FOREIGN

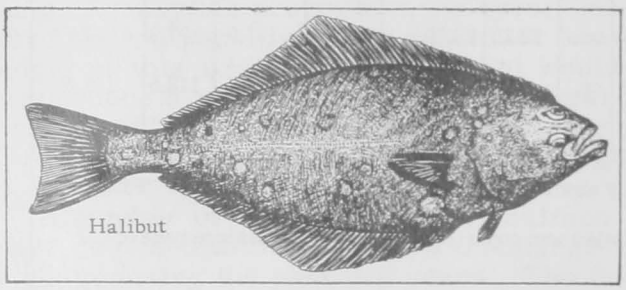
International

INTERNATIONAL PACIFIC HALIBUT COMMISSION

NORTH PACIFIC HALIBUT FISHING IN AREA 3A ENDED AUGUST 11, 1962:

Fishing in Pacific halibut Area 3A ended at 6 p.m. (P.S.T.) on August 11, 1962. The International Pacific Halibut Commission estimated that by August 11 the catch limit of 33 million pounds for Area 3A would be reached. As of July 23, 1962, the landings of halibut from Area 3A were 25.5 million pounds, compared with 23.0 million pounds to July 20, 1961. The Area 3A closure this year was about 12 days earlier than in 1961 when fishing ended on August 23 (6 a.m.). In 1960, fishing in Area 3A stopped on July 25, in 1959 on August 1, and in 1958 on August 31.

Area 3A includes the waters off the coast of Alaska between Cape Spencer and Shumagin Islands. Fishing in Area 3A is ended until reopened in 1963.



Halibut

There has been no anouncement as to closure of Area 2 and fishing in that area will continue until the 28.0-million-pound limit has been caught. Halibut landings from Area 2 as of July 23, 1962, totaled 20.0 million pounds, as compared with 21.4 million pounds to July 20, 1961. In 1961, Area 2 closed on September 7; in 1960, Area 2 closed on July 31; and in 1959, Area 2 closed on July 8. The Area 1 fishing season, with no catch limit, will end at the same time as that in Area 2. In 1961 when Area 1 consisted of two areas, that part designated Area 1A was open to fishing to October 1.

The official opening date for all halibut fishing in the North Pacific regulatory areas this year was May 9 (at 6 p.m.) in all areas (Areas 1, 2, and 3A) except in the Bering Sea (Area 3B North) where fishing started on March 28 and in waters west of the Shumagin Islands (Area 3B South) where fishing started on April 19. In Area 3B North fishing will end October 15, and in Area 3B South fishing will end September 30; there is no catch limit for either area.

This year, Area 3A was open to fishing for 94 days--11 days less than the 105 days in 1961. In 1960, the area was open to fishing for 85 days, in 1959 for 92 days, in 1958 for 119 days, and in 1957 for 144 days (the longest season for the area since 1945 when the area was open to fishing for 147 days). Between 1945 and 1955 the trend had been towards a shorter season, but then the trend reversed itself and through 1957 the seasons were longer. Beginning in 1958 the trend was reversed again and the seasons through 1960 became shorter. But the season was longer by 20 days in 1961, and the trend was reversed again with the shorter season this year.

Note: See Commercial Fisheries Review, April 1962 p. 37.

FOOD AND AGRICULTURE ORGANIZATION

PROPOSED AGENDA FOR FISHING GEAR CONGRESS IN 1963:

The Second International Fishing Gear Congress under the auspices of the Food and Agriculture Organization (FAO) is to be held at London, England, May 25-31, 1963.

The First draft of the Proposed Agenda follows:

The Second Congress will be organized along lines similar to those of the First Gear Congress in 1957. The 1957 agenda was comprehensive, but it is proposed to limit the 1963 meeting to a few selected topics of maximum interest. Fewer topics will mean more time for discussion of each topic, and strict selection of topics should mean more intense and specific discussion. The main emphasis will again be on recent developments in the industry and on the growth of gear technology.

This first draft of the tentative agenda is designed as a basis for discussion with contacts in industry, research, and government. The Fisheries Division of FAO will appreciate any comments on this draft. Suggestions are needed for deleting or adding items, change of emphasis, etc. Comments are also invited on organizational aspects, duration of the Congress, etc. Tentatively it is envisaged that the Congress would last one working week, Monday through Saturday, with 5 days devoted to discussions and 1 day for an excursion.

I. New Materials and Their Application to Fishing: New synthetic fibers have been developed since the 1957 Congress or have found recent application in fisheries, particularly polyethylene fibers and their admixtures. Other fibers, such as polypropylene, are in an advanced stage of development. These are expected to find commercial application in fisheries in the very near future, possibly before the next Congress is held. Such fibers are expected to have considerable impact, if advance information as to strength weight, and price holds true.

There should be no need to repeat from the First Congress the systematic coverage of

International (Contd.):

characteristics of various net materials and preservation of gear.

Numbering systems for twines might usefully be reviewed again. The Working Group appointed at the First Gear Congress has now prepared a report with recommendations on standardization of numbering systems for netting twines.

Testing methods for gear materials also need to be discussed again. The Working Group appointed at the First Congress has now prepared a report on the various testing methods used in different parts of the world. It is hoped that agreement may be reached on standardization so that test results will be comparable.

Knotless nets were virtually unknown outside Japan four years ago when the First Gear Congress met. Now these nets are finding considerable application in other parts of the world. It might be opportune to discuss and compare the different makes and report on their application in various types of nets (trawls, purse seines, gill nets).

Lines and ropes of novel construction and unconventional materials are appearing on the market. They might perhaps be included on the agenda as a minor item.

Monofilament nets are finding a wider application, even in marine fisheries. It might be useful to discuss their construction and applicability to certain fishing conditions, catchability, etc.

II. Handling of Gear: Stern trawling is still a controversial subject. Until now discussion has been mainly confined to stern trawling with large vessels. The application of this method on smaller craft is also of interest, particularly in view of simpler maneuvering, and the possible saving of labor. Several differnt stern hauling arrangements are in use. It should be fruitful to discuss the comparative virtues of the various systems under different fishing conditions, with heavy or light gear from different types and sizes of vessels.

Mechanical handling of gill nets and long lines was dealt with rather sketchily at the First Congress. These basic fishing methods continue to be important and in some cases, their importance is increasing. It might be useful to discuss power hauling of bottom-set and drifting nets and lines with various types of winches and gurdies, grooved sheaves on horizontal axis, either suspended (power block) or fitted on a rigid support. There might also be discussion of deck layouts and for facilitating rapid setting, etc.

III. Gear and Fishing: Certain important gear types, which were passed over lightly at the First Congress, could be discussed under this heading.

Gill nets and tangle nets. Design; methods of framing; effect of hanging-ratio on catchability and selectivity; color; strength in relation to fishing ability, first cost, durability.

Long lines (both bottom-set and drifting) can usefully be described and discussed, particularly the types adapted for mechanized fishing.

IV. Trawling: One-boat midwater trawling is an interesting subject. Many of the people concerned with developing this method feel they are on the threshold of a major breakthrough. However, each developer still seems to have his own special problem. Some have difficulties with depth regulation; some have overcome this problem and have encountered new problems. It would certainly be useful to assemble these persons in one room to solve each others' problems. Quite possibly, the various solutions have already been found in different parts of the world. This forum would help to bring these possible solutions into the open and to the attention of those who need them. Discussions on midwater trawling might come under the following headings: (1) Gear--design and materials of net, floats, kites, boards, warps. (2) Deck gear. (3) Performance--opening size and shape, resistance, maneuverability. (4) Operation (technique)--fish finding, aiming gear (headline transducer, towed "shark," telemeter, etc.), towing speed. (5) Fish Behavior--in relation to gear used. (6) Bottom trawling and off-bottom trawling.

High-opening trawls are of growing interest for catching some pelagic species within a few yards of the bottom. Features of such nets are not known in many parts of the world where they might quite likely find application.

Low and wide-opening trawls--species selectivity of some nets of very low opening may, for instance, be of interest from both the conservation and commercial angles. This may be of growing importance with increasing regulation of fishing in territorial waters.

International (Contd.):

V. Fish Finder With Purse Seines: In recent years a technique has been developed not only for detecting pelagic fish with a fish finder, but also relying on the fish finder indications for guidance in setting one-boat purse seines around the submerged school. This, coupled with the use of extra-deep purse seines, made of strong synthetics and hauled mechanically, has opened up new fisheries. The technique may have far-reaching implications. It seems an effective method of catching schooling fish at considerable depth and under more difficult weather and sea conditions than has previously been feasible with seines. Purse-seining accounts for one-third of the total world catch. Its effectiveness for quantity fishing at low unit cost is unsurpassed. Possible new applications of purse-seining are certainly worthy of careful consideration.

VI. New Ideas: The following items give an indication of some of the subjects that might come up for discussion under this topic: (1) air-bubble curtain fishing; (2) pump fishing (any new developments); (3) accoustical attraction and detection of fish; (4) chemical attractants (artificial bait) and repellants (any new developments); (5) electrical fishing; (6) light attraction with new or conventional gear; (7) fleet operation on distant grounds, including transfer of catch at sea.

Contributions to be presented at the Second Congress are being prepared by fisheries scientists and technologists from many countries. The meeting will be open not only to persons connected with official fisheries services and institutions, but also to interested persons from private industry, and all participants will be free to take part in the discussions. It is expected that copies of papers to be given at the Congress will be distributed in advance of the meeting, so that participants may be prepared to contribute to the discussions, and to the exchange of information and experience. (Regional Fisheries Attache, United States Embassy, Copenhagen, October 6, 1961; Food and Agriculture Organization, Rome.)

GREAT LAKES FISHERY COMMISSION

ANNUAL MEETING:

The Annual Meeting of the Great Lakes Fishery Commission was held at Ann Arbor, Mich., June 19-20, 1962. The Commission's meeting was preceded by a meeting of the United States Advisors on June 18. The highlights of the Commission's Annual Meeting were:

1. Reports on sea lamprey reductions in Lake Superior were very encouraging. The take of migrant adult lampreys in 1962 at 29 index barriers amounted to only 13 percent of the number taken in 1961. The population of larval lampreys in streams has been greatly reduced.

2. Lake trout populations in Lake Superior in 1962 continue to show better than 80-percent reduction in occurrence of lamprey wounds. The lake trout caught were larger by 0.3 to 0.8 pounds. Stocks of young lake trout are dominated by planted and marked individuals. Natural recruitment to the stocks is very low as was expected, but survival of larger fish has improved. There has been little or no recruitment for several years. The ban against lake trout fishing in Lake Superior is being effected with only nominal objections from the Great Lake's fishery industry.

3. The Commission was encouraged by the reports of its agents but, due to stringent needs for economy, adopted a budget and program for fiscal year 1964 only modestly above that of the 1963 fiscal year base. Some control work will be done in Lake Michigan but none is scheduled for Lake Huron.

4. Dr. A.L. Pritchard of Ottawa, Canada, was selected as Chairman of the Commission, replacing Claude Ver Duin of the United States Section. Director Donald L. McKernan was named Vice-Chairman. Lester P. Voigt was chosen as Chairman of the United States Section.

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CHEMICAL TREATMENT OF LAKE SUPERIOR STREAMS REDUCES SEA LAMPREY POPULATION:

Sea lamprey catches at Lake Superior barriers were down substantially, the Great Lakes Fishery Commission reported on June 1962, at the University of Michigan, Ann Arbor, Mich. The Commission, which is a United States-Canadian body heading the fight against a predator that has nearly wiped out lake trout populations in the upper Great Lakes, opened its two-day annual meeting with some hopeful statistics.

International (Contd.):

The Commission's chairman reported that with possibly three-quarters of the sea lamprey spawning run over in the United States, and about half over in Canada, the United States catch at assessment barriers was then 6,191 sea lampreys compared to 51,628 in 1961, and that the Canadian catch was 454 compared with 1,555 at the same time the previous year.

The over-all 1962 sea lamprey catch was about 12 percent of the 1961 catch at the same point--an indication that chemical treatment of Lake Superior streams, which was begun in 1958, was beginning to reduce the predator population.

"We can be justifiably pleased and encouraged by these results," the Commission chairman said, "but I must point out that we still must determine whether or not the lampreys have been reduced sufficiently to allow a recovery of the lake trout and re-establishment of that fishery."

"I suggest, therefore, that the Commission, while acknowledging this major accomplishment of its agents, recognize that total success of the control program depends upon the rehabilitation of the lake trout population in Lake Superior. In the meantime, all reasonable measures must be taken to insure that lampreys are reduced further and maintained at a low level."

In line with that goal, the Commission ordered immediate treatment with lampricide of 2 new Lake Superior streams where lamprey populations were reported, and recommended treatment of 6 minor streams with newly-established populations by 1962-63. There are a total of 86 lamprey-producing streams in Lake Superior.

Response to a Commission request that the various Great Lakes States and Province of Ontario limit lake trout fishing in Lake Superior to operations which will provide essential biological information has been "very encouraging," the chairman added.

Agencies studying the fishery reported a decrease in the occurrence of lamprey scars on fish, and an increase in the average size of lake trout caught, both of which are encouraging signs. "Lamprey predations tend to keep down the average fish size by eliminating larger lake trout from the population," the chairman of a special committee on lake trout rehabilitation said. "Recently there has been, for the first time, a significant increase in the size of lake trout taken, suggesting that more trout are being left to grow. Agencies in the United States studying the lake trout fishery also observed a decrease in sea lamprey wounds on lake trout this spring compared to last year," he added.

The latest evidence indicated that natural reproduction of lake trout in Lake Superior has been negligible in recent years, and that the lake trout population is approaching complete dependence on hatchery-raised lake trout. Hatchery fish made up 94 percent of the total 1961 catch of undersized fish by the U.S. Bureau of Commercial Fisheries research vessel Siscowet.

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CONTRACT-FISHERMEN ONLY TO FISH LAKE TROUT IN LAKE SUPERIOR:

A recommendation that commercial landings of lake trout in Lake Superior be restricted to the amount needed for assessment studies by the various research agencies working on the lake, was made by the Great Lakes Fishery Commission at the interim meeting in November 1961. This recommendation was based on evidence presented by the U.S. Bureau of Commercial Fisheries, the Michigan Department of Conservation, the Wisconsin Conservation Department, and the Fisheries Research Board of Canada. The high percentage of hatchery-reared fish (as high as 95 percent in some areas) among the undersize lake trout in the commercial catch supported earlier evidence that natural reproduction has been practically nil for the past few years, and that the fishery faced almost certain collapse. In view of that evidence, and evidence of markedly lower incidence of sea lamprey wounds during the past year, the Commission felt immediate action was necessary in order to expedite the restoration of the lake trout population. Examination of catches made in the spring of 1962 confirmed the scarcity of small trout, and the lower incidence of lamprey wounds. The Michigan Conservation Commission issued the order in April, to close all commercial fishing for lake trout, except for eight fishermen who are under contract to the U.S. Bureau of Commercial Fisheries to provide research information on their restricted catches of lake trout.

International (Contd.):

The eight commercial fishermen contracted by the Bureau are under specific controls to provide minimal numbers of lake trout required to continuously evaluate the status of the lake trout population in Lake Superior. The restricted commercial fishing will yield: (1) information on the incidence of sea lamprey scars and wounds; (2) length, sex, and age compositon of fish caught; (3) numbers of planted fish caught; and (4) the catch per unit of effort (10,000 feet of gill net) in standard commercial gear. These data will be compared with similar records taken by the same eight fishermen in previous years to evaluate the current status of the population and the success of hatchery plantings.

The contract-fishermen will fish only during the months for which comparable data are available from previous years. The total catch of lake trout in Michigan waters will be limited to 25,000 pounds during the balance of 1962. Amounts needed for research purposes in future years will be determined by administrative and research agencies concerned with Lake Superior.

After collection of data for the U.S. Bureau of Commercial Fisheries, the contractor may keep or sell all lake trout of legal size which he has caught. All live lake trout of illegal size shall be returned to the water at the time of capture. Dead, undersize fish shall be surrendered to a conservation officer who will be charged with turning them over to an institution for use in feeding inmates.

Contract fishing will be closed during the October-November lake trout spawning season.

Commercial fishermen who are scheduled to fish for lake trout for the assessment studies are: Tom Brown, Whitefish Point; Falk Brothers, Skanee; Robert Kaliainen, Chassell; Arthur Kolehmainen, Chassell; Arthur Lasanen and Son, Lake Linden; Francis Thill, Marquette; William Tornovish, Grand Marais; and Jerome Van Landschoot, Munising.

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LAKE TROUT CATCHES IN LAKE SUPERIOR RESTRICTED TO QUOTAS:

Because of the rapid decline in lake trout stocks in Lake Superior due to sea lamprey depredations, Canada and the United States have agreed to restrict the 1962 commercial lake trout catch to only the amount needed by scientists of each country for their studies. The restriction was recommended by the Great Lakes Fishery Commission made up of representatives from both countries.

In a letter to Lake Superior commercial fishermen, the Ontario Lands and Forests Minister said: "It is apparent that, due to the seriousness of the situation, we can only agree. As a result, catch quotas for 1962 have been set at 60,000 pounds from United States waters and 44,000 pounds from Canadian waters."

The steady decline in the lake trout fishery in Lake Superior due to the sea lamprey is indicated in Canada's Lake Superior lake trout landings data for the past ten years. From 1,389,000 pounds in 1952, landings dropped to 1,371,000 pounds in 1953, 1,266,000 pounds in 1954, 1,003,000 pounds in 1955, 527,000 pounds in 1956, 324,000 pounds in 1957, 366,000 pounds in 1958, 238,000 pounds in 1959, and 122,000 pounds in 1960. In 1961, Canada's Lake Superior lake trout landings were estimated to be down to only 44,000 pounds. In United States waters, the decline was from 2,838,000 pounds in 1952 to an estimated 298,000 pounds in 1961.

INTERNATIONAL ASSOCIATION OF FISH MEAL MANUFACTURERS

THIRD ANNUAL CONFERENCE:

The Third Annual Conference of the International Association of Fish Meal Manufacturers will be held at the Mayfair Hotel, London, England, October 9-12, 1962. The Conference will be longer than the two previous conferences. Members of the Scientific Committee will have a full day's pre-meeting discussion on the many scientific and technical subjects which concern the Association. It will also allow the meeting to consider the increasing number of topics in which the Association is actively interested. A special session is to be held for delegates, including leading world industry manufacturers and scientists, to discuss problems of mutual interest with brokers, agents, and importers principly dealing with fish meal.

The Conference will be hosted by the United Kingdom Association of Fish Meal Manufacturers which had a leading role in sponsoring and organizing international fish meal conferences before the formation of the International Association, and in the formation of the United Kingdom Association.

International (Contd.):

The International Associations' main aim and activity is devoted towards cooperation, thereby assisting world fish meal manufacturers to open and develop wider outlets for fish meal in all its forms in both developed and underdeveloped markets, thus enabling this valuable product to play an even greater part in animal and human nutrition.

To this end, manufacturers and scientists connected with the industry undertake a full exchange of information by means of meetings. In 1961 such meetings were held in Hamburg, Bergen, and Paris; also by issuance of a News Summary, and in other ways to improve methods of manufacture and preservation of meal, quality standards, methods of analysis, knowledge of nutritional requirements, and to supply the answers to many other technical and nutritional problems. During the year, a brochure on the use of fish meal was prepared in English, French, and Spanish, which can be used with appropriate additional chapters adapted to local conditions to make its value known in less highly-developed agricultural countries, or in developed countries which now use comparatively little fish meal. Collaborative feeding trials were recently made simultaneously in several countries, and the results were pooled for the common benefit of the industry.

The Association has been actively collaborating and exchanging information with an increasing number of international organizations in connection with statistical information on fish meal, fish flour for human consumption, and with an expert committee of the European Economic Community (EEC) on the question of analytical methods, and similar problems. The Association also cooperates closely with the Fish Meal Exporters Association in FEO's activities relating to establishment of wider markets, exchange of statistics, and similar matters concerned with the promotion of fish meal. All those and other problems will receive detailed scientific and commercial consideration at the Third Annual Conference.

Members of the Association are the manufacturers' associations or individual manufacturers in Belgium, Canada, Denmark, France, Germany, Holland, Iceland, Morocco, Norway, Peru, Portugal (including the Overseas Province of Angola), Spain, South Africa, Sweden, United States, and United Kingdom.

Observers have been invited to attend the Conference from Japan and Chile, the remaining major producers who are not yet members, as well as from the Food and Agriculture Organization (FAO) and the Bureau of Commercial Fisheries, U.S. Department of the Interior.

ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT

SUBSIDIES AND PROGRAM FOR 1963 DISCUSSED BY FISHERIES COMMITTEE:

The fourth session of the Fisheries Committee of the Organization for Economic Cooperation and Development (OECD), held in Paris, France, on July 9-10, 1962, was attended by nearly all of the 20 member countries and by representatives of the Food and Agriculture Organization (FAO), and the European Economic Community (Common Market).

The principal topics for discussion on the agenda of the meeting were: (1) a review of papers on the fishery subsidies provided by the various OECD countries, and (2) the operational program and budget for the calendar year 1963. Subsidy reports for seven member countries were reviewed, modified, and approved. When the reports on all countries have been cleared, they will be combined to form a complete documentation on the subsidies to fisheries in the OECD countries. The Committee also reviewed the progress in the draft report on the market for canned fish in OECD countries, which is scheduled for completion in the near future.

The projects proposed for the calendar year 1963 include the following:

1. Promotion of uniform quality standards for frozen fish.

2. Study of the establishment of a fishery market newstype service in the European countries.

3. Simplification and coordination of sanitary regulations affecting international trade.

4. Economic factors concerned with the rational exploitation of maritime resources.

5. Detailed nomenclature of the different species and varieties of sea products.

The next meeting of the OECD Fisheries Committee is tentatively scheduled for the first part of October 1962.

Note: See Commercial Fisheries Review, August 1962 p. 55.

International (Contd.):

UNESCO INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION

ARABIAN SEA PLANS OF INDIAN OCEAN EXPEDITION COORDINATED:

A working meeting on the coordination of operating plans for the Arabian Sea phase of the UNESCO Indian Ocean oceanographic expedition was held in Wormley, England, July 9-11, 1962. The meeting was attended by a group of United States representatives headed by John Lyman, Associate Program Director for Earth Sciences (Oceanography), National Science Foundation, Washington, D.C. The Foundation has been named by the President as coordinator for the United States Government participation in the Expediton.

At its first session (October 1961), the UNESCO Intergovernmental Oceanographic Commission adopted a resolution which commended the International Indian Ocean Expedition to its members for possible participation, and instructed the Secretary of the Commission to assume such coordinating functions as could be worked out with the Scientific Committee on Oceanic Research (SCOR) and other appropriate bodies. SCOR in April 1962 transferred formal responsibility and authority for coordination of the Expedition to the Secretary of the Commission.

The working meeting concerned itself with the coordination of scientific programs involving oceanographic study of the Arabian Sea.

The agenda, as approved by the Meeting follows:

1. Work already done and its results.

2. Existing cruise plans for the Arabian Sea.

3. Coordinating requirements for synoptic work:
   - (a) Time and space adjustment of cruise tracks;
   - (b) Coordination of volume, nature, and methods of measurements to be done;
   - (c) Standardization and intercalibration requirements;
   - (d) Reference stations;
   - (e) Use of underwater cables and buoys.

4. Meteorological problems.

5. Tide gauges.

6. Logistics, e.g. port facilities, explosives, communications, exchange of data, and people, etc.

Besides those from the United States, the Working Meeting was attended by participants from France, German Federal Republic, India, Pakistan, South Africa Republic, United Kingdom, and UNESCO's Intergovernmental Oceanographic Commission.

At the beginning of the meeting it was decided to enlarge the area to be covered by the discussion from the originally planned Arabian Sea region to the whole North-Western Indian Ocean including the Arabian Sea and the part of the open ocean south of it to 10^{0} S. latitude. It was done with understanding of the importance of interregional coordination and of the necessitiy of some geographical overlap between the regions to be covered by all four coordinating working groups. Some of the water movements and other physical and biological processes must be followed from one region to the other.

Note: See Commercial Fisheries Review, July 1962 p. 51, June 1962 p. 46.

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WORKING GROUPS ON COMMUNICATIONS AND FIXED STATIONS MEET IN PARIS:

Two Working Groups of the UNESCO Intergovernmental Oceanographic Commission, one on Communications, and the other on Fixed Stations met in Paris, France, August 6-10, 1962. The two Working Groups studied various matters relating to communications and fixed stations, particularly the establishment of oceanographic communication requirements, and the legal status of manned and unmanned buoys.

The United States was a prime force in the establishment of the Intergovernmental Oceanographic Commission and has considerable interest in the work being done by the two groups which met for the first time.

The meetings of both Working Groups were attended by United States representatives; the meeting on Communications by a representative from the Scripps Institute of Oceanography, La Jolla, Calif., and on Fixed Stations by a representative of the Woods Hole Oceanographic Institute, Woods Hole, Mass., and an adviser from the Weather Bureau, Marine Observation Section, U.S. Department of Commerce.

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ROUP OF EXPERTS ON OCEANOGRAPHIC ATA EXCHANGE MEETS IN WASHINGTON:

A Group of Experts on Oceanographic Data Exchange, UNESCO Intergovernmental Oceanographic Commission, met in Washington, D.C., August 7-10, 1962. The meeting was held at the National Oceanographic Data Center and concerned the organization of data exchanges.

The Oceanographic Commission recommended the establishment of this Group at its first session held in October 1961.

United States members of the Group attending the meeting were from the National Oceanographic Data Center, the U.S. Bureau of Commercial Fisheries, and Coast and Geodetic Survey, U.S. Department of Commerce.

TERNATIONAL NORTH PACIFIC SHERIES COMMISSION

CIENTIFIC COMMITTEE MEETS N HONOLULU:

A meeting of the Scientific Committee, ternational North Pacific Fisheries Commission, held at Honolulu, August 8-12, 1962, oncerned itself with preparations for the terim Meeting of the Commission, which as scheduled to convene at Honolulu, August , 1962. The Committee meeting was attended by a representative of the U.S. Bureau of ommercial Fisheries.

ALE OIL

ICES DECLINE:

According to sources from London, England, a sale of 60,000 long tons of whale oil was made some time during July 1962 at £45 (about US$126) per long ton (about 5.6 U.S. cents a pound) ex-tanker Rotterdam, which was the lowest price in some years. The quantity was made up of British, Japanese, and Dutch oil.

A previous sale of 50,000 tons of Antarctic whale oil at £50 (about US$141) per long ton (about 6.3 U.S. cents a pound) had been made about two months previous to July 1962. The lower price was the result of the steady decline in prices for competitive vegetable and fish oils.

e: See Commercial Fisheries Review, August 1962 p. 85.

H MEAL

ORLD PRODUCTION, MAY 1962:

According to preliminary data from the International sociation of Fish Meal Manufacturers, world production of fish meal in May 1962 amounted to about 232,755 metric tons, an increase of 25.7 percent over world production in May 1961.

Most of the principal countries producing fish meal submit data to the Association monthly (see table).

World Fish-Meal Production by Countries, May 1962

Country	May		Jan.-May
	1962	1961	1962
	.... (Metric Tons)		
Canada	2,376	1,643	35,808
Denmark	8,424	5,315	28,229
France	1,100	1,100	5,500
German Federal Republic	5,485	4,980	32,264
Netherlands	1/	500	1/1,600
Spain	2,578	1,339	11,476
Sweden	459	270	2,329
United Kingdom	6,939	6,353	30,861
United States	38,433	31,242	50,772
Angola	1/	6,363	1/10,442
Iceland	9,661	5,106	26,930
Norway	3,822	12,311	19,945
Peru	121,533	80,784	460,623
South Africa (including South-West Africa)	31,945	27,800	134,596
Total	232,755	185,106	851,375

1/Data not available for May; data available only for January-April 1962.
Note: Belgium, Chile, Japan, and Morocco do not report their fish-meal production to the International Association of Fish Meal Manufacturers at present.

The increase in world fish-meal production in May 1962 was mainly due to increased output in Peru (up 50.4 percent), the United States (up 23.0 percent), Iceland (up 89.2 percent), South Africa (up 14.9 percent), and Denmark (up 58.5 percent).

This year to date Peru had increased landings of anchoveta; menhaden landings in the United States, especially on the Atlantic Coast, were up; Iceland's landings of herring were up; South Africa's pilchard landings were higher; and Denmark's landings of industrial fish were up. The increase was partly offset by a sharp drop in fish-meal production in Norway because of the failure of this year's herring fishery. Peru accounted for 52.3 percent of world production (for countries listed)in May 1962, and the combined production of Peru, the United States, and South Africa accounted for 82.5 percent of total production this May.

During the first five months of 1962, world fish-meal production for the countries listed was 851,375 tons. Peru accounted for 54.1 percent of total production during that period followed by South Africa with 15.8 percent, and the United States with 6.0 percent.

INTERNATIONAL WHALING COMMISSION

FOURTEENTH ANNUAL MEETING:

Scientists attending the Fourteenth Annual Meeting of the International Whaling Commission at London, England, June 25 to July 6, 1962, generally agreed that the whale resources of the world are in very poor condition. If the Commission does not act almost immediately, it seemed clear that the situation would continue to deteriorate.

The meeting was attended by representatives from Argentina, Australia, Canada, Denmark, France, Iceland, Japan, Mexico, the Netherlands, New Zealand, Norway, South Africa, Sweden, the United Kingdom, the

International (Contd.):

United States, and the Union of Soviet Socialist Republics. In addition, observers were present from the Food and Agriculture Organization (FAO), the International Council for the Exploration of the Sea, Chile, and Italy. The first week was occupied by meetings of the Scientific Committee, and the second week by plenaries and other Commission committees.

In 1961, the Commission appointed a special committee of experts to study the extensive scientific data that are available. For various reasons, the work of this special committee did not proceed very rapidly in the past year. Funds now have been provided and it is expected that this committee will complete its work and submit its report in time for the Fifteenth Annual Meeting in June 1963. The Commission did not take positive action at the 1962 meeting, preferring to await completion of the special committee's report.

