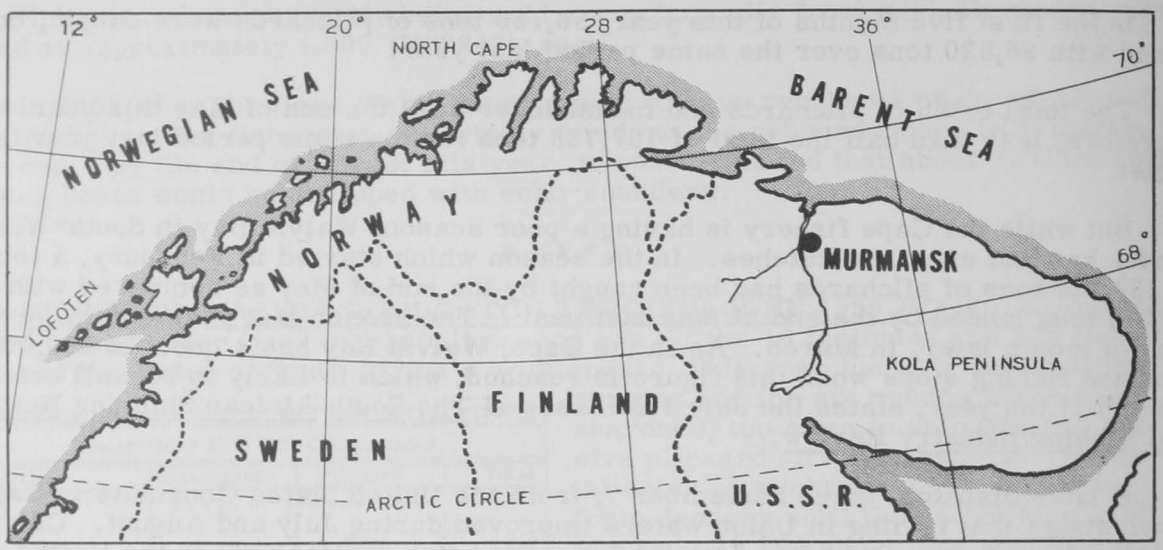
U.S.S.R.

MURMANSK--A MAJOR FISHING PORT: Forty years ago there was no Russian ocean fishery off the Murmansk coast in the Barents Sea. Today Murmansk is is one of the world's largest fish harbors and a base for 500 modern fishing vessels, according to a report in Dansk Fiskeritidende (August 17, 1956), a Danish fishery periodical. Most of the vessels are large trawlers, but about 50 fish for herring with gill nets. There are large repair yards for the fishing fleet. Last year Murmansk received 640,000 metric tons of fish--which reveals how much the Soviet Union has expanded its ocean fisheries in less than two-score years.

There are large fish-processing plants in Murmansk--filleting plants, smokeries, and canneries--but the daily supply of fish is so large that a part must be sent elsewhere for further handling.

Large quantities of fish are sent to Moscow by airplane or in refrigerated cars attached to express trains. The quality of the fish is first class when it reaches Moscow, where the demand is great and the prices good.

It is noteworthy that the Murmansk trawlers, because they are very particular about the quality of the fish, do not remain at sea longer than 7 days.



Fish are handled in Murmansk in a sanitary and effective manner. Automatic conveyors are widely used. Much is done to produce various types of canned fish. There is a large production of fish cooked in oil, and there are many types of smoked fish produced.

Fishermen on the large ocean vessels, which are owned by the State, receive a fixed wage and a certain percentage of the catch. A fisherman can earn from 35,000 to 60,000 rubles (the approximate equivalent of US$1,400-2,000) a year.

The Soviet Union has no problems whatsoever in disposing of the catches. All fish landed can be sold within the boundaries of the country and the quantity could be doubled many times. Thus, the Russian ocean fleet could be increased almost endlessly. Expansion is occurring currently to such a great degree that it is only a question of time until the Soviet Union can supply all its needs.

United Kingdom

CANNED SARDINE MARKET: The production of sild, pilchard and brisling, the sardinelike fish canned in the United Kingdom, amounted to 3,646 short tons in 1955 as compared with 2,385 tons in 1954 (table 1). The importance of this production is relatively small in terms of total consumption and in terms of the total catch of the entire British fishing industry. As might be expected, however, production of sardinelike fish has some local importance, namely in Cornwall, where the pilchard-canning industry has been a growing one since World War II.

