



International

FOOD AND AGRICULTURE ORGANIZATION

PROGRAM TO PROMOTE USE OF FISH PROTEIN CONCENTRATES FOR HUMAN CONSUMPTION:

A program to promote the use of fish protein concentrate or fish flour for human consumption has been announced by the Food and Agriculture Organization Fisheries Division.

Fish protein concentrates of appropriate quality would be extremely effective in meeting serious protein deficiencies in many areas of the world and...raw materials to produce such concentrates are available in abundance in certain areas.

FAO, in consultation with other U. S. specialized agencies and with various experts in this field, has drawn up minimum specifications for fish protein concentrates which would be suitable for human consumption and has also been assembling the latest available information on suitable types of equipment and processes.

However, it is recognized that the information concerning equipment and processes and concerning the results of various experiments in different parts of the world is still not yet complete.

FAO's Fisheries Division has prepared a paper, entitled "Note on a Proposal to Manufacture Fish Protein Concentrates in Peru." This note deals with minimum specifications for fish protein concentrates suitable for human consumption and also gives the latest available information on equipment and processes. The Division is also urgently seeking supplementary information on equipment and processes for manufacturing fish protein concentrates and on the results of experiments with this product.



Excerpts from the FAO paper follow:

1. Background: The use of fish protein concentrates for human consumption was discussed by the FAO International Meeting on Fish Meal, Rome, March 1961; by the FAO/UNICEF/WHO Protein Advisory Group, June 1961; by the FAO International Conference on Fish in Nutrition, Washington, September 1961; and in particular by a Panel of Experts convened by FAO in Washington in September 1961. This Panel made certain recommendations concerning the specifications which should be followed in the manufacture of such products and concerning areas in which campaigns to promote the consumption of such products would be likely to be most effective. Among the latter, priority was given to a campaign in Peru to be associated with the very large-scale production of fish meal which had developed in that country. Recommendations of the Panel were subsequently discussed in FAO and were also referred to the Second Annual Conference of the International Association of Fish Meal Manufacturers, Lisbon, October 1961. A tentative plan of operation for a project in Peru was drafted and thereafter discussed in detail with representatives of the Government, the Fish Meal Industry, and other interested agencies in Peru, by FAO staff members during a visit to Peru in December 1961. Discussions revealed a strong interest on the part of the Government of Peru in promoting such a campaign and on the part of the fish meal manufacturers in Peru in acquiring and operating the necessary equipment for the manufacture of fish protein concentrates in sufficient quantity to supply such a campaign and, later, the commercial demand for such products in Peru.

2. Fish Protein Concentrates--Characteristics and Specifications: In considering the manufacture of fish protein concentrates in powdered form, it is essential to recognize the typical characteristics of these products and what bearing these have on the equipment and processes to be used. For the purpose of these and similar projects, where the production of fish protein concentrates, as described in the tentative specifications, is envisaged as supplementary to the manufacture of fish meal, three types of product have been specified.

The specifications give the minimum requirements for each type. Type A is completely, or almost completely, deodorized and defatted; Type B is partly deodorized and defatted; and Type C is non-deodorized and non-defatted.

3. Existing Equipment and Processes for the Manufacture of Fish Protein Concentrates: The following is a summary of what is known to FAO concerning available equipment and processes used for the manufacture of fish protein concentrates in different countries. In this connection, it must be emphasized that the manufacture of Types A and B products from a

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Type C product has so far been restricted to batch production on a small scale and that continuous type extraction plants have not yet been tested on fish.

(a) Types A and B Products

Two groups of processes can be distinguished:

- (i) Production of Types A and B in one stage directly from raw fish by azeotropic dehydration and lipid extraction with partial or complete deodorization. Fish protein concentrates of Type C cannot be manufactured by this method.
- (ii) Production of fish protein concentrates in two stages, the first of which consists in producing a concentrate of Type C. The second stage is a solvent extraction of Type C leading to a concentrate of Types A and B.

The solvents used in the various processes for making fish protein concentrate of Types A and B are ethanol, isopropanol, hexane, ethylacetate, acetone, and ethylene dichloride.

The solvents used may affect the wholesomeness of the product. They must be eliminated from the final product because of undesirable effects on taste and flavor. No toxic residues must be allowed to remain in the final product.

Good experiences are recorded with ethanol and isopropanol.

In most of the equipment to be used for manufacturing concentrates of Types A and B, various solvents can be utilized but trials have to be carried out before switching from one solvent to another.

The apparent merits and demerits of the various processes in relation to requirements in Peru are discussed below. The conclusion is that the information available is sufficient for the Peruvian Government and industry to come to a decision about the manufacture of Types A and B in Peru now, but that the selection of a specific process might be made dependent on further investigations and trials. If the decision is positive, these investigations and trials could take place concurrently with the first phase of the campaign for the introduction of fish protein concentrates into the diet of protein-deficient people in Peru, namely the development of suitable vehicles including testing for palatability. Meanwhile, FAO is now conducting widespread enquiries in order to supplement the analytical and operational information available at present.

(b) Type C Products

Subject to certain precautions and control with regard to the quality of the raw material and standards of hygiene during processing, these products can be manufactured in conventional fish meal equipment. The methods can again be divided into two groups:

- (i) Those where the raw material is dehydrated by direct heat (flame driers);
- (ii) Those where the raw material is dehydrated by indirect heat (indirect steam driers).

It is fully realized that satisfactory products might be produced by all the methods involved. In order to decide what type of process should be selected for Peru, it appears that the following points ought to be taken into account:

- (i) The process should be easily controllable and not need highly skilled operation.
- (ii) The equipment should be easily serviced and cleaned in order to meet the requirements necessary for food processing equipment.

4. Investigations Concerning the Manufacture of Fish Protein Concentrates: There is widespread interest on the part of the fishery industry, food technologists, and nutritionists in the development of equipment and processes for the manufacture of fish protein concentrates suitable for human consumption, and certain investigations now proceeding offer hope of success at a fairly early date.

5. Considerations Affecting the Proposed Project in Peru: During discussions between FAO and the fish meal manufacturers in Peru, the latter indicated their interest in an installation capable of producing 1,500 tons annually of fish protein concentrates of Types A, B, and C, without restriction below this limit of the capacity to produce any one of these types. It will be evident that in the circumstances described above, the manufacturers are faced with a number of alternatives which must be evaluated in terms of the commercial risks involved and the prospects for a profitable return on investments. These alternatives are described below, together with FAO's comments on the apparent advantages and disadvantages from the standpoint of technical, economic, and organizational considerations:

- (a) It is recognized that an annual production of 1,500 tons, such as is visualized by the fish meal manufacturers in Peru, is considerably in excess of the requirements of the projected campaign and that the surplus will be marketed together with fish meal for animal feeding. In view of this, and also since some Type C product will probably be required in any case (for the purpose of the campaign), it is assumed that the project in Peru will be based on the manufacture of a Type C product. The manufacture of Types A and B products will be based on processes involving the manufacture of a Type C product as a first stage (production in two stages).
- (b) With regard to the manufacture of a Type C product, it has been mentioned above that conventional fish meal equipment can be used for this purpose. It is a matter for the manufacturers to decide whether to install a new plant or to make available an existing plant for this purpose. In this connection, it is strongly recommended that whatever equipment is used, whether new or existing, the installation should be used exclusively for the manufacture of a Type C product and should be operated quite separately from other installations manufacturing products below the standards required for human consumption, with due regard for the control of raw material and standards of hygiene as mentioned above. The manufacturers of the fish protein concentrate should be carried out in a closed building.

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(c) With regard to the manufacture of fish protein concentrates of Types A and B, continuous production processes have been used so far only for products other than fish, and on a scale much larger than that envisaged in Peru.

(d) For the manufacture of Types A and B products, therefore, the manufacturers could adopt one of the following alternatives:

(i) A rotary drum batch process using a plant to be purchased and installed by the fish meal manufacturers.

Comment: The advantage would be that a Type B and perhaps A product could quickly be produced in sufficient quantities for the promotion campaign. During this period, it would be hoped that the results of various experiments and pilot operations would be available, on the basis of which the manufacturers could then be further advised. If, at a later stage, the manufacturers decided to replace the rotary drum process by a continuous process, this might be done without changing the solvent recovery unit which accounts for the greater part of the cost of the equipment.

(ii) A pilot plant for continuous extraction set up and operated by interested manufacturers of equipment.

Comment: Manufacturers of equipment have already indicated interest in making pilot plants available in Peru or to make trials with anchoveta in their own countries. Production would be on a small scale, but would be adequate for gaining experience with the process and for supplying material for the early stages of the promotion campaign.