The return to the Commission of the Netherlands as a participating Government was considered significant. The consequences of this, and of the agreement made outside the Convention by the five Antarctic pelagic whaling countries for sharing the pelagic catch in the Antarctic were most important, as outlined in the opening speech by the United Kingdom representative. He pointed out that now that the agreement on catch-sharing had been reached, he hoped it would be possible to limit the Antarctic catch to the level which the stocks are able to bear. He considered the special scientific investigations on the condition of the Antarctic stocks, shortly to be undertaken, to be of vital significance, and hoped that the meeting would agree on the details of the International Observer Scheme.

In carrying out its principles, the Commission has limited the annual catch of Antarctic pelagic whales by blue-whale units each season. (A blue-whale unit equals one blue whale, or two fin whales, or two and a half humpback whales, or six sei whales). At the time of the Twelfth Meeting in June 1960, this limit had been 15,000 units but it was then suspended for two seasons for the four countries remaining in the Convention, with the exception of Japan and the U.S.S.R. who had objected to the suspension. No change in this over-all limit was suggested at the 1962 meeting so that it returns to 15,000 units again for the 1962/63 season. During the last Antarctic whaling season, when the over-all limit was still suspended, the Antarctic pelagic whaling countries had imposed on themselves the following voluntary limits: Norway 5,100 Netherlands 1,200, U.S.S.R. 3,000, Japan 6,680, and United Kingdom 1,800 units.

During the 1961/62 season, 21 expeditions operated in the Antarctic (7 Norwegian, 7 Japanese, 4 Soviet, 2 British and 1 Dutch) and caught a total of 15,253 blue-whale units. The number of whales in the total baleen catch was 1,118 blue whales, 26,438 fin whales, 309 humpbacks, and 4,749 sei whales. The total baleen catch in the 1960/61 season had amounted to 16,433 blue-whale units(1,740 blue whales, 27,374 fin whales, 718 humpbacks, and 4,310 sei whales). A total of 4,864 sperm whales were also taken by pelagic expeditions in the Antarctic compared with 4,681 sperm whales in 1960/61. The production of baleen and sperm oil in 1961/62 amounted to 2,005,087 barrels (6 barrels to the ton); in the previous season it was 2,123,571 barrels.

Only one Antarctic land station, at South Georgia, was operating in the 1961/62 season A total of 1,194 whales were caught and 49,815 barrels of oil (baleen and sperm) produced. In the previous season when two companies were operating from three land stations the total catch of whales amounted to 2,317 and total oil production to 109,727 barrels.

Outside the Antarctic, 46 land stations and 3 floating factories were in operation in 1961. A total of 22,195 whales were caught compared with 24,313 in 1960. Total oil production, baleen and sperm, amounted to 646,676 barrels compared with 724,707 barrels in 1961.

The Commission considered the position of the former sanctuary in the Antarctic (the waters south of 40° south latitude from 70° west longitude westwards as far as 160° west longitude) for baleen whales against pelagic whaling operations. Since 1955 this area has been open to pelagic operations by decisions taken at previous meetings of the Commission. On the last occasion that this matter was considered by the Commission, in 1959, it was agreed that the sanctuary should remain open for a further three years, until November 8, 1962. At their Fourteenth Meeting, the Commission decided that it would be undesirable to close the Sanctuary again at this stage since

International (Contd.):

it might result in increased catching in other more heavily hunted areas. It was therefore agreed that the former sanctuary should remain open "until the Commission otherwise decided" and that the relevant paragraph of the Schedule to the Convention should be amended accordingly.

The Commission made no change in the length of the open season for Antarctic pelagic whaling which remains from December 12 to April 7.

At their 1960 meeting, the Commission altered the opening date for the taking of blue whales from February 1 to 14 and adopted measures for the further protection of humpback whales in closing Antarctic Area IV to humpback whaling by pelagic expeditions until the end of 1963 and by reducing during the same period the catching season in Antarctic Area V from 4 to 3 days starting on January 20. Because objections to these measures were subsequently lodged and not withdrawn by the member Antarctic pelagic whaling countries (Japan, Norway, the United Kingdom, and the Soviet Union), the measures were not effective during the 1960/61 and 1961/62 season. At their Fourteenth Meeting the Commission adopted a resolution calling upon those countries to reconsider their objections in view of the deteriorating position of the stocks of blue and humpback whales. At the same time, however, the Commission recognized that the Netherlands, who was not a member of the Commission when the measures were adopted, should be placed on the same footing as the other Antarctic pelagic whaling countries. A further resolution was therefore passed by which the Netherlands is enabled, if it so wishes, to register objections to the blue whale and humpback measures within 90 days from the date of their re-accession to the Convention on May 4, 1962.

Discussions on the setting up of an international inspection system of Antarctic pelagic factory ships were held during the meeting. No decisions were reached but the Commission is to convene a further meeting on this subject between the five Antarctic pelagic whaling countries. It was expected that this meeting would be held before the end of August 1962.

As a result of the recommendation of the Committee of Three Scientists and the Special Scientific Committee with which they worked, the preparation of data to allow a proper appraisal of the stocks of whales in the Antarctic was completed by the national research units. It was hoped that at this meeting it would be possible to formulate in a precise way the state of some of the stocks of Antarctic whales and to see at what level the annual catch should be maintained so as to obtain the best yield. In view of a later meeting to be held by these special committees, there was no disposition at the Fourteenth Meeting to take any regulatory measures such as the complete restriction of the blue whale catch that the Scientific Committee advocated.

In view of a Japanese proposal to reduce the minimum size of sperm whales delivered to land stations in the Northwest Pacific, or over a wider area to 33 feet, the Scientific Committee was asked to undertake further study of evidence on the effect of reducing the minimum size of sperm whales both for land stations and factoryships in the North Pacific and elsewhere. A working group already set up to study the North Pacific whale stocks would be asked to do this task. (International Whaling Commission, London, England, July 7, 1962.)

Note: See Commercial Fisheries Review, Aug. 1962 p. 12.

EUROPEAN ECONOMIC COMMUNITY

CANNED SALMON IMPORT DUTY RATE LOWERED:

A lower canned salmon duty rate of 16 percent ad valorem was granted by the European Common Market on canned salmon imports from all members of the General Agreement on Trade and Tariffs (GATT) including the United States. The original duty rate fixed by the European Economic Community (EEC) was 20 percent. As a result of negotiations between EEC and the United States at the GATT meetings held in 1961, the duty was reduced from 20 percent to 18 percent. Canada, which had also negotiated with the Common Market on the canned salmon duty rate, claimed that a 16 percent rate had been promised. A review of the EEC-Canadian negotiations substantiated Canada's claim, and the rate was reduced to 16 percent.

Aden

UNITED STATES VESSEL TO FISH SPINY LOBSTERS OFF COAST:

A United States importing firm was making preparations in June 1962 to bring a 60-foot refrigerated fishing vessel to Aden to fish commercially for spiny lobsters along that Protectorate's coast. Fishing operations were scheduled to begin some time during the fall after the southwest monsoon season was over. The spiny lobster tails will all be for export to the United States.

The vessel, which is the first of its type in that region, will operate in the Mukalla area. It has a refrigerated holding capacity of 10 tons of spiny lobsters or lobster tails. It is expected that a 300-ton cold-storage plant will be completed by November in that area, and the United States firm has an option on space in the plant. The vessel will be capable of bringing in 10 tons of spiny lobster tails each trip for storage in the cold-storage plant, awaiting shipment to the United States. The enterprise depends on com-

pletion of the cold-storage plant. Meanwhile, the United States importing firm has an option on space in a smaller 60-ton cold-storage plant which is also being planned for Mukulla.

The Aden fishing industry has been in a state of uncertainty for several years, but has finally started moving forward. A representative of the United States importing firm visited Aden at the invitation of that country's Marketing Department. He saw that spiny lobster fishing there looked promising and negotiated for a United States vessel to fish the resource. The vessel was expected to arrive at Aden by the end of July. (United States Consulate, Aden, July 12, 1962.)

Angola

NEW FISH PROCESSING PLANT OPENED:

A new fish-processing factory opened on June 19, 1962, according to a report in the Diario de Luanda, June 11, 1962. The new factory is located at Equimina Bay, about 86 miles south of the city of Benguela. It will can, freeze, and dry fish as well as manufacture fish meal. It will also operate its own fishing fleet. No information is available as to the amount of the investment involved. (United States Consulate, Luanda, June 28, 1962.)

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TRAWLING REGULATED:

Portuguese Government regulations governing the type, equipment, and operations of trawlers fishing in Angolan waters were enacted by Decree No. 44,398, published in the Diaro do Governo, in mid-1962.

The Angolan fishing industry recently acquired its first trawler. This decree may mean that additional trawlers will be added to the Angolan fishing fleet as part of general measures to improve the antiquated status of Angola's fishing industry. (United States Consulate, Luanda, June 28, 1962.)

Australia

SHRIMP FARMING EXPERIMENTS SHOW PROMISE:

An attempt to mass-breed shrimp in captivity is being made by a group of Australians. They hope to show that large-scale shrimp farming on a sound economic basis is possible along a vast stretch of the eastern Australian coast. Although the effort is still in an experimental stage, the indications are that it will be successful.

Australia (Contd.):

One of the group started his shrimp investigations in 1953, when employed by the Fisheries Department of the New South Wales Government. He already knew of one species of shrimp that bred in enclosed waters. This is the greasy back (Metapenaeus mastersii), a shrimp found only in Australia, that breeds freely in estuaries and lakes on the east coast from southern New South Wales to central Queensland.

Another of the Australian group became interested in the prospects of shrimp farming in Australia while serving with the Australian Forces in Japan. There he visited the Hiroshima district where he inspected a farm in which trapped offshore shrimp were fattened in several ponds of 2-3 acres in extent. With the idea of following the Japanese system, he leased a large section of mangrove swamp at Taren Point, on a southern fringe of Great Sydney, an area in Botany Bay, close to the estuary of the Georges River. Two ponds were dug, each measuring 75 feet by 40 feet and 5 feet deep.

In November 1958, 300 pairs of breeding shrimp were obtained from Lake Macquarie, about 65 miles north of Sydney, and released in the ponds. During the following weeks, the stock was breeding prolifically, and before long, several hundreds of thousands of young shrimp populated the ponds. Soon they were between a quarter and a half-inch long.

At this stage they had shed their shells many times as they developed into demersal features easily recognizable as shrimp. Their diet slowly underwent the usual change from herbivorous to omnivorous, and on to carnivorous as they became adults. The natural available food in the pounds was supplemented with chopped liver and crayfish meat.

Because of lack of scientific knowledge, and ignorance of the food requirements of the rapidly growing young, the mortality rate was extremely high. The oxygen in the water became depleted and the shrimp died by hundreds of thousands. One pond was opened to the sea and many of the still-living shrimp left for the bay. But many stayed on, reaching full maturity once the pressure had been removed from the food and oxygen resources and the shrimp also reached maturity in the fully enclosed pond. These facts made it clear that shrimp farming was possible but it was obvious that the two original ponds were not big enough for the populations they were called on to support.

Later a shallow tide-fed estuarine pond was provided covering an area of 10 acres, and rich in weed and both animal and vegetable plankton. Stocking of the pond began on September 6, 1960, and small quantities of breeding shrimp were periodically released until the end of the year. Altogether, 900 pairs of migrant shrimp were introduced into the pond. Early in 1961, microscopic examination of water samples showed the presence of large numbers of shrimp larvae. A little later hundreds of thousands of young, each measuring about a quarter-inch long, had developed to the demersal stage. Subsequent investigations revealed a huge population of healthy young shrimp growing to adulthood.

The group was confident that the experiment would prove to be a great success. But an unknown factor then became evident. When an assessment of part of the pond was made in August 1961, it was found that the population had only tripled itself. Earlier indications had been that the original population would have multiplied several thousand times. Seeking a reason for this devastating result, the experimenters came to the conclusion that water pollution from chemical and other factory waste had probably caused the enormous mortality in the pond. Sufficient results were achieved, however, to convince the group that true shrimp farming was filled with the best of prospects.

One of the group said, that the number of shrimp that can be raised in ponds of given sizes is one of the vital facts they are trying to establish. It is known that a female is capable of spawning twice a season at the rate of about 250,000 eggs each time. As with all animals of high fecundity, the mortality is enormous, but from 5,000 to 10,000 eggs may develop into individuals. It is not known yet what order of population will emerge under the conditions in the pool. Mortality may be higher or lower than elsewhere. It may also be hard to maintain food supplies. Shrimp need different diets at different times of their lives. The young are plankton-eating vegetarians. It is therefore necessary to increase the productivity of plankton in enclosed ponds and this calls for complex procedures, including the use of fertilizers. As the growing shrimp pass through the omnivorous stage to become almost entirely carnivorous,

Australia (Contd.):

more prepared foods such as liver meal will have to be used. The successful use of this system of feeding on a commercial scale can be decided only by experiment.

The Australian group sees farming as a means of filling a gap in the existing Australian shrimp industry.

One of the group said today's harvest by the usual means depends to a great extent on weather and other conditions outside the control of fishermen. Supplies, as a result, vary greatly. Glut and scarcity follow each other in a monotonous cycle. Shrimp farming would play a major role in stablizing the industry. Harvests could be gathered when shrimp from the usual sources are scarce. (World Fishing, April 1962.)

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SOUTHERN WEST AUSTRALIA TUNA SURVEY RESULTS:

A spotting plane was used by the Australian chartered tuna survey vessel Estelle Star to locate schools of fish. No tuna were sighted by the spotting plane on the first six flights (May 7-9) which covered the Albany area and Cape Naturaliste to Jurien Bay. Another series of flights over a three-day period were planned for May, two series were scheduled for June, and another two series for July.

The survey of tuna resources in southern West Australia began in August 1961. It is being carried out by the Fisheries Division, Department of Primary Industry, in association with CSIRO Division of Fisheries and Oceanography.

When it was announced that a spotting plane would be used in the survey, Australia's Minister for Primary Industry said funds for that purpose had been made available from the Fisheries Development Trust Account which was also financing the survey by the Estelle Star.

The Minister said it was possible for spotters to identify the fish from a height of about 1,000 feet. The aircraft would make sweeps of the area in which the Estelle Star was to work each two weeks at new moon and full moon because those were the times when tuna were most likely to be near the surface.

The spotting plane is a twin-engined Aero 145, with cruising speed of 160 m.p.h. and range of 800 miles. It has cabin accommodations for three in addition to the pilot.

The vessel's operations out of Albany from April 13 through May 10, 1962, yielded catches of southern bluefin tuna by trolling on six days in April. A total of 90 tuna were caught, mostly in the Bald Head area, of which 70 were tagged and released. In May, on seven days from May 1-May 10, a total of 280 tuna were caught with pole-and-line and 351 were trolled; a total of 631 fish (all southern bluefin). Of that total, 566 were tagged and released. Most of the fish were caught off Bald Head.

The best day was May 8 when the vessel in the area between Bald Head to Cave Head caught 250 tuna--157 with pole-and-line and 93 by trolling. Most of the fish were caught 50 yards off Bald Head. Of the total caught that day, 230 were tagged and released. (Australian Fisheries Newsletter, June 1962.)

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TUNA FISHERY TRENDS, 1962:

A record 3,715 short tons of tuna was landed during South Australia's 1962 tuna fishing season which ended May 26, 1962. Most of the catch was for the South Australian Fishermen's Cooperative, and the balance for a cannery at Eden in New South Wales. The 1961 season's catch was 2,480 tons.

The New South Wales 1961/62 season was disappointing. Bad weather was responsible for the light tuna landings of 1,737 tons, compared with 2,363 tons the previous season.

The 1961/62 season tuna landings for South Australia and New South Wales combined totaled 5,452 tons, compared with 4,844 tons landed during the 1960/61 season. The tuna fishery in other Australian states is minor. (Australian Fisheries Newsletter, July 1962.)

British Guiana

SHRIMP EXPORTS, 1961:

British Guiana's shrimp exports in 1961 totaled almost 4.2 million pounds, valued at W.I.$2.7 million (US$1.6 million) f.o.b. point of export. The United States received 90.2 percent of British Guiana's total shrimp exports in 1961.

British Guiana (Contd.):

British Guiana's Shrimp Exports in 1961 by Countries			
Destination	Quantity	Value	
	Pounds	W.I.$	US$
United States	3,674,832	2,388,559	1,393,318
United Kingdom . .	282,450	213,668	124,638
Trinidad	177,450	115,494	67,371
Other countries . . .	35,468	23,278	13,579
Total	4,170,200	2,740,999	1,598,906

Note: One W.I. dollar equals about 58.333 U.S. cents.
Source: Department of Customs and Excise, Georgetown, British Guiana.

Canada

ARCTIC CHAR FISHERY:

Eskimo fishermen expect to market 100,000 pounds of Arctic char during 1962. This specialty product, almost unknown outside the arctic only four years ago, is now distributed in many parts of Canada. It was introduced to British housewives in June 1962 when a firm in London, England, imported 10,000 pounds. Arctic char, or "ilkalupik" as the fish is known to the Eskimos, has a pink meat. It can be prepared like salmon or trout, but it has its own distinctive flavor.

The commercial fishery for Arctic char was started in Frobisher Bay in the eastern Arctic in 1958, following popular acceptance of a trial shipment to Montreal, Canada. Fish-freezing facilities were installed at Frobisher Bay before the start of the 1959 season. The char run is short and a year's harvest must be caught, frozen, and packed during a month or six weeks. An annual fishery quota of 12,000 pounds was established for the Frobisher Bay fishery.

Other fishery stations were soon needed to meet the demand for this new product. A study by the Arctic unit of the Canadian Research Board showed that prospects were promising for a commercial char fishery at George River in northern Quebec. In this remote part of Canada, some 100 Eskimos were eking out a living off the land. None had ever worked in a commercial fishing operation, but in 1959, with the aid of officials from the Canadian Department of Northern Affairs they established a small fishery cooperative. The Canadian Government then provided a loan for the purchase of supplies and fish-processing equipment and with a tentative quota of 30,000 pounds of char set for the season, the first Eskimo fishermen's cooperative began operating. Cooperatives were later established at Port Burwell in the eastern Arctic, and at Fort Chimo and Cambridge Bay on Victoria Island in the central Arctic.

At Frobisher Bay, the entire catch is now marketed locally. The Cambridge Bay fishery is Canada's most northerly fishing center, and the char catch from there is used to supply the western part of Canada.

The growth of the cooperatives has enabled the Eskimos to harvest resources that for years had been without economic benefit to them. The point has been reached where the Eskimos are running the enterprises themselves, and the financial returns have had a marked effect on their general standard of living.

Up to the beginning of 1962, a total of 107,000 pounds of Arctic char had been produced by the cooperatives; the production for 1962 has been set at 100,000 pounds--an increase of 100 percent over the previous year's production. (Fish Trades Gazette, June 23, 1962.)

Note: See Commercial Fisheries Review, July 1960 p. 53.

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NEW PRODUCTS BEING DEVELOPED FROM UNDERUTILIZED FRESH-WATER FISH SPECIES:

Some people believe that fish stocks in the Great Lakes are depleted, but that is not so, according to the Chief of the London Ontario Technological Unit of the Fisheries Research Board of Canada. In an interview, he went on to explain that what really has happened is that there has been a change in fish populations in the Great Lakes. There has been a decline in lake trout and whitefish populations, but an increase in underutilized species, or so-called "trash" fish, which presently find very limited markets.

According to recent surveys made in the United States, 30 to 40 percent of the food products sold are products which were not on the market 10 years ago. New products, especially the fully-prepared and partially-prepared convenience foods, are opening new markets for food processors in Canada and in the United States.

One great, underdeveloped food resource is the Canadian inland fisheries. Ontario's Great Lakes and many lakes of the Prairie Provinces contain living silver which fish processors with initiative could convert to gold. Perhaps the reason they are not doing so is because they are not yet aware of the possibilities.

Underutilized Fresh-Water Fish Species: Lake Erie contains more species of game fish, commercial fish, and potentially commercial fish, than any other body of water in Ontario. In recent years the dominant species in the catch from that lake has varied through

Canada (Contd.):

whitefish, blue pike, yellow pike, and yellow perch, to smelt.

When the smelt first appeared in Lake Erie, they were considered a nuisance by the fishermen. There was little or no market for them and economical means of fishing them had not then been devised. But when they became so abundant that they clogged up nets set for other fish, steps had to be taken. Suitable smelt fishing gear was developed and gradually a year-round market for fresh, frozen, and processed smelt was built up. At the present time the consumer market absorbs about 15 million pounds of Lake Erie smelt a year. But the lake could produce a much larger quantity if there was sufficient demand. Some estimates are as high as 50 million pounds a year.

In Lake Ontario there are thousands of tons of alewives, but they are not being fished because of lack of

A Manitoba commercial fisherman sets his gill nets under the ice on Lake Winnipeg with a "jigger." After the first hole in the ice has been cut, it is possible to set 50 fathoms of net in three minutes with this simple device.

markets. In Lake Huron there is a large chub (a variety of fresh-water herring) population, but the fishery has been limited due to market problems. The Fisheries Branch of the Manitoba Department of Mines and Natural Resources is desirous of finding markets for such species as suckers (mullet) and burbot (maria). Carp, sheepshead, buffalofish, and yellow perch could be exploited to a much greater degree than they now are.

The whitefish is one of the most popular of the fresh-water fish. But the meat of whitefish from some Canadian lakes contains foreign bodies (such as cysts) which though harmless to the consumer, interfere with marketing of the fish. At the present time the only practical method of handling such whitefish is to skin, fillet, and candle them. The foreign bodies show up as dark shadows and are cut out. A proportion of the cut-out fillets are used to make "gefilte fish," but there is room for developing additional markets.

Research on Underutilized Species: Unwanted fish species have one thing in common--they are not popular with consumers. The underlying cause of their unpopularity varies with the different species. The fact that these fish are unpopular does not mean that they lack potential for the consumer market. Food technologists feel that a more complete knowledge of their composition and a better understanding of how to handle, process, and market them could mean the difference between an unsalable food product and a readily salable one.

The London Technological Unit of the Fisheries Research Board of Canada, in the five short years of its existence, has been actively investigating the underutilized fish problem in the Great Lakes and has made some useful discoveries.

Studies of the nutrient compositon of each of the problem species have been made and are still in progress. As some of the species have been found to deteriorate rapidly, studies of the microflora (especially the spoilage organisms) found on them have been initiated. Studies of fishing gear, fish-processing equipment, and means of handling fresh-water fish products are a continuing part of the Unit's program. A senior scientist at the Unit is developing a variety of new products from the underutilized fish species which may have commercial application.

New Products from Underutilized Species: One of the scientist's current projects is the development of sausage-type fish products. Fish sausages, he affirms, are 100 percent edible, high in food value, and require little attention from the cook. If produced on a commercial scale to compete favorably in price with meat sausages, they would likely find a ready market. Three types of sausage are being investigated: (1) uncooked fish sausages, (2) cooked fish sausages (bologna-type rolls), and (3) cooked smoked fish sausages ("wieners"). All three have been prepared experimentally with success and seem to have a good market potential. More work has been done on the fish "wiener" than on the other two types of sausage.

Fish "wieners" have been prepared from burbot, carp, catfish, perch, sheepshead, smelt, sucker, and whitefish. All varieties with the exception of smelt have proved satisfactory. Carp and whitefish, because of the cohesive properties of the meat made the best "wieners." Blends of various species, especially those containing carp and whitefish, were excellent. Smelt was unsuitable because the meat lacked cohesiveness and developed a dirty grey color when minced.

The basic procedure for making fish "wieners" is as follows: Chunks of frozen fillets are minced to a pulp in a grinder and blended according to a precise formula with fat, spices, water, and a cereal binder. The homogenized product is then stuffed into animal or cellulose casings and tied off in links. Chains of these links are smoked according to a predetermined schedule, following which they are cooked in water and chilled.

The finished "wieners" look like meat wieners. They can be formulated to taste like meat "wieners" or to retain a distinctive fish flavor, whichever is desired. Work on them is continuing as there are still a number of variables to be determined before approved formulae can be offered to commercial producers.

Rivaling the "wieners" in popularity are the fish bologna-type rolls. These are prepared from skinned fillets pressed together in a transparent casting with a binder substance like egg albumin, and then cooked. As is the case with the "wieners," it is important that the fish species selected to make the rolls have meat with good cohesive properties. Three such species found to make excellent fish rolls are whitefish, carp, and pike.

Canada (Contd.):

An interesting sidelight of the work on the fish sausages has to do with the mincing operation. Up to now, dressed fish could not be used to make sausages because of the bone. If in processing the bone could be finely ground and homogenized with the meat, the nutritional value of such products would be increased and the filleting operation eliminated. Recently a new cutting mill has been put on the market which reduces fish meat and bone to a smooth paste at a low temperature, using centrifugal force. The first one of its kind in Canada was expected to be delivered to the London Technological Unit.

Cut-out whitefish fillets have been tested in several new products, one being fish ball "servies"--all that has to be done is to heat and serve them. "Servies," like the sausages, are prepared from homogenized fillets. They are about the size of golf balls, golden brown on the surface and smooth, firm, and white on the inside. Their flavor is mild.

If produced commercially, the "servies" might be frozen and marketed in boilable plastic bags, each bag of a size to contain an individual serving. Ease of preparation would seem to make this product ideal for use in institutions where quick service is essential.

Another possible new use for the cut-out whitefish fillets is in patties. Fish patties have been prepared by molding uncooked minced fish in a patty-molding machine developed for the commercial manufacture of meat patties. Before serving, the patties were cooked by various means such as deep-frying, sauteing, baking, and boiling in a plastic bag. Three varieties of fish, whitefish, perch, and smelt, have been used to make the patties. Whitefish made excellent patties with smooth texture and good flavor. Perch patties were also good. Smelt did not make a product of acceptable quality.

A number of the new products developed have been freeze-dried in the medical laboratories of the Defence Research Board of Canada. Of these, the minced fish patties have been one of the most successful. Freeze-dried minced fish patties may be a food item that will develop successfully in the future.

A new method of dressing chub prior to smoking has been developed by the London (Ontario) Technological Unit. Chubs are found in substantial quantities in Lake Huron. The heads, tails, fins, and viscera are removed and they are spread open and flattened in such a manner that when viewed from the skinless side each fish looks like a fillet. After being dressed, they are cooked in brine and then smoked at temperatures progressing from 120-170° F. They emerge from the smoke tunnel fully cooked.

Canned Products from Underutilized Species: When the London Technological Unit was established in 1957, one of the first problems brought to its attention was the lack of market outlets for smelt, especially during the peak season. Canning, it was felt, might be an answer and so smelt canning experiments were initiated. The smelt were canned following basic fish canning procedures developed earlier at the Fisheries Research Board's Vancouver Technological Station.

As the work progressed, innovations were made. The smelt were canned in just about every conceivable manner which seemed practical. They were given various canning treatments such as brining, smoking, marinating in vinegar, and breading followed by pan frying. They were packed in various forms such as whole and ungutted, whole dressed, as fillets, and as rolled fillets ("rollmops"). They were packed with and without the skin removed. They were processed with added salt and with such other additives as oil, spices, and sauces. Some of the treatments produced better results than others. In general, however, the results indicated that a satisfactory canned smelt product can be obtained.

Canning experiments at the Unit were not confined to smelt alone. As additional equipment was installed, the experiments were broadened to include a wide variety of species from both the Great Lakes and the lakes of the Prairie Provinces. The following general observations resulted. Canning appeared to develop the flavor of certain species but not others. In some, it produced an undesirable aftertaste which may or may not be caused by overcooking or undercooking. The texture of canned fresh-water fish generally tends not to be as firm as that of canned salmon. It was found that fish of the same species taken from different lakes will, on canning, exhibit different flavor and texture characteristics.

When asked which of the Unit's canned products had the greatest potential for the Canadian market, one opinion was that whitefish canned in the salmon-type pack was an attractive product and could be rated first for flavor, with canned suckers a close second. Regarding the export market, it was believed that canned alewives, which could be produced at very low cost, might find favor in newly-developing countries. (Canada Trade News, May 1962.)

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NEW TAX APPLIES TO SHRIMP IMPORTED FROM THE UNITED STATES:

A new Canadian tax on imports has, in effect, offset the reduction in the duty rate on fresh, frozen, and canned shrimp granted to the United States in recent negotiations under the General Agreement on Tariffs and Trade (GATT). On July 1, 1962, the Canadian duty on shrimp imported from the United States and elsewhere was reduced from 10 percent to 5 percent ad valorem. Effective June 25, 1962, however, a 5-percent surcharge was added to many Canadian import duties including the duties on shrimp and other fishery products.

The surcharge or tax was one of the steps taken by the Canadian Government to stabilize its currency and to overcome balance-of-payment difficulties. Under the GATT, however, these surcharges must be removed as soon as these conditions have been corrected.

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PURSE SEINERS IN NEW BRUNSWICK CAN'T FISH WITHIN ONE MILE OF STATIONARY FISHING GEAR:

A new amendment scheduled to become part of Canada's New Brunswick fishing regu-

Canada (Contd.):

lations will prohibit purse seiners from operating within one nautical mile of fishing weirs and trap nets during the summer fishing season, according to a June 5, 1962, announcement by Canada's Department of Fisheries.

Canada's Fisheries Minister stated that steps were being taken to amend the regulations in force, which allow purse seiners to fish within one-half nautical mile of stationary fishing gear after discussions with the operators of weirs and trap-nets, as well as with the operators of purse seiners, particularly those in the Bay of Fundy area of Charlotte County, New Brunswick.

When in force, the one-mile restriction will be for the period April 15 to November 15 inclusive, which is the time when almost all the weirs and trap-nets are in operation. For the remainder of the year, purse seiners will be permitted to operate within 2,000 feet of any weir, trap-net, or any other stationary fishing gear being used.