Table 1 - United Kingdom's Catch of Sardinelike Fish, 1953-55

Species	1955	1954	1953
	(Short Tons)		
Brisling	503	347	290
Pilchards	2,077	1,232	2,326
Sild	1,066	806	524
Total	3,646	2,385	3,140

Although some sardines are canned in the United Kingdom, the quantity is insignificant. Only fish of the European varieties of immature pilchards may be sold

Table 2 - United Kingdom's Supply of Canned Sardinelike Fish, 1954-55

Type	Sardines		Brisling		Pilchards		Sild		Total	
	1955	1954	1955	1954	1955	1954	1955	1954	1955	1954
	(Short Tons)									
Domestic pack	-	-	256	120	2,016	2,077	756	584	3,028	2,781
Imports	6,682	8,110	947	1,888	8,692	4,002	164	315	16,485	14,315
Total Supply	6,682	8,110	1,203	2,008	10,708	6,079	920	899	19,513	17,096

as sardines in the United Kingdom, an August 27 dispatch from the United States Embassy in London states. (The Embassy understands that this ruling arose out of litigation in 1915 involving a Newcastle firm and a Norwegian product. According to a source in the Ministry of Agriculture, Fisheries and Food, Maine and California sardines are known in the United Kingdom only as pilchards.)

Consumption trends for canned sardinelike fish have been upward (see table 2), probably because of the shortage of canned salmon. Supplies of pilchard from the Union of South Africa and South-West Africa were three times as great in 1955 as supplies of imported canned pilchard from all sources in 1938. There is a demand for "true" sardines, and its satisfaction depends to a large extent on a good Portuguese pack.

Table 4 - Retail Prices of Sardinelike Fish in London Area, Mid-1956

Product	Origin	Packing Medium	Type of Can	Weight	Price Per Can	
					British Currency	U. S. Currency
					s. d.	¢
Pilchards	South Africa	Natural	Tall	8 oz.	1s.	14
	" "	"	"	1 lb.	1s. 4d.	19
	" "	Tomato	Oval	1 lb.	1s. 8d.	23
	British	"	"	7 oz.	1s. 1d.-1s. 3d.	15-17
	"	"	"	14 oz.	1s. 10d.	26
	"	"	Tall	9½ oz.	1s. 6d.	21
	"	"	"	15 oz.	2s.	28
	South Africa	"	"	1 lb.	1s. 5d.	20
	" "	"	Oval	8 oz.	1s.	14
	South-West Africa	"	Tall	15 oz.	1s. 4d.	19
Sardines	Portugal	Olive oil or tomato	Flat rectangular	4-4½ oz.	1s. 1d.-1s. 6d.	15-21
	"	Olive oil	" "	7 oz.	2s. 3d.-2s. 6d.	32-35
	"	" "	" "	3½ oz.	1s. 7d.	22
	France	" "	" "	3¾ oz.	3s. 6d.	50
	"	" "	" "	6½ oz.	6s. 6d.	91
	"	" "	" "	4 oz.	2s.	28
	"	" "	" "	6 oz.	3s. 9d.	52
Sild	Norway	Olive oil or tomato	" "	3¾ oz.	1s. 6d.-1s. 11d.	21-26
	"	Olive oil	" "	3¾ oz.	1s. 1d.	15
	British	Tomato	" "	1½ oz.	8d.	9
	"	"	" "	3¾ oz.	1s. 1d.	15
Brisling	Norway	"	" "	3¾ oz.	1s. 10d.	26
Herring	British	"	Oval	7 oz.	1s. 2d.	16
	"	"	"	4½ oz.	10d.	11

The most popular can sizes are:

(a) Sardines--¼ club (4-oz. flat rectangular with rounded corners), in olive oil and in tomato sauce; probably represents 80 percent or more of total consumption.

(b) Pilchard--7-oz. and 8-oz. oval and flat and 1-lb. tall or oval, in tomato sauce with some in brine.

(c) Sild and brisling--dingley (3¾ oz. flat rectangular with rounded corners, mostly from Norway, Denmark, and Holland); packed in oil and in tomato sauce.

There is a very wide variety of canned sardinelike fish, including canned small herrings, on the British market. They are retailed in a wide price range in numerous sizes and shapes of cans up to 1-lb. net. Currency difficulties affect imports from the United States. Present imports come from sterling and soft-currency areas.