(iii) An existing continuous extraction plant now being used in Peru for products other than fish.

Comment: The capacity would undoubtedly be much greater than that required for the manufacture of fish protein concentrates in Peru. The arrangement would depend on the willingness of a firm in Peru already operating a continuous extraction plant to make the plant available and to operate it under appropriate conditions, including the use of specified solvents and the exclusive use of the plant at given periods for the manufacture of fish protein concentrates.

(iv) A full-scale continuous extraction plant purchased and installed to the specifications of the fish meal manufacturers.

Comment: FAO could not recommend the outright purchase of any particular full-scale continuous extraction plant and considers further trials and investigations essential. However, interested suppliers of equipment may be willing to make such a plant available on attractive terms. This would be subject to negotiation once it has been decided to proceed with the project.

(e) In general, for a plant in which fish protein concentrates of Types A, B, and C should be manufactured, the following characteristics should be given:

(i) Operate only with fresh, wet fish of good quality.

(ii) Be equipped in a fully sanitary manner, so as to qualify as a food processing installation.

(iii) Store the fish protein concentrates in such a way that no spontaneous heating can occur (storage of the concentrates in bags of suitable material).

6. **Conclusions:** It is necessary first to decide, in principle, whether in the light of the information now available, the campaign outlined in the draft plan of operation should be undertaken. If this decision is positive, the fish meal manufacturers could go ahead with setting up a new, or using an available, plant for the production of fish protein concentrate of Type C. The manufacturers could either choose one of the alternatives listed under 5 (d) above or, if on closer examination there is not one which appears sufficiently attractive at once, defer for the moment the final decision concerning the process and equipment to be used in the manufacture of fish protein concentrates of Types A and B--see 3. (a). Supplies of these products could be obtained from other countries for the purpose of the early stages of the promotion campaign. This procedure would probably be effective in determining the requirements of the market.

As part of the project, FAO would make available the services of a suitably qualified food processing technologist, who would be ready to advise the industry on the choice of methods and equipment. He will have at his disposal a good deal of additional information on existing processes and equipment which FAO and other agencies are now assembling. Moreover, a number of pilot operations undertaken both by suppliers of equipment and by research institutes are at present in progress and well advanced. The FAO expert will keep in close touch with these pilot operations. By the time preparations for the acceptability trials are complete, vehicles for the introduction of fish protein concentrates into the diet of protein-deficient people have been developed and palatability trials have been carried out, it is likely that considerably more will be known about the various processes for the manufacture of Types A and B, so that, if the decision of the choice of equipment is deferred, it could then probably be taken with a good deal of confidence.

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WORLD MEETING ON TUNA BIOLOGY:

Some 250 scientists from 25 nations were expected to gather at La Jolla, Calif., July 2-14, 1962, for a World Scientific Meeting on the Biology of Tunas and Related Species. The meeting was sponsored by the Food and Agriculture Organization (FAO). The United States Government was official host.

Its purpose was to launch first steps toward establishing the world-wide cooperation

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necessary to clear up some of the unknown factors surrounding the fish, its behavior, migratory habits, how much is caught and how much could be caught, and the differences between the various species of tuna.

Though man has fished tuna for thousands of years, a great many questions remain unanswered about the fish. FAO officials say that fish biologists around the world agree that these questions must be answered if further progress is to be made in tuna fishing.

While this meeting was concerned primarily with the biology of tunas, its results should be of great interest to all tuna-fishing nations.

World tuna landings have more than tripled since the end of the Second World War, FAO's most recent fisheries yearbook shows. Just over 500 million pounds were landed in 1948. By 1961 landings had climbed to about 2,000 million pounds.

Japan and the United States, in that order, dominate commercial tuna fishing, accounting between them for more than 90 percent of the world catch. Other important tuna fishing nations are Peru, France, and Spain.

Interest in new developments in tuna fishing is not limited to just a handful of nations, however. Almost every maritime country bordering tropical and temperate waters conducts at least some tuna fishing and in many the industry is rapidly growing.

FAO fishing experts expected the La Jolla meeting would be an important first step toward answering some of the still-unanswered questions about the tuna, in stimulating further research, and in working out international cooperation for the most intelligent exploitation and conservation of the world's tuna resources.

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INTERIOR OFFICIAL HEADED UNITED STATES DELEGATION:

The United States delegation to the World Scientific Meeting on the Biology of Tunas and Related Species, sponsored by the Food and Agriculture Organization of the United Nations, was headed by Donald L. McKernan, Director of the Fish and Wildlife Service's Bureau of Commercial Fisheries. The United States was host for the conference, July 2 to 14, at the Art Center in La Jolla, Calif.

Following success of the World Scientific Meeting on the Biology of Sardines and Related Species in September 1959, in Rome, Italy, the value of holding expert meetings on various species of fishes was recognized. The convening of this meeting on the biology of the tuna and related species was approved at the Eleventh Session of the FAO Conference in Rome in November 1961.

The World Tuna Meeting brought together about 250 scientists from 15 to 20 governments and private institutions engaged in studying the identity, distribution, behavior, and potential yields of stocks of tunas.

The objectives of the La Jolla meeting were to appraise known scientific factors, gaps in knowledge, theories and concepts, and methods and equipment, and to consider and recommend future lines of endeavor, national and international, in the study of the biology of world tuna resources.

The tuna--yellowfin, skipjack, albacore, bluefin, and little tuna--and the tunalike fish, bonito and yellowtail, roam the oceans; they know no geographical boundaries. As late as the turn of this century, tuna had little or no commercial value. They were not considered edible, and fishermen who found them on their lines usually threw them back into the sea.

Then, in 1903, the Pacific sardine failed to appear in the San Pedro, Calif., area. One packer, in an effort to keep his cannery operating, canned 700 cases of tuna and distributed them to wholesalers. Repeat orders were received, and the fishery grew rapidly. The tuna are now one of the leading fishery resources of the United States, as well as of many other nations whose tuna fisheries continue to advance. FAO statistics for 1960 show a world catch of about two million tons of tuna, bonito, mackerel, and their relatives. Almost half this catch was true tuna.

Canned tuna now is a familiar item in almost every American home and on every grocer's shelf. It is economical, nutritionally excellent because of its animal protein of superior quality along with its valuable vitamins and minerals, easy to prepare, and universal in taste appeal. Because of its versatility, it is probably the most frequently served canned fish in the United States, appearing in an infinite variety of tuna salads, tuna chowders, tuna casseroles, tuna pot pies, tuna and egg scramble, tuna a la king, tuna sandwiches, and in other dishes with an international flavor like tuna foo yung, tuna a la Stroganoff, and tuna pizza.

The Department of the Interior reported that the recent and rapid development of tuna fisheries throughout the world has emphasized the need for tuna research workers to meet and discuss the biological and oceanographic research programs now being conducted, and to consider the coordination of their work. New methods of fishing and high prices are increasing the danger of overfishing, particularly of the yellowfin stocks. Serious consideration must be given to such matters.

The World Tuna Meeting was conducted in the three official languages of FAO--English, French, and Spanish. The Japanese provided their own interpreters with some help from the United States.

McKernan's alternates to the meeting were Dr. O. E. Sette, Director of the Bureau of Commercial Fisheries Biological Laboratory at Stanford, Calif., and Vernon E. Brock, Director of the Bureau's Biological Laboratory, Washington, D. C. Other members of the United States delegation included Dr. Roger Revelle, Science Advisor to the Secretary of the Interior; Stuart Blow, Office of Special Assistant for Fisheries and Wildlife, Department of State; and several other officials of the Bureau of Commercial Fisheries, as governmental advisers. The nongovernmental advisers included Dr. F. N. Spiess, Acting Director of the Scripps Institution of Oceanography, La Jolla, Calif., Dr. Richard Van Cleave, Dean, College of Fisheries, University of Washington, Seattle; Sigurd J. Westrheim of the Oregon Fish Commission; and Phil M. Roedel of the California Department of Fish and Game.

Preparatory arrangements for this important world meeting were handled by a subcommittee appointed by

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the United States FAO Interagency Committee. Dr. J. L. McHugh, Chief of the Division of Biological Research, Bureau of Commercial Fisheries, was chairman.

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INTERIOR UNDER SECRETARY CARR DELIVERED KEYNOTE ADDRESS:

Under Secretary James K. Carr of the U. S. Department of the Interior delivered the keynote address at the opening session of the 13-day United Nations' Food and Agriculture Organization World Scientific Meeting on the Biology of Tunas and Related Species, July 2, 1962, at the Art Center in La Jolla, Calif.