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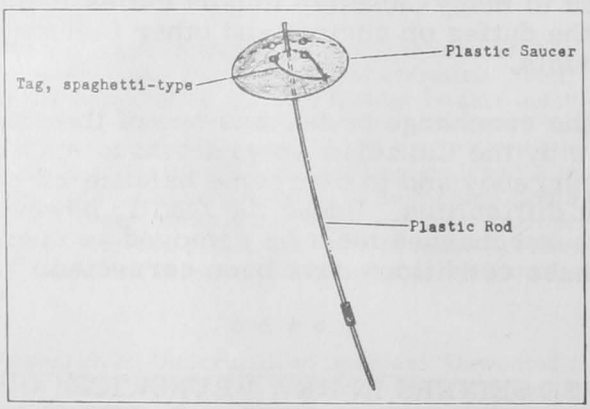
SEA-BED DRIFTERS USED TO STUDY NORTH ATLANTIC OCEAN CURRENTS:

A simple device called a sea-bed drifter is being used to get information about ocean currents. It consists of a weighted plastic rod with an orange plastic saucer at the top. Each drifter has a spaghetti-like tag tied to it. Scientists of the Fisheries Research Board of Canada are studying ocean currents that flow over the rich fishing banks along the Atlantic coast of Canada by using these devices.



Large numbers of sea-bed drifters were released over the Canadian Atlantic fishing banks. They will be carried on the sea bed by currents and may be caught by fishermen in their otter-trawl nets or they may be washed ashore.

Fishermen or others recovering sea-bed drifters are asked to send the tag to the Fisheries Research Board at St. Andrews, New Brunswick. The Board wants to know the date and position of drifter when found as well as the kind of fishing gear, if applicable, with which it was picked up. The Board will pay a reward of one dollar for each sea-bed drifter tag returned with the required information. A description of where and when the sea-bed drifter was released will also be given those sending in tags. (Canada's Trade News, June 1962.)

Note: See Commercial Fisheries Review, March 1962 p. 21.

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SEA LION CONTROL PROGRAM IN COASTAL WATERS OF BRITISH COLUMBIA:

Professional hunters were hired by Canada's Department of Fisheries in 1962 in an attempt to reduce the number of sea lions in important fishing areas along the British Columbia coast. Sea lions have always plagued the gill-net and troll fisheries in certain of the better fishing areas. Some fishermen have had severe losses of catch, gear, and fishing time because of the animals. The total populations of sea lions in waters adjacent to British Columbia is estimated at 7,000-8,000 animals. Professional hunters have not been used before. In the past, Departmental officers stationed in areas where sea lions are known to be numerous have tried to control the sea lion population.

The new sea lion control program was described as "strictly experimental." But it has the full support of research scientists of the Fisheries Research Board of Canada who conduct extensive and continuing studies of sea lions in Canadian waters. Hunting is done under the close supervision of a scientific personnel or Fisheries Officers. A Vancouver company was given a contract for a four-week hunt. One week of the hunt was completed by June. Later in the season, the hunters were to return to the coastal areas for the remainder of the contract period.

The contracting company was also granted a permit to take 1,000 sea lions from rookeries at Cape St. James and in the Scott Islands. The sea lion control program in coastal waters is entirely separate from the com-

Canada (Contd.):

mercial hunt in the rookeries. This is the fourth year the company has engaged in the commercial sea lion hunt at the major rookeries. Investigations have shown that the reduction of sea lion stocks at the rookeries had no significant effect upon populations in areas near the fishing grounds. (Canada's Trade News, June 1962.)

Cook Islands

JOINT JAPANESE-NEW ZEALAND TUNA BASE:

The Japanese are to take part in a tuna industry base at Rarotonga, Cook Islands. A canning factory is to built at Rarotonga by a firm in the Cook Islands which is a subsidiary of a Dunedin, New Zealand, firm. The Japanese will provide boats and crews to catch the fish for the cannery.

Final details of the joint Japanese-New Zealand venture were being worked out in May 1962. Part of the deal is that the Japanese must help to train Cook Islanders in their boats. Each boat will train four Cook Islanders each year and use them at the end of their training to replace Japanese crew members. Eventually full crews will be Maori, under the scheme. However, the boats and the profits from the sale of the catch would still belong to the Japanese.

Meanwhile, the Cooks' Director of Fisheries is still going ahead with his plan to train Cook Islanders for tuna fishing. He is using Japanese fishing equipment. (Pacific Islands Monthly, June 1962.)

Denmark

FILLETING ASSOCIATION SEEKS CLOSER CONTACT WITH FISHERMEN:

At the annual meeting of the Danish Flatfish Fillet Association in Esbjerg in late June 1962, it was noted that no decision was expected on the request that the filleting of frozen fish be approved until the Fisheries Ministry's Research Laboratory completed its study later in the year. There are divided views of the proposal in the Association. Filleting machines for flatfish are in use in several filleting plants, but it is not yet possible to exercise final judgment on their value. The increase in the minimum size of plaice is a development in the right direction--larger fillets--but it is minor and has not been in effect long enough to determine any effect on prices.

Association members were not opposed to minimum prices sought by fishermen but indicated low prices were due to lack of organization with respect to landings. Fishermen seek the fish they can catch, leaving the distribution problem wholly to the buyers. This adversely affects prices and makes it difficult to take advantage of special supply and demand situations. Better contact between the filleters and the fishermen was urged for their mutual benefit. (Fisheries Attache, United States Embassy, Copenhagen, July 4, 1962.)

* * * * *

FISHERIES TRENDS, JAN.-JUNE 1962:

Denmark's fishing industry may set new annual records for the amount of fish landed and the value of fish exported. Landings in January-June 1962 were 8 percent ahead of the same period of 1959 when the record annual catch was made. The value of exports of fishery products during the first half of 1962 was 16 percent greater than in the same period of the record year 1961. The value of exports of canned herring during the first half of 1962 was four times greater than in the same period of 1961; exports of lobster tails doubled in value; and exports of cod fillets increased 12 percent in value. But the value of exports of pond trout was down 33 percent. Denmark's total fishery products exports to the United States in the first half of 1962 were worth 26 percent more than in the same period of 1961.

Denmark's increased exports were achieved without subsidies. The fishing industry in Denmark contributes only one-half to one percent of the gross national product but accounts for about 5 percent of all exports. A need for Government or joint Government-industry support of ex-vessel fish prices has been expressed by fishermen. (United States Embassy, Copenhagen, August 1, 1962.)

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INDUSTRIAL FISH LANDINGS WERE HEAVY IN JUNE 1962:

Fish reduction plants in the Esbjerg area of Jutland on Denmark's North Sea coast were overwhelmed with landings of in-

Denmark (Contd.):

dustrial fish, especially sand eels (Ammodytes lanceolatus) in June 1962. Sand eels are characterized as "soft" fish and lower appreciably the capacity of the reduction plants when not mixed with "firm" industrial fish, such as horse mackerel, whiting, etc. Between 4,000 and 5,000 metric tons of sand eels were reported landed in one day. Ultimately, this resulted in the dumping of 500 tons or more of sand eels at sea for which the cooperative reduction plant paid the fishermen the contract ex-vessel price of $26.10 a metric ton. Cutters were placed on tonnage limits, deckloads were banned, and they were required to land in rotation. Prices for "firm" fish were temporarily increased from $26.10 to $29.00 a ton to induce fishermen to land those varieties.

During the period of restricted landings arrangements were made for cutters to land their catches in Norway and West Germany with Ijmuiden in the Netherlands also expressing interest. Industrial fish landed in Cuxhaven, West Germany, by Danish cutters brought $21.03 a ton and in Egersund, Norway, $21.39 a ton. Under the circumstances, these net prices were considered reasonably satisfactory, although somewhat lower than the gross price of $26.10 a ton prevailing in Esbjerg from which, however, landing costs must be deducted. By July 1 the landing limitations in the Esbjerg area had been raised considerably and it appeared that plant capacities again were in line with landings.

The immediate future of the Danish fishery for industrial fish was brightened by two decisions made at the Hamburg meeting dealing with North Sea Convention matters in May. The dispensation permitting Danish fishing vessels to land up to 10 percent undersize whiting in their industrial fish catches was continued until June 1, 1966. And a regulation in the Skagerak-Kattegat area, permitting small Danish craft to use a mesh smaller than prescribed by the Convention and to land unlimited amounts of undersize whiting, used mostly for brook trout and mink food, was extended until June 1, 1964. (Fisheries Attache, United States Embassy, Copenhagen, July 4, 1962.)

* * * * *

POND CULTURE OF RAINBOW TROUT:

Raising rainbow trout in ponds in Denmark is primarily a fresh-water culture, but some experiments have been conducted in rearing trout in salt-water ponds. In its 1960 annual report, the Technological Research Laboratory of the Danish Ministry of Fisheries stated that samples of rainbow trout transferred from fresh-water ponds for further rearing at a salt-water trout farm developed meat that was distinctly red. At the time of transfer, the fish ranged in weight from 3.5 ounces to 5.3 ounces. Their meat remained light-colored after a period of from 1 to 2-1/2 months in the salt-water pond, but after about 4 months the meat was a definite red color. There is very little salt-water culture of rainbow trout in Denmark, and experiments made so far were not successful in the opinion of some observers.

Salt-Water Culture of Rainbow Trout: To some degree, the unsuccessful experiments in salt-water rearing of rainbow trout may have been due to technical difficulties, such as barriers being broken down by storms, or fish being killed because of oxygen deficiencies in hot weather because of lack of currents in the water. Also physiological difficulties may have occurred, especially in winter, when the fish are unable to maintain the osmoregulation necessary to compensate for the salinity of the water. Nothing is done to control the salinity in the ponds. As a general rule salinity must not exceed 15 percent in the summer, and 10 percent in the winter.

In Denmark, rainbow trout reared in salt water are fed on fish just as they are in fresh-water ponds.

There has been little experience with diseases of rainbow trout raised in salt-water, but a bacterial disease resembling furunculosis has been observed, which was cured with sulfamerazine.

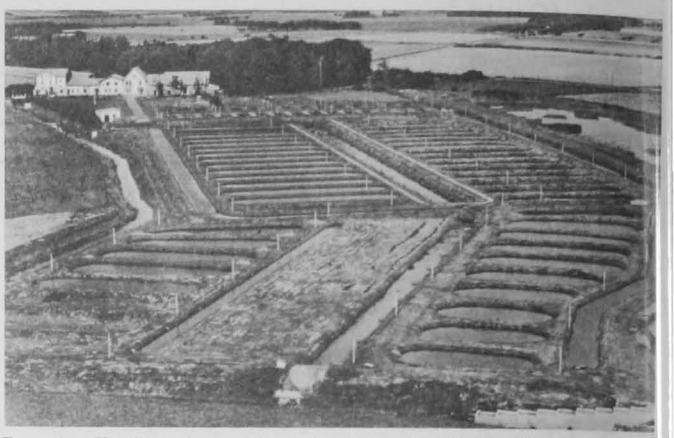

Fig. 1 - Fresh-water rainbow trout pond at Brøns, Denmark, about 45 miles south of Esbjerg. Originally started by trout pond operators as a research station, it was later offered to the Danish Government for research. Now it is jointly operated by the Government and the trout growers. Research is conducted to obtain better growth by experiments in genetics--mating best growers. Dry food from the United States is fed to the young trout, but older trout get fresh fish from Esbjerg.

Fresh-Water Rainbow Trout Culture: The common food used in fresh-water trout culture in Denmark is salt-water fish not used for human consumption--mostly small herring and whiting, and several other species. Dry food in pellet form is used to some extent when fry are fed in troughs.

Fig. 2 - Weighing Danish rainbow trout raised in fresh-water ponds. In 1961 about 7,000 metric tons of trout were produced in Danish ponds.

Denmark (Contd.):

As a rule, a quantity of about 100,000 pounds of trout is produced by a team of three men. (That production data assumes that fingerlings are not produced.) Normally a trout farm of that size has no production of fry and fingerlings. Usually the fingerlings are brought from smaller trout farms. Those smaller farms only feed the fish from the fry to the fingerling stage and they are then sold in the autumn or spring to the regular trout-producing farms.

The trout are marketed by the farms in three ways: packed in ice, frozen, and alive. Normal sizes of the fish are from 5.6 to 7.8 ounces, and from 7.8 to 9.2 ounces, but smaller amounts of larger fish also are sold. Live fish are transported by tank truck and rail tank cars to such countries as Switzerland, Belgium, Germany, France, Norway, Austria, Italy, and the Netherlands.

In Denmark, there are hatcheries which produce eggs and fry almost exclusively. Farms which produce commercial fish and eggs for export are also found. There are also farms which produce eggs, fry, fingerlings, and commercial trout.

The Danish Government does not operate any of the trout hatcheries that are operating. Fish for stocking domestic ponds are produced by privately-owned hatcheries. No government subsidies of any kind are given for the production or export of rainbow trout. (Regional Fisheries Attache, United States Embassy, Copenhagen, July 18, 1962.)

* * * * *

SEAWORTHINESS OF STEEL CUTTERS UNDER STUDY:

A study of the seaworthiness of Danish steelfishing cutters will require the construction of models and take one year, according to a professor of Denmark's Technical University, Copenhagen, who is now preparing a plan for the investigation. Fisheries Minister Normann requested the study of the stability of the steel cutters after three sank in the North Sea in a storm in February 1962. Many have contended that the traditional wooden cutters are preferable because they withstand heavy weather better.

At the end of 1961, the motorized Danish fishing fleet numbered over 8,000 vessels of which 96 were steel cutters, mostly measuring 95 to 120 gross tons. (Fisheries Attache, United States Embassy, Copenhagen, July 4, 1962.)

* * * * *

SECOND DANISH-BUILT FISH-FREEZING VESSEL FOR U.S.S.R.:

After only 19 days in the working dock, a Copenhagen shipyard launched the M/S Vitus Bering on June 9 for V/O Sudoimport, Moscow. The vessel is the 21st refrigerated type constructed by the shipyard for the U.S.S.R. since World War II and is the second in a series of four fish carriers.

The vessel has a dead weight of about 2,600 tons, is 91 meters (298.5 feet) in length between perpendiculars, and has a beam of 16 meters (52.5 feet). It is driven by a 6-cylinder Diesel engine developing 3,530 horsepower. Speed during loaded trials was 14.0 knots. Auxiliary machinery consists of three 6-cylinder and one 3-cylinder Diesel engines. In the boiler room is an oil-fired boiler with a steam production of about 3,000 kilograms per hour. The propelling machinery and refrigerating machinery are located amidships, with large refrigerated-cargo holds fore and aft. The quarters for the vessel's crew and factory staff (about 102 men) are extremely comfortable, considering the general standard of accommodation in fishing fleets. Specifications are the same as for the Skryplev, the first in the series, christened May 10, 1962.

Fig. 1 - The M/S Vitus Bering, fish-freezing vessel built in Denmark for the U. S. S. R. Shows vessel almost completed on 19th working day.

The Vitus Bering is equipped with controllable-pitch propeller which can be operated either from the main bridge or from a small bridge placed immediately above the stern ramp. In view of the very stringent requirements with regard to accurate and careful maneuvering while the catch is being taken aboard, the vessel is also equipped with a so-called "activated rudder," consisting of an electrically-driven propeller mounted in a nozzle on the actual rudder. This special rudder arrangement makes it possible to turn the vessel even when she is making no headway.

Denmark (Contd.):

Construction time in the dock was cut from 74 to 19 days by assembling the vessel in six sections. The sections were carried to the building dock by means of two large gantry cranes which have a capacity of 600 tons in one lift. The main engine, weighing 90 tons, was also lifted into the ship in one piece. In addition to reducing the time of construction, the prefabricated method of ship building reduced the amount of out-of-door work required. The work was thus less hampered by bad weather.

The Vitus Bering is intended to serve as mothership and refrigerated fish carrier for the Soviet trawler fleet operating in various waters--the North Atlantic, the Arctic Ocean and the Pacific Ocean. She represents the most up-to-date trends in her field.

The catch will consist mainly of cod. The vessel is provided with a large ramp at the stern so that the fish can be taken aboard direct from the sea, and there is a gate with which to close the opening. The fish are taken over from the fishing fleet in two days. Either direct from the vessels over the ship's side as hitherto or, as something entirely new, from trawl bags which are left by the trawlers in the water and marked by a buoy. Often these buoys are provided with radar reflectors so that the Vitus Bering will be able to locate them easily by means of radar.

By means of a line-throwing apparatus, a catching device is shot over a floating line attached to the bag. A powerful winch then hauls the catch up the stern ramp and on to the deck where it is emptied into stalls. From here the fish is skidded directly to the ship's two raw product bunkers. For short-time preservation of the fish, two ice generators are installed in connection with the fish stalls which, from seawater, can produce a total of 10 metric tons of scale ice per day. Irregular fish is sorted out on the deck and poured into the raw product bunker of the fish-meal plant.

From the raw product bunker all transport of the fish is mechanical right up to its being stored in cartons in the holds. On the way the fish is slit open and gutted. This process is still done manually but with automatic feed and removal at the working places. There are special machines for cutting off the fish heads. After washing in continuously-working washing machines, the fish is weighed out automatically in portions of about 10 kilograms (22 pounds), tipped into trays with spring-loaded lids and taken to the freezing tunnel.

After approximately half an hour's freezing, the lids are removed and the block of fish, which will now retain its shape, is given about four hours' final freezing. Then the fish is loosened from the trays by superficial thawing, it is glazed by immersion in water for a few seconds, and is taken via a reception conveyor on to the packing site. The entire further preparation of the iced fish requires only 4 men, whereas in previous refrigerator vessels delivered to the Soviet Union, this work required 8 men.

The entrails and fish heads are taken automatically from the cutting tables to the raw product bunker of the fish meal and fish oil plant, which has a capacity to process 30 tons of raw products per day. In the treatment of cod, the liver is separated from the entrails and is processed into medicinal oil in a special liver-oil plant. Two fresh-water generators with a capacity of 20 tons per day take care of the fresh-water supply. (Fisheries Attache, United States Embassy, Copenhagen, June 19, 1962.)

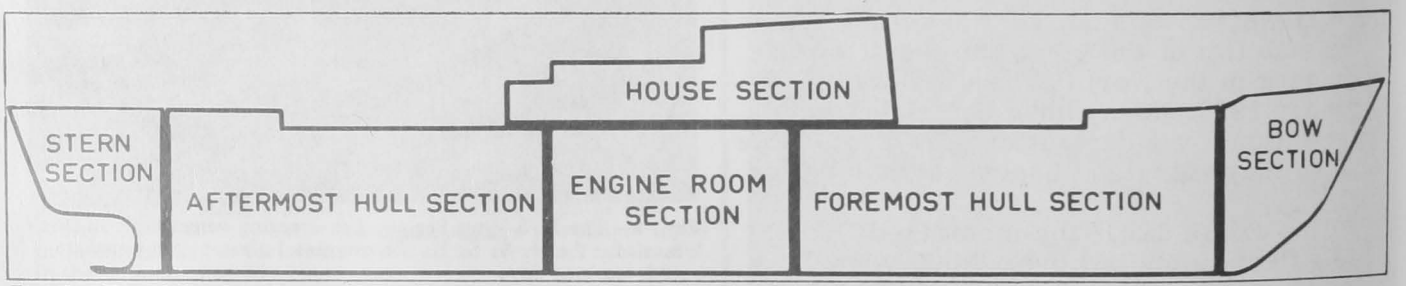

Fig. 2 - The M/S Vitus Bering was constructed from six sections. On the 1st working day (May 12, 1962), the keel was laid down and engineroom section erected (weight 425 tons). On 3rd working day (May 15), aftermost hull section erected (weight 357 tons). On 4th working day (May 16), the stern section erected (weight 86 tons). On 11th working day (May 26), foremost hull section erected (weight 414 tons). On 13th working day (May 29), bow section erected (weight 76 tons). On 19th working day (June 7), house section erected (weight 149 tons).

Ecuador

COASTAL FISHING PROBLEMS BEING STUDIED:

A delegation from the Province of Manabi met with Ecuador's Minister of Development early in July concerning economic problems of the Province, including coastal fishing problems. The following account of statements made by the Minister with respect to fishing is taken from the Quito daily El Comercio of June 29, 1962.

The Minister referred to fishing as one of the activities with greatest possibilities in the Province of Manabi and stated that the Ministry of Development was preparing a program for the promotion of fishing which was national in scope but with greatest emphasis in the Province of Manabi. The program includes technological help to the individual fisherman. The Minister commented that Ecuador has a large domestic market for fish consumption which has not been sufficiently developed because of transport difficulties and an inadequate distribution system. The Ministry of Development, he added, is planning with the Ministry of Economy the installation of freezing plants to help this situation. The program also would assist the fishermen grouped together in associations to improve their equipment so that they would be more nearly able to compete with foreign fishermen fishing in Ecuadorian waters. He referred to the necessity of converting the Ecuadorian fishing fleet to the purse-seiner system.

The Minister also stated that final details were being completed for the establishment of a mixed Japanese-Ecuadorian company which would establish freezing plants for the export and canning of tuna and other fish. Representatives of the Japanese company, according to the Minister, were scheduled to arrive in Ecuador on July 6, 1962. (United States Embassy report, Quito, July 11, 1962.)

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MANTA TUNA FISHERY:

Purse seiners were prohibited from fishing within 40 marine miles of the Ecuadorian coast between Cabo Pasado and Punta de Santa Elena by the Government of Ecuador on May 31, 1962. One of the objectives of the ban on purse-seine fishing was to protect the local bait-boat tuna fishery at Manta.

The Manta fishing fleet consists of two types of vessels, a canoe fleet that fishes nearby waters, mainly for the local fresh market, and a fleet of tuna boats. While the catch of the canoe fleet includes some skipjack tuna, their production is of no consequence to the cannery at Manta. The tuna fleet at Manta consists of 32 bait boats, ranging in carrying capacity from 5 to 55 tons. Propulsion is by Diesel engines averaging about 135 horsepower, but ranging up to at least 180 horsepower. Their speed is about 8-10 knots. Crew size varies from 15 to 25, which (if an estimated average of 20 is used) suggests that the total number of bait-boat fishermen in Manta is about 640.

The Manta bait-boat fleet is locally built and new. According to representatives of the tuna cannery at Manta, their company began to provide interest-free loans for tuna vessel construction in 1958. Since then the local bait-boat fleet has been built on the beach nearby. At present, the fleet fishing capacity is sufficient to supply the cannery for a substantial part of the year, and the construction of additional vessels is not being encouraged. The local fishing skippers, who received loans from the cannery, have become land-based managing owners, according to the company. A part of the daily catch is used to retire the loan on each vessel. The amount subtracted for this purpose varies with the catch (from zero for catches less than 5 tons to 25 percent for catches over 25 tons). In the Manta fleet the crew share is about 40 percent and the vessel share 60 percent.

The superstructure of the Manta bait boat is centered forward of midships and the pilothouse is well forward. Bait tanks are located in the space aft of the cabin. Racks are used during fishing. The vessels are not refrigerated, the catch being protected from the heat with damp cloths.

Fishing trips are usually completed in a day. The fishing operation begins shortly after midnight. The vessels take a position along the beach in the harbor and hang out lights to attract the local bait species. About 4:00 or 5:00 a.m. a net is used to catch the bait fish needed for the day. About 5:30 a.m. the fleet departs for the fishing grounds, the closest of which are about an hour's run.

The seasonal availability of tuna in Manta waters is not fully understood. Skipjack tuna

Ecuador (Contd.):

are by far the most abundant species. They are usually taken during the period extending from April or May to August or September. But in 1961, skipjack catches fell off in August and September and then improved with good fishing lasting until December. In 1962, good catches of skipjack were not made until May, whereas in 1961, good fishing began in April.

A general view of the Port of Manta.

The canning plant in Manta has a cold-storage capacity of about 2,000 tons. Two California-type bait boats of Panamanian registry have recently been brought to Manta, and these provide an additional 250 tons of frozen storage capacity. Under ideal conditions, the daily freezing capacity of the plant, as of May 1962, was about 150 tons. The canning capacity is 50 tons per day. Additional construction is under way to make sure that the cited maximum tonnages of freezing and canning capacity can be attained under average conditions.

When fishing is very good, the existing fleet can bring in more fish than can be canned or refrigerated. Thus, during May, June, and July, it is common for the boats to be on limits.

The catch is unloaded offshore. The fish are first transferred to large dugout canoes which carry the catch about 100 yards to the beach. Then the fish are loaded on trucks and hauled to the plant. At the cannery the fish are processed almost immediately or are frozen for processing at another time. It is common for the cannery to can frozen fish at the start of the day before any landings have been made.

Skipjack tuna is packed in several styles and can sizes at Manta. The company produces a four-pound solid pack, a one-pound tall chunk style pack, a one-half pound sol pack, and a one-half pound grated pack. Bri or oil is added to the pack, depending on the style of the pack and the intended market.

significant amount of tuna is sold in Ecuador. Local sales have tripled since 1960. The cannery employs about 320 people. All are Ecuadorians except the general manager, plant manager, and fleet manager.

While the cannery and fishing operations appear to be contributing significantly to the economy of Manta, problems exist. One problem involves relations between Ecuadorian and foreign fishermen. The friction between fishermen was partly due to the scarcity of fish during the off-season. Since, in 1962, skipjack were not available to the local bait-boat fishery until a month later than in 1961, the Ecuadorians believed that fishing by purse seiners was driving the fish down where they were inaccessible to the local bait boats. By late May 1962 the situation had changed. Only 2 or 3 large purse seiners were in nearby high-seas waters at that time and the catch by local bait boats was excellent.

The fact that skipjack are only seasonally available in local waters causes economic hardship among bait-boat fishermen. Skipjack is the only local species that can be

Ecuador (Contd.):

marketed in quantity at present by the bait boats. The ocean offshore from Manta is reputedly rich in marine life, and a variety of species is taken by the canoe and tuna fleets when there is a market for the catch. It may be possible to can and market species other than tuna. A "blue mackerel" seems to have the greatest potential. It appears likely that the market for low-priced canned fish would be mainly in Ecuador and nearby countries.

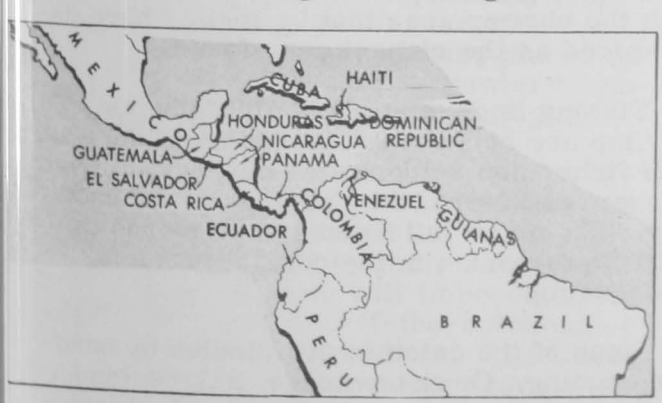
Fish are a popular food in Manta. It has been reported that crowds of people are on hand when boats land, and that afterwards, hundreds of fish are hand-carried to Manta homes.

Note: See Commercial Fisheries Review, Aug. 1962 pp. 25 and 61; June 1961 p. 57.

El Salvador

FISHERIES TRENDS, SECOND QUARTER 1962:

Tuna Resources: Studies by the Inter-American Tropical Tuna Commission and the Food and Agriculture Organization (FAO) indicate a considerable amount of tuna near the Salvadoran coast. The Government of El Salvador was expected to license a vessel to fish yellowfin tuna on an experimental basis. The Ministry of Economy of El Salvador had received five license applications to fish for tuna as of July 1962. Several vessels originally purchased for shrimp fishing may be used for tuna fishing. The Government of El Salvador is encouraging local and foreign investments in freezing and canning facilities.



Spiny Lobster Fishery Promising: Significant catches of spiny lobster were reported during the second quarter of 1962. Lobstermen are seeking means to export their product. (United States Embassy, San Salvador, July 24, 1962.)

Note: See Commercial Fisheries Review, February 1962 p. 64.

Fiji Islands

JAPANESE FISHERIES AGENCY POSTPONES DECISION ON FIJI ISLANDS TUNA BASE:

The Japanese Fisheries Agency is reported to have postponed approval of the application submitted by the South Pacific Ocean Fisheries Cooperative Association to establish a tuna base at Levuka, Fiji Islands, in cooperation with a British fishing and canning company. The Fisheries Agency is said to have taken this action since the Cooperative Association does not possess licensed tuna vessels; consequently, approval of the proposed venture would be meaningless. The Agency is reported to have instructed the Cooperative Association to submit a more detailed report of its business plan, but the Association is withholding its reply to this instruction because it feels that it cannot prepare a detailed plan until such time that the Agency formally clarifies its position regarding the licensing of additional tuna vessels totaling 20,000 gross tons.

The Association had submitted on April 25 of this year its application to establish a tuna base at Levuka. Under the automatic approval clause of the Fisheries Cooperative Association Law, an application is automatically approved if the Fisheries Agency does not act on it within two months of its submission date. Thus, the application submitted by the Cooperative would have been automatically approved on June 24. However, to temporarily halt the application of the clause, the Agency on June 17 applied another provision within the same law which requires applicants to state in clear detail their operational plans. (Suisan Keizai Shimbun, June 28, 1962.)

France

UNITED STATES QUALITY CERTIFICATION OF FRESH OR FROZEN SCALLOPS ACCEPTED:

In response to a Government request, the French market has recently been opened to

France (Contd.):

United States exports of fresh and frozen scallops.

The French Institut Scientifique et Technique des Peches Maritimes, decided in June 1962, to recognize the U.S. Department of the Interior's "Certification of Quality and Condition" for scallops as a certificate of wholesomeness. This was considered sufficient sanitary documentation for the importation into France of United States-produced fresh or frozen scallops for immediate consumption. The phrase, "immediate consumption" is interpreted to preclude any further processing in France from the fresh or frozen condition, such as canning, etc.

Under French regulations such certificates, signed by a recognized authority, must accompany shipments of scallops to France.

Imports of scallops into France are free from quantitative restrictions and import licensing. The import duty is low--9 percent ad valorem on c.i.f. (cost, insurance, and freight) value--and additional import taxes are negligible.

The prospects for the sale of scallops in France are good. Domestic production does not satisfy the demand, particularly for frozen scallops, and there is an active interest in importing them from the United States.

The Certificate of Quality and Condition which must accompany each shipment may be obtained from the Regional Director of the U.S. Bureau of Commercial Fisheries. Applications from the New England area, for example, should be sent to the Regional Office at Gloucester, Mass. (United States Embassy, Paris, June 20, 1962; International Commerce, August 13, 1962.)

Note: The names of French importers of fish and seafood are available in a Commercial Intelligence Division trade list titled Provisions--Importers and Dealers, France, which may be purchased for $1.00 from U. S. Department of Commerce field offices. The relative size of each firm, products handled, and size of sales force are indicated in the listings.