Table 3 - Canned Sardinelike Fish Imports into United Kingdom, 1954-56

Product & Principal Country of Origin	January-April 1956			12 Months 1955			12 Months 1954		
	Quantity	Value		Quantity	Value		Quantity	Value	
	1,000 Lbs.	£1,000	US$1,000	1,000 Lbs.	£1,000	US$1,000	1,000 Lbs.	£1,000	US$1,000
Brisling:									
Norway	82	21	60	1,867	507	1,421	3,760	1,045	2,925
Denmark	6	1	3	23	4	10	15	3	7
Other	1	1	1	5	1	2	1	1/	1
Total	89	23	64	1,895	512	1,433	3,776	1,048	2,933
Pilchards:									
Union of South Africa	10	69	193	49	328	919	21	154	431
South-West Africa	49	347	973	124	799	2,237	59	374	1,046
Other	1	1/	1/	1	1/	1/	1/	1/	1
Total	60	416	1,166	174	1,127	3,156	80	528	1,478
Sardines:									
France	1	12	34	1/	11	29	2	50	140
Portugal	25	376	1,053	132	1,842	5,158	147	2,038	5,707
Yugoslavia	-	-	-	-	-	-	3	25	70
French Morocco	1/	1	3	1/	1	3	8	107	300
Other	1	6	15	2	13	36	2	21	59
Total	27	395	1,105	134	1,867	5,226	162	2,241	6,276
Sild:									
Norway	2	37	104	3	63	177	6	121	338
Other	-	-	1/	1/	1	3	1/	1/	1/
Total	2	37	104	3	64	180	6	121	338
Grand Total	178	871	2,439	2,206	3,570	9,995	4,024	3,938	11,025

1/Less than 1,000 lbs., £1,000, or US$1,000.

Domestically produced supplies go through the normal channels: factory, wholesaler, and retailer. Imports are made by first-hand distributors, brokers, or agents and thence distributed to wholesalers and retailers.

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FISH MEAL PRODUCTION INCREASE SOUGHT: In spite of greatly increased production of fish meal at the English fishing ports of Hull and Grimsby, which produce about 70 percent of Britain's supplies, there are still big deficiencies and the Government spent more than £7 million (US$19.6 million) in 1955 for imports to meet the demand.

The British Trawlers' Federation believes that this sum could be saved if more incentives to home production could be given, and the matter will be discussed at a federation meeting in September.

It is also felt by the producers of fish meal that they might well be allowed to explore foreign markets with their fish meal, to win new business and thus help in the country's economic position.

Largely because it was felt that British bacon had suffered from the use of inferior meals in feeding, Hull and Grimsby fish meal factories in October 1955 pooled their resources to manufacture a new pure white fish meal, which is sold under one brand name.

This meal was the first to carry a triple guarantee of purity and quality with protein content fixed at 66 percent, with oil and salt at less than 4 percent and 2 percent, respectively.

The two factories produce about 70 percent of the British fish meal output in the ratio of about 40,000 tons annually at Hull to 30,000 tons at Grimsby.

In July 1956 the British Trawlers Federation stated that manufacturers of Hull and Grimsby had given valuable assistance towards Britain's efforts to cut down on imports.

Production and sales had soared to the record level of 26,022 tons in the first six months of 1956, an increase of 32.5 percent, and this increased production meant a reduction in imports of fish meal and a substantial saving in overseas payments. It was a great step forward because, since the war, imports of marine protein had grown year by year.

British trawler owners naturally feel that through the meal factories, which are nonprofit-making companies working on a cooperative basis in the industry, they could completely offset all imports of white-fish meal if it could be made possible for them to catch white fish solely for the manufacture of meal.

Every processor, trawler owner, fish merchant, and curer is a shareholder in the Hull and Grimsby fish meal companies. (Approximately $4\frac{1}{2}$ tons of fish offal is needed to manufacture one ton of white-fish meal.) A continuous process system is worked at the two plants for 365 days a year and between 200,000 and 230,000 tons of surplus fish and trimmings is processed annually, with a maximum of 1,400 tons a day (Fishing News, September 14).

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INTEREST RATES ON LOANS FOR VESSELS AND GEAR INCREASED: The British White Fish Authority has announced that, as a result of a recent rise in the rates of interest charged to them by the Treasury, their own rates of interest will be increased on loans effective August 30, 1956. The new rates are: on loans for not more than five years, $5\frac{1}{4}$ percent; on loans for more than five years but not more than 15 years, $5\frac{3}{4}$ percent; on loans for more than 15 years, $5\frac{1}{2}$ percent.

The other terms and conditions of the Authority's arrangements for loans are unchanged according to The Fishing News, September 7, 1956.

The Authority's loans are connected with the building of new fishing vessels of not more than 140 feet; the purchase, in certain circumstances, of new engines and nets and gear for inshore vessels; the construction and equipment of processing plants; and the formation and development of cooperative organizations.

Interest rates previously payable of $4\frac{3}{8}$ percent for loans up to five years, and $4\frac{3}{4}$ percent for those of more than five years, became effective on August 13, 1955. A previous increase to 4 percent and $4\frac{1}{2}$ percent, respectively, had taken place only a few weeks earlier on July 9, 1955.