Other speakers at the opening session of the meeting were William E. Warne, Director, Department of Water Resources, State of California, and Dr. D. B. Finn, Director, Fisheries Division, FAO, Rome, Italy. Mayor Charles Dail of San Diego, Calif., welcomed the conferees and distinguished guests.

The World Tuna Meeting is a major event in the history of scientific fishery research. About 200 to 250 scientists from 15 to 20 governments and private institutions engaged in studying tuna participated in the conference. The biological and oceanographic research programs now being conducted, often independently, by the many nations with important tuna fisheries were discussed, and consideration was given to coordination of such work.

EUROPEAN ECONOMIC COMMUNITY

FISHERIES POLICY CONFERENCE PROPOSED FOR EUROPE:

Immediate talks on a common fisheries policy between European Free Trade Association (EFTA) members Norway, Denmark, and Great Britain, and the European Economic Community (EEC) were proposed by the vice-president of the EEC Commission. These conferences would be independent of the current negotiations of the three countries for EEC membership.

He declared that, in view of the fact that Great Britain, Norway, and Denmark together produce substantially more fish than the present Common Market countries, their entry into the EEC would be of greater significance to the fisheries industry than the drafting of a common policy within the Six--a matter

which the EEC has not yet undertaken. It would be impossible, he said, for the EEC countries to formulate a meaningful fisheries policy without prior consultation with the three EFTA countries, which fish the same North Sea waters.

Speaking earlier on the same subject, the Danish Minister for Fisheries said that he looked forward to talks with the EEC on fisheries problems. The interests of Denmark, Norway, and Great Britain, he said, were so dissimilar to those of the Common Market countries that it would be necessary to review the whole complex situation. He said that it would be of genuine value for Denmark if liberalization of the trade in fish and fish products could be achieved in Western Europe.

The fish catch for all the EFTA countries including Finland, was 3.85 million metric tons in 1959, of which Denmark, Norway, and the United Kingdom accounted for 3.36 million. That of the EEC members was 1.95 million metric tons. Among individual countries, Norway led with 1.61 million, followed by the United Kingdom, with 989,000; West Germany, 765,000; Denmark, 761,000; and France, 511,000. (EFTA Reporter, May 29, 1962.)

EUROPEAN FREE TRADE ASSOCIATION

ANOTHER TEN PERCENT TARIFF CUT ANNOUNCED:

The European Free Trade Association (EFTA) Ministerial Council met in Copenhagen June 21-22, 1962, and decided to slash tariffs among its members a further 10 percent. This cut will bring intra-EFTA tariffs down to half what they were when the organization was launched two years ago. The action marked a further vigorous acceleration in tariff-cutting; according to the Stockholm Convention, EFTA's charter, the half-way mark was to be reached January 1, 1965^{1/}.



The new 10 percent cut will be implemented by Denmark, Portugal, Sweden, Switzerland, and the United Kingdom on October 31, 1962. Austria will make the reduction not later than December 31, 1962, and Norway not later than April 30, 1963.

The first meeting of the Finland-EFTA Council took place on June 22. The Finnish

^{1/}Under the previous accelerated program of tariff cuts. Most EFTA countries had reduced tariffs among themselves by 40 percent on March 1 (and all were to do so by September 1)--a level which, according to the Stockholm Convention, was to have been reached not later than July 1, 1963.

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representative stated that he would bring the question of the further 10 percent tariff cut before his Government with a view to its participation in the decision.

The EFTA Secretary General gave two reasons for the accelerated tariff cut.

"First, to do so is a good thing in itself. It is sensible to proceed toward the abolition of tariffs within EFTA, thus creating our own common market as rapidly as possible. The present economic climate is highly advantageous for such a move.

"The second reason is that, from the very beginning, we have had as a major objective keeping in step with the European Economic Community (EEC). We devised our own timetable in the Stockholm Convention as nearly as we could to follow the time-table of the Treaty of Rome and we have, whenever the EEC has modified its program, made a similar modification in ours."

Note: See Commercial Fisheries Review, April 1962 p. 41.

FISH OILS

WORLD EXPORTS ESTABLISHED RECORD IN 1961:

World gross exports of fish oils (including fish-liver oils) reached a record 344,000 short tons in 1961, reflecting the phenomenal expansion of fish oil shipments from Peru. World exports increased by 27,400 tons from the previous high of 1960 and were almost two-thirds higher than the 1955-59 average.

Peru, the United States, Iceland, the South Africa Republic, and Portugal are the most important world suppliers of fish oil, accounting for over 90 percent of the world's net exports and over 60 percent of the world's gross exports of fish oil in 1961. Although several European countries export sizable quantities of fish oil, the area as a whole is a net importer, and is the world's major market for fish oil. The Netherlands, Denmark, and West Germany import large quantities of fish oil for further processing and export largely to other European countries.

Peru has become the world's leading exporter of fish oil. Total exports reached a record 112,772 tons in 1961, almost three times 1960 exports. Apart from Portugal, exports from the other major exporting countries declined slightly in 1961. Norway's reported exports of fish oil were up slightly in 1961, but are probably much larger than indicated owing to the exclusion of hardened fish oils which are not classified separately in trade statistics.

World exports in 1962 will probably continue upward but possibly at a lower rate than in the preceding 3 years owing to the fear of overexpansion in production and weak prices. Exports from the United States and Iceland probably will increase on account of the fairly large carry-over stocks held at the end of 1961.

World Gross Exports of Fish Oil (Including Fish-Liver Oils) 1/, Average 1955-59, Annual 1958-61					
Continent and Country	2/1961	1960	1959	1958	Average 1955-59
..... (1,000 Short Tons)					
North America:					
Canada	4.1	14.8	14.4	5.8	8.3
Mexico	0.8	3/	0.7	0.7	0.7
United States	61.2	71.8	72.2	47.0	64.1
Total	66.1	86.6	87.3	53.5	73.1
South America:					
Argentina	0.2	0.7	0.3	0.5	0.3
Chile	3.2	6.6	0.1	-	4/0.1
Peru	112.8	38.6	18.9	1.8	5.5
Total	116.2	45.9	19.3	2.3	5.9
Europe:					
Denmark	10.5	7.4	16.1	12.6	12.5
France	2.7	2.4	1.6	0.4	1.1
Germany, West	25.3	26.2	31.6	17.9	17.9
Iceland	35.0	53.7	18.9	27.4	21.1
Netherlands 5/.	5.4	7.8	16.0	13.0	10.4
Norway	24.0	18.4	21.8	19.8	21.3
Portugal	7.4	5.2	6.3	5.8	5.5
Sweden	3.4	2.5	3.0	2.0	2.5
United Kingdom	3.2	3.7	3.7	3.6	3.8
Other (incl. U.S.S.R.) 6/	2.4	1.8	2.4	1.5	1.2
Total	119.3	129.1	121.4	104.0	97.3
Africa:					
Angola	3.1	7.3	5.6	9.4	8.1
Morocco	5.2	5.7	4.3	4.5	2.7
South Africa Republic	30.5	36.5	26.0	18.1	14.9
Total	38.8	49.5	35.9	32.0	25.7
Asia and Oceania:					
Japan	2.7	3.8	3.6	6.6	5.8
Other 6/	0.9	1.0	1.7	1.2	1.7
Total	3.6	4.8	5.3	7.8	7.5
World Total	344.0	315.9	269.2	199.6	209.5

1/Hardened fish oils have been included wherever separately classified in export statistics.

2/Preliminary.

3/Under 50 tons.

4/1959 only.

5/May include some whale oil prior to 1960.

6/Includes estimates for minor exporting countries.

Source: Foreign Crops and Markets, June 28, 1962, U. S. Department of Agriculture.

INTERNATIONAL NORTHWEST PACIFIC FISHERIES COMMISSION

SOVIET-JAPANESE SALMON CATCHES, 1956-1961:

While Japanese salmon catches in the Treaty area have been controlled through catch quotas negotiated between Japan and U. S. S. R., Japanese fishing pressure in the non-Treaty area has been maintained at a high level. But there has been a steady de-

North Pacific Salmon Catches by Japan and U.S.S.R., 1956-1961					
Year	Japan			U.S.S.R.	Grand Total
	Treaty Area	Non-Treaty Area ^{1/}	Total		
..... (1,000 Metric Tons)					
1961	64.9	80.7	145.6	79.7	225.3
1960	66.6	80.2	146.8	69.5	216.3
1959	85.1	94.0	179.1	94.1	273.2
1958	110.1	86.4	196.5	73.0	269.5
1957	121.1	60.4	181.5	150.0	331.5
1956	100.9	49.4	150.3	165.7	316.0

^{1/}Area south of 45° N. latitude off Eastern Hokkaido.