Greece

FREEZER-TRAWLER LANDINGS, JANUARY-JUNE 1962:

In the first half of 1962, freezer-trawler landings in Greece totaled 7,481 tons, an increase of 15.3 percent over the 6,488 tons landed in the same period of the previous year. It had been predicted that landings by the freezer-trawler vessels would reach 8,500 tons in the first half of 1962. Landings did not match expectations because of a prolonged decline in the catch from the Mauretania fishing grounds.

Although freezer-trawler landings increased in Greece in 1962, the increase was not as large as was expected. In June 1962, 6 vessels landed 1,850 metric tons of frozen fish as compared with landings of 1,252 tons by 3 vessels in the previous month. In June 1961, 3 vessels landed 687 tons of frozen fish. (Alieia, July 1962.)

Greenland

SHRIMP INDUSTRY:

Greenland is planning to increase shrimp output, particularly for export markets. In 1961, the shrimp production, supervised and marketed by the Royal Greenland Trading Company (with offices in Copenhagen), amounted to over three million cans, vacuum-packed bags, and jars. An additional 125 tons of frozen shrimp in bulk were exported also. Although much of the shrimp for canning is peeled by hand, shrimp-peeling machines are in use. Machine-peeled shrimp have a considerable sale in the United States, while France prefers a specialty pack of frozen unpeeled shrimp.

From May to November, as the ice barrier of the Arctic Sea withdraws under the Midnight Sun, small shrimp boats leave the towns around Disko Bay on the west coast of Greenland to fish the shrimp area that biologists have determined as the richest ever found.

Fishing is done at about 200 fathoms. The shrimp are red when removed from the water. The fishermen seldom stay out long in these dangerous waters; they return to port each day. The catch is landed and delivered to modern factories in the coastal towns for processing.

Much of the catch is still peeled by hand for canning. On the average, a Greenlander woman can peel about $4\frac{1}{2}$ pounds of cooked shrimp an hour, but in some plants, machines have replaced the hand peelers. The machines

Greenland (Contd.):

can peel about 650 pounds an hour. (The Fishing News, June 15, 1962.)

Note: See Commercial Fisheries Review, July 1962 p. 64.

Iceland

FISHERIES TRENDS, JANUARY-JULY 1962:

Landings: All species of fish landed by Icelandic vessels in the first four months of 1962 totaled 193,399 tons as compared with 185,943 tons in the same period of the previous year. The increase in the herring catch was partly offset by a decline of 6,000 tons in groundfish landings. The decline in groundfish landings was due to a drop in landings by the trawler fleet.

Trawler Fishery: The trawlers had poor catches early in the year and then on March 10 they stopped fishing because of a dispute between the trawler seamen's union and vessel owners over wages and terms. The dispute was settled on July 18, but the trawlers were slow to resume fishing. By August 2, only 9 trawlers were fishing. An additional 4 or 5 trawlers were transporting herring.

Iceland's own trawlers were excluded from certain inshore fishing grounds when Iceland extended her fishing limits to 12 miles. Since then the trawlers have operated at a loss. The Government recently passed a bill that will provide about 60 million kroner (US$1.4 million) to help compensate trawlers for their losses in 1960 and 1961. The money will come partially from the existing fisheries catch guarantee fund, which is financed by export levies placed on the motorboats as well as the trawlers, and the balance (about half) is matched by the Treasury.

Trawler Dispute Settled: Employers and seamen on July 18 approved the wages and terms agreement made by their representatives on July 5. Seamen will improve their earnings from the share-of-the-catch under the terms of the new agreement. The Chairman of the Seamen's Federation described the increase as "20-21 percent, provided that half of the catch is for the domestic market and the other half for the foreign market." Reports of good catches of cod and haddock off Greenland's east coast had exerted pressure for settlement of the dispute.

Even though the trawlers were free to go to sea on July 19, other problems were to delay their sailing. Only part of the fleet had been fitted out at that time. The press reported that trawler officers were negotiating with owners for better wages and terms. Also, the question of what additional government assistance the trawlers may receive had not yet been settled satisfactorily from the owner's viewpoint. The trawler strike was marked by a sharp controversy over the possibility of allowing Icelandic trawlers to conduct more extensive fishing within the 12-mile fishing limits off the Icelandic coast. At a July 5 meeting of the Reykjavik City Council, the Mayor (supported by Independent and Social Democratic Party members) spoke in favor of such trawler relief. The Progressive Party members pointed out that such steps would greatly endanger both the operations and catch of the smaller motor fishing vessels, and might prompt foreign countries to demand similar rights for their trawlers.

Herring Fishery: An excellent winter herring catch off the southwest coast of Iceland was followed by record landings from the summer herring fishery off the north coast. Winter herring landings in the first 4 months of 1962 amounted to 41,080 metric tons, a gain of 52.0 percent over landings of 27,027 tons during the same period in 1961. The summer herring season was delayed this year until June 24 by a dispute between fishermen and vessel owners over division of the proceeds of the catch. But by July 22, the summer herring catch amounted to 114,264 tons, a gain of 6.7 percent over the catch of 107,055 tons by the same date last year. The improvement in herring catches in the last two years was partly due to the use of more efficient equipment by part of the herring fleet. Some vessels added sonar to locate schools of fish, and power gear to haul loaded nets.

North Coast Herring Season: By mid-June 1962 fishing vessel owners and fishermen were still in disagreement over division of the herring catch. Because it was feared the start of the Icelandic north coast herring season might be further delayed, a Provisional Decree was issued by Iceland's President on June 24, making it possible for the fleet of about 240 herring vessels to put out to sea. The vessels moved promptly to the herring runs off the north coast and caught moderate quantities of what was considered good fat fish. Herring had moved close to shore and even into the fjords this summer. By July 1, a total of 14,518 metric tons was

Iceland (Contd.):

caught as compared with 21,307 tons by the same date the previous year when there was no delay in the start of the fishery. A total of 65,612 metric tons of herring had been landed by July 15, 1962, as compared with landings of 77,424 tons by the same date last year. The catch in 1961 was the largest since 1944. This year's catch consists of good quality herring, and salting proceeded normally.

The Provisional Decree was hailed by the Social Democratic and Independence Party press, but was denounced by the Central Board of IFL as "violation by State power of the basic rights of labor unions." Timmin, a newspaper, reflecting the views of the Progressive Party, charged that the Government was acting too late.

Since the Icelandic State Mediator believed that further negotiations between both parties involved in "share-of-catch" dispute was futile and since no agreement was reached before July 10, 1962, an Arbitration Board (with a majority of its members chosen by the Supreme Court) was appointed to decide the question.

Herring Dispute Settled: The Arbitration Board decided the herring dispute. Crews of boats equipped with Asdic finders and power haulage systems were awarded 34.5 to 35.5 percent of the value of the catch depending on the size of boat. The old contract, giving 40 percent of the catch value to crew members, will remain in force for boats without such equipment (about one-third of the fleet). The minimum monthly wage, payable in case of a poor catch was raised from 5,365 kroner (US$125) to 6,610 kroner (US$154). Each seaman gets a free 200,000 kroner (US$4,657) life insurance policy, and 1 percent of the value of the catch goes into a medical aid fund for seamen.

Salted Herring: Herring salting began on July 4, with the fat content fixed at about 20 percent. In 1961, salting started on June 19. A total of 8,255 tons had been salted by July 15, 1962. Prices received for salted herring in June were higher than in 1961, and the United States figured substantially in sales for the first time in a number of years. Negotiations were continued with the Soviet Union, which bought 40,000 more barrels than the 120,000 barrels of salted herring called for in the trade protocol during 1961. The Soviets wished to decrease correspondingly the amount purchased in 1962. As of July 27 the Soviet Union had not renewed its contract to buy salted herring from Iceland.

The Herring Production Board concluded some contracts for the prospective north sho herring catch as follows: for salted herring 165,000 barrels to Sweden and Finland, and 11,000 barrels to the United States.

Herring Meal: Prices for herring meal a 16 to 18 shillings ($2.248 to $2.529) per unit of protein were fairly good, but herring oil prices were not considered good. By July 15 a total of 55,826 tons of herring had been sol to reduction plants. About 92,761 tons of the herring catch to July 22, 1962, was used for meal and oil as compared to 62,727 tons use for meal and oil by the same date last year. The export price for herring oil in July 1962 was £ 37.1 per metric ton (4.7 U.S. cents pe pound). In July 1961, export prices for Iceland herring oil ranged as high as £70.0 per metric ton (8.9 U.S. cents per pound). The decline in herring oil prices was due to severe competition from Peruvian anchovy oil, United States menhaden oil, and vegetable oil Contracts made by the Herring Production Board for herring meal and oil amounted to about 148 million kroner ($3.4 million)--about 14,000 metric tons of meal and 11,000 tons of oil.

Production and Marketing: The value of frozen fillets exported during the first five months of 1962 was 55 percent greater than in the same period of 1961 and accounted for 30 percent of the value of Iceland's total exports. Early in 1962 the U.S.S.R. contracted to buy 13,000 metric tons of frozen cod and 5,000 tons of frozen perch during 1962, for £145 per ton (18.4 U.S. cents per pound). Iceland sold frozen fish to the Soviet Union in 1961 for £128 per ton (16.3 U.S. cents per pound). Although the fish could probably have been sold to the Western countries, the contracts were made at a time when the Freezing Plants Corporation was having difficulty in making prompt payments to its members from sales in the United States. Later the Freezing Plants Corporation and Samband, the other major frozen fish exporter, received working credits of US$4 million from two New York City banks. The credits enabled them to make prompt payments for fish sold in the United States. The Freezing Plants Corporation has reorganized its sales organization in order to increase its sales of frozen fish to the Western countries. A new frozen fish

Iceland (Contd.):

exporter, Atlantor Ltd., entered the frozen fish export business with five freezing plants at the beginning of 1962. It has been successful in selling all its frozen fish to Great Britain and the United States and in making prompt payments to its member plants.

In order to take advantage of the vast fish market developing in Africa, the Ministry of Foreign Affairs is planning to send a commercial representative to Nigeria. This area has long provided Iceland with a market for stockfish. The spread of refrigeration equipment in the more developed countries of Africa has caused this area to be considered as a potential market for frozen fish exports. Iceland would welcome an additional market for its fish, especially if it does not reach a favorable arrangement with the European Common Market.

Whaling: Iceland was enjoying a record whaling catch this season. On June 27, the Icelandic State Radio announced that 137 whales had been caught compared with 87 by the same time in 1961. From May 20, the opening of the season, until July 26, a total of 269 whales were caught as compared to 65 for the same period in 1961. But the price of whale oil slipped to £45 per long ton (6.6 U.S. cents per pound) in July 1962, down 38.5 percent from the price in 1961 of £73.1 per ton (9.1 U.S. cents per pound).

Soviet Research Vessels: Two Soviet oceanographic research vessels arrived in Reykjavik on July 13, 1962. The newspaper Morgunbladid said that the Foreign Office had allowed the vessels to enter to take on water and provisons. (United States Embassy, Reykjavik, July 13, 20, 27, and August 3, 1962.)

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EXPORTS OF FISHERY PRODUCTS, JANUARY-MAY 1962:

During January-May 1962, there was a considerable increase in exports of frozen herring, frozen fish fillets, salted herring, herring oil, and herring meal as compared with the same period in 1961, according to the Statistical Bureau of Iceland's Statistical Bulletin, June 1962. Exports of fish meal and ocean perch meal showed a considerable increase in the first five months of 1962.

Icelandic Fishery Exports, January-May 1962 with Comparisons

Product	Jan.-May 1962			Jan.-May 1961		
	Qty.	Value f.o.b.		Qty.	Value f.o.b.	
	Metric Tons	1,000 Kr.	US$ 1,000	Metric Tons	1,000 Kr.	US$ 1,000
Salted fish, dried	1,215	24,053	558	2,321	44,205	1,158
Salted fish, uncured	14,043	172,356	3,999	11,364	113,954	2,986
Wings, salted	735	8,481	197	1,203	11,108	291
Stockfish	4,213	108,576	2,519	5,093	117,611	3,081
Herring on ice	4,828	16,895	392	3,754	9,630	252
Other fish on ice	12,864	58,339	1,353	13,984	58,065	1,521
Herring, frozen	11,680	60,942	1,414	7,926	39,208	1,027
Other frozen fish, whole	857	11,027	256	672	6,995	183
Frozen fish fillets	26,611	456,084	10,581	17,127	259,981	6,812
Shrimp and lobster, frozen	82	7,436	173	179	12,498	327
Roes, frozen	592	11,249	261	472	6,059	159
Canned fish	87	5,797	134	110	7,127	187
Cod-liver oil	1,813	14,499	336	1,873	14,975	392
Lumpfish roes, salted	246	3,686	86	332	5,518	145
Other roes for food, salted	2,709	37,428	868	2,321	23,403	613
Roes for bait, salted	304	2,064	48	194	1,327	35
Herring, salted	16,609	149,427	3,467	7,668	57,912	1,517
Herring oil	17,823	76,865	1,783	4,293	22,944	601
Ocean perch oil	15	59	1	196	1,109	29
Whale oil	388	2,558	59	-	-	-
Fish meal	12,641	78,305	1,817	20,765	79,058	2,071
Herring meal	18,616	116,326	2,699	9,081	37,962	995
Ocean perch meal	34	204	5	1,559	5,362	140
Wastes of fish, frozen	1,818	4,505	105	3,947	7,610	199
Liver meal	170	1,119	26	175	936	25
Lobster and shrimp meal	-	-	-	194	376	10
Whale meal	302	1,567	36	305	1,025	27
Whale meat, frozen	151	1,097	25	292	1,965	51

Note: Values converted at rate of 1 kronur equals 2.32 U. S. cents in 1962 and 2.62 U. S. cents in 1961.

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ICELANDIC PRODUCTION OF PROCESSED FISHERY PRODUCTS AND BYPRODUCTS, 1960-61:

Product	1961			1960		
	Qty.	Value		Qty.	Value	
	1,000 Metric Tons	Million Kronur	US$ 1,000	1,000 Metric Tons	Million Kronur	US$ 1,000
Frozen:						
Fillets	48.5	802.9	19,751	58.8	962.6	25,220
Fish waste	9.5	18.2	448	10.8	19.3	506
Herring	18.6	97.7	2,404	8.8	52.4	1,373
Fish roe	0.7	10.2	251	0.7	9.4	246
Shrimp and lobster	0.6	54.2	1,333	0.4	40.6	1,064
Total Frozen	77.9	983.2	24,187	79.5	1,084.3	28,409
Cured:						
Salt fish, dried	2.5	51.3	1,262	5.5	109.9	2,879
Salt fish, wet	24.6	273.2	6,721	22.7	232.0	6,078
Stockfish	8.1	209.9	5,163	9.4	241.7	6,333
Herring, salted	49.4	499.9	12,298	25.7	225.3	5,903
Fish roe	4.4	47.5	1,168	0.4	3.5	92
Other	1.8	15.6	384	0.4	2.7	71
Total Cured	90.8	1,097.4	26,996	64.1	815.1	21,356
Canned:						
Fish	0.4	12.8	315	0.5	18.4	482
Shrimp	1/	4.8	118	-	5.7	149
Total Canned	0.4	17.6	433	0.5	24.1	631
Byproducts:						
Meal:						
Herring	43.6	244.1	6,005	19.5	85.3	2,235
Ocean perch	4.6	22.1	544	10.1	37.3	977
Lobster	0.2	0.5	12	0.2	0.1	2
Liver	0.3	2.2	54	0.4	2.7	71
Other	19.6	81.2	1,997	23.4	91.9	2,408
Oil:						
Ocean perch	1.2	6.2	153	2.3	13.5	354
Herring	38.1	190.1	4,676	18.2	106.9	2,801
Cod-liver	6.9	50.5	1,242	10.5	71.0	1,860
Solubles (50% solids)	2.9	4.9	121	1.2	2.3	60
Total Byproducts	117.4	601.8	14,804	85.8	411.0	10,768
Miscellaneous:						
Fish landed abroad on ice	39.9	204.6	5,033	29.1	127.1	3,330
Fresh-water fish	6.3	35.4	871	6.7	48.9	1,281
Home consumption	17.3	65.7	1,616	17.0	63.4	1,661
Trimmings	0.2	1.5	37	-	-	-
Total Misc.	63.7	307.2	7,557	52.8	239.4	6,272
Grand Total	2/350.2	3,007.2	73,977	282.7	2,573.9	67,436

1/Includes 57 tons of shrimp in 1961 and 60 tons in 1960.
2/Does not include whale products as follows: meat 1,534 tons; oil 2,564 tons; meal 1,604 tons; and other 573 tons.
Note: Values converted at rate of 1 kronur equals 2.48 U. S. cents in 1961, and 2.62 U. S. cents in 1960.

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Iceland (Contd.):

FISHERY LANDINGS BY PRINCIPAL SPECIES, JANUARY-APRIL 1962:

Species	January-April	
	1962	1961
	(Metric Tons)1/	
Cod	115,009	120,943
Haddock	13,436	14,057
Saithe	5,020	3,276
Ling	3,755	2,743
Wolffish (catfish)	7,142	7,328
Cusk	3,285	3,129
Ocean perch	2,585	5,265
Halibut	450	478
Herring	41,080	27,028
Shrimp	309	430
Other	1,328	1,266
Total	193,399	185,943

1/Except for herring which are landed round, all fish are drawn weight.

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UTILIZATION OF FISHERY LANDINGS JANUARY-APRIL 1962:

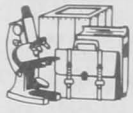
How Utilized	January-April	
	1962	1961
	(Metric Tons)	
Herring1/ for:		
Oil and meal	22,862	11,089
Freezing	9,592	6,758
Salting	3,182	6,038
Fresh on ice	5,375	3,143
Canning	69	-
Groundfish2/ for:		
Fresh on ice landed abroad	12,278	10,617
Freezing and filleting	65,386	66,203
Salting	47,122	45,480
Stockfish (dried unsalted)	22,969	32,385
Home consumption	3,427	2,690
Oil and meal	828	1,110
Shrimp for:		
Freezing	230	304
Canning	79	126
Total production	193,399	185,943

1/Whole fish.
2/Drawn fish.

Indonesia

SOVIET TECHNICIANS PLAN CONSTRUCTION OF OCEANOGRAPHIC SCHOOL:

Soviet technicians this summer arrived in Ambon, Indonesia, to begin planning for construction of an oceanographic school. Housing for Russian and Indonesian workers is being built. Construction materials and equipment to build the school was expected to arrive in September. (United States Consulate Surabaya, July 5, 1962.)



Iran

STATUS OF FISHING INDUSTRY:

Iran's fishing industry is one of that country's minor industries, employing some 12,000 persons. It is to a great extent carried on by independent fishermen and fishing enterprises who use primitive fishing equipment and techniques. Iran's annual fish and shellfish catch is estimated at from 20,000 to 25,000 metric tons. The most important fish species caught in the Caspian Sea are sturgeon, white salmon, white fish, carp, bream, pike, catfish, and herring. Species caught in the Persian Gulf include sardines, tuna, bream, snappers, mackerel, and shrimp.

Iran is a major source of the world's caviar supply. Its caviar production during fiscal year 1957/58 (March 21, 1957, through March 20, 1958) was 162.5 metric tons as compared with 126.5 tons the previous year. Iran's exports of "caviar and caviar-like" products in 1958-59 totaled 159 tons valued at 160.9 million rials (US$2.1 million), including U.S.S.R. 55 tons; France 39; United States 36; and Germany, 11 tons.

The most important fisheries enterprise in Iran is the Iranian Fisheries Company (Sherkat Sahami Shilat Iran), a Government agency. It was established in 1952 after the termination of the Iran-U. S. S. R. Fishing Company and has its headquarters at Tehran. Its main installations are at Bandar Pahlevi, a port city on the Caspian Sea. Until 1961, its authority was limited to the Caspian Sea and northern rivers fisheries, but in 1961, the Iranian Fisheries Company was granted jurisdiction over the Persian Gulf Fisheries.

The exploitation of fishery resources in the Persian Gulf began about 1955 with the organization of a joint venture between the Iranian Government and a Japanese company. That arrangement was subsequently terminated. As of May 1962, the Iranian Fisheries Company was seeking to establish a joint fisheries operation in the Persian Gulf with a foreign firm.

The shrimp fishery in the Gulf of Persia was substantially developed by a joint United States-Iranian company in 1958. (Economic Reports Part I, No. 62-48, U. S. Dept. of Commerce, May 1962).

Note: Value converted at rate of 75.75 rials equal US$1.00.

Italy

FROZEN TUNA EXPORTED TO ITALY DIRECTLY FROM JAPAN:

A Japanese fishing firm is reported to have concluded a contract to export 148 metric tons of frozen yellowfin tuna to Italy from Japan proper at a c.i.f. price of $380 per metric ton. Reportedly, this provides a very small margin of profit since about $87 would have to be deducted for transportation expenses and brokerage fees.

In February this year, another Japanese fishing company exported a small quantity of frozen tuna from Japan proper to Europe. But the recent contract to export frozen yellowfin tuna to Italy is the first case of frozen tuna being exported from Japan proper to any European or African country in fiscal year 1962 (April 1962-March 1963). A third Japanese firm is reported to be negotiating a contract to export around 100 metric tons of frozen tuna to Italy, which it hoped to conclude by the end of July.

Practically all frozen tuna and tuna-like fish exported by Japan to Europe and Africa have been Atlantic-caught fish transshipped from Atlantic Ocean tuna bases. Frozen tuna were not exported from Japan proper to Europe and Africa in the past because of the high cost of transportation and also because of the high demand for the product in the United States, to the extent that the Japanese exporters were even transshipping much of the Atlantic-caught frozen tuna to the United States. However, exports of frozen tuna to the United States have recently begun to decline, whereas demand in Italy is firm. Therefore, it appears that frozen tuna exports from Japan proper to Europe and North Africa may likely increase hereafter, particularly since tuna catches in the Atlantic Ocean are reported to be declining.

Exports of frozen tuna to Italy during the first three months of the current fiscal year reportedly total approximately 6,000 metric tons. In fiscal year 1961, a total of 30,000 metric tons is reported to have been exported to Italy. (Suisan Keizai Shimbun, July 22, 1962.)

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INCREASE IN FROZEN TUNA IMPORT QUOTA REQUESTED:

According to reports received by the Japanese frozen tuna industry, the Italian Government has agreed to seek an increase of 15,000 metric tons in the duty-free import quota for frozen tuna, as requested by the Italian tuna packers. It plans to submit a request to the Common Market. This increase, if granted, would raise Italy's total duty-free import quota of frozen tuna from 25,000 metric tons to 40,000 metric tons.

The present 25,000-ton frozen tuna import quota for Italy was originally believed to have been established under pressure from France and other Common Market nations, but recent reports indicate that pressure from within Italy, particularly from Italian beef producers, had also played an important part in setting that quota. Therefore, if the Italian Government decides to increase the present tuna import quota, it is believed that its decision may likely be accepted by the Secretariat of the Common Market.

Japan annually exports between 25,000 to 30,000 metric tons of frozen tuna to Italy. Under the present 25,000-ton import quota for Italy set by the Common Market, Japanese frozen tuna exports to Italy are limited to 14,000 metric tons. Imports (for canning) exceeding that amount are dutiable at 7.5 percent ad valorem. Establishment of a 40,000-ton quota would mean that Japanese tuna producers would be able to increase their duty-free exports to Italy. (Suisan Tsushin, July 24; Suisan Keizai Shimbun, April 10, 1962.)

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FISHERY COOPERATIVES HAVE INFLUENTIAL ROLE IN ITALIAN FISHING INDUSTRY:

There are about 450 fishery cooperatives in Italy as compared with some 100 in the United States. The membership in the Italian organizations is about 120,000 or almost as many as all full-time and part-time fishermen in the United States.

Italian fishery cooperatives have functions beyond those of United States cooperatives. They manage wholesale fish markets in some areas, and even regulate fishing in territorial waters over which the government has assigned them jurisdiction. Italian fishermen's cooperatives are also involved in governmental assistance to fishermen in the form of family allowances, insurance benefits, and medical assistance.

Japan

CANNED TUNA IN BRINE SALES TO UNITED STATES:

The eighth sale to the United States of canned tuna in brine was approved at a July 20, 1962, meeting of the Tuna Sales Standing Committee, Japan Canned Foods Exporters Association. The Committee approved the sale of 250,000 cases, consisting of both white meat and light meat tuna, offered by the Canned Tuna Joint Sales Company which represents the packers. The Committee also approved a 20 cent per case increase for white meat tuna. Deliveries are to be completed by September 23, 1962.

Sale of Canned Tuna in Brine to U.S.

Species	No. Cases 48 No. ½, 7-oz. Cans	Price Per Case F.o.b. Japan
Tuna:		
White meat	150,000	US$10.40
Light meat	100,000	7.80
Total	250,000	

Japanese export sales of canned tuna in brine up to and including the eighth sale total 1,743,000 cases, consisting of 968,000 cases of white meat tuna and 775,000 cases of light meat tuna.

The joint Sales Company reported as of July 1962 stocks of 500,000 cases each of canned white meat tuna and canned light meat tuna, a total of one million cases. (Suisan Tsushin, July 21, 1962.)

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EXPORTS TO U. S. OF CANNED TUNA IN BRINE, 1961:

Japan's exports to the United States of canned tuna in brine during January-December 1961 amounted to 2,218,857 standard cases (48 7-oz. cans), a 9-percent increase from the previous year's exports of 2,035,195 cases. The 1961 exports were up 74.3 percent for canned white meat tuna, but were down 51.8 percent for light meat, as compared with the previous year.

Japanese Export to the U.S. of Canned Tuna in Brine, 1956-61

Year	White Meat	Light Meat	Total
	. . (Standard Case - 48 7-oz. Cans) . .		
1961	1,711,607	507,250	2,218,857
1960	981,761	1,053,434	2,035,195
1959	1,004,824	1,058,422	2,063,246
1958	1,312,265	799,914	2,112,179
1957	1,166,111	563,748	1,876,013
1956	1,010,378	677,434	1,677,812

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CANNERS CONSIDER INCREASE OF CANNED WHITE MEAT TUNA EXPORT PRICES:

The Japan Export Tuna Packers Association was scheduled to hold a directors meeting on July 19, 1962, with discussions likely to center around the July sales of canned tuna. The discussion was to be concerned particularly with the problem of raising the export price of white meat tuna in brine. The early July 1962 price of white meat tuna was $10.2 per standard case, f.o.b. Japan, but some of the canners were expected to urge a price increase of $1 per case.

Reportedly, the price increase is being sought since the packers have had to pay high ex-vessel prices for summer albacore this year, with prices averaging 160 yen per kilogram (US$403 a short ton), and also because of the low stocks of canned white meat tuna held on consignment by the Canned Tuna Sales Company. In addition, large-scale production of canned white meat tuna is not expected until the winter albacore season arrives. (Suisan Tsushin, July 14, 1962.)

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SHIZUOKA PACKERS CAN SKIPJACK TUNA FOR U. S.:

Shizuoka Prefecture packers in July were concentrating on packing skipjack tuna for export to the United States. Some of them had been canning tuna in oil, using small skipjack costing around US$162 per ton. Judging from prices received for light meat (skipjack) in oil to Europe, it was believed it would be more profitable if less than $125 per ton was paid for small skipjack. Production of tuna in oil was expected to be stepped up after the end of July. (Suisan Tsushin, July 5, 1962.)

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SKIPJACK TUNA EX-VESSEL PRICES MAKE CANNING UNPROFITABLE:

Heavy landings of very small skipjack tuna continued in late July 1962. Because of the small size of the tuna, the ex-vessel price of about 55 yen a kilogram ($152 a metric ton) in Sanriku District barely allowed tuna canners to recover their packing costs. The higher ex-vessel skipjack price of about 60 yen a kilogram ($166 a metric ton) in Shizuoka Prefecture was also described as unsatisfactory by canners.

Packers in the Sanriku District were concentrating on packing tuna in oil for export to

Japan (Contd.):

Europe because they had almost finished their tuna pack for export to the United States. Japanese periodical, August 3, 1962.)

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ALBACORE AND YELLOWFIN TUNA PRICES FOR EXPORTS TO UNITED STATES:

Yellowfin tuna fishing in the Eastern Pacific as of July 1962 was still light, reports the Japanese periodical Suisan Keizai Shimbun of July 16, 1962. Also, the United States landings of albacore tuna in the 1961 season did not meet the demand by United States canners. The periodical explains that accelerated buying of frozen tuna in Japan by United States packers during the last half of 1961 caused Japanese export prices for frozen tuna to rise.

Japanese Average f.o.b. Prices for Licensed Frozen Tuna Exports to United States by Months

Month	Albacore (Round)			Yellowfin (Gilled and Gutted)		
	1962	1961	1960	1962	1961	1960
	(US$/Short Ton)					
January	379	278	1/	330	248	1/
February	360	281	1/	322	259	1/
March	362	281	1/	340	259	1/
April	365	297	1/	340	260	1/
May	374	300	1/	348	264	1/
June	1/	315	296	2/350	266	257
July	1/	322	309	1/	265	259
August	1/	340	312	1/	271	246
September	-	356	283	-	288	239
October	-	376	277	-	312	240
November	-	389	276	-	318	236
December	-	389	272	-	326	244

1/ Not available.
2/ June 15.

According to the average price of licensed Japanese exports of frozen tuna to the United States, the price of round albacore rose steadily since the fall of 1961. In November and December the price advanced to $389 a short ton f.o.b., which was $100 higher than at the beginning of 1961. At the start of 1962, prices began to decline and in February the albacore price dropped to $360 a ton. Later, there was a gradual upward price trend and in May the price had climbed to an average of $374 a ton.

In contrast, prices for gilled and gutted yellowfin tuna had been advancing since last year and in June 1962 were at an unprecedented high average $350 a short ton. As compared with albacore, prices for yellowfin tuna through July this year remained firm.

Japan's export prices of frozen tuna to the United States are generally low in February and March each year due to light demand from the United States, and those months are usually referred to as a "weak period." In the case of yellowfin, however, such a trend was completely reversed this year and the price remained at a high level thoughout the so-called "weak period."

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FROZEN TUNA APPROVED FOR EXPORT TO UNITED STATES:

The following quantities of frozen tuna, by species, were approved for export to the United States from Japan proper in Fiscal Year 1961 (April 1961-March 1962):

Product	Quantity
	Short Tons
Albacore, round	27,733
Albacore, other	1,267
Yellowfin, gilled and gutted	29,060
Yellowfin, other	8,366
Total	66,426

About 95 percent of the 66,426 tons was earmarked for some 12 principal United States buyers. (Suisan Tsushin, July 19, 1962.)

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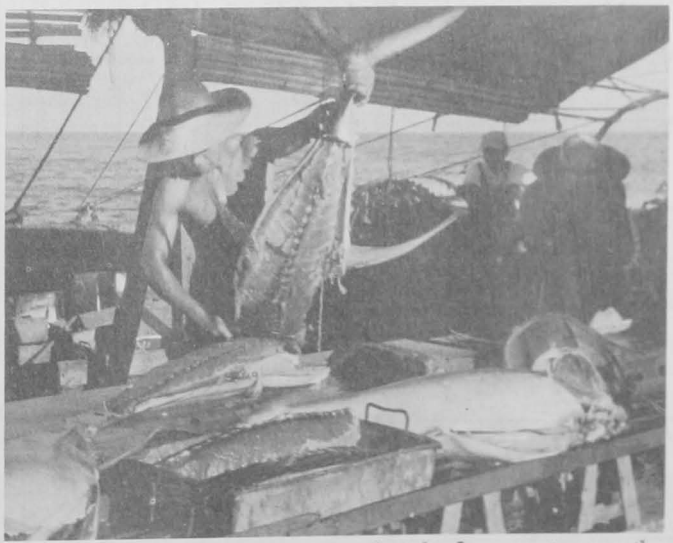
TUNA AND SWORDFISH EXPORTS, CALENDAR YEARS 1956-60:

Japan's total exports of frozen and fresh (mostly frozen) tuna and broadbill swordfish (direct shipments and transshipments) during calendar year 1960 amounted to 124,741 actual tons (equal 125,538 metric tons), valued at $34.2 million. Japanese tuna exports that



A worker filleting a yellowfin tuna aboard a Japanese tuna mothership.

Japan (Contd.):

Japanese Frozen Tuna and Broadbill Swordfish Exports, 1956-1960

Species	Year	Quantity		Total Value
		Actual 1/ Tons	Metric 2/ Tons	Million US$
Direct Shipments:				
Albacore	1960	25,185	24,187	7.7
	1959	24,760	24,761	8.5
	1958	22,127	20,760	7.0
	1957	34,966	36,188	10.6
	1956	22,012	21,043	8.2
Yellowfin	1960	31,054	31,609	8.4
	1959	34,999	35,743	9.0
	1958	46,620	45,709	12.4
	1957	30,906	33,420	7.7
	1956	32,501	31,078	7.3
Skipjack	1960	138	125	4/
	1959	1,204	1,092	0.2
	1958	2,711	2,475	0.5
	1957	21	23	4/
	1956	3/	3/	4/
Big-eyed	1960	90	88	4/
	1959	1,275	1,467	0.4
	1958	3,163	3,289	0.8
	1957	661	698	0.2
	1956	570	554	0.1
Other Tuna	1960	276	293	0.1
	1959	-	-	-
	1958	116	109	4/
	1957	254	244	0.1
	1956	322	293	0.1
Total Tuna	1960	56,743	56,302	16.2
	1959	62,238	63,063	18.1
	1958	74,737	72,342	20.7
	1957	66,808	70,573	18.6
	1956	55,406	52,969	15.7
Broadbill Swordfish	1960	5,168	6,713	3.3
	1959	4,797	6,234	2.5
	1958	5,075	6,585	3.3
	1957	4,132	6,263	2.8
	1956	6,041	8,417	3.7
Total Direct Shipments	1960	61,911	63,015	19.5
	1959	67,035	69,297	20.6
	1958	79,812	78,927	24.0
	1957	70,940	76,836	21.4
	1956	61,447	61,386	19.4
Transshipments:				
Albacore:	1960	8,017	7,273	2.2
	1959	1,509	1,369	0.5
	1958	383	347	0.1
Yellowfin:	1960	14,025	14,137	3.2
	1959	14,644	14,764	3.4
	1958	5,091	5,142	1.2
Tuna (to Europe)	1960	40,788	41,113	9.3
	1959	22,499	22,678	5.1
	1958	10,846	10,942	2.4
	1957	11,483	11,562	2.6
Total Transshipments	1960	62,830	62,523	14.7
	1959	38,655	38,811	9.0
	1958	16,320	16,431	3.7
	1957	11,483	11,562	2.6
Grand Totals	1960	124,741	125,538	34.2
	1959	105,690	108,108	29.6
	1958	96,132	95,358	27.7
	1957	82,423	88,398	24.0
	1956	61,447	61,386	19.4

1/Includes short tons and metric tons of actual shipment of products.
2/Converted to round fish in metric tons.
3/Less than 5 tons.
4/Less than US$1,000.

year totaled 118,825 metric tons valued at $30.9 million (direct shipments 56,302 tons valued at $16.2 million, and transshipments 62,523 tons valued at $14.7 million).

The 1960 Japanese tuna exports were up 16.6 percent from the previous year and the value increased 14 percent. Most of the increase was in Japan's transshipments, which were up 61 percent in 1960 as compared with 1959. The larger proportion of the transshipments were to Europe.

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EX-VESSEL TUNA PRICES IN TOKYO:

The following ex-vessel prices were paid on July 13, 1962, for 241 metric tons of frozen tuna and tuna-like fish landed in Tokyo by the Oasa Maru No. 8.

Product	Price	
	Yen/Kg.	$/Short Ton
Yellowfin (round):		
Special lge. (over 120 lbs.) . .	88.0	222
Large (100-120 lbs.)	115.7	292
Medium (80-100 lbs.)	127.4	321
Small (20-80 lbs.)	128.4	324
Fillets:		
Yellowfin	115.7	292
Big-eyed	100.2	253

The Oasa Maru No. 8 operated in the eastern Pacific Ocean in the vicinity of 100° W. longitude between 3° N. and 3° S. latitude. (Suisan Keizai Shimbun, July 15, 1962.)

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FROZEN TUNA EX-VESSEL PRICES AT TOKYO, AUGUST 10:

The following ex-vessel prices were paid on August 10, 1962, for about 500 metric tons of frozen tuna and spearfish landed at Tokyo.

Frozen tuna at Tokyo Wholesale Fish Market.

Japan (Contd.):

by three Japanese tuna long-line vessels, reports the August 12, 1962, issue of the Japanese periodical Suisan Keizai Shimbun.

Frozen Tuna Ex-Vessel Prices at Tokyo, August 10

Product	Price	
	Yen/kg.	$/Short Ton
Yellowfin (gilled & gutted):		
Special lge. (over 120 lbs.)	90	227
Large (100-120 lbs.)	100-120	252-302
Medium (80-100 lbs.)	110-120	277-302
Small (20-80 lbs.)	115-120	290-302
Albacore (round)	138	348
Fillets:		
Yellowfin	115	290
Big-eyed	112-115	282-290

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SKIPJACK TUNA LANDINGS AT YAIZU:

Skipjack tuna fishing in inshore waters off Japan as of early July 1962 was good. Landings exceeding 300-400 metric tons were reported daily at Yaizu (Japan's most important tuna port). Early in July, this year's highest landings of 585 tons of skipjack were reported and the market had a liberal supply of that species.

The fishing area was from Zenisu Bank to Miyakejima Island, near enough to the coast for the fishermen to make a trip in two days with a catch of 20-30 tons a day. This type of fishing was expected to last until mid-July.

Landings of skipjack at Yaizu from April through the latter part of June totaled 12,173 tons worth US$2.6 million ex-vessel. At the same time last year, 1,935 tons (valued ex-vessel at $175,799) more skipjack were landed. Landings at the beginning of June were up, with schools near the shore. By the latter half of June, 6,234 tons, valued at 1.2 million, were landed (3,637 tons worth 1 8,475 were landed at the same time last year). The fishing was so good that some 30 skipjack vessels came into port every day with full loads. (Japanese periodical, July 7, 2.)

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YAIZU FISHERY LANDINGS, JANUARY-JUNE 1962:

A total of 72,988 metric tons of fish valued at US$20.2 million was landed at Yaizu (leading Japanese tuna fishing port) in the first half of this year. This was 159 tons and $1.3 million more than in the same period of 1961.

Landings in June were 4,970 tons (value $1,570,839) of tuna other than skipjack and 9,498 tons ($1,807,819) of skipjack. The port's total June landings were 17,057 tons, valued at $4.2 million. June 1962 landings surpassed the record for the same month last year by 2 percent in quantity and 3 percent in value. Skipjack landings in June 1961 were only 4,894 tons, valued at $1.1 million. While skipjack landings this June were so much more than last year, albacore tuna landings were not even one-third of last year's landings.

Table 1 - Yaizu Fishery Landings, Principal Species, January-June 1962 with Comparisons

Species	Quantity		Value	
	1962	1961	1962	1961
	(Metric Tons)		..(US$1,000)..	
Albacore tuna	10,266	14,009	4,018	4,397
Skipjack tuna	16,118	12,653	3,367	2,907
Other tuna	34,166	34,753	11,352	10,061
Mackerel	8,488	7,806	791	945
Others	3,950	3,608	671	607
Total	72,988	72,829	20,199	18,917

Table 2 - Summer Albacore Tuna Landings at Japanese Port of Yaizu, March-June 1962 with Comparisons

Month	1962	1961
	(Metric Tons)	
June	1,576	5,253
May	2,758	3,512
April	1,269	1,215
March	1,801	1,266

Usually summer albacore landings keep the Yaizu fish market busy from the beginning through the middle part of summer. Landings usually taper off in mid-July or the beginning of August at the latest. This year the season ended about mid-July, with landings light throughout the season. Each year the peak of the season is in June and landings continue well into the beginning of July. Things were different this season. In the beginning of July, landings amounted to only a few tons a day up to the 5th of the month. In June, total albacore landings were 1,576 tons, while last year when fishing was considered only fair, 5,213 tons were landed. There has been no record of landings of less than 2,000 tons in any June in past years. Records of the past 7 years show the following landings of albacore tuna at Yaizu: 5,200 tons in 1961, 5,800 tons in 1960, 2,200 tons in 1959, 5,500 tons in 1958, 9,300 tons in 1957, 7,200 tons in 1956, and 2,400 tons in 1955. While 200 or 300 tons of albacore are landed daily during the peak of the season in June, this year good skipjack fishing was found in inshore waters and around the Bonin Islands at the end of May and fishing vessels normally fishing albacore concentrated on skipjack. This resulted in unprecedented light landings of summer albacore.

Catch of albacore was normal March through April, but in May light landings became conspicuous. In June, summer albacore fishing almost ended affected by good skipjack fishing.

Oceanic conditions too were not exactly suitable for albacore fishing, with the boundary of the Black and Kurile Currents less definitive than usual. (Suisan Keizai Shimbun, July 14 and 16, 1962.)

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TUNA FISHING CONDITIONS OFF HOME ISLAND, EARLY JULY 1962:

As of July 10, 1962, fishing for skipjack tuna in Japanese waters was reported good off northeastern Japan about 120-140 nautical miles to the east and southeast of Kinkazan, Miyagi Prefecture. Several vessels were reported to have caught from 30-40 metric tons a day. Off central Japan, skipjack fish-

Japan (Contd.):

ing slowed down, although fishing was reported still fair off Cape Omaezaki, Shizuoka Prefecture.

Landings of skipjack at Yaizu July 1-10 totaled 3,260 metric tons. Ex-vessel prices firmed up somewhat during the month, with a high of 145 yen per kilogram (US$365 a short ton) and low of 46 yen per kilogram ($116 a short ton) being paid for 383 metric tons landed on July 10. On July 9 a high of 135 yen per kilogram ($340 a short ton) and low of 42 yen per kilogram ($106 a short ton) were paid for 685 metric tons of skipjack landed on that day. Compared to those prices, in late June skipjack sold for a high of 120-125 yen per kilogram ($302-315 a short ton).

According to data published by the Fisheries Agency, a near record 9,498 metric tons of skipjack were landed at Yaizu for the month of June. However, for the same month skipjack landings at the five principal ports in Miyagi Prefecture in northeastern Japan (Kesennuma, Shiogama, Ishinomaki, Onagawa, and Watanoha) totaled 15,590 metric tons, or 4,268 metric tons less than in June 1961, according to press reports. With the shift in skipjack fishing to the waters off Miyagi Prefecture, early July landings of skipjack at the five ports were reported to have picked up considerably.

Albacore fishing was still very poor and incidental catches of about 100 albacore a day were reported by the pole-and-line skipjack fleet. The few albacore that were landed at Yaizu brought ex-vessel prices ranging from 150 to 165 yen per kilogram ($378-416 a short ton).

Landings of skipjack and albacore tuna for the five-year period of 1958 to 1962 April-June are shown in tables 1 and 2. (Suisan Keizai Shimbun, July 13, 1962, and other sources.)

Table 1 - Skipjack Tuna Landings at Yaizu, April-June 1958-62

Year	April	May	June	Total
	(Metric Tons)			
1962	997	4,971	9,498	15,466
1961	1,953	4,647	5,894	12,494
1960	2,000	3,258	3,241	8,499
1959	3,352	8,465	10,400	22,217
1958	2,437	6,362	4,143	12,942

Table 2 - Albacore Tuna Landings at Yaizu, April-June 1958-62

Year	April	May	June	Total
	(Metric Tons)			
1962	1,271	2,738	1,577	5,586
1961	1,215	3,512	5,253	9,980
1960	911	4,516	5,802	11,229
1959	428	791	2,184	3,403
1958	1,228	2,361	5,478	9,067

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TUNA QUOTAS INCREASED FOR MOTHERSHIPS AND CERTAIN OVERSEAS BASES:

Increases in tuna production quotas for the overseas-based fisheries and the mothership-type tuna fishery for FY 1962 (April 1962-March 1963) were announced by the Japanese Fisheries Agency on August 3, 1962.

The 6,000-ton quota increase for American Samoa was allocated only to the one Japanese fishing company, which submitted an application earlier this year to engage in tuna fishing from that Island. Two other Japanese fishing firms, which are currently delivering tuna to the cannery (operated by a United States west coast tuna canning firm) at Samoa were not granted any quota increase. The quotas for those two firms are: 8,000 tons and 4,000 tons. This gives American Samoa a total quota of 18,000 short tons.

Japanese Tuna Quotas for Motherships and Certain Overseas Bases

	FY 1962	FY 1961	Increase
	(Short Tons)		
Espiritu Santo, New Hebrides	6,000	4,000	2,000
American Samoa	18,000	12,000	6,000
Penang, Malaya	6,000	6,000	-
	(Metric Tons)		
Mothership-type tuna fishery	27,000	22,900	4,100

Production quotas were not allocated to the tuna base planned for Levuka, Fiji Islands under the so-called Matsuda Plan, or to the proposed tuna bases at Tahiti and New Caledonia. However, the Agency announced that it has established a special provision in the law whereby overseas bases can be licensed if they meet the conditions newly-established by the Agency. Based on this special provision the Agency is reviewing the application submitted by Japanese firms seeking approval to establish fishing bases at Tahiti, Fiji Islands and New Caledonia, and it is reported that the Agency is likely to authorize a production quota of around 2,000-3,000 tons for the Fiji Islands tuna base. (Suisan Tsushin, August 1, 4, and 8, 1962.)

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FISHERIES AGENCY REQUESTS VESSELS TO SUBMIT YELLOWFIN TUNA CATCH DATA:

The Japanese Government, which recently pledged its cooperation in submitting Japanese tuna catch data for the eastern Pacific Ocean, has instructed the National Federation of Japan Tuna Fisheries Cooperative Associations and the Japan Tuna Fishermen's Association to submit to the Fisheries Agency catch data on all yellowfin tuna taken from the eastern Pacific Ocean within the Inter-American Tropical Tuna Commission proposed area of regulation. Data to be reported to the Fisheries Agency are:

1. Quantity (in number) and weight of yellowfin tuna, and amount of other species of fish taken from within the regulatory area after January 1962 and landed before July 31, 1962, on a trip basis. Vessels fishing within the proposed regulatory area, but which have

Japan (Contd.):

not returned to their home ports as of July 31, will report this same information.

2. Quantity (in number) and weight of yellowfin and amount of other species of fish landed during each month after August 1, 1962. However, in cases where a vessel trip extends to the following year or if fishing was done partly outside the proposed regulatory area, a monthly report showing the quantity and species of tuna taken from within the proposed regulatory area shall be filed. In addition, a report showing the catch for the entire trip must be filed.

3. Catch data for the period up to July 31, 1962, will be submitted to the Fisheries Agency by August 15, and the monthly data for the period after August 1 must be filed with the Agency by the tenth of the following month. (Suisan Keizai Shimbun, August 3, 1962.)

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RESEARCH VESSEL TO SURVEY EASTERN PACIFIC OCEAN TUNA RESOURCES:

The Japanese Fisheries Agency's research vessel Shoyo Maru (602 gross tons) is scheduled to conduct a survey of tuna resources in the eastern Pacific Ocean from mid-October of this year. The Shoyo Maru is expected to survey the waters to the west of the area fished by the United States purse-seine fleet but within the United States-proposed regulatory area for yellowfin tuna, as well as the waters south of the proposed regulatory area, that is south of 30° S. latitude. (Suisan Keizai Shimbun, July 4, 1962, and other sources.)

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RESEARCH VESSEL INVESTIGATES ALBACORE SCHOOLS IN NORTH PACIFIC:

The Tokai Daigaku Maru, a 190-ton training and research vessel of Tokai University, returned to a Japanese port about the end of June, from a 25-day voyage to investigate small and medium albacore tuna in waters east of 140° east longitude.

The University's research scientists aboard the vessel conducted investigations to substantiate the theory of finding more schools of small and medium-fish in more northerly sections of the Pacific. Although such schools were found, the strength of the Kurile Current thrusting into the Black Current running eastward was not strong enough this year. Because of this, the area where the two currents mingled was not definitive enough for the fish schools to linger. This failed to bring about the expected results.

The vessel took a course moving northward along the Izu Seven Islands to 30° north latitude, then eastward to 150° east longitude. The investigations were repeated around 33°-34° north latitude, 147°-148° east longitude. Albacore schools were discovered around 34° north latitude, 142° east longitude, but were lost sight of after hooking a few fish. (Susian Kezai Shimbun, June 30, 1962.)

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VESSELS OPERATING IN SOUTH ATLANTIC TUNA FISHERY, JULY 1962:

As of early July 1962 there were 68 Japanese vessels operating in the South Atlantic tuna fishery as compared with 69 in May, 77 in April, and 80 in March. The number fishing in that area since March 1962 has been declining steadily. The daily catch per boat on the average was 4-5 metric tons of fish--considered only fair fishing.

The peak of the yellowfin tuna season in the Atlantic lasted for the seven months period March-September, from 1957 through 1960. Last year, however, yellowfin fishing took a turn for the worse in July and the so-called big-eyed fishing season began. Based on the results of the vessels through early July, the peak of the yellowfin season was expected to end earlier this year than last year, and the big-eyed fishing season might have actually begun in June. The catch ratio this year was some 40 percent big-eyed to 60 percent yellowfin. Depending upon the location of vessels, this was not much different from last year's July-August season. However, since this year the export price of big-eyed tuna has advanced, this year's operation seems more profitable than last year's.

The Japanese industry and Government are considering ways and means to cope with the extremely poor tuna fishing in the South Atlantic. Six years have elapsed since a new tuna fishing ground was developed in the South Atlantic in 1958. Since then there has been a decline in catch ratio and catch per day. This drop in yield has not been encountered only in the Atlantic, but also in the Indian Ocean and Pacific. But the decline has been more pronounced in the Atlantic.

The recent catch rate in the South Atlantic is said to be 8,300-12,400 pounds per day by the 240-ton-class tuna vessels as compared with 24,800-33,100 pounds per day in 1960 when fishing was good. From the standpoint of management, the catch yield causes the operation to only just about break even.

The poor fishing for Atlantic tuna is curtailing exports to Italy. Because the Italian Government has limited frozen tuna imports to 25,000 metric tons, some tuna interests in Japan see no necessity of concentrating on exports to Italy as there are a number of other countries wanting to import Japanese tuna. (Suisan Keizai Shimbun and Suisan Tsushin, July 6, 1962.)

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RESEARCH VESSEL TO EXPLORE FOR TUNA IN SOUTH ATLANTIC OCEAN:

In order to find new fishing areas for the Japanese tuna fleets, the Japanese Fisheries Agency is planning to dispatch the research

Japan (Contd.):

vessel Shoyo Maru (603 gross tons) to the South Atlantic Ocean next year. The tuna fleets, yearly, are extending their range of operations to distant waters.

The Shoyo Maru is scheduled to depart Japan on September 23, 1963, and is expected to arrive at the fishing grounds off the coast of West Africa on November 4, where it will conduct initial exploratory fishing until November 29. The vessel will then call at Luanda, Angola, from where it will proceed to Rio de Janeiro, Brazil, and resume exploratory operations in the southwest Atlantic Ocean. The Shoyo Maru is scheduled to return to Japan by way of the Panama Canal on March 31, 1964. (Suisan Keizai Shimbun, August 8, 1962.)

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NEW ALBACORE TUNA AREAS IN ATLANTIC DISCOVERED:

As of mid-July 1962, a total of 81 Japanese tuna long-line vessels were reported to be fishing in the Atlantic Ocean, or 13 more vessels than in June. A number of these vessels are said to have conducted exploratory fishing in the waters nearby Puerto Rico, described as new fishing areas, and found good fishing for albacore. Reportedly, they are catching about 4 metric tons of albacore per day.

The Japanese Atlantic tuna vessels appear to be placing great hopes on the new albacore areas. In the past, albacore fishing has proven to be slow throughout the Atlantic at that time of the year. The albacore areas normally fished by the Japanese are located off Brazil, but this fishery does not begin until the fall season. (Suisan Tsushin, July 27, 1962, and other sources.)

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ADDITIONAL TUNA VESSEL TONNAGE:

The allocation of a 20,000-ton increase in tuna vessel tonnage to be used in the next two years for the construction of tuna vessels as replacements for fishing vessels to be withdrawn from the depressed fisheries was announced by the Japanese Fisheries Agency on August 3. Vessels to be constructed will total approximately 200 vessels, primarily under 100 tons gross. Present size of the tuna fleet, in terms of total gross tonnage, is nearly 248,000 gross tons.

Additional Vessel Tonnages Allotted to Different Japanese Fisheries

Fishery	Allocated Tonnage
	Gross Tons
Salmon	10,500
Coastal	3,000
Trawl	3,000
Surrounding net	1,500
Tuna	1/2,000
Total	20,000

1/To be allocated to tuna vessel owners who are planning to construct vessels larger than 99 gross tons.

The additional tonnages allotted to the different Japanese fisheries for the construction of new tuna vessels are as shown in the table. (Suisan Keizai Shimbun, August 4, 1962.)

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CHANGES SOUGHT IN REGULATIONS ON PORTABLE-VESSEL-CARRYING TUNA MOTHERSHIP-TYPE OPERATIONS:

The Japanese Fisheries Agency in August 1962 was studying applications submitted by four large fishing companies which hope to operate portable-vessel-carrying tuna motherships solely as carriers and to employ for fishing purposes only the catcher vessels carried by the motherships. This type of operation differs with the existing portable-vessel-carrying mothership-type operation in that the mothership will not engage in fishing.

Purpose of this plan is to circumvent restrictions on construction of large tuna vessels. At the present time, existing tuna vessels of certain prescribed tonnages must be retired from the tuna fishery before larger tuna vessels of specific sizes can be constructed in their places. Under the plan proposed by the large fishing companies, the large tuna vessels carrying portable catcher boats would not directly engage in fishing but serve as carriers, which do not require tuna licenses. Thus, being "carriers" and not "fishing vessels," they would be exempt from existing restrictions governing construction of large tuna vessels.

Reportedly, two of the firms are planning to operate 3,700-ton tuna motherships, each carrying eight portable fishing vessels. The other two are reported to be planning on operating tuna motherships carrying 8-10 portable vessels, which they hope to dispatch to the Indian Ocean.

At present, a total of 23 large fishing vessels are licensed as portable-vessel-carrying tuna motherships, the largest of which is

Japan (Contd.):

the Kuroshio Maru No. 21 (1,900 gross tons), which carries six portable vessels. (Shin Suisan Shimbun, August 13, 1962.)

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TUNA FISHING VESSEL TESTS POWER BLOCK:

The first power block ever to be used in Japan was reported to have been installed this summer on a large surrounding net (probably purse seine) vessel belonging to a large fishing company. This hydraulic power block was imported from the United States and was installed on the tuna vessel Kenyo Maru (240 gross tons) at a cost of about 3 million yen (US$8,333).

Immediately after installation of the power block, the Kenyo Maru departed for the skipjack fishing grounds off the coast of Northern Japan to test its efficiency.

The Japanese Fisheries Agency and the Japanese fishing industry reportedly are conducting studies on the possibilities of adopting power blocks and on improving vessel designs and fishing nets in an effort to increase further the operational efficiency of surrounding-net gear. The Government has already appropriated a sum of 2,080,000 yen (US$5,800) for FY 1962 (April 1962-March 1963) aimed at studies to improve the efficiency of surrounding nets used by fishing vessels operating out of Nagasaki.

The Agency has for some time urged the Japanese surrounding-net industry to study the actual operations of efficient United States purse seiners employing power blocks. At a recent meeting of the North Pacific Japan Surrounding Net Fishery Council held in Aomori Prefecture in northern Japan, the Council members urged that a group of Japanese vessel owners be sent to the United States to observe the operations of United States purse seiners, and a tour has been tentatively organized, with plans to send one fishery cooperative member each from Aomori, Iwate, Miyagi, Fukushima, Ibaraki, and Chiba Prefectures. Arrangements for overseas travel and other administrative affairs related to this tour are to be handled by the Japan National Federation of Fishery Cooperatives. (Suisan Keizai Shimbun, July 31 and August 8, 1962.)

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TUNA COMPANY TO BE ESTABLISHED BY COOPERATIVE:

The Japan National Federation of Fishery Cooperatives (ZENGYOREN) early in August reportedly was planning on forming a tuna fishing company to conduct tuna fishing in the South Pacific Ocean. The president of the firm and the directors are said to have approached the Fisheries Agency Director to seek Government approval and support for their plan. But the Agency has made it clear that it does not intend to approve such a plan.

Under the original plan, the company would be assigned 30 tuna vessels (99 tons each), the construction of which the Fisheries Agency is expected shortly to authorize under the Government's plan to promote the coastal fishery cooperatives in 15 prefectures (at the rate of two vessels per prefecture), in line with the Government's over-all plan to increase the total authorized tuna vessel tonnage in Japan by 20,000 tons in the next two years. The Federation contends that if each prefectural fishery cooperative forms its own separate organization to operate the newly-licensed 99-ton tuna fishing vessels, they will all certainly run into operational and financial difficulties. Therefore, to insure effective utilization of these 30 tuna vessels, the Federation would organize, above the prefectural cooperatives, a central company to operate the 30 vessels. The central company would enter into a contract with a large fishing company to engage in joint tuna fishing, whereby the Federation would provide the catcher vessels and the large fishing company the mothership. Several large Japanese fishing firms were reported to be interested in entering into an agreement on this basis with the Federation, which reportedly had asked for a production quota of 5,000 metric tons of tuna for export purposes. (Minato Shimbun, July 17; Nihon Suisan Shimbun, July 23, 1962.)

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NATIONAL COOPERATIVE SCHEDULES MEETING TO STUDY USE OF ITS TUNA VESSELS:

The Japan National Federation of Fishery Cooperatives (ZENGYOREN) was scheduled to meet in Tokyo on August 17 to discuss the use of the 30 tuna vessels (99-tons each) newly-licensed to its 15 regional fishery cooperatives (2 vessels per cooperative). ZENGYOREN had originally hoped to utilize the 30 vessels in the tuna mothership fishery, with the mothership to be provided by a large fishing company. However, the Fisheries

Japan (Contd.):

Agency does not intend to license such a venture, so the August 17 meeting was scheduled to study other ways and means of most effectively using the 30 tuna vessels.

The key question to be resolved at the meeting is whether each regional cooperative should independently operate its two tuna vessels or whether ZENGYOREN should form a central organization to operate the 30 vessels belonging to the regional cooperatives. (Suisan Tsushin, August 15, 1962.)

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LONG-LINE VESSELS REACH SALMON CATCH GOAL SOUTH OF 45° N. LATITUDE:

The Japanese land-based long-line fleet of about 369 vessels fishing for salmon off Eastern Hokkaido south of 45° N. latitude (Area B) stopped fishing on June 25, 1962, five days earlier than usual. The fleet had attained its catch goal of 10,000 metric tons. The fleet reported unexpectedly good fishing. In 1961, the salmon catch by the long-line fleet in Area B amounted to about 14,000 tons.

The over-all salmon catch quota for both long-line and gill-net vessels in Area B this year was 60,000 tons, a reduction of about 20,000 tons from the previous year's quota. In 1962, Area B was added to the area regulated by the Japan-Soviet Northwest Pacific Fisheries Convention (Japanese newspaper, July 4, 1962).

Ex-vessel prices for the long-line salmon catch in Area B in 1962 were as follows:

Species	Value	
	US$/Metric Ton	U. S. Cents/Pound
Salmon, fresh . . .	729	33.1
Trout, fresh	603	27.3
Salmon, salted . .	754	34.2
Trout, salted . . .	528	23.9

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SALMON MOTHERSHIP FLEETS IN NORTH PACIFIC REACH CATCH QUOTA:

Japanese press reports indicate that the 11 Japanese salmon mothership fleets in North Pacific had reached their catch targets and were expected to return to Japan by August 2, 1962. Two of the first motherships to return to Japan were the Chiyo Maru (7,653 gross tons) and Miyajima Maru (9,598 gross tons)--they arrived in Hakodate on July 25.