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cline in both Japanese and Soviet salmon catches during the past few years. (Suisan Keizai Shimbun, February 11, 1962.)

INTERNATIONAL NORTH PACIFIC FISHERIES COMMISSIONCOMMITTEE ON BIOLOGY AND RESEARCH MEETS IN TOKYO:

The working party on offshore distribution of salmon and the working party on oceanography of the subarctic waters of the North Pacific of the Committee on Biology and Research of the International North Pacific Fisheries Commission, met in Tokyo, Japan, May 28-June 30, 1962. A U. S. Bureau of Commercial Fisheries scientist was a member of each working party.

At its 1959 and 1960 meetings, the Commission adopted recommendations of its Committee on Biology and Research with the objective of joint reporting of appropriate phases of the salmon research program and the eventual joint reporting of the results of the research program as a whole. In 1961, the Committee developed several recommendations as to the preparation of a comprehensive report on the origin, distribution, abundance, and intermingling of the continental stocks of Pacific salmon on the high seas. The purpose of the meetings of the two working parties, which met concurrently, was to expedite the final preparation of Chapters V and VI of that report, dealing respectively with the two subjects.

(NORTH EUROPEAN)
INTERNATIONAL FISHERIES CONVENTION OF 1946TENTH MEETING OF THE PERMANENT COMMISSION:

The Tenth Meeting of the Permanent Commission of the International Fisheries Convention of 1946 was held in Hamburg, West Germany, May 8-11, 1962. Delegations attended from all 14 of the Member Governments (Belgium, Denmark, the Federal Republic of Germany, France, Iceland, Ireland, Netherlands, Norway, Poland, Portugal, Spain, Sweden, U.S.S.R., and United Kingdom). Observers represented the United States, the International Council for the Exploration of the Sea, the International Commission for the Northwest Atlantic Fisheries, and the Food and Agriculture Organization.

The Commission agreed that for an experimental period of 3 years from June 1,

1963, the use of nets with meshes between 50 mm. (almost 2 inches) and the Convention minima should be prohibited in and around the North Sea. The Commission further agreed to increase the minimum size of whiting from 20 to 23 cm. (7.9-9.1 inches) from the same date and to extend to June 1, 1966, the rule permitting the landing from mixed fisheries of a proportion of undersize protected fish for industrial purposes. Permission for the use of small-mesh nets in the whiting fishery in the Skagerak and Kattegat was extended until May 31, 1964. The Commission also resolved to request member governments to take all practicable steps to ensure that small-mesh nets are used solely for unprotected fish.

The Commission expressed their concern at the state of the fish stocks in the northern part of the Convention area, and resolved to request member governments to facilitate the introduction of further conservation measures as soon as possible.

The Commission agreed to extend the present permission for the use of top-side chafers until June 1, 1963. They also expressed desire to prevent the use of those types of chafers which reduce the selectivity of nets, and their intention to review the position at their 1963 meeting.

The Commission agreed to increase the minimum sizes of cod and haddock to 34 cm. (13.4 inches) and 31 cm. (12.2 inches), respectively, in all waters in which at any time a minimum size of mesh of nets of 120 mm. (4.7 inches) is specified.

The Commission agreed to extend until June 1, 1964, the operation of the minimum size of mesh of nets of 75 mm. (almost 3 inches) in the southern part of the Convention area.

The Commission expressed its appreciation of the valuable contributions that were being made by the International Council for the Exploration of the Sea to their work. (News release dated May 12, 1962, from the Office of the Permanent Commission, London.)

NORTHWEST ATLANTIC FISHERIES COMMISSIONCOMMISSION MEETS IN MOSCOW:

The 12th Annual Meeting of the Commission for the Northwest Atlantic Fisheries was held in Moscow, U.S.S.R., June 4-9, 1962. The meeting was attended by a delegation of

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United States Commissioners, and Government and industry advisers.

The Commission is concerned with the investigation, protection, and conservation of the fisheries of the Northwest Atlantic Ocean, in order to make possible the maintenance of a maximum sustained catch from those fisheries. The United States Delegation was particularly concerned at this meeting with (a) consideration of member governments' annual returns showing inspections carried out, (b) reconsideration of the minimum mesh size regulations for various areas in the Northwest Atlantic, and (c) the establishment of an international inspection system for North Atlantic trawlers.



Actions and discussions by the Commission of interest to the New England fishing industry were:

1. The Soviets requested and were admitted to Panels 4 and 5.
2. Sea herring were recognized as a species to be considered in Subarea 5.
3. An increase in the ring size for scallop gear was discussed. It was pointed out that delaying the time of harvest by one year would increase the short-term yield by 10-20 percent. However, because of the fishing mechanics of the gear, it has been determined that minor increases in ring size accomplishes little and experiments have not yet been conducted to determine the ring size necessary to achieve an increase in the yield of meats. The scientists were instructed to continue the studies.
4. The possibilities of establishing a minimum trawl mesh size for the bottom fisheries on species other than haddock and cod were discussed. It was felt that this would be desirable, but there was insufficient data concerning the effect of various mesh sizes on the different species and fisheries. The scientists were directed to continue studies on this matter.
5. The Commission made no recommendations for changes in fishing regulations in any of the ICNAF areas.

6. The matter of international or cooperative enforcement of ICNAF regulations was considered. It was recognized that the mechanics of such an operation would be complicated. It was felt that if such an enforcement program were to be recommended by the Commission, it would best be done by means of the enforcement facilities of the member countries. It was decided to continue the study of this matter along these lines and bring it up again for discussion at the next annual meeting of the Commission, which will be held in Halifax, Nova Scotia.

A group from the United States delegation attending the Commission meeting met informally with members of the U.S.S.R. delegation to discuss reported operating difficulties experienced by United States fishing vessels in areas where vessels of both nations fished in the North Atlantic. Both groups urged that all fishermen of all nations review and study the Rules of the Sea as applied to fishing vessels, and to put them into practice.

To further promote cooperation between the fishing vessels of both nations, starting in the spring of 1963 fishing vessels of the U.S.S.R. will place a radar reflector buoy at the tail or far end of the drift gill nets which are used for catching herring. It was agreed at the meeting, that observance of the Rules of the Sea, and a common respect for a neighbor fisherman would help eliminate any future problems of that type.

It was agreed that a joint publicity campaign be started to further instruct the fishermen of both nations upon the Rules of the Sea and good fishing practices.

INTERNATIONAL WHALING COMMISSION

AD HOC SCIENTIFIC COMMITTEE MEETING:

The Ad Hoc Scientific Committee of the International Whaling Commission met in London June 25-29, 1962. The Committee met one week before the Fourteenth Meeting of the International Whaling Commission to prepare a report on the conditions of the Antarctic whale stocks in connection with new regulations on limitations of whales to be taken from the Antarctic stocks during the next whaling season. The Committee's action was



International (Contd.):

considered by the Commission which convened at London on July 2, 1962.

* * * * *

ANNUAL MEETING OF COMMISSION:

The United States delegation at the Commission's Fourteenth Annual Meeting consisted of J. Laurence McHugh, United States Deputy Commissioner, International Whaling Commission, and Dale W. Rice of the U. S. Bureau of Commercial Fisheries Marine Mammal Laboratory, Seattle, Wash.

A major agenda item was the setting of an over-all quota (based on blue-whale units) for the Antarctic whale catch for a four-year period ending with the 1965/66 season.

In 1960 the Commission established a three-man committee composed of one each from the United States, Canada, and the Food and Agriculture Organization (FAO) to study the condition of the Antarctic whale resources and to recommend for the Commission's consideration the number of whales that could be safely taken without injury to the resource. The percentage shares of the total quota, which the Commission will set, are as follows: Japan, 33; Norway, 32; U.S.S.R., 20; United Kingdom, 9; and the Netherlands, 6 percent.

According to early press reports, Britain and the Netherlands were expected to table a proposal calling for a reduced catch quota of less than 15,000 blue-whale units for each year of the four-year period. Two reasons for the reduction are cited: (1) to conserve the resource; and (2) to stabilize the market for baleen whale oil.

Baleen whale oil is used primarily for making margarine. Baleen prices have dropped from an average price of (\$194 per long ton in 1960, to \$167 in 1961 and \$125 in 1962 because fish oils, which are cheaper to produce, are now being used in the manufacture of margarine. (United States Embassy, Tokyo, June 29, 1962.)