According to press reports, red salmon was estimated to make up 60 percent of the total catch of the 11 fleets. This season's catch by species was estimated to be: red salmon 26,000 metric tons, chum 15,000 tons; pink 2,000 metric tons, and silver 1,500 tons. The catch quota for the salmon mothership fleets this year was 44,665 metric tons.

Reportedly, several factors stood out in this year's operation: the abundance of red salmon of Asian origin; lack of red salmon of Bristol Bay origin; lack of pink salmon; and abundance of silver salmon towards the latter part of the fishing season. The 11 fleet were reported not to have operated in the eastern area (towards the abstention line) but concentrated their operations to the west this year. (Suisan Keizai Shimbun, July 20, Hokkai Suisan, July 30, 1962, and other periodicals.)

* * * * *

FROZEN HALIBUT EXPORT PRICES STEADY:

Japanese exports of frozen halibut to the United States were comparatively good in June, according to translations of articles from Japanese periodicals. Export prices during that month were officially quoted at 45-47 U. S. cents a pound, c.i.f. the United States east coast.

Ex-vessel halibut prices in Japan were reported to be 160-170 yen per kilogram (20. 21.4 cents a pound). (Suisan Tsushin, July 2 Shin Suisan Shimbun Sokuho, July 20, 1962.)

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BERING SEA HALIBUT LANDINGS:

The Japanese bottom fishing fleets in the Bering Sea were reported to have already caught a total of 8,000 metric tons of halibut as of June this year, according to a translation from the Japanese periodical Suisan Tsushin of July 21, 1962. It was reported that by the end of the 1962 fishing season, landings of 12,000 tons of halibut may be reached.

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KING CRAB OPERATIONS IN BRISTOL BAY:

The Tokei Maru crab fishing fleet, jointly operated by two Japanese fishing firms, was

Japan (Contd.):

reported to have left its fishing ground in Bristol Bay early in July 1962. The fleet completed its production target of 60,000 cases of canned crab meat and was returning to Japan.

The Dainichi Maru crab fishing fleet, under the joint management of two other Japanese fishing firms was expected to attain its production goal of 70,000 cases in the middle of July. (Suisan Keizai Shimbun, July 3, 1962.)

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GOVERNMENT ISSUES FALL KING CRAB FISHING LICENSES AND REGULATIONS:

Eight Japanese fishing firms planning to operate jointly two king crab mothership fleets in the eastern Bering Sea this fall were issued licenses on July 30, 1962, by the Fisheries Agency. Four firms will operate jointly the mothership Ishiyama Maru (5,630 gross tons) and the other four will operate jointly the mothership Shinyo Maru (5,632 gross tons).

The Ishiyama Maru fleet, which consists of 8 catcher vessels, was scheduled to depart Hakodate on August 5. The fleet's catch quota is 400 metric tons of king crab. The Shinyo Maru fleet, which was scheduled to depart on August 10, will consist of 4 catcher vessels and 4 "Kawasaki" (portable launch-type) vessels, each of 20 tons gross. The Shinyo Maru's production quota is 350 metric tons of king crab. Both fleets are reported to be planning on producing frozen "discs," described as crab meat which has been processed and prepared for immediate canning at shore installations.

The Fisheries Agency has issued the following regulations concerning the fall king crab operations:

1. Fishing season will be from August 1 to November 30.

2. The following areas will be closed to fishing: Area bounded by a line drawn from Unimak Island north along 164° W. longitude to the points 56° N.-164° W., 56°20' N.-164° W., 57°10' N.-163° W., and 58°10' N.-160° W., and south along 160° W. longitude to the Alaska Peninsula.

3. Possession and/or use of gear other than crab tangle nets are prohibited.

4. Capture of female crabs and of crabs measuring less than 13 centimeters (5.1 inches) in carapace width is prohibited. However, such crabs may be taken incidentally in the catch if they do not average more than one crab per "tan" (shackle) of net set by a vessel.

5. Fishing vessels must not refuse to allow foreign officials, who have been properly authorized under international fisheries agreement, to inspect and search their vessels. Vessels that have been subjected to inspection and search must promptly report to the Fisheries Agency.

6. Operational instructions deemed necessary and, therefore, issued by the Fisheries Agency inspector must be complied with.

7. The outfitting of motherships and catcher vessels may be restricted, when necessary, to regulate fishing operations.

8. Vessels engaged in the transportation of catches and processed products must be equipped with radio and direction finders.

9. Products to be unloaded at port of landing will be counted by an inspector and a certificate showing quantity will be issued, which must be submitted to the Fisheries Agency. (Suisan Keizai Shimbun, July 31; Suisan Tsushin, July 5, 1962, and other periodicals.)

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LANDINGS OF FISHERY PRODUCTS IN 1961:

According to a preliminary report, Japan's total landings (excluding whaling operations) in the 1961 calendar year amounted to 6,710,000 metric tons--a new record and 8.4 percent more than the previous year's landings of 6,190,000 metric tons.

Japan's Landings by Type of Fishery, 1960-61[1/]

Type of Fishery	1961	1960
	(1,000 Metric Tons)	
Marine landings	6,230	6,280
Shallow-water	320	280
Fresh-water	90	80
Other aquatic products	20	20
Total landings	6,710	6,190

1/Does not include whaling.

Marine landings accounted for 93.6 percent of the total catch in 1961. The flatfish catch by the mothership fleets in the North Pacific showed a substantial gain in 1961.

Catches in 1961 by mothership-type trawling, gill-netting, long-lining in "northern waters" (North Pacific and Bering Sea) were up 180,000 tons from 1960. A recovery in the mackerel pike dip-net fishery (landings up 190,000 tons), and better catches in the skipjack hook-and-line fishery (landings up 60,000 tons) contributed to the gain in total landings.

A number of vessels were added to the tuna fleet in 1961 and new tuna fishing grounds were also developed. In spite of the increase in fishing effort, the tuna long-line catch showed only a modest increase. Landings by tuna long-liners operating out of Japanese ports were up 30,000 tons and the catch of long-liners in the Atlantic was up 10,000 tons.

In 1961, some 20,000 large whales (an increase of some 1,000) and 950 small whales (an increase of some 160) were caught by Japanese whaling operations. (Japanese newspaper, June 20, 1962.)

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SALMON INDUSTRY URGES END OF ABSTENTION PRINCIPLE:

The Special Committee on Tripartite (Canada, Japan, United States) Fisheries Problems, organized by the Japan Fisheries Society, held its first meeting on August 9, 1962,

Japan (Contd.):

and formally decided to file a petition to the Japanese Government strongly urging that the abstention principle of the present Japan-Canada-United States North Pacific Fisheries Convention be abolished. In attendance at the meeting were leading members of the Japanese salmon industry, including fishermen's unions and associations.

The Committee planned to adopt concrete policies after first determining the intentions of the United States and Canada at the interim meeting which convened in Hawaii on August 13. At the meeting, the Committee Chairman announced that the present Treaty is unfair and it would be better to negotiate a new treaty. (As reported and translated from the Japanese periodical Suisan Keizai Shimbun, August 10, 1962.)

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SOCIALIST PARTY OPPOSES EXTENSION OF TRIPARTITE NORTH PACIFIC FISHERIES CONVENTION:

Japan's Socialist Party has decided to oppose the extension of the present Tripartite (Canada, Japan, United States) North Pacific Fisheries Convention. It plans to question the Government's policy on this issue at a special Diet session. The Socialist Party is also expected to urge the Japanese Government to terminate its membership in the Tripartite Commission as soon as Japan fulfills her present Treaty obligations, and to establish a basic policy to guide Japan's fishing activities on the high seas so that Japan can negotiate a reasonable fisheries treaty based not on the voluntary abstention principle but on the principle of equality reciprocity, resource conservation, and prevention of disputes. The Socialist Party claims that the existing Fisheries Treaty is: (1) unequal; (2) not based on scientific findings; and (3) adversely affects the development of the Japanese fishery. (As reported and translated from the Japanese periodicals Suisan Keizai Shimbun and Minato Shimbun, August 11, 1962.)

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FISHING FIRMS PLAN TRAWL FISHING IN NORTHWEST ATLANTIC:

Three Japanese fishing firms are reported to be planning trawl fishing for cod in the northwest Atlantic Ocean off the southwest coast of Greenland. The three companies were expected to file applications with the Fisheries Agency by early August this year t engage in that fishery, and the Agency is said to have unofficially approved one application.

According to present plans, one firm plans to employ its freezership Tenyo Maru No. 3 (3,500 gross tons) which it will convert into a stern trawler, and assign to it two portable catcher vessels, each of 20 gross tons. The second company plans to operate one vessel Aoi Maru No. 2 (1,100 gross tons). The third company will operate a 1,500-ton trawler. Upon approval by the Fisheries Agency, the three companies plan to make necessary preparations so that fishing operations can be launched in the spring of 1963. The company whose application reportedly has been unofficially approved hopes to start operations this year. The three firms hope to export their cod catches to the United States and to Europe.

According to press reports, the Japanese Fisheries Agency is considering the possibility of joining the International Northwest Atlantic Fisheries Commission. (Suisan Tsushin and Suisan Keizai Shimbun, July 24; Nihon Suisan Shimbun, July 25, 1962.)

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FISHERIES AGENCY AUTHORIZES TRAWLING IN NORTHWEST ATLANTIC OCEAN:

A Japanese press report of August 1, 1962 states that the Fisheries Agency has officially authorized a Japanese fishing company to operate a trawler in the northwest Atlantic Ocean. The company was scheduled to dispatch the Aoi Maru No. 2 to the waters off Greenland on August 2. The trawler was to depart from the Japanese port of Nagasaki in southern Japan and was expected to arrive off Greenland in early October. (Suisan Tsushin, August 1, 1962.)

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GUIDANCE AND CONCENTRATION OF FISH SCHOOLS TO BE STUDIED:

The Japanese Fisheries Agency reportedly is planning on a new three-year fishery research program from FY 1963 (April 1963-March 1964) to conduct basic studies on methods of guiding and concentrating fish schools. The primary objective of this research program will be to develop an effective method of concentrating fish schools of relatively low density, such as those fished by means of gill nets, as well as to develop suitable fishing methods and gear. As a means of attracting or guiding fish, lights, guiding nets, air curtains, and articles both attractive and repulsive to fish will be used in the study. This program will be supervised by the Tokai Regional Fisheries Research Laboratory at Tokyo and is scheduled to be conducted in three phases.

Japan (Contd.):

FY 1963: Basic experiments with low-density fish schools will be conducted. Experiments will be conducted with fish held in tanks and in ponds and lakes. As means of concentrating fish, lights will be used to test the reaction of rainbow trout and kokanee (land-locked red salmon). Tests will be conducted to guide fish by such means as artificially-created air curtains and cold-water zones, in addition to nets.

FY 1964 (April 1964-March 1965): Methods of concentrating fish developed in the preceding year will be put to practical tests in lakes and in coastal waters to determine their feasibility. In these tests, small set nets, surrounding nets, and midwater trawls will be used. Studies will also be made regarding possibilities of separating catches.

FY 1965 (April 1965-March 1966): Field tests in coastal waters will be continued to determine the effectiveness of the methods developed. If results are satisfactory, the new methods will be introduced subsequently to commercial fishermen.

Reportedly, the above studies are being prompted by the problem faced by the Japanese salmon fishery, where, despite improvements in fishing efficiency brought about through refinements in fishing techniques and gear, the problem of gilled salmon falling off from the nets and of salmon being injured by drift nets have not yet been solved. Gear-caused injury and mortality have been the subject of discussion at every annual fisheries negotiation held between Japan and the Soviet Union, and Japan plans to conduct the above studies in an attempt to solve this problem. (Suisan Keizai Shimbun, July 11, 1962.)

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NEW MARINE RESEARCH INSTITUTE ESTABLISHED:

A new Institute, called the Ocean Research Institute, University of Tokyo (ORITU), was established in Tokyo in April 1962.

The Institute is the first of its kind established in Japan for the scientific study of basic problems of the oceans, their resources, and fisheries. It is expected that the Institute will have 15 divisions, with a full staff of about 100 professionally-trained persons within a few years. They will cover the fields of physical oceanography, submarine geophysics, marine meteorology, submarine geology, chemistry and biochemistry of the oceans, marine biology, and various phases of scientific fisheries. The Institute plans to have two research vessels, one of 250 tons and another of 3,000 tons, to be used primarily for exploring the deep sea and ocean floor.

The Institute was established at the University of Tokyo for two main reasons: 1. It was the general consensus of Japanese marine scientists that there should be a Japanese institution exclusively devoted to the study of basic marine prblems. 2. They believed it would be more appropriate if the institute were set up as an adjunct of the University of Tokyo. The Institute will be used not only by the scientists from the University of Tokyo, but also by those from other universities and organizations of Japan. It is also expected that scientists from other countries will be able to do research at the Institute.

The office of the new Institute was temporarily located on the campus of the University of Tokyo. Plans are being made for a building in a permanent location not far from the main campus of the University.

Republic of Korea

FIRM TO PURCHASE TUNA VESSELS:

The U. S. Foreign Investment Promotion Committee, on June 28, 1962, approved an application for foreign investment by a South Korean firm for the procurement of six 135-ton tuna vessels. It was reported that an investment of $720,000 is to be financed by a loan from the New York subsidiary of a Japanese firm. The six tuna vessels are to join the vessels being operated by the Korean firm in Samoan waters.

Tuna caught by the Korean firm's fishing fleet is supplied, under contract, to a United States packer's canning plant in American Samoa. (United States Consulate, Seoul, July 13, 1962.)

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SIX TUNA VESSELS TO BE BUILT IN JAPAN:

A Korean firm, which presently operates a number of tuna vessels out of American Samoa, is reported to be planning on constructing six tuna vessels in Japan with the aid of United States capital. Reportedly, the order for the vessels has already been placed with a Japanese shipbuilder.

Exports of Japanese tuna vessels are prohibited by the Japanese Government. To circumvent this restriction, the six vessels are to be constructed not as tuna fishing vessels but as carriers and, supposedly, are for export to Switzerland, from which the Korean firm would purchase the vessels.

Without a doubt, all the vessels will be based at American Samoa. This means that they will enter into direct competition with Japanese tuna vessels, but, despite this, the Japanese Government licensed the construction of these vessels. Consequently, strong objections are being voiced within the Japa-

Republic of Korea (Contd.):

nese tuna industry. (Suisan Tsushin, July 26, 1962.)

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FISHERY COOPERATIVES LAW ENACTED:
A new fisheries cooperative law was enacted by South Korea early in 1962, to encourage the economic development of the fishing industry.

Almost 32 percent of the marketing cooperatives had business volumes of $1 million or more. About 13 percent of the farm supply cooperatives had business volumes of $1 million or more. No cooperative whose business was primarily performing services related to marketing or farm supply purchasing reported a business volume of $1 million or more.

Almost 22 percent of these cooperatives did a business ranging between $1 and $10 million in 1959-60 compared with about 17 percent in this group in 1955-56. About 2.4 percent reported a business volume upwards of $10 million in 1959-60 compared with 1.7 percent doing a comparable volume of business in 1955-56. On a numerical basis, 2,242 cooperatives had volumes of $1 million or better in 1959-60 compared with 1,863 cooperatives in 1955-56. The new law provides for the formation of fishing cooperatives, fishery manufacturers cooperatives, and a central association of fishery cooperatives. Membership in the cooperatives is on a voluntary basis and no token stock investment is required. The selection of key officials and all operations are subject to close Government control. A majority of the financial support will come from the Government.

The Military Government of the South Korean Republic is committed to improving the welfare of the fishermen through cooperative action, and is aware of the great amount of educational work to be done in that area of cooperation among the Korean fishermen.

Note: See Commercial Fisheries Review, May 1962 p. 64.

Malagasy Republic

JAPANESE AND CHINESE AID IN DEVELOPING TUNA FISHERY:
A Japanese fishing company will train Malagasy fishermen in modern tuna fishing techniques under the terms of a new cooperative agreement with the Government of the Malagasy Republic. The firm will also help set up tuna canning facilities at Majunga.

Fig. 1 - Fishermen on the southwest coast of the island fish between the coast and the large coral reef that runs parallel to it. Canoes in a semicircle chase fish towards nets off the beach. The fish hemmed in by the nets are speared.

The Government has also undertaken an experimental cooperative fishing venture with a Taiwan company. With the aid of the Chinese company, tuna canning has been started at Diego-Suarez for domestic consumption.

Fig. 2 - Mako shark (Isurus oxyrhynchus) caught by research vessel Maru Atha.

Exploratory fishing has shown that the Mozambique Channel is suitable for Japanese and Chinese long-line tuna fishing techniques.

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Malagasy Republic (Contd.):

FISHERIES TRENDS:

Despite over 3,000 miles of coastline, salt-water fishing in the past has been limited to the efforts of a small group of tribesmen on the southwest coast. The tribesmen use small canoes equipped with sails, but usually hand-

1 - Maran Atha, research vessel of Centre d' Oceanographie des Peches. This vessel has explored for tuna off the north-east coast of Malagasy using Japanese long-line gear.

addled. Fishing is done fairly close to shore. The catch is consumed in the fishing villages or sold to nearby villages. The tribesmen have no storage or transport facilities and their catch does not appear in inland markets.

Various shellfish are caught along the coast. They are mostly consumed locally, except for small amounts flown to Tananarive. Small canning and freezing operations planned or undertaken in the past have been unsuccessful. The Government has recently been engaged in exploratory shrimp trawling, lobster fishing, and tuna long-lining.

Fig. 2 - Workers at a Government pilot station on Lake Alaotra. The station was set up to smoke lake fish and produce fish meal, and fillet fish for smoking.

In contrast to salt-water fishing, fresh-water subsistence fishing is widely practiced in Malagasy. Fish are increasingly being recognized as a means of reducing protein deficiencies in the Malagasy diet. The Gov-

Fig. 3 - An entire family casts fishing lines into Lake Alaotra, Malagasy Republic.

ment carries on a program of fish farming and stocks the rivers and ponds with carp, black bass, tilapia, and many other varieties. Fishing techniques are very simple and the fresh-water catch is estimated at 12,000 tons annually. (United States Embassy, Tananarive, report of April 2, 1962.)

Note: See Commercial Fisheries Review, Feb. 1962 p. 85 and p. 93, Jan. 1962 p. 58.

Malaya

JAPANESE-MALAYAN TUNA BASE CONCENTRATING ON FROZEN TUNA EXPORTS:

The Japanese Overseas Fisheries Company (which manages the joint Japanese-Malayan tuna base, including a cannery) at Penang, Malaya, was granted by the Japanese Fisheries Agency, in December 1961, a quota of 36,000 cases of canned tuna in brine for export to the United States. Subsequently, in April 1962, the Agency designated Penang and Singapore as transshipment ports and allotted a 4,000-ton frozen tuna export quota to those two ports. In addition, the Agency authorized the Company to land, at Penang, 6,000 short tons of fresh tuna for freezing and transshipment to the United States.

Subsequent developments following the allocation of the above export quotas for canned tuna, frozen tuna, and fresh tuna to the Penang base indicate that the Penang base is now concentrating on transshipping clipper-caught Indian Ocean frozen tuna to the United States, suspending almost entirely the production of canned tuna in brine for export. Also, only small amounts of fresh tuna are being landed at Penang as a result of the Company's lack of success in attracting ice-carrying fishing vessels to fish out of Penang.

Apparently, under present operating conditions, the cannery at Penang cannot be operated at a profit, and Japanese tuna industry members believe that the Malayan tuna base may eventually turn to the production of tuna loins for export to the United States. (Suisan Tsushin, July 19, 1962, and other sources.)

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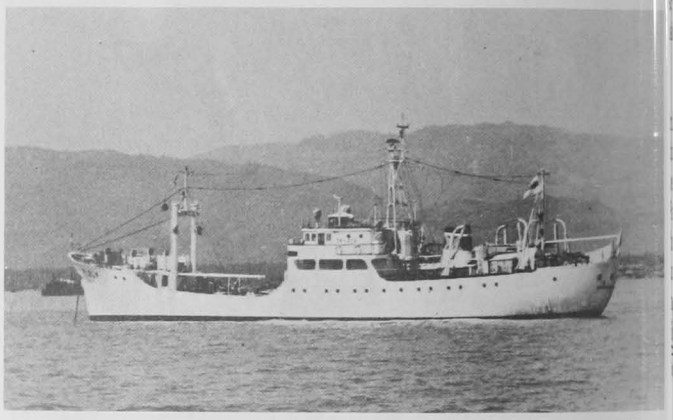
FROZEN TUNA TRANSSHIPMENTS TO U.S. FROM PENANG AND SINGAPORE:

Transshipments of Indian Ocean frozen tuna to the United States from Penang (Malay and Singapore (the two ports which were designated as transshipment bases in April of this year and granted a combined export quot of 4,000 short tons) were reported proceedin smoothly as of July 10; transshipments total



Japanese fishery research vessel Shoyo Maru visited Penang, Malaya, early this year before going on a search for tuna fishing areas in the vicinity of Mauritius.

Indian Ocean Frozen Tuna Transshipments, April-July 10, 1962

Transshipment Port	Albacore	Yellowfin	Total
		(Short Tons)	
Penang	1/396.00	2/763.00	1,159
Singapore	114.16	235.84	350
Total	510.16	998.84	1,509

1/Includes 50 tons transferred from direct export (from Japan proper) quota.
2/Includes 20 tons transferred from direct export (from Japan proper) quota.

1,509 short tons. On the other hand, the fres tuna quota of 6,000 short tons authorized land ed at Penang for freezing and transshipment to the United States is not expected to be met Conjecture is that by the end of the fiscal year (March 1963), fresh tuna landings at the Penang base may only reach somewhere between 1,000-2,000 short tons. The poor landings of fresh tuna are attributed in part to the fact that the Japanese Overseas Fisheries Company, which operates the tuna base at Penang, so far has not been able to attract more ice-carrying tuna vessels to its overseas base. However, by the end of September or by early October of this year, several ice-carrying fishing vessels are expected to un-

Malaya (Contd.):

load their catches at Penang. (Suisan Tsushin, July 11, 1962.)

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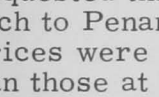
TUNA FISHERMEN URGED TO BRING CATCHES TO PENANG:

Ex-vessel tuna prices paid at Penang were increased 10 to 20 percent in May 1962 by the Overseas Fisheries Company. The increase was announced by the Japanese firm which operates the joint Japanese-Malayan tuna-packing plant at Penang. Japanese tuna fishermen were later brought together by the Japanese firm, which explained its reconstruction plans for the Penang Base and asked for the fishermen's cooperation.

The firm requested that iced fish vessels bring their catch to Penang, and emphasized that the new prices were more than 20 percent higher than those at bases on the South Pacific islands. It was pointed out that those vessels could make the trip to the Penang base in about 25 days on the average, including the time required to unload the fish. (Suisan Tsushin, July 2, 1962.)

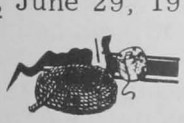
Note: See Commercial Fisheries Review, July 1962 p. 86.



New Caledonia

TUNA CATCH QUOTA FOR JAPANESE-FRENCH FISHING BASE:

A Japanese fishing firm, who earlier this year filed an application with the Fisheries Agency to establish a joint Japanese-French tuna fishing base in New Caledonia, plans a catch quota of 10,000 tons. The firm plans to use some 30 tuna vessels. As soon as permission is received from the Fisheries Agency, the firm intends to begin fishing. The freezing of tuna at the base is to be a joint operation with the New Caledonia Development Public Corporation. (Suisan Keizai Shimbun, June 29, 1962.)



Norway

MACKEREL SHARK FISHERY OFF UNITED STATES WATERS:

The Norwegian mackerel shark fishery in waters near the coast of America now appears to be entering a new phase. Among the vessels now fishing, several are chartered by a Danish company and will land part of their catches in St. Pierre, near Newfoundland, and part in a Danish port. The plan includes Norwegian boats as well as two Faroese fishing boats, Bakur and Hoivikingur. The Danish firm has agreed to export to Italian buyers 1,000 metric tons of frozen mackerel sharks from the Newfoundland fishing grounds. It is believed that the vessels which have contracted with the Danish firm will receive a price of 2-1/2 kroner a kilogram (16 U.S. cents a pound) for mackerel sharks landed in St. Pierre, and 3 kroner a kg. (19 cents a pound) for fish landed in Denmark.

Norway's Mackerel Shark Fishermen's Sales Association (Habrandfiskernes Salslag) is familiar with this situation and has brought the matter to the attention of the Norwegian Fisheries Department.

The cause for this concern may stem from the course that the market for mackerel sharks from Norway took in 1961, after the large landings of frozen mackerel shark from the waters off America. This concern developed after a Danish vessel last winter began mackerel shark fishing in the "North Atlantic Ocean." The fishing grounds were described that way in the newspapers in an attempt to camouflage the information concerning the fishing area. Actually, fishing extended to the waters east of New York.

According to some reports, there is exceptionally good mackerel shark fishing off the American Coast. When the Norwegian mackerel shark vessels had fished for 14 days, they had obtained full loads.

There has been apprehension that the supplies of mackerel shark in Norway might depress the market and lead to a collapse. It now seems that by contracting their boats to the Danish firm, the Norwegian vessels have avoided the problem of landing in Norway; consequently, the matter is put in an entirely different light. Norway exported about 1,200 tons of mackerel shark each year in 1959-60 with Italy the principal buyer. Exports were far less than that in the years previous to 1959, but averaged about 2,000 tons shortly before and immediately after World War II. The Italian market is sharply limited, and Norway has competition from Japan and France. It is assumed that a quantity of 1,000 tons of frozen mackerel shark from Denmark will also influence the selling conditions for fresh mackerel shark from Norway and the price for Norwegian mackerel shark in general.

The Danish firm has apparently contracted for the landing of a quantity of mackerel shark that exceeds slightly the Norwegian export quantity, except for 1959-60. If the Italian market is provided with such a quantity, it will not need imports from Norway. The Mackerel Shark Fishermen's Sales Association will then become only an historical group.

There is a good possibility that the demand for mackerel shark in the Italian market may be somewhat more than is now believed. The supplies in the years before World War II suggest it. But it is likely that this additional demand in later years was met by Japanese suppliers. (Fiskaren, 39 arg., no. 21, p. 5.)

* * * * *

FOREIGN MINISTER PRESENTS DECLARATION ON MEMBERSHIP IN EEC:

Norway's declaration in connection with its application for negotiations on full membership in the European Economic Community (EEC) was presented before the EEC Council of Ministers at Brussels on July 3, 1962. It was agreed at the meeting that actual negotiations would start this fall.

"The Norwegian Government," the Foreign Minister stated, "desires to contribute to the

Norway (Contd.):

development of a closer economic and political cooperation in Europe. Such a cooperation could strengthen Western unity and act as a stimulant for world trade, not least in relation to the developing countries. He added that "The Norwegian Government agrees with the objectives and the measures outlined in the Treaty of Rome. It believes that an expanded EEC can create new prerequisites for solving the special problems in each member country."

A major part of the declaration described the peculiar problems that EEC membership would entail for Norwegian farming and fishing. The cost of many agricultural products in Norway is relatively high and the trend is toward the creation of larger and more economic operating units. It was stressed that rationalization of Norwegian agriculture must be carried out over a long period lest it inflict permanent damage to the social structure in rural communities. The Foreign Minister said, "The special conditions of Norwegian agriculture, together with the social interest of maintaining essential farm settlements and farm production, require special solutions that necessitate special measures. The Norwegian Government believes it is feasible to find these solutions, within the framework of the Treaty of Rome."

The Norwegian Foreign Minister said his Government also assumed that Norway, as the largest European exporter of fishery products, would have an opportunity to participate in discussions on formulation of a common fisheries policy for EEC. Moreover, in light of the special conditions that prevail along the Norwegian coast, Norway would request discussions of the Rome Treaty provisions on the rights of establishment and the problems that these might create for Norway's fishing industry.

As Norway sees it, a common fisheries policy should recognize the necessity of regulations to protect fish stocks against overexploitation, facilitate the development of stable markets for high-quality fish at reasonable prices, and assure adequate living conditions for fishermen. (News of Norway, August 16, 1962.)

* * * * *

ONLY FOUR FLEETS TO PARTICIPATE IN 1962/63 ANTARCTIC WHALING:

Norwegian whaling companies, after an extended period of indecision, announced that they would participate in the 1962/63 Antarctic whaling season.

Four Norwegian expeditions are to take part in the 1962/63 whaling season as against seven expeditions using 71 catcher boats the previous season. Two whaling factory ships have been withdrawn permanently, in accordance with an agreement between the Norwegian whaling companies. The four factory vessels (Thorshavet, Thorshovdi, Kosmos IV, and the Sir James Clark Ross) are all registered at Sandefjord, the main port in the Province of Vestfold.

The lower number of whaling expeditions for 1962/63, together with an even bigger reduction in the number of catcher boats, will probably mean that the Norwegian quota of 4,200 blue-whale units cannot be fulfilled. The total catch by seven expeditions during the 1961/62 season amounted to less than 3,700 blue-whale units, as against the original quota of 5,100 units.

Of the 4,557 Norwegian crew members who took part in the 1961/62 Antarctic whaling, 2,850 came from Vestfold. In the coming season, the number from Vestfold will be cut down to about 2,200. The cutback, it was believed, would be felt in the traditional whaling districts which have derived a considerable part of their income from the Antarctic whaling operations. This is true in spite of the trend in recent years that nearly half of the whaling crews give up sailing at the end of the season and take jobs in the Norwegian merchant fleet, or in factories.

During the 1961/62 season, the seven expeditions paid nearly 50 million kroner (US$7 million) for wages, about 21 million kroner ($2.9 million) for repairs, and some 30 million kroner ($4.2 million) for outfitting.

The decision to take part in Antarctic whaling next season was reached despite the large quantity of unsold whale oil (estimated to be about 29,000 tons) and the poor prospects for future profitable operations. Norway's whaling companies have operated with little or no profit during the past few years because of the weak market for whale oil. The market price for whale oil during the

lorway (Contd.):

ummer of 1962 was £40 (about US$112) a ng ton (about 5.0 U. S. cents a pound), with nsold stocks in Norway then at about 30,000 ns. The only encouraging sign in the whal- g picture for Norway was reported to be the newly-developed market for frozen hale meat in Japan. In the 1961/62 Antarc- season, the whale meat production of one the Norwegian expeditions surpassed the l production in value.