ORGANIZATION FOR ECONOMIC
COOPERATION AND DEVELOPMENT

FISHERIES COMMITTEE MEETING:

The fourth session of the Fisheries Committee of the Organization for Economic Cooperation and Development (OECD) was held

in Paris, France, July 9-10, 1962. H. E. Crowther, Assistant Director, U. S. Bureau of Commercial Fisheries, attended the meeting. He also traveled to Brussels, Belgium, to contact officials of the European Economic Community (Common Market). A. W. Anderson, Regional Fisheries Attache for Europe, attended the OECD fisheries meeting in his capacity as permanent United States representative on the Fisheries Committee.

The agenda for the Fisheries Committee meeting included consideration of the OECD work program for fisheries. The program for 1962 is largely a continuation of several unfinished projects started under the former Organization for European Economic Cooperation (OEEC). The new program sets the direction for activities and work projects in the OECD fisheries sector during 1963 and in subsequent years.

OECD actions take on special significance for the United States fishing industry when it is considered that members of this organization account for one-third of the world's total fish production, about 80 percent of world imports of fishery products, and 56 percent of world exports. Among the 20 member countries are the United States, Canada, the six members of the European Common Market, the United Kingdom, Denmark, and Norway.

In Brussels, Crowther conferred with representatives of the European Economic Community principally on matters concerning a common fisheries policy for member countries.

INTERNATIONAL INSTITUTE OF REFRIGERATIONINTERNATIONAL CONGRESS OF REFRIGERATION TO BE HELD IN MUNICH:

The eleventh International Congress of Refrigeration will be held at Munich, West Germany, August 27-September 4, 1963. The Congress is under the auspices of The International Institute of Refrigeration.

The Congress will convene with a General Meeting, followed by three Plenary Sessions covering a number of main subjects, among which are included: (1) Freeze-Drying; (2) Time-Temperature Tolerance, and (3) Energy for Refrigeration in Coming Years.

The Technical Commissions of the Institute selected various special subjects for dis-



International (Contd.):

cussion at the Congress, which include the following:

1. Chemical and physical methods for measuring the quality of foods.
2. Biochemical changes in fresh and frozen meat, poultry and fish; their chilling before freezing.
3. Chilling and cooling down of foods, and heat transfer.
4. Extraction of fresh water from sea or brackish water.
5. Freeze-drying, theory, industrial developments, use in foods, and future prospects.
6. Refrigeration of fishing boats.
7. Application of hermetic compressors to marine refrigeration.

The official languages of the Congress are English and French.

OCEANOGRAPHY

TROPICAL ATLANTIC INVESTIGATION:

The first Working Group of the Intergovernmental Oceanographic Commission met in Washington at the National Oceanographic Data Center June 20-22 to draw up plans for an International Cooperative Investigation of the tropical Atlantic which will begin in February 1963. Such an international cooperative project in synoptic oceanography is a bold new venture in the field of oceanography, and its successful completion will require participation of ships and scientists from many nations. In a synoptic survey simultaneous instrument readings are taken from a number of ships to give what one might consider as a photograph of the surface and subsurface conditions of the ocean. Ships from eight nations and scientists from additional nations are expected to participate in the project, which will be the first international cooperative effort initiated under the auspices of the Intergovernmental Oceanographic Commission. The Commission was formed within UNESCO and held its first session in October 1961 in Paris. The United States called this first working group together under a resolution adopted by the Commission authorizing member govern-

ments to convene working groups to draw up comprehensive plans for such cooperative oceanographic undertakings.

The Working Group, under the Chairmanship of Dr. Arthur E. Maxwell of the Office of Naval Research, drew up plans for a multi-ship synoptic oceanographic investigation in the tropical Atlantic from South America to Africa. The fisheries investigation in the Gulf of Guinea under the Commission for Technical Cooperation in Africa will be part of the over-all project. The United States Agency for International Development is planning to finance part of this fisheries investigation.

The United States will contribute seven ships to the investigation, representing the Bureau of Commercial Fisheries, Coast and Geodetic Survey, Woods Hole Oceanographic Institution, Texas A & M, and the Lamont Geological Observatory. Two fisheries research vessels and a large oceanographic vessel from the U.S.S.R. will participate. Other ships will be from Argentina, Brazil, France, Ivory Coast, Nigeria, and the (former French) Congo.

Other representatives or observers present at the meeting were from Canada, Chile, China, Germany, Italy, Korea, Morocco, Sierre Leone, Spain, Uruguay, and the Food and Agriculture Organization of the U. N.

The Working Group recommended that each participating member country name a representative to a Coordination Group, which will nominate an International Coordinator of the project to the next Commission meeting in September.

**Angola**JAPANESE COMPANY PLANS TO ESTABLISH FISHING BASE:

A large Japanese fishing company is planning to establish a joint fishing base at Luanda, Angola, with an Angolan company. Plans call for freezing and processing bottomfish at the base, as well as operating a fish meal plant. To make final arrangements for this joint venture, the president of the Japanese firm departed Japan for Luanda on June 17.

The Japanese firm involved operated the fish meal factoryship Renshin Maru (14,094

Angola (Contd.):

gross tons) in Angolan waters for the first time in the fall of 1961. The company had pioneered fish meal operations in the Bering Sea but now hopes to rely less on its Bering Sea operations for fish meal production, since they are becoming less profitable due to the increase in fish meal factoryships and bottomfish fleets operating in that area.

The same Japanese firm is also studying possibilities of entering into agreements with a Danish firm and a United States firm, whereby the three firms would jointly engage in the production and marketing of freeze-dried products. According to present plans, the Danish company would furnish the machines, the Japanese firm would provide the fishermen and vessels, and process the catch, and the United States company would market the products. Four units of the Danish firm's vacuum freezing and drying machines would be installed on the Japanese firm's factoryship, which would initially process shrimp and crab meat. The president of the Japanese firm was scheduled to meet with the heads of the Danish and United States firms at Chicago around July 2, for preliminary discussions of this joint venture. (Suisan Tsushin, June 18, 1962.)



Argentina

LANDINGS OF FISH AND SHELLFISH, 1960-61:

Argentina's marine landings of fish and shellfish in 1961 were 9.2 percent below the 1960 landings. The decline was entirely in finfish landings which dropped 8,541 metric tons from the previous year. The 1961 shellfish landings were 741 metric tons more than in 1960.

The principal marine species of fish caught in Argentina was hake -- 34,426 metric tons in 1961 and 36,095 metric tons in 1960. Mackerel and anchovy were the other principal species. Less of those two species were landed in 1961 than the previous year. Mackerel landings in 1961 dropped 26.9 percent from 1960.

The principal shellfish products landed in 1961 were mussels and shrimp. Mussels were up 17 percent from 1960, and landings

of small shrimp were more than double those in 1960.

Table 1 - Argentine Marine Landings of Fish and Shellfish by Fishery Zones, 1960-61

Zone	1961	1960
. . . (Metric Tons) . . .		
Fish:		
High seas	37,677.9	39,867.6
Coastal Zones:		
Bahia Blanca	1,189.1	1,183.4
Quequen, Necochea	2,173.9	3,024.6
Mar del Plata	28,223.1	34,057.4
Rawson	215.5	364.0
San Antonio Oeste	109.7	162.6
San Blas, Patagones	407.8	157.0
Tres Arroyos	395.6	154.2
All other zones ^{1/}	273.0	236.0
Total Fish	70,665.6	79,207.4
Shellfish:		
High seas	315.6	565.9
Coastal Zones:		
Bahia Blanca	237.6	302.1
Quequen, Necochea	4,961.7	4,189.8
Mar del Plata	612.2	229.0
Rawson	320.1	312.1
San Antonio Oeste	157.5	163.3
All other zones ^{1/}	98.8	190.4
Total Shellfish	6,703.5	5,952.6
Grand Total	77,369.1	85,160.0

^{1/}Includes Comodoro Rivadavia, Gral. Madariaga, Puerto Madariaga, Puerto Madryn, Puerto Deseado, Rio Gallegos, Rio Grande, San Julian, Santa Cruz, etc.

Table 2 - Argentine Marine Landings of Fish and Shellfish by Species, 1960-61

Species	1961	1960
. . . (Metric Tons) . . .		
Fish:		
Anchovy	10,668.8	11,177.6
Sea bream (besugo)	1,293.0	1,532.2
Mackerel and mackerel-like ^{1/}	12,361.1	16,900.4
Conger eel (corvina)	1,292.2	1,398.1
Hake (<i>Merluccius hubbsi</i>)	34,425.9	36,094.6
Tuna	1,657.3	1,860.2
Other fish	8,967.3	10,244.3
Total Fish	70,665.6	79,207.4
Shellfish:		
Shrimp, small	690.7	288.6
Shrimp, large ("langostinos")	323.7	359.4
Mussels	5,013.1	4,284.9
Other shellfish	676.0	1,019.7
Total Shellfish	6,703.5	5,952.6
Total Fish and Shellfish	77,369.1	85,160.0

^{1/}Includes caballa, cornalito, and pejerrey.
Source: Boletín Mensual de Estadística, Febrero de 1962; República Argentina, Poder Ejecutivo Nacional, Secretaría de Estado de Hacienda, Dirección Nacional de Estadística Y Censos.