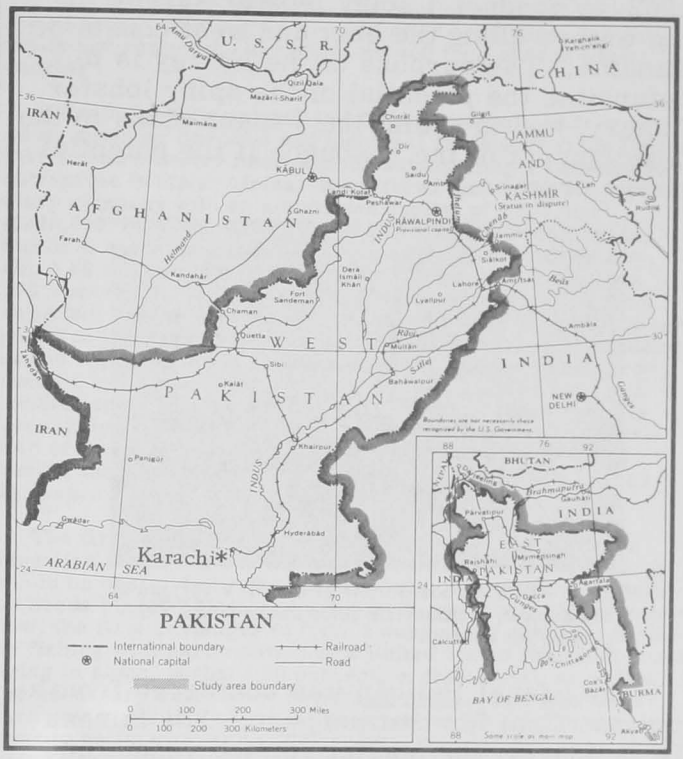
The Norwegian Government served notice December 29, 1961, of its conditional with- awal from the International Whaling Con- ntion, because it was not certain whether e conditions for Norway's continued adher- nce to the Convention could be fulfilled. The thdrawal was to be cancelled as soon as an greement on distribution of the international haling quota was signed by the five whaling tions prior to July 1, 1962. (United States mbassy, Oslo, August 6, 1962, and News of orway, August 16, 1962.)

te: See Commercial Fisheries Review, Aug. 1962 p. 85, eb. 1962 p. 88.

akistan

NITED STATES FIRMS INVITED TO D GOVERNMENT IN EVELOPING FISHERIES:

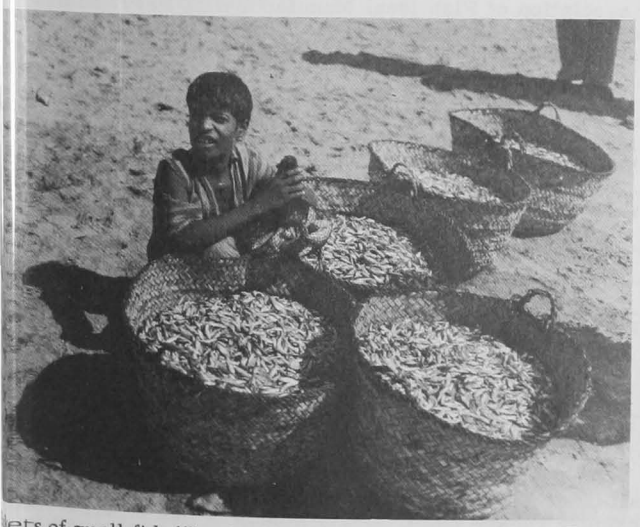
Pakistan's Ministry of Food and Ag- culture (Agriculture Division) invites erested firms in the United States submit proposals for joint United States-Pakistani commercial fishing ventures. It is believed that waters off the coast of Pakistan are rich in fish and shellfish. The fishing industry along the coast of Pakistan is not well developed, although modern facilities for handling fish have been established at Karachi harbor.



It is understood that Pakistan needs the services of technicians who can offer the Government a detailed plan for the exploration of their fish wealth. Technicians are also needed who can show them how to operate an exploratory fishing vessel and its gear.

Pakistan wants to obtain an exploratory fishing vessel of about 70 gross tons or more. The vessel should be equipped for shrimp trawling and should also be equipped to purse seine for sardines, mackerel, and threadfin. Pakistan may want to purchase additional fishing vessels and gear.

Initially fishing would be confined to waters off West Pakistan and would be aimed at locating shrimp breeding areas. But the Government is also interested in exploratory fishing in the Arabian Sea and in the Bay of Bengal adjoining East Pakistan. (United States Embassy, Karachi, June 28, 1962.)



ets of small fish ("kaokra") brought ashore at Ibrahim Hydari, all fishing village 11 miles from Karachi.

Panama

VESSEL CHARTERED FOR SPINY LOBSTER EXPLORATIONS:

The U. S. Bureau of Commercial Fisheries contracted with the U. S. Agency for International Development (AID) on June 20, 1962, to conduct a spiny lobster survey in the waters along the east and west coasts of Panama. The purpose of the survey is to determine the potential of the spiny lobster fishery, and to assist the Panamanians in the development of the resource if the potential shows promise.

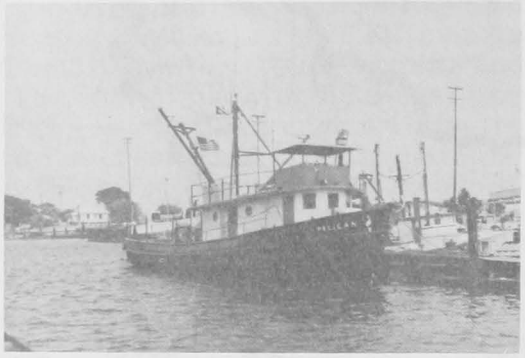


Fig. 1 - Full starboard view of the M/V Pelican at the dock in Jacksonville prior to the vessel's departure for Panama.

The vessel Pelican was chartered from a private firm for that purpose. The Bureau is to provide the Master for the vessel and some of the equipment. All other personnel, material, supplies, and other equipment is to be furnished by AID.

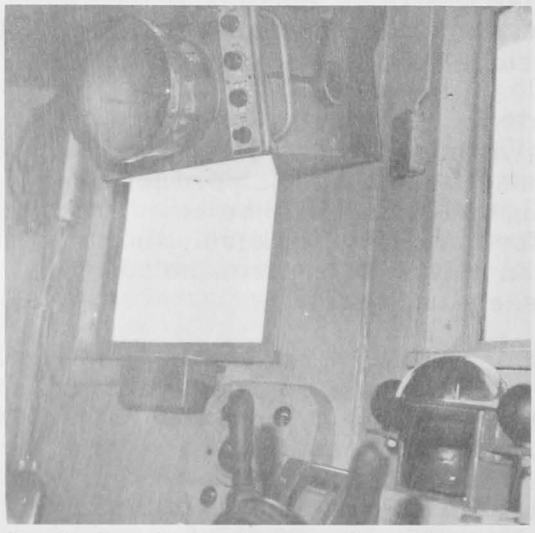


Fig. 2 - Partial view of the wheelhouse showing instrumentation, including radar.

The survey will take 14 months to complete, and the responsibility for performance under the contract was assigned to the Bureau of Commercial Fisheries Region 2, St. Petersburg Beach, Fla. The Bureau's Exploratory Fishing and Gear Research base at Pascagoula will exercise general supervisory authority over the survey work.

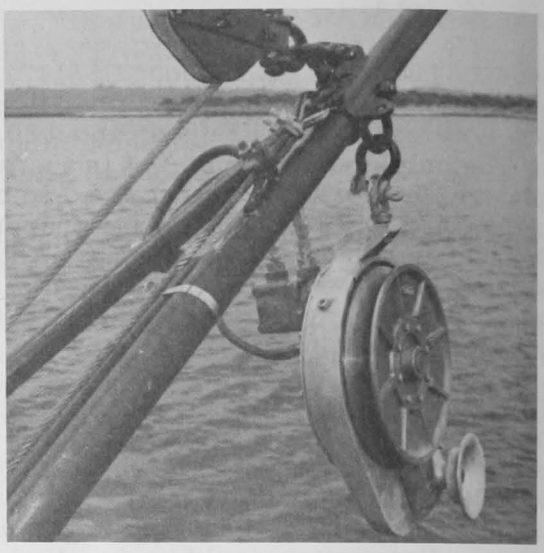


Fig. 3 - Hydraulic lobster pot hauling block.

Peru

FISHERIES TRENDS, SECOND QUARTER 1962:

The Peruvian fishing industry continued to expand during the second quarter of 1962. According to industry data total exports of all fishery products amounted to 559,771 metric tons during the first half of 1962, up 27.7 percent from fishery products exports of 436,790 tons during the same period of 1961. Data are not available on the quantity of fish meal produced and exported during January-June 1962. But fish meal exports on the average account for about 85 percent of Peru's total exports of fishery products. (Editor's note: According to reports submitted to the International Association of Fish Meal Manufacturers, Peruvian fish meal production January-May 1962 amounted to 460,623 metric tons.)

The value of fish meal exports during the first quarter of 1962 was 845 million soles (US$31.5 million), over three times greater than the value of fish meal exports during the same period of 1961.

Value (f.o.b.) of Peru's Exports of Fish Meal, First Quarter 1960-62

January-March					
1962		1961		1960	
Million Soles	US$ 1,000	Million Soles	US$ 1,000	Million Soles	US$ 1,000
845.0	31,506	260.1	9,705	360.2	13,004

Note: Values converted at rate of US$1 equal 26.82 soles in the first quarter of 1962; 26.80 soles in the same period of 1961; and 27.70 soles in the first quarter of 1960.

During the first quarter of 1962 exports of fish meal led all other Peruvian commodity exports in value, and fish oil exports ranked ninth. Heavy stocks of fish meal carried over from 1961 partly accounted for the unusually large shipments in the first quarter of 1962. Fish meal exports

eru (Contd.):

-ing the second quarter were not as large as in the first arter. But industry representatives estimate that fish al exports for the full year 1962 will be over a million s, possibly 1.2 million tons. In 1961, fish meal exports ounted to 760,619 tons according to industry data (Gov- ment statistics show 1961 fish meal exports as 708,366 s).

Peruvian fish meal producers enjoyed a strong world rket demand for their products in the first half of 1962. -ing the first quarter of 1962, fish meal export prices raged about US$92 per metric ton, 31.4 percent above average export price of $70 per ton in 1961. European nand increased due to poor crops of animal feedstuffs many continental areas. Reduced competition from other meal producing countries which continue to experience production also helped create a favorable market for uvian fish meal. The present good returns to Peruvian meal producers have spurred substantial additional in- st in investment in fish meal plants. It is understood 72 applications for licenses to establish new fish meal nts along the Peruvian coast were submitted during the t half of 1962 and 38 have been granted. But construc- of new plants in the Lima-Callao area has been pro- ited.

A constantly increasing number of fishing vessels of ger size and capacity, permitting access to fishing unds farther from the coast, is expected to supply ugh anchoveta for the potential increase in production. ere seems to be no concern that there will be overfish- of anchoveta in Peruvian waters. Also, there appears e little concern that there will continue to be a prof- le market for the increased production of fish meal ected in the future.

The Consorcio Pesquera del Peru, S. A. (Fisheries sortium of Peru) is the marketing agency for a large centage of Peru's fish meal production. It has been orted that the Consortium is working to expand its mbership through broadening the advantages its mar- ng organization can offer. The Government may even uire producers, especially those entering the industry, come members. In the second quarter of 1962, pro- ers in the Consortium accounted for 82 percent of to- ish meal production. (United States Embassy, Lima, 26, 1962.)

th Africa Republic

NA FISHING DEVELOPMENT PORTUNITIES:

There is a constantly growing interest within and without South African fishing industry in the possibilities of de- ping an important tuna fishing industry in South Africa. s industry is thought of as an export industry; emphasis lmost entirely on catching and freezing tuna for export aly, Yugoslavia, and the United States. The market po- ialities must, therefore, be measured in terms of the ld market for tuna.

n South Africa there are groups interested in exploiting tuna possibilities. Aside from rod-and-line fishing n pleasure boats, tuna fishing to date has been done in pilchard off-season with wooden pilchard boats and Jap- se long-line gear. The Fisheries Development Corpo- on, a Government-sponsored body, has equipped one pil- rd boat with a tuna purse seine and power block, but tests only just started and cannot be evaluated yet.

ccording to investigations of the South Africa Depart- t of Fisheries and the findings of two other firms or ups of companies, tuna is abundant in South African wa- . There were about 400 metric tons of tuna caught in 1961. The estimate for 1962, based on present catches, is 3,000 tons. Catch of one boat in early August was 4 tons per day. Catch of another boat in one morning's set was 3.5 tons. The boats are 50 to 60 feet, and fishing is with Japanese-type long lines.

The tuna presently caught by long lines brings the following prices at the dock: Price to boat owners who borrow equipment from factory and receive ice and bait is $57.14 a ton. Price to boat owners who have their own equipment, ice, and bait is $85.50 a ton. The boat owner pays crew $25.71 a ton. The fish is weighed after head, fins, and entrails are removed. In 1961 about 400 tons of tuna were caught.

A South African canning and fishing company is interested in obtaining financial and technical assistance from United States tuna industry interests for establishing a tuna fishing enterprise in South Africa. Registered in 1953 as a proprietary company with an authorized capital of R200,000 ($280,000) of which R129,100 ($180,740) have been paid in, the firm operates a fish canning factory at St. Helena Bay, about 80 miles north of Cape Town. The cannery employs 100 workers during the season, November-July. The firm owns two fishing vessels (67-foot wood pilchard boats); is engaged in the catching and canning of pilchards, jack mackerel and true mackerel; production of fish meal and oil; produces a certain amount of dried shark and shark fins; and handles spiny lobster for the local market. Since there is very little room for expansion in the present fishing activities of the firm because they are pegged at their present limits, the firm seeks to enter other types of fishing, such as tuna.

The firm's Managing Director points out that since the long-line method is not the most economical one for tuna, it would be desirable to use purse seines. But since that method needs bigger boats, expensive nets, and a good bit of know-how, the firm envisages to form a subsidiary company for tuna fishing with participation of a United States firm who could bring in some, perhaps 50 percent, of the capital, as well as the necessary experience in purse seining. The type of return envisaged is a share in the equity of the subsidiary company to be formed, up to 50 percent. Investor would be at liberty to share in the management in accordance with his financial interest.

The type of purse seiner used in the United States west coast tuna fishery could be built cheaply in South Africa, but power blocks and nets would have to be imported. There is no import restriction on necessary equipment for the fishing industry and so there is no reason to think that there would be any obstacles in the way of equipping such a vessel. Harbor facilities, including drydocking and marine railways, are adequate and there are plenty of highly-skilled fishermen who would be available to man the vessel.

* * * * *

PILCHARD-MAASBANKER FISHERY, JANUARY-MARCH 1962:

The Republic of South Africa cape west coast pelagic shoal fishery for the first three months of 1962 totaled: pilchards 283,613 short tons, maasbanker 4,451 tons, and mackerel 9,207 tons. The total catch was 297,271 tons.

The catch in March 1962 was: pilchards 94,775 tons, maasbanker 3,175 tons, and mackerel 3,020 tons. The total March catch was 100,970 tons. In March 1961 the catch was: pilchards 64,698, maasbanker 4,145 tons, and mackerel 3,663 tons; a grand total of 72,506 tons. In 1960 the total catch in March was 84,327 tons.

South Africa Republic (Contd.):

The March catch this year yielded: fish meal 24,001 short tons, fish body oil 1,793,903 Imperial gallons, canned pilchards 2,244,576 pounds, canned maasbanker 1,681,152 pounds, and canned mackerel 1,333,776 pounds. (The South African Shipping News and Fishing Industry Review, May 1962.)

South-West Africa

FISHERY TRENDS FOR 1961:

Although landings increased, the value of fishery products manufactured in South-West Africa declined in 1961. The record catch of 378,032 short tons of pilchard and maasbanker was 21.9 percent above the amount landed in 1960. Spiny lobster landings in 1961 of 6,361 short tons increased 48.7 percent over 1960. But the total value of manufactured fishery products, estimated at 22,753,000 S.A. rands (US$31,854,000), was down 9.0 percent from 1960. The value declined because the pack of canned pilchards in 1961 was much smaller than the pack in 1960. The decline in value was partly offset by an increase in the value of the production of frozen spiny lobster tails and fish meal.

In addition to pilchards and spiny lobsters, a total of 1,912 short tons of whitefish, snoek, and other finfish were landed in 1961.

South-West Africa's Production of Sardine (Pilchard) and Spiny Lobster Products, 1960-1961

Item	Production	
	1961	1960
	. . .(Short Tons). . .	
Pilchard:		
Canned	76,975	114,034
Meal	77,735	55,122
Oil	19,710	16,694
	. . . .(1,000 Lbs.). . . .	
Spiny Lobster:		
Canned	306.4	399.4
Frozen tails	3,027.8	1,060.0
Meal	1,330.4	2,029.4

In 1961, production was higher for fish meal (up 41.0 percent) and fish oil (up 18.1 percent). But the pack of canned pilchards was 32.5 percent below the pack in 1960. Heavy stocks of canned pilchards were on hand at the beginning of 1962 even though Walvis Bay canners severely restricted the pack in 1961. Only part of the canned pilchard pack had been sold by July 1962. During 1961 fish meal prices improved, but fish oil prices declined.

The pack of frozen spiny lobster tails in 1961 was almost three times as large as the pack in 1960. Higher prices were received for the larger pack in 1961 because the demand continued to exceed the supply.

The amount of pilchards that may be landed in South-West Africa during 1962 has been raised to 435,000 short tons, an increase of 16 percent over the 1961 quota. (United States Embassy, Capetown, report of June 25, 1962.)

Notes: One South African rand equals about US$1.40.
Also see Commercial Fisheries Review, May 1962 pp. 68-70; July 1961 p. 87.

Spain

VIGO FISHERIES TRENDS, SECOND QUARTER 1962:

Landings: Fish unloaded at the port of Vigo, Spain, during the second quarter of 1962 was 65.6 percent more in weight and 30.3 percent higher in value than during the first quarter of the year, and 4.9 percent more in quantity and 20.6 percent higher in value when compared with the second quarter of 1961. The average price per kilo for the second quarter of 1962 was 10.38 pesetas (7.8 U.S. cents a pound) compared with 13.24 pesetas (10 cents a pound) for the first quarter of 1962, and 9.04 pesetas (6.8 cents a pound) for the second quarter of 1961

The much higher landings of octopus and horse mackerel and the fairly good start of the albacore fishing season were mainly responsible for the increased landings in the second quarter of 1962. The price of albacore started to increase as the season advanced because of the heavy demand from fish canners who were anxious to make up for the poor sardine season. Albacore and sardines are the basic species for the export market of canned fish.

Table 1 - Fish Handled by the Vigo Fish Exchange, Second Quarter 1962 with Comparisons

Period	Qty.	Value	
	Metric Tons	1,000 Pesetas	US$ 1,000
1962:			
April-June	18,322	190,409	3,173
January-March	11,065	146,117	2,435
1961:			
April-June	17,461	157,931	2,632

Table 2 - Utilization of Fish Landed at Vigo Fish Exchange, Second Quarter 1962 with Comparisons

Period	Shipped Fresh to Domestic Mkts.	For Canning	Other Processing (Smoking, Drying, Fish Meal, etc.)	Local Consumption
	. . . . . .(Metric Tons).			
1962:				
2nd. Qtr.	9,636	1,830	6,043	813
1st Qtr.	8,624	565	1,160	716
1961:				
2nd. Qtr.	10,948	1,302	4,440	771

Vigo's landings during April 1962 amounted to 5,804 metric tons with an ex-vessel value of 64.7 million pesetas (US$1.1 million) as compared with 5,831 tons valued at 52.0 million pesetas ($0.9 million) in April 1961. In May, 5,938 tons were unloaded valued at 54.9 million pesetas ($0.9 million) as against 6,410 tons and 56.6 million pesetas ($0.9 million) in May 1961.

The lower landings for May 1962 were caused by a decrease in catches of the following species: small hake 1,028 tons in May 1961 as against 549 tons in May 1962; pomfret 200 tons in May 1961 and 6 tons this May; sardines 378 tons in May 1961 and 207 tons in May this year; and horse mackerel 886 tons in May 1961 and 793 tons this May. Increases in other species, such as octopus, sea bream and cuttlefish, were not large enough to offset decreases in catches of major species.

The lifting on April 15 of the conservation fishing ban on sardines did not help as catches of that species continued

pain (Contd.):

t through most of the second quarter. The price of sar-es at the fish exchange increased from 4.19 pesetas a (3.16 U.S. cents a pound) ex-vessel in April 1961 and pesetas (3.76 cents a pound) in May 1961, to 6.87 and pesetas (5.19 and 5.27 cents a pound) in April and May 2. Price increases were also reported for other species.

Canning: The fish canning industry was fairly active during the second quarter of 1962, in spite of lack of commercial species and high costs. Sardine catches were not as abundant as expected, and the prices were high. The albacore fishing season, which started about the middle of June accounted for limited catches only, and the prices also were high. Octopus and shellfish (mainly mussels) made up the bulk of the packing at fish canning plants during the period.

A collective agreement was being discussed for the fish canning industry. Unconfirmed reports indicated that minimum wage increases of about 30 percent will be granted by the agreement. Since this industry is dependent upon labor to a very large extent, it is easy to foresee a substantial increase in production costs, which will inevitably be reflected in the price of the finished product. Prices of Spanish canned fish in the international market are already higher than those for similar products from other countries--Portugal, Morocco, and Japan, in particular--and exporters are apprehensive for their foreign trade prospects.

Also contributing to high production costs is the price of tinplate (which is estimated as a 30-60 percent factor of the total costs). Spanish tinplate costs about 1,720 pesetas (US$29.00) per 190-pound case. Imported tinplate is obtained at around 1,150 pesetas (US$19.00) f.o.b.; transportation costs and entrance duties (30-percent customs duties plus 12-percent fiscal tax) bring the price of imported tinplate to the level of domestic tinplate. A reduction of 15 percent in customs duties has been requested by the canning industry. About 60,000 metric tons of tinplate are imported each year. The prospects are for an increase in Spanish tinplate production to about 100,000 tons by 1963, when the needs of the canning industry will be around 140,000 tons. The problem of tinplate prices seems to be a long-term one.

Table 3 - Landings and Average Ex-Vessel Prices of Principal Species at Vigo Fish Exchange

Species	April-June 1962			January-March 1962			April-June 1961		
	Qty.	Average Price		Qty.	Average Price		Qty.	Average Price	
	Metric Tons	Pesetas/ Kilo	US¢/ Lb.	Metric Tons	Pesetas/ Kilo	US¢/ Lb.	Metric Tons	Pesetas/ Kilo	US¢/ Lb.
Octopus	5,763	3.09	2.3	1,711	4.44	3.4	3,249	3.23	2.4
Horse mackerel	2,627	4.34	3.3	1,662	6.00	4.5	2,391	2.71	2.0
Hake, small	2,176	25.58	19.3	2,794	23.07	17.4	2,973	19.84	15.0
Sardines	777	7.21	5.5	105	7.93	6.0	1,411	5.20	3.9
Sea bream	552	11.76	8.9	424	18.95	14.3	237	10.74	8.1
Hake, large	493	46.62	35.2	145	59.16	44.7	238	45.45	34.4
Albacore	453	28.37	21.4	-	-	-	188	23.04	17.4

lbacore Tuna Fishing: The albacore tuna fishing season ed during the last week of June. The catches were re-ed to run higher than during the first days of the 1961 sea-Prices at the fish exchange averaged 25-30 pesetas a (18.9-22.7 cents a pound) as compared with an average of pesetas a kilo (17.4 cents a pound) in 1961. In the opin-f some fishermen, the fishing for the season started too since albacore were found close to Vigo Bay and they will ably have proceeded in their migration beyond the range of fishing vessels before full advantage could be taken of the on.

a Coruna Fishing Port: Improvements are being planned h e La Coruna fishing port, second in importance in Galicia. n ew facilities will include a 3,100-foot pier, fish exchange, office, telephone and telegraph, banking and other services. plan is designed to attract fishing vessels from other ports a Coruna, and to take full advantage of the increased capac-f the fishing fleet under the new "Law for the Renovation of p anish Fishing Fleet."

od: Some of the fishing vessels that sailed to Newfoundland he cod fishing season in January had returned. Cod catches less than satisfactory, but data are not available as the were landed at several ports in Galicia.

At least one local fish canner is experimenting with aluminum as a substitute for tinplate with some success, especially for the more delicate products such as shellfish, and other fish in which olive oil is not used. It will, however, be some time before aluminum replaces tinplate in the local canneries as the price is still higher than tinplate, and new machinery will have to be installed. Some Portuguese fish canneries are already using aluminum.

Canned Fish Exports: Exports of canned fish from Vigo dropped considerably during the second quarter of 1962. Although complete figures are not available, it is estimated that exports during the period April 21-May 20, 1962, were about 30 percent of the amount exported during the same period of 1961.

Table 4 - Canned Fish Exported from Vigo, January-May 1962

	Quantity	Value
	Metric Tons	US$
1962:		
April 21 - May 20	319	194,652
February 21 - March 20	586	396,261
January 21 - February 20	915	607,156

Spain (Contd.):

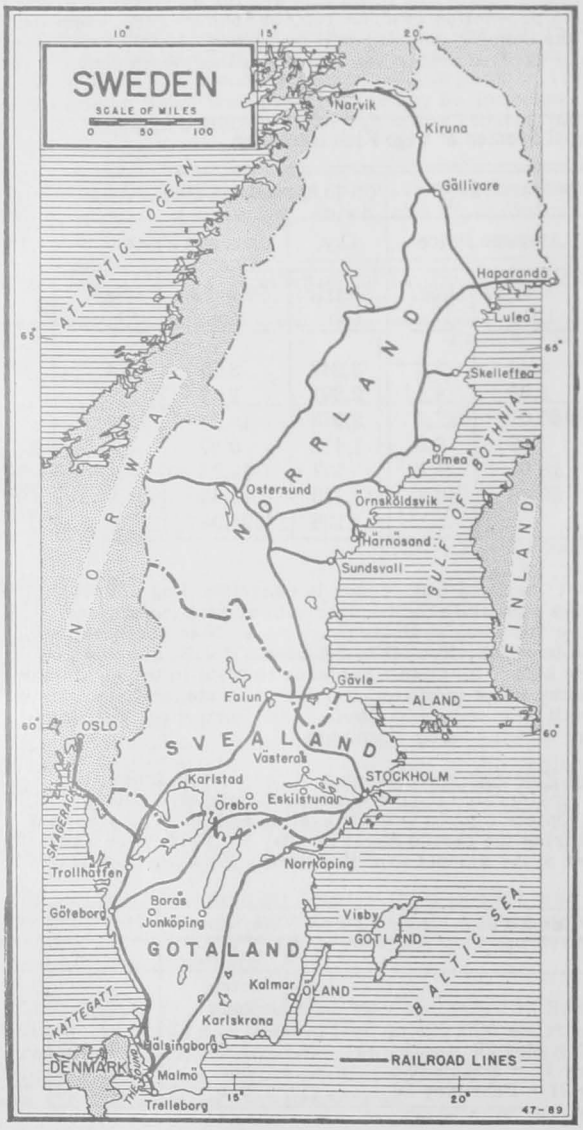
Lack of commercial species and high prices were given as the main reason for the continued drop in exports, following the high level maintained through the second half of 1961 and early 1962. (United States Consulate, Vigo, report of July 6 and 16, 1962.

Note: Values converted at rate of 60.00 pesetas equal US$1.00.

Sweden

FISHING GEAR ATTACHMENT FOR SIMULTANEOUS TROLLING AT DIFFERENT DEPTHS:

A recent development in trolling or line fishing is the Swedish "surfing" paravane manufactured in Goteborg, Sweden. It is claimed that by using 3 or 4 paravanes, fish can be taken at the same time at different depths.



An illustration of the "surfing" paravane shows a device with two fins sticking out of one side of a round ball. The vertical fin is set on the plane of the horizontal fin. (Editor's note: The paravane appears to have some relation to the familiar trolling "dodger" widely used in salmon trolling. It looks like a "dodger" might look if one end of the "dodger" were inserted in a ball and a vertical fin was then attached to the top side of the "dodger.") Both the vertical and the horizontal fin have sets of holes. Trolling depth can be varied by fastening the line in different holes of the vertical fin of the paravane, by the speed of the boat, by the length of line, and by the size and weight of the bait. Lateral control is provided by the horizontal fin. The surfing paravane signals a bite by surfacing, unless a heavy bait is used.

There are 3 models of the paravane. Model No. 43 is for small fish such as mackerel and trout. Model Nos. 50 and 60 are for large fish such as salmon, kingfish, barracuda, dolphin, and tuna. Using model No. 60, a fisherman can troll to a depth of 90 feet. A greater depth can be reached by using 2 model No. 60's. (World Fisheries Abstracts, April-June 1962; Australia's Fisheries Newsletter, November 1961.)

Taiwan

FISHERY LANDINGS UP IN 1962:

Taiwan's fishery landings in the first 6 months of 1962 were estimated at 166,400 metric tons, a 10.5-percent increase from the first half of 1961. The growth of Taiwan's fishing fleet is largely responsible for the increased landings during the past few years, as well as the Government's efforts to modernize and expand the fishing industry. Two 550-ton tuna vessels constructed in Japan were delivered to a Taiwan fishery firm early in 1962, and 12 additional tuna vessels of 145-ton capacity, which were being constructed locally with United States aid funds, were due for delivery in September.