Table 3 - Argentine Marine and Fresh-Water Fishery Landings, 1960-61

Type of Fishery	1961	1960
. . . (Metric Tons) . . .		
Marine fish and shellfish	77,369.1	85,160.0
Fresh-Water Fish:		
Food	4,631.0	7,018.9
Industrial use ^{1/}	4,897.5	7,865.1
Total Fresh-Water Fish	9,528.5	14,884.0
Total Marine and Fresh-Water Fish	86,897.6	100,044.0

^{1/}Consists of "sabalo" (*Prochilodus platensis*), related to shad.

Argentina's total marine and fresh-water fish landings in 1961 decreased 13.1 percent

Argentina (Contd.):

from 1960. Landings from the Argentine River and lake fisheries both for food and industrial use were down substantially in 1961.

Note: Boletín Mensual de Estadística, February 1962, Dirección Nacional de Estadística Y Censos



Australia

TUNA RESEARCH TO BE EXPANDED:

The Division of Fisheries and Oceanography of the Australian CSIRO is concentrating its fisheries research on a limited number of species; principally tuna, spiny lobster or crayfish, Australian salmon (a type of trout), and whales.

In connection with tuna research, it is proposed to have one officer based on Cronulla studying tuna distribution and behavior, another in Victoria investigating reproduction and recruitment, a third in South Australia looking into nutrition, and a fourth, who might be in West Australia, concerned with stock identity. (Australian Fisheries Newsletter, April 1962.)



Canada

FREEZING SYSTEM RESEARCH TO AID IN DEVELOPMENT OF BRITISH COLUMBIA TUNA FISHERY:

The development of an active tuna fishery in British Columbia may be brought closer to reality by work being carried out by the Fisheries Research Board of Canada at its technological station in Vancouver. This work involves the design of freezing equipment which can be used at sea to preserve

the catch and enable vessels to range far offshore.

The Research Board technologists are working with the Industrial Development Service of the Federal Department of Fisheries on the project, which in its present state is intended to equip four big seiners with suitable freezing systems which will differ in certain important respects from those now in use on United States tuna vessels. The equipment being designed is felt to have many advantages for local vessels. (Canadian Trade News, February 1962.)



Ceylon

DEPARTMENT OF FISHERIES TO PURCHASE FISHING TRAWLERS:

The Government of Ceylon has approved the expenditure of five million rupees (US\$1.1 million) for the purchase of five trawlers, one of which will reportedly be purchased from Yugoslavia. Worldwide tender notices will be issued for the remaining four in the near future. Bids should be around one million rupees or approximately \$210,500 per trawler in order to receive consideration. (United States Embassy, Colombo, report dated June 18, 1962.)



Congo Republic

ONLY FISH CANNERY PACKS TUNA AND PILCHARDS:

The only fish-canning factory (packing only tuna and pilchards) in the Republic of the Congo invested new capital in 1961 to increase the



Congo Republic (Contd.):

output of its cannery, and also double the capacity of its storage facilities.

The pack was expected to rise by about one-third in 1961 to a monthly average of between 450,000 and 500,000 cans of tuna and pilchards, compared with 375,000 cans in 1960. By the end of the third quarter 1961, the output was running much higher, and was about double the 1960 rate. The Congo tuna and pilchard pack is sold almost exclusively in the Equatorial Customs Union.

A large United States firm with a sizable operation in Ghana indicated serious interest in setting up a fish-processing and fish-freezing plant at Pointe-Noire if suitable investment incentives and other concessions were granted by the Congolese government. Little progress had been achieved on that proposal by the end of 1961 although independent studies indicated that long-term investment opportunities in the fishing and fish-processing industry in the Congo were good.

No statistical data are available on salt- or fresh-water fishing operations in the Congo. Most of the Congo's fishing is done by pirogues (canoe-like boats) operating from beaches and in the rivers. Some fish supplies are also sold in Pointe-Noire by trawlers operating out of other countries. The canning plant also has a small fishing fleet of its own.

Despite the introduction in June 1961 of an Investment Code setting forth certain rights, privileges, and guarantees for investors, there appeared to be little additional interest, internally or externally, in undertaking private investments in new plants, or in the expansion of existing facilities in the fishing industry.



Denmark

SECOND 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. Construction time in the dock was cut from 74

to 19 days by assembling the vessel in six sections. Specifications are the same as for the Skryplev, the first in the series, christened May 10, 1962.

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.

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 ways: (1) either direct from the vessels over the ship's side as hitherto or (2) 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 sea-water, 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

Denmark (Contd.):

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.)

* * * * *

FISH FILLETS AND BLOCKS AND FISHERY INDUSTRIAL PRODUCTS EXPORTS, APRIL 1962:

Denmark's exports of fresh and frozen fillets and blocks during the first four months of this year were 21.3 percent or almost 5.0 million pounds greater than in the same period of 1961. The exports of cod and related species dropped 3.6 percent, but flounder and sole fillets were up 19.7 percent and herring fillets were up 137.0 percent. During the first four months this year exports to the United States of fresh and frozen fillets and blocks of almost 5.0 million pounds (mostly cod and related species) were down 1.7 percent from the exports of almost 5.1 million pounds in the same period of 1961.

Denmark's exports of fresh and frozen fish fillets and blocks during April 1962 were up 36.2 percent or almost 1.5 million pounds as compared to the same month in 1961. Of the total exports, almost 1.6 million pounds (mostly cod and related species) were shipped to the United States in April.

Denmark's exports of fish meal, fish solubles, and similar products in January-April 1962 were up 64.4 percent or 6,930 tons from the same four months a year earlier.

Product	April		Jan.-Apr.	
	1962	1961	1962	1961
 (1,000 Lbs.)			
Fillets and Blocks:				
Cod and related species.	2,687	2,475	13,285	13,787
Flounder and sole	1,514	1,065	6,989	5,837
Herring	1,309	462	7,668	3,236
Other	147	151	261	389
Total	5,657	4,153	28,203	23,249
 (Short Tons)			
Industrial Products:				
Fish meal, fish solubles, and similar products . .	3,618	839	17,692	10,762
^{1/} Shipments from the Faroe Islands and Greenland direct to foreign countries not included.				



Typical wooden fishing craft used in Denmark.

During April 1962, Denmark exported more than 4 times (up 2,779 tons) the meal, fish solubles, and similar products shipped out in the same month of 1961. The principal buyers were the United Kingdom, West Germany, Finland, and Sweden.



Ecuador

GOVERNMENT PLANS AID TO FISHING INDUSTRY:

The Quito newspaper *El Comercio*, on June 22, 1962, reported that Ecuador's Minister of Development called a meeting of officials of the National Fisheries Institute during the week of June 25 to prepare a program for immediate assistance to the fishing industry. The Minister proposed that the Institute consider: (a) a technical study for improvement of coastal fishing; (b) provision of facilities to enable small fishermen to acquire motors and nets in order to eliminate the primitive methods of the small fishing boats; (c) placing in immediate operation the freezing plants of Manta and Puerto Lopez in order to help small fishermen who lose part of their catch because of lack of refrigeration; (d) installation of freezing plants in other fishing centers;

Ecuador (Contd.):

(e) taking steps to promote establishment of additional canneries and factories for preparation of fish meal; (f) coordinating with the Ministry of Economy the installation of refrigeration in principal cities in order to facilitate increased consumption of fish.

The article states that this program will provide protection to small fishermen, who will be able to receive better prices and be able to sell fish to consumers at lower prices, thereby contributing to improvement of the nutritional level of the Ecuadorean people.

RESTRICTED FISHING ZONE ESTABLISHED OFF COAST:

Purse seiners are prohibited from fishing within 40 marine miles of the Ecuadorean coast between Cabo Pasado and Punta de Santa Elena, according to Decree 749, published in *Registro Oficial* 170, dated May 31, 1962. The following is an informal translation of the decree.

"No. 749 - Carlos Julio Arosemena Monroy, Constitutional President of the Republic,

"Considering: That, the Manabi Association of Boat Owners (AMAPE) has presented to the Ministry of Development a petition asking that tuna fishing in Ecuadorean waters be regulated in a manner so that it does not adversely affect the national fishing fleet;

"That, having sent a Special Commission of representatives of the Ministry of Development and the Ministry of Defense, it has been established that the activity of Ecuadorean tuna boats would be affected considerably by the system of fishing known as purse seiner; and,

"That, in conformity with Article 13 of the Maritime Hunting and Fishing Law, the Executive Branch is authorized to prohibit, restrict, limit or condition fishing activities,

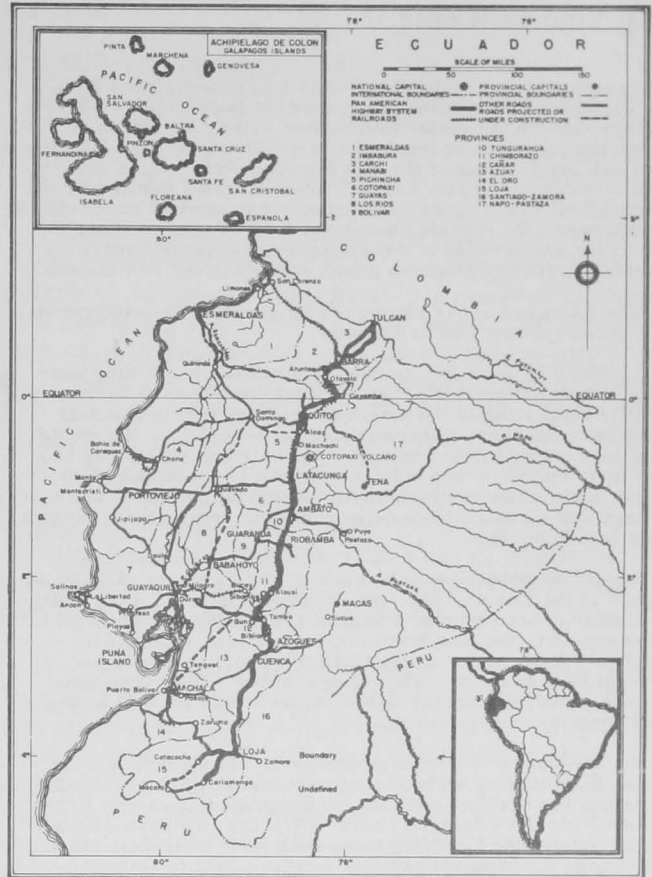
"Decreets: Article 1 - Fishing vessels are prohibited from fishing tuna by means of nets (system known as purse-seiner), in the section of the sea comprehended within the following limits: from the beacon of Cabo Pasado, an imaginary line, 40 marine miles to the west to the point 00° 22'00" south latitude and 81° 10'00" west longitude. From this point with a true route of 195° to another point situated in the sea at 02° 12'00" south latitude and 81° 40'00" west longitude, that is to say, to 40 miles west of Punta de Santa Elena; and from there, with a true route of 90°, until ending on land at Punta de Santa Elena.

"Article 2 - Said zone is declared a National Reserve, in which there will be permitted only fishing by hook-and-line subject to pertinent legal provisions.

"Under the present decree, foreign flag fishing vessels will continue subject to the provisions of Executive Decree No. 991, of May 23, 1961, published in Official Registry No. 229, of June 2 of the same year. (Note: this decree prohibits foreign flag vessels from fishing for bait between Punta de Santa Elena and Cabo Pasado.)

"Article 3 - The prohibition provided in Article 1, modifies the fishing permits granted to purse-seiners, limiting their operations to outside the reserve zone.

"Article 4 - All foreign-flag tuna fishing vessels are obligated to present themselves to the captain of the Ecuadorean port closest to their route, in order to have their documents countersigned, on entering and leaving national territory.



"Article 5 - Authorized Ecuadorean consuls, on granting the matricula and fishing permit, will receive a sworn statement from the captains of fishing vessels, that will be evidenced in writing at the bottom of such documents, that they understand the provisions of the present decree.

"Article 6 - Any violations of the provisions of this decree will be punished in accordance with the sanctions provided in Article 52 of the Maritime Law of Hunting and Fishing.

"Article 7 - The Ministers of Development, Foreign Affairs and Defense are given responsibility for enforcement of this Decree.

"Signed in the National Palace at Quito on May 15, 1962."



Fiji Islands

GOVERNMENT TO APPROVE JAPANESE-BRITISH TUNA BASE:

The plan to establish a large tuna base in the Fiji Islands under a cooperative agreement between the South Pacific Ocean Fisheries Cooperative Association (Japanese) and a British fishing and canning company was expected to be formally approved by the Fijian Government around June 10, 1962. As soon as the Fijian Government approved the project, the Association planned to submit an application to the Japanese Government for approval to engage in the joint enterprise, which calls for the emigration of Japanese fishermen to the Fiji Islands.

Emigration of Japanese fishermen to a foreign country, as planned for in the Fiji Islands tuna venture, is unprecedented in the history of the Japanese overseas fishery. The Director of the Fijian Government Economic Development Program,

Fiji Islands (Contd.):

who came to Japan to conduct preliminary discussions with the Japanese Government, expressed his hope to the Fisheries Agency that the Japanese Government will by all means approve the joint tuna venture, which would help promote the industrial development of the Fiji Islands. Prior to his departure from Japan on May 23, the Director stated that the Fijian Government would probably approve the project around June 10 of this year. He revealed his Government's plan to grant 7-year resident permits to the emigrating Japanese fishermen in order to firmly establish a tuna fishery in the Fiji Islands.

The Association has expressed its views on the emigration of Japanese fishermen as follows:

1. The Fiji Islands tuna base is not merely a fishing venture, but an emigration program which the Fijian Government is fully supporting to the extent of granting 7-year resident permits to Japanese fishermen and their families. We would like the Japanese Government to consider this point. We hope that this venture, which will be operated in accordance with Fijian laws, will contribute to the industrial growth of the Fiji Islands and also provide an opportunity to demonstrate Japan's fishing techniques.

2. Thirty fishing vessels, each of 99 tons gross, will be assigned to the Levuka tuna base in the Fiji Islands. (According to earlier press reports, a total of 100 fishing vessels would be assigned to the tuna base over a four-year span.) All catches will be landed at the Fiji Islands and none will be brought back to Japan. Fishing operations will be organized in such a manner that the fishing vessels will not call at any port outside the Fiji Islands.

3. Japanese are investing heavily in this venture and the Fijian Government, endeavoring to cooperate, has arranged to extend the resident permits for emigrating Japanese fishermen from the original 4 years to 7 years, with provisions for automatically extending them even after their expiration. The Fijian Government has gone to this extent to establish this project and we hope the Japanese Government, on its part, will approve Japanese participation in the joint venture

4. The Association plans to operate 30 fishing vessels at the Fiji Islands base and the vessels are to deliver their catches to the fishing and canning company which will be established with Fijian and Japanese capital. However, the Association hopes to determine the actual size of the fishing fleet in accordance with the capacity of the land facilities and believes that fishing operations can be started by May 1963. (Suisan Keizai Shimbun, June 6, 1962.)



France

FISHING FLEET, 1961:

France's commercial fishing fleet at the end of 1961 numbered 14,206 different types of craft. Of the 1,422 trawlers in operation during the year, 31 were used for fishing and

Type Vessel	No. of Vessels
Trawlers	11,422
Tuna clippers	137
Lobster vessels	147
Other fishing vessels	1,700
Small fishing craft ^{1/}	10,800
Total	14,206

^{1/}Less than 10 tons.

salting fish on the Grand Banks, and 3 were freezer-trawlers. Seventeen vessels of the French tuna fleet were equipped with freezing facilities. Lobster vessels included 31 fitted out with freezing equipment. (La Pêche Maritime, May 20, 1962.)



Ghana

JAPANESE FISHING COMPANY TO BASE FOUR TUNA VESSELS IN GHANA:

A Japanese fishing company was planning to send Kuroshio Maru Nos. 72 and 73 (each 240 tons gross) to Ghana where they will be employed in pole-and-line fishing. These two vessels were scheduled to depart for Ghana around mid-July.

The number of vessels the Japanese firm plans to employ at the Ghana tuna base now totals 4, including the two pole-and-line vessels Kuroshio Maru Nos. 70 and 71 (each 239 tons gross) dispatched earlier to Ghana. In addition, the firm is reported to have started construction of another tuna vessel of this same size. (Shin Suisan Shimbun Sokuho, June 5, 1962.)



Greece

FISHERY LANDINGS, 1961:

Fishery landings in Greece in 1961 were up 3.2 percent from 1960. The ex-vessel value in 1961 was about 828.0 million drachmas (US\$27.6 million), an 8.3 percent drop as compared with the 1960 value of 902.5 million drachmas (\$30.1 million).