The Tawain Government's success in expanding its fishing industry apparently has exceeded the consumption capacity of the local fishery marketing and processing indus-

iwan (Contd.):

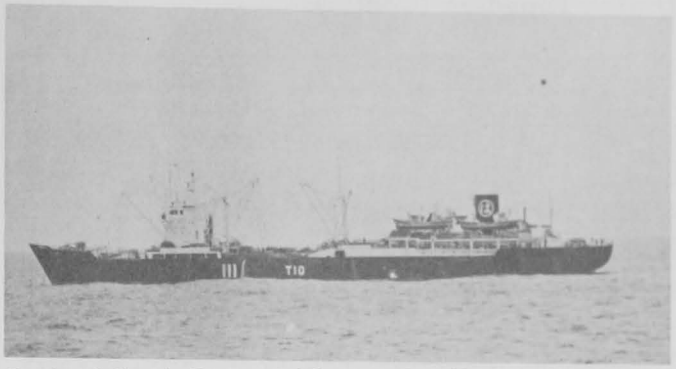
ies. During June 1962, a total of 17 private shing companies petitioned the Taiwan Fisheries Bureau to take action to relieve the offshore fishing industry from overexpansion d overproduction, both of which had contributed to a drop in the market price of fish. ring the second quarter of 1962, the average wholesale price of fish dropped by about percent as compared with the corresponding period in 1961. The Taiwan Fisheries reau was then somewhat inclined to disunt the complaint of the fishing industry an industry-wide conference was planned July to review the industry's problems. e possibility of placing a limitation on the nber of operating trawlers, finding new hing grounds, improving the method of h handling and marketing, reducing operng costs of the fishing industry, and exnding the fish processing industry were ms up for discussion at the meeting. The oblems were considered domestic primar, and were not believed to affect Taiwan's ep-sea fishing industry.

The Taiwan Government also held a fish oducts processing seminar to discuss protion of export sales of frozen fish. In ne, the Kaohsiung Fisheries Association Taiwan contracted to supply 30 tons of zen dolphin and 80 tons of frozen tuna Japan at about US$300 a ton f.o.b. Taiwan. was believed that this fish would be reorted to the United States. There were ne reports that Japanese firms were ious to sign long-term contracts for the ply of frozen tuna to Japan. The Taiwan heries Bureau stated it was more intered in finding direct outlets in the United es, or other markets instead of to Ja. (United States Embassy, Taipei, re- of July 31, 1962.)

S.S.R.

HING FLEET ON ORGES BANK, JUNE 1962:

During the third week in June 1962, the iet fishing fleet on Georges Bank in the th Atlantic numbered 169 vessels. The t consisted of 164 trawlers and gill-nets, a seagoing repair tug, and 4 mothership. This is approximately the same num- of Soviet vessels as were in the area in late May. Herring was the major species being taken. (Unpublished sources.)

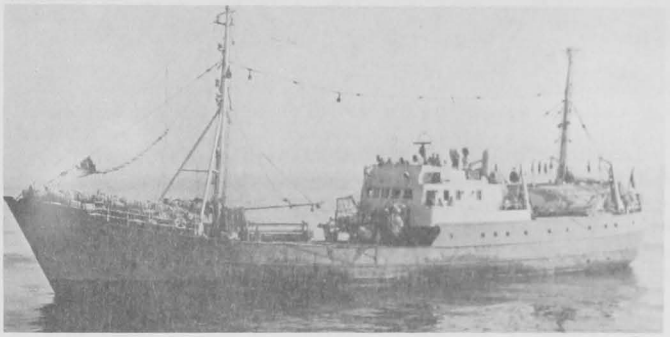


Russian drifter (gill-netter) fishing on the "Northern Edge" of Georges Bank.

* * * * *

FISHING IN GULF OF ALASKA, JUNE-JULY 1962:

In a period of six weeks beginning in mid-June 1962, the Soviet fleet in the Gulf of Alaska increased to 107 vessels, consisting of 89 trawlers, 8 freezer ships, and 7 support vessels, such as tugs, tankers, and cargo ships. The fleet, using midwater trawls, was catching mostly Pacific ocean perch and some sablefish. No halibut or other bottom fish were reported taken. The fleet was gradually moving eastward and was last reported late in July in the vicinity of Chirikof Island. (Unpublished sources.)



Russian king crab factoryship Andrey Zakharov, operating in Bering Sea, July 5, 1961.

United Kingdom

BRITISH FISHERIES TRENDS, 1961:

Landings: White fish landings by British and foreign vessels in the calendar year 1961 amounted to 780,022 metric tons, down 3.1 percent from landings in 1960. But the ex-vessel value of those landings in 1961 was slightly above that of the larger catch one year earlier.

United Kingdom (Contd.):

Great Britain's White Fish Landings, 1961-60			
Year	Quantity	Ex-Vessel Value	
	Metric Tons	Million £	Million US$
1961	780,022	61.3	171.6
1960	805,028	60.7	170.0
Note: The term "white fish" excludes pelagic fish and shellfish.			

A drop of 5.3 percent in white fish landings by British vessels was partly offset by an increase of 10.3 percent in white fish landings by foreign vessels.

The decline in landings by British vessels in 1961 was mainly due to reduced rates of catch on almost all fishing grounds by near- and middle-water trawlers. Landings by that fleet in 1961 were down 13 percent even though the fleet increased. A total of 70 new vessels came into service and 58 were scrapped that year. At the end of 1961 there were 514 trawlers in the fleet as against 502 at the end of 1960. The fall in the rates of catch by near- and middle-water trawlers was most severe for English and Welsh trawlers, but it created a serious operating problem for all owners.

Fig. 1 - Distant-water trawler getting ready to dock at Grimsby, England.

Landings by the British distant-water fleet in 1961 of 359,500 tons were down slightly from the previous year. Landings by the distant-water fleet were sustained by an increase in fishing by grant-aided trawlers. The rate of catch fell in all of the main distant-water fishing areas except Bear Island. The decline in the rate of catch was partly due to increased fishing by the less powerful grant-aided trawlers. The average value of the distant-water catch in 1961 was 65s. 4d. per hundredweight of 112 pounds (8.17 U. S. cents a pound) as compared to the average value in 1960 of 62s. 7d. per hundredweight (7.82 cents a pound). The quantity not sold at or above the minimum price and used for fish meal was just less than 6,000 tons in 1961 as compared with 7,000 tons in 1960. The number of vessels in the distant-water fleet at the end of 1961 was 228, one less than at the end of 1960. Five new Diesel-powered vessel (including a stern trawler designed to freeze part of her catch at sea) came into service in 1961. In 1961, British yards had ten vessels under construction for the distant-water fleet, including one stern trawler designed to freeze her entire catch at sea.

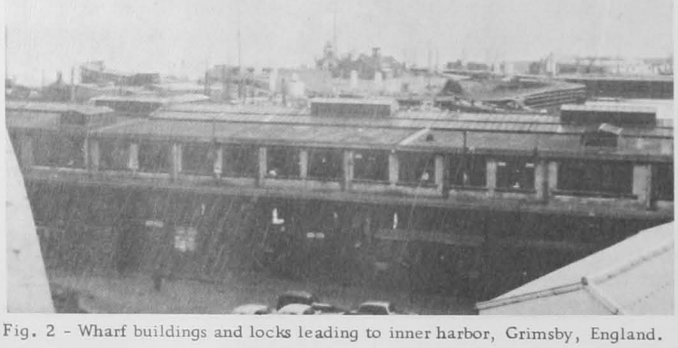


Fig. 2 - Wharf buildings and locks leading to inner harbor, Grimsby, England.

The number of Scottish seiners fell by 56 during 1961, but the fleet accounted for 45 percent of Scottish landings. There was a small increase in the number of English seiners, but their catch declined slightly in comparison with the previous year.

The inshore catch (excluding shellfish) in 1961 was down about 1 percent in quantity and 1.5 percent in value from the previous year. Landings in Northern Ireland recovered from the previous year's low level. Shellfish landings again showed an increase in value from £2,078,739 ($5,820,469) in 1960 to £2,376,918 ($6,655,370) in 1961, due mainly to an increase in the catch of lobsters and Norway lobsters in Scotland.

Aid For Fishing Industry: The White Fish Authority for the fiscal year ending March 31, 1962, showed a deficit of £17,578 (US$49,218) and the accumulated surplus of the Authority's funds was reduced to £187,18[illegible] ($524,112). This was revealed in the annual report of the White Fish Authority which was published in July 1962. The deficit was mainly due to increased outlays for research. The report stated that for the current year the deficit is likely to be £100,000 ($280,000) due largely to the cost of additional research. For this reason initial steps were taken to raise the general tax from ½d. per stone (4.16 U. S. cents for 100 pounds) to 1d. per stone (8.33 U. S. cents for 100 pounds).

The net amount outstanding as of March 31, 1962, on loans made by the Authority for new vessels, motors, nets and gear, improvements, and processing plants was over £22.0 million ($61.6 million). Past due loans became a problem for the first time during 1961. The amount in arrears reached £417,467 (US$1,168,908) on May 14, 1962, and placed a heavy burden on the Authority's funds. But it was still possible to meet the half-yearly repayment of £1.4 million ($3.9 million) to the Treasury on April 30.

The Authority applied a policy of restraint in 196[illegible] in approving assistance for building new near- and middle-water vessels. Grants and loans were approved for only six trawlers and one large vessel. From the beginning of the program in 1953 through March 31, 196[illegible] the Authority had assisted 356 near- and middle-water vessels. Total assistance to the near- and middle-water fleet had amounted to almost £33.5 million ($93.8 million): over £9.5 million ($26.6 million) in grants and almost £24.0 million ($67.2 million) in loans.

Only 29 coal-burners were left in the fishing fleet at the end of March 1962, as compared with 87 a year earlier. When the coal-burners have all been scrapped and the vessels now being built have come into service, the size of the near- and middle-water fleet will be two-thirds of the total at the end of 1953.

The Authority examined applications for building inshore vessels in 1961/62 more rigorously than when modernization was less advanced. In the case of seiners emphasis was on replacement. Only 52 grants for inshore vessels were approved in 1961/62 as compared with 73 in the previous year. Approvals for new motors in 1961/62 amounted to 45, about the same as in the previous year. Through March 31, 1962, the Authority had approved 819 grants for new inshore vessels and 507 grants for new motors. Financial assistance had amounted to over £7.5 million ($21.0 million): about £2.5 million ($7.0 million) in grants and £5.0 million ($14.0 million) in loans.

United Kingdom (Contd.):

In accordance with the broad policy set out in the Government's White Paper on the fishing industry, issued in August 1961, the Ministers have informed the Authority of the arrangements which they desire should be adopted in administering grants for new trawlers of 80 feet and over under the scheme to be presented to Parliament under the Sea Fish Industry Bill. The trawler owners organizations and the Authority were consulted on and concurred in the arrangements.

The arrangements provide that new grant-aided trawlers should genuinely displace older vessels (i.e. pre-war distant-water vessels and near- and middle-water trawlers built without grant) roughly on the basis of one new ton for every two old tons. The Authority should satisfy themselves that the old tonnage was scrapped. Some limited relaxations could be made at the Authority's discretion in respect to small companies, genuine newcomers to the industry, and in certain exceptional circumstances. The Minsters considered that a total provision of £2.0 million ($5.6 million) for grants for trawlers should be adequate for the period up to the end of 1965. Loans--of up to 60 percent of a trawler's cost--should be made only to applicants who satisfied the Authority that they could not borrow on the open market at reasonable rates of interest.

The trend towards greater concentration of ownership of trawlers in England and Wales continued in 1961. Six companies, or groups of companies, now own 60 per cent of the fleet. In Scotland also, the number of owners fell. At Aberdeen at the end of 1961, a total of 51 owners controlled 129 vessels, compared with 61 owning 122 vessels a year earlier.

Marketing and Distribution: The Authority's report records the steps taken on the Fleck Committee's recommendation "that a deliberate and concentrated attempt should be made to raise the average quality of fish by improved handling methods." The recommendation was endorsed in the Government's White Paper of August 1961. The terms of a resolution adopted by a conference convened by the Department of Scientific and Industrial Research at Hull in November showed that the need to raise standards was widely recognized in the industry. A series of discussions on the matter are being arranged jointly by the Fisheries Departments and the Authority. The first, which was held in April 1962, was with representatives of the trawler owners, distributors, and quick-freezers. Meetings with other interests concerned have been planned.

In the course of the year, the Authority discussed with representatives of distributors' organizations the proposals on fish boxes put forward originally by the National Federation of Fish Friers. There was general agreement that regulations should be made prohibiting, first, the use of any box for fish if it had previously been used for another commodity and, secondly, the use of returnable boxes for quantities of more than two stones (28 pounds) of fish. The matter, including the question of enforcement, is now being examined in detail.

The assembly of the equipment for the pilot project for mechanizing the unloading and handling of fish at Grimsby was completed in 1961. It was tried in sections at experimental landings. Progress was delayed for several weeks through the strike in the spring. The results are promising, but certain problems and modifications require further study. While the equipment on trial is providing useful experience, it is

Fig. 3 - At Grimsby, after unloading from the trawler in wicker baskets, fish is transferred to aluminum trays for display to buyers. Auction begins at 7:30 a.m.

cumbersome and difficult to maneuver and is not the ultimate answer. But the traditional method of unloading is clearly wasteful and gives no ground for complacency.

The committee for Scotland and Northern Ireland has continued consultations with the advisory panel on the Highlands and Islands on the development of the shellfish industry, particularly crab fishing.

The Authority's publicity appropriation for 1961/62 remained at the previous year's figure of £75,000 ($210,000). While the broad divisions of expenditure were much the same--advertising in evening newspapers throughout the country, the merchandising service among fish-mongers and fish friers, and educational work--the general theme of the campaign was revised to take account of the findings of the consumer survey conducted in 1960.

According to returns submitted to the Authority, British production of frozen processed fishery products rose in 1961 by 7.1 percent to 56,157 tons, a smaller advance than in the previous, year; about 30,000 tons were in bulk or institutional packs and 26,000 tons were in consumer packs. This production represented a usage of 16.3 percent of total white fish landings. Home market sales rose by 8.8 percent, again a smaller increase than in 1960.

The pilchard catch of 2,669 tons showed a further decline in 1961 of nearly 10 percent. Domestic production of canned pilchards fell by over 15 percent and imports from South and South-West Africa dropped by about $8\frac{1}{2}$ percent.

British production of white fish meal fell slightly in 1961 to 71,100 tons, due to a further drop in supplies of raw materials. But imports showed an increase of 38 percent, mainly from Norway, Denmark, South Africa, Peru, and Iceland. Prices were on the average slightly lower.

Research: The Advisory Group on Experimental Fisheries Work, which was set up by the Fishery Ministers last year to consider what grant-aided experimental work should be done to help the fishing industry to adapt itself to the conditions it would have to face over the coming years, submitted their first report to the Ministers in the fall of 1961. The Authority has started working on the following recommendations of the Advisory Group.

1. Design of new vessels: It was recommended that the best method of assistance was for grants to be giv-

United Kingdom (Contd.):

en in suitable cases for building experimental vessels on condition that full information was made available for the industry. A grant for a Diesel-electric trawler designed to freeze her whole catch at sea has been made, and the Authority is keeping the need for other prototype freezer vessels under review.

2. Conversion of existing conventional trawlers: The Authority is commissioning a design study, as recommended by the Group, of the reengining of a distant-water steam trawler, preferably with Diesel-electric machinery, and the installation of a freezing plant. Further studies of conversion to part-freezing of distant-water and middle-water motor trawlers will be considered.

3. Development of trawler-freezing plants: The Authority has approached a number of firms about the possibility of developing a compact and lighter compressor with other features advantageous to refrigerating work in trawlers.

Progress on research into trawling gear was made during the year. Modifications and improvements of the Granton trawl as used by distant-water vessels have been tested by the Fisheries Departments' research vessels Ernest Holt and Explorer, and other trials are planned. Complementary studies on fish behavior have been carried out in the Marine Laboratories at Aberdeen and Lowestoft, and there have been

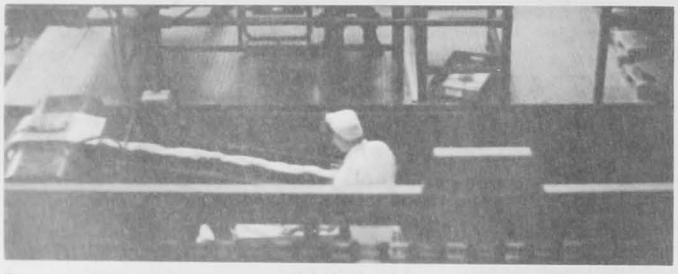


Fig. 4 - Girls candling ocean perch fillets at a Grimsby frozen fish plant.

meetings between the Government scientists concerned with this work and the team working on the gear design.

The survey work by the near-water trawler Madeline continued during the year, though it was severely restricted during the winter months by exceptionally rough weather. Among the different kinds of gear being tried is the latest type of French purse-seine net.

The Authority has asked the Department of Scientific and Industrial Research to inquire into the feasibility of icing and freezing pilchards for subsequent processing as well as the suitability for processing of pilchards caught during certain months of the year.

The Department of Agriculture and Fisheries for Scotland has given permission to a commercial processing concern to undertake exploratory trawling for shrimp in the upper reaches of the Firth of Forth and in the region of Largo Bay. Samples from the fishing are being examined by the Department's marine laboratory at Torry.

Approval was given in August 1961 to a request from the Aberdeen Fishing Vessel Owners' Association for financial assistance towards the cost of trials with French gear by two Aberdeen trawlers. The trials established, briefly, that this gear was more effective in catching round fish than flat fish and produced higher catches of superior-quality haddock than the Aberdeen gear when fished during daylight. However, the apparent potential of the gear needs further confirmation. Approval has been given for an extension of the trials with the object of securing improvements and obtaining information on the gear's performance in deeper water than normally fished by Scottish trawlers.

The Authority's expenditure of £29,506 ($82,617) on maintenance grants to fishermen and new entrants attending training was somewhat lower than the previous year's total of £31,184 ($87,315) due to a decline in the number of trainees. On the other hand, Fleetwood began courses for new entrants which attracted a satisfactory enrollment. At Aberdeen, progress was made in the comprehensive course for Diesel engineers and in the prevocational courses.

The number of trainees receiving grants was 745 (460 on upgrading courses, 43 on Diesel engineers' courses, and 242 on new entrant courses).

Ten training courses were organized by the Authority for retail distributors, in cooperation with local trade associations and education authorities. Courses for fishmongers were arranged at Leeds, Manchester, Bristol, Birmingham, Dagenham, and Woolwich. Courses for fish friers were held at Leeds, Chester, Bristol, and Southampton. With the exception of the two courses in the London area, the numbers enrolling were good. More courses are being planned for the coming autumn and winter. (Fish Trades Gazette, July 7, 1962.)

Note: See Commercial Fisheries Review, February 1962 p. 96.

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BRITISH FISHERMEN NEED NEW FISHING GROUNDS:

Danish, Faroese, Norwegian, and Icelandic extensions of their national fishing limits or boundaries threaten to drive Britain's high seas trawlers to such distant waters as the Antarctic or tropical areas of Southwest Africa, according to a news item in the London Financial Times of July 12, 1962.

In the future, British fishermen may have to cruise south of the Equator to sustain their present catch level. The trend towards extending national fishing limits to 12 miles could, within 10 years, deprive British trawlers of almost 9,000 square miles of fishing grounds now fished by them. The loss of such traditional fishing grounds may reduce the present British trawler catch by about 30 per cent.

According to the London newspaper, the most promising undeveloped trawling grounds are located in waters off Southwest Africa and the Antarctic. Russian trawlers are now conducting exploratory fishing off Southwest Africa. So far British exploratory trawling

United Kingdom (Contd.):

nas been limited to the Farm area west of Ireland, the Dohrn Bank off Greenland, and the Grand Banks off Newfoundland. (Berlingske Tidende, Copenhagen, July 13, 1962, as translated by the Fisheries Attache, United States Embassy, Copenhagen.)

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BRITISH SUGGEST USING HELICOPTER FOR OCEAN TRAWLING:

Four aircraft designers in Yorkshire, England, have drawn designs for adapting a helicopter to ocean trawling. The designs envision a craft with a dead weight of about 100 tons that could fly 9 feet above the water. It would travel at a speed of up to 100 miles per hour on the way to and from fishing grounds, and have a range of 3,500 miles. It would cost an estimated £1 million (US$2.8 million) to build. The designers emphasize the advantages of fishng from the air. (The South African Shipping News and Fishing Industry Review, May 1962.)

* * * * *

FISHERY LOANS INTEREST RATES REVISED:

The British White Fish Authority announced that, as a result of a change in the rates of interest charged to them by the Treasury, their own rates of interest on loans made as from June 16 will be as follows:

Fishing vessels of not more than 140 feet, new engines, nets and gear: on loans for not more than five years, $5\frac{3}{8}$ percent, decrease $\frac{1}{8}$ percent; on loans for more than five years, but not more than 10 years, $5\frac{7}{8}$ percent, decrease $\frac{1}{8}$ percent; on loans for more than 10 years, but not more than 15 years, $6\frac{3}{4}$ percent, decrease $\frac{1}{8}$ percent; on loans for more than 15 years, but not more than 20 years, $6\frac{7}{8}$ percent, no change.

Processing plants: on loans for not more than 15 years, $7\frac{1}{2}$ percent, no change; on loans for more then 15 years, but not more than 20 years, $7\frac{1}{2}$ percent, no change.

The rates on loans made before June 16 are unchanged.

The White Fish Authority announced during the week ending July 21 the following additional changes in rates of interest on loans made as from July 14:

Fishing vessels of not more than 140 feet, new engines, nets and gear: on loans for more than 10 years, but not more than 15 years, $6\frac{3}{8}$ percent, decrease $\frac{3}{8}$ percent; on loans for more than 15 years, but not more than 20 years, $6\frac{5}{8}$ percent, decrease $\frac{1}{4}$ percent.

All other rates were unchanged. (Fish Trades Gazette, June 23 and July 21, 1962.)

Note: See Commercial Fisheries Review, June 1962 p. 64.

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NEW SUBSIDY RATES:

Five plans introducing new rates for subsidies and grants for vessels in the white fish and herring industries were laid before Parliament on July 4, 1962, by the British Minister of Agriculture and Fisheries and the Secretary of State for Scotland. The plans were developed under the Sea Fish Industry Act of 1962 which received the Royal assent on July 3, 1962.

White Fish Subsidy (United Kingdom) Scheme, 1962: Provides for both basic and special rates for vessels of 80 feet or more in length. Also provides for changes in the rates for vessels under 80 feet. The new rates, except where otherwise stated, apply for the 12 months ending July 31, 1963. Distant-water vessels and near-middle water vessels will receive subsidy payments for each day at sea. Inshore vessel subsidies will be based on landings.

The rates for distant- and near-middle water vessels are as follows:

Type of Vessel	Payment Per Day at Sea	
	£	US$
Basic rates for vessels 80 feet or more in length, other than coal-burners:		
Vessels between 80 and 110 feet	9.0	25.20
Vessels between 110 and 140 feet	13.0	36.40
Vessels 140 feet and over	15.0	42.00
Special rates for vessels 80 feet or more in length:		
Coal-burners:		
Vessels between 80 and 140 feet	6.5	18.20
Vessels 140 feet and over	7.5	21.00
Oil-burners built before Aug. 1, 1952:		
Vessels between 80 and 120 feet	2.0	5.60
Vessels between 120 and 140 feet:		
(a) which spent at least 30 percent of their days at sea in 1960 or 1961 fishing grounds in the vicinity of the Faroes:		
Between Aug. 1, 1962 and Dec. 31, 1962	5.0	14.00

(Continued on next page)

United Kingdom (Contd.):

Type of Vessel (Contd.)	Payment Per Day at Sea	
	£	US$
Between Jan. 1, 1963 and July 31, 1963	2.0	5.60
(b) Other vessels	2.0	5.60
Oil-burners built after July 31, 1952, and motor vessels:		
Vessels between 80 and 90 feet ordinarily fishing from Aberdeen, Lowestoft, or Fleetwood	1.0	2.80
Vessels between 90 and 100 feet ordinarily fishing from Aberdeen . .	2.0	5.60
Vessels between 100 and 110 feet ordinarily fishing from Aberdeen, Granton, North Shields, Hartlepools, Milford Haven, or Fleetwood . . .	3.0	8.40
Vessels between 110 and 120 feet ordinarily fishing from Aberdeen, Granton, North Shields, Grimsby, or Lowestoft:		
(a) which spent at least 30 percent of their days at sea in 1960 or 1961 fishing grounds in the vicinity of the Faroes		
Between Aug. 1, 1962 and Dec. 31, 1962	4.0	11.20
Between Jan. 1, 1963 and and July 31, 1963	2.0	5.60
(b) Other vessels	2.0	5.60
Vessels between 120 and 130 feet ordinarily fishing from Aberdeen, North Shields, Grimsby or Lowestoft Between Aug. 1, 1962 and Dec. 31, 1962	3.0	8.40
Vessels between 130 and 140 feet ordinarily fishing from Grimsby Between Aug. 1, 1962 and Dec. 31, 1962	3.0	8.40
Rates for vessels under 80 feet in length: Vessels between 60 feet registered and 70 feet over-all length 1/.	6.0	16.80
Vessels over 70 feet over-all, but under 80 feet registered length 2/	7.5	21.00

1/Includes seine-net vessels of any length up to 70 feet over-all which normally make voyages of more than 7 days.
2/Includes seine-net vessels which meet the length requirement and which normally make voyages of more than 7 days.

The subsidy rates for other vessels under 60 feet are based on landings. The rates are: 1s. 3d. per stone ($1.25 for 100 pounds) for whole gutted fish and certain ungutted fish; 10d. per stone (83 U. S. cents for 100 pounds) for sprats and white bait; and 1s. 1d. per stone ($1.08 per 100 pounds) for other whole ungutted fish.

Herring Subsidy (United Kingdom) Scheme, 1962: Provides for some changes in subsidy rates on herring. The new rates apply for the 12 months ending August 31, 1963. The rates for vessels over 40 feet are as follows:

Type of Vessel	Payment Per Day at Sea		Percentage Change from Old Rate
	£	US$	
Motor vessels between 40 and 60 feet	7.5	21.00	+15.4
Motor vessels between 60 and 80 feet	8.0	22.40	-5.9
Motor vessels over 80 feet and all steam vessels . . .	14.0	39.20	No change

The herring subsidy rate for vessels under 40 feet are based on landings and have been increased to 6d. per stone (50.0 U. S. cents for 100 pounds). This is an increase of 2½d. per stone (20.8 U. S. cents for 100 pounds) over the old rate.

White Fish and Herring Subsidies (Aggregate Amount of Grants) Order, 1962: Increases from £25.25 million ($70.7 million) to £30.25 ($84.7 million) the aggregate amount of grants available towards the cost of the white fish and herring subsidies.

The White Fish Industry (Grants for Fishing Vessels and Engines) Scheme, 1962: Revokes the White Fish Industry (Grants for Fishing Vessels and Engines) Scheme, 1955, and provides for the payment of grants of 30 percent of the cost, up to a maximum of £13,000 ($36,400), for new vessels under 80 feet; 30 percent of the cost, up to a maximum of £2,500 ($7,000), for new motors for such vessels; and 25 percent of the cost, up to a maximum of £50,000 ($140,000) for new vessels of 80 feet or over.

Grants for new vessels may in certain circumstances be repayable during a period of ten years and grants for new motors during a period of five years. Unlike previous schemes this scheme imposes no restrictions on voyages to distant waters by grant aided vessels and does not require the vessels or engines to be built in the United Kingdom.

The Herring Industry (Grants for Fishing Vessels and Engines) Scheme, 1962: Revokes the Herring Industry (Grants for Fishing Vessels and Engines) Scheme, 1955, and provides for grants for new herring vessels and motors similar to those provided for white fish vessels and motors under the White Fish Industry (Grants for Fishing Vessels and Engines) Scheme, 1962.

All of the Schemes, with the exception of the White Fish and Herring Subsidies (Aggregate Amount of Grants) Order, 1962, require the approval of both Houses of Parliament. The excepted Scheme only requires the approval of the House of Commons. (Fish Trades Gazette, July 7, 1962, and The Fishing News, July 13, 1962.)

Note: See Commercial Fisheries Review, February 1962 p. 95

Viet-Nam

TWO NEW TRAWLERS ADDED TO FISHING FLEET:

Two new trawlers arrived in Saigon in the summer of 1962 to add to Viet-Nam's small fishing fleet. The two trawlers were built in Japan and imported under the commercial import program of the U. S. Agency for International Development (AID). The vessels were purchased when the limited world-wide procurement policy of AID did not apply. Each vessel has icing facilities and can carry 50 tons of fresh fish.

According to officials of the Directorate of Fisheries, only two of Viet-Nam's fleet of six trawlers were operating in the summer of 1962. Four vessels were undergoing repairs. Cambodia seized and held two additional Viet-Nam trawlers in 1961. Cambodia said the vessels were operating in their territorial waters. (United States Embassy, Saigon, August 2, 1962.)

Yugoslavia

CANNED FISH PACK UP IN 1961:

Yugoslavia's canned fish pack (all species) increased steadily each year from 7,530 metric tons in 1956 to 19,997 tons in 1961. The 1957 pack of canned fish increased 40 percent from the previous year. In 1958, the pack was 14.2 percent higher, in 1959 the increase was 3.8 percent, and in 1960 it was 32.3 percent more than the previous year.

Women at a Yugoslav cannery preparing fish for cooking in wire baskets prior to canning operation.

The canned fish industry in Yugoslavia packs some amount of tuna. Some of the raw fish is Japanese frozen tuna. Although the 1961 canned fish pack increased 20.8 percent from the 16,545 tons packed in 1960, the amount of tuna canned that year may not have increased appreciably. Deliveries of Japanese frozen tuna to Yugoslavia were lower in 1961 because of Japan's commitments to other countries. (Indeks, May 1962.)

PRESERVATION OF SOME MARINE FORMS

Screw-top jars containing a formalin solution should be at hand when collecting. Also, jars should be labelled immediately after collecting. A 10% formalin solution (10 parts formalin + 90 parts water) will take care of most forms. Although for more fragile forms a 5% solution (5 parts formalin + 95 parts water) should be used. Borax should also be added. If the animal is to be dried, first preserve in 70% alcohol (70 parts alcohol - 30 parts water) with some small amount of conosive sublimate (mercuric chloride) which will permeate the animal and prevent insects from touching him.

Also, if the specimen has dried out and you wish to restore the original form, place it in a solution containing one gram of tri-sodium phosphate in one liter of water. If it had been preserved in alcohol, the original shape will be restored. After the original shape returns, transfer it to 70% alcohol. (Sea Secrets, The Marine Laboratory, University of Miami, Coral Gables, Fla.)