Fishing Area	1961	1960
	. . . (Metric Tons) . . .	
Atlantic	14,500	8,000
Mediterranean	8,500	9,000
Middle and near water (trawlers and purse-seiners)	53,000	58,000
Inshore	10,000	12,000
Lagoons and lakes	6,000	8,000
Total	92,000	95,000

The yield of Greece's various fisheries in 1961 was down, except that the yield of the Atlantic fishery was nearly double that in the previous year.

The average ex-vessel price during 1961 was 9 drachmas per kilo (13.6 U. S. cents a

Greece (Contd.):

a pound), as against 9.5 drachmas a kilo (14.3 cents a pound) in 1960.

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COMMERCIAL FISHING VESSEL FLEET, 1961:

The Greek fishing fleet at the end of 1961 was up to nearly 6,000 vessels, according to the annual census taken by Greece's Director of Fisheries (Ministry of Industry). Smaller boats such as gill-netters, drift-netters, long-liners, and other small craft comprised about 80 percent of the Greek commercial fishing fleet.

Greek Fishing Vessels Operating in 1961	
Type of Vessel	Number of Vessels
Distant-water freezer-trawlers	13
Middle- and near-water trawlers	369
Purse seiners ("gri-gri")	283
Combination boats ("gri-gri" and trawlers)	138
Small "gri-gri" and similar crafts	173
Trates (small boats using ring nets)	968
Gill-netters, Drift-netters, and Long-liners (small size boats)	3,785
Sponge fishing boats	186
Total	5,915

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NEW STEEL TRAWLER BEING BUILT:

A new steel fishing trawler is being built by a Greek shipyard. It is to be the sister-ship of a similar one already under construction. The new vessel will have an overall length of a little more than 85 feet, and will be equipped with a Danish propulsion engine of 280 hp. Construction will be completed by the end of 1962 or in January 1963.

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ARTIFICIAL CULTIVATION OF SPONGES:

The installation of the first experimental bed for the artificial cultivation of sponges in Greece was completed early this year, according to a report made to the Greek Director of Fisheries. It was reported that 15,000 sponges were placed in the experimental beds, and that their growth is being closely observed.

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SPONGE EXPORTS, 1961:

Greece's sponge exports during 1961 amounted to 203,000 pounds, valued at 175 million drachmas (US\$5.8 million), according to the National Statistics Bureau of Greece. (Alieia, 1962.)

Iceland

FISHERIES TRENDS, MAY 1962:

North Coast Herring Season: Two factors were expected to delay the start of Iceland's north coast herring season usually set for about mid-June. One was a strike by the Reykjavik metal workers' union which began May 5, 1962. The strike could postpone the conversion of certain vessels and processing plants to herring operations; however, outside of Reykjavik local labor was used to accomplish this changeover. Another disturbing factor was a demand by the Fishing Vessel Owners for a larger share of the catch. They demand that the percentage of catch to the herring fishermen be reduced to compensate the owners for the cost of new, more efficient equipment which has been installed on many fishing boats. The Fishing Vessel Owners were threatening a lock-out unless this matter was satisfactorily settled.

Herring Exports to Norway End: The Norwegian transport of herring from Iceland to Kristiansund, Norway, stopped after only 2,344 metric tons of a 5,000-ton contract were shipped. The reason for cancellation of the remainder of the contract was Norwegian concern that the Icelandic employers would resort to a lockout on June 1 to obtain satisfactory settlement of their demand for a larger percentage of the catch. The Norwegian action put an end to Faxa Bay herring operations.



Barrels of herring being readied for shipment.

Record Herring Sale to U.S.S.R.: On February 11, 1962, the Icelandic press announced agreement on a contract providing for sale of 5,000 metric tons of frozen herring to the Soviet Union. This was reported to be the largest sale of this type herring which has ever been made and delivery of that amount was expected to use up virtually all the frozen herring available in Iceland early this year.

Iceland (Contd.):

Fish Meal: In contrast to the situation a year ago, all fish and herring meal stocks in Iceland early this year had been sold and the continuing demand could not be met.

Whaling Season Opens: Iceland's whaling season opened on May 20, as usual. The whaling ships returned May 22 with three whales in tow. A fourth whaling vessel was to be added to the fleet when it arrives from Norway. (United States Embassy, Reykjavik, May 24, 1962.)

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EXPORTS OF FISHERY PRODUCTS,
JANUARY-APRIL 1962:

During January-April 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, May 1962. Exports of fish meal and ocean perch meal showed a considerable decrease in the first four months of 1962.

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FISHERY LANDINGS BY PRINCIPAL
SPECIES, JANUARY-MARCH 1962:

Species	January-March	
	1962	1961
	.. (Metric Tons1/)	
Cod	66,560	58,820
Haddock	12,422	11,557
Saithe	4,546	2,408
Ling	3,444	2,318
Wolfish (catfish)	4,464	4,212
Cusk	3,059	2,875
Ocean perch	2,391	3,771
Halibut	404	419
Herring	27,442	19,537
Shrimp	187	382
Other	1,093	869
Total	126,012	107,168

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

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Icelandic Fishery Exports, January-April 1962 with Comparisons

Product	Jan.-Apr. 1962			Jan.-Apr. 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	961	18,886	438	2,158	41,185	1,079
Salted fish, uncured	6,643	81,924	1,901	4,554	47,165	1,236
Wings, salted	159	1,861	43	463	4,433	116
Stockfish	3,361	87,020	2,019	4,274	98,636	2,584
Herring on ice	4,828	16,895	392	2,976	8,898	233
Other fish on ice	12,619	57,258	1,328	10,932	43,386	1,137
Herring, frozen	10,487	53,769	1,247	6,992	34,756	911
Other frozen fish, whole	834	10,649	247	619	6,304	165
Frozen fish fillets	18,475	307,669	7,138	11,580	178,208	4,669
Shrimp and lobster, frozen	77	6,844	159	141	9,870	259
Roes, frozen	505	9,822	228	430	5,391	141
Canned fish	72	4,711	109	101	6,663	175
Cod-liver oil	1,242	10,776	250	1,517	12,277	322
Lumpfish roes, salted	67	969	22	88	1,285	34
Other roes for food, salted	1,494	20,518	476	1,641	16,693	437
Herring, salted	16,268	145,851	3,384	7,667	57,906	1,517
Herring oil	14,267	62,823	1,457	3,815	20,323	532
Ocean perch oil	15	59	1	189	1,075	28
Whale oil	388	2,558	59	-	-	-
Fish meal	8,369	52,076	1,208	17,414	65,563	1,718
Herring meal	14,816	91,861	2,131	7,237	28,758	753
Ocean perch meal	5	23	1	1,459	4,967	130
Wastes of fish, frozen	538	1,463	34	3,207	6,141	161
Liver meal	150	985	23	135	715	19
Lobster and shrimp meal	-	-	-	194	376	10
Whale meal	252	1,310	30	305	1,025	27
Whale meat, frozen	101	712	17	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.

Iceland (Contd.):

UTILIZATION OF FISHERY LANDINGS,
JANUARY-MARCH 1962:

How Utilized	January-March	
	1962	1961
	.. (Metric Tons) ..	
Herring^{1/} for:		
Oil and meal	12,551	5,961
Freezing	7,385	5,045
Salting	2,061	6,037
Fresh on ice	5,375	2,494
Canning	69	-
Groundfish^{2/} for:		
Fresh on ice landed abroad	11,232	7,813
Freezing and filleting	43,293	41,047
Salting	28,100	22,952
Stockfish (dried unsalted)	12,305	12,691
Home consumption	2,787	1,969
Oil and meal	667	777
Shellfish for:		
Freezing (shrimp)	181	270
Canning (shrimp)	6	112
Total production	126,012	107,168

1/Whole fish.
2/Drawn fish.



Indonesia

JAPANESE GOVERNMENT SEEKS
INDONESIAN FISHING BASE:

As one of its projects for this year, the Japanese Overseas Fisheries Cooperative Association, a government-sponsored organization, hopes to promote the establishment of a fishing base at Tandjung Periuk nearby Djakarta, Indonesia. Reportedly, a letter has already been written to the Indonesian Government requesting that it approve establishment of the base.

Establishment of a fishing base nearby Djakarta has long been sought by Japan. Negotiations with the Indonesian Government to establish a joint fishing base were first begun three years ago by the Wakayama Prefectural Fisheries Cooperative Association and a Japanese steel import-export firm. Under present plans, the Japanese firms would invest a total of 1 billion yen (US\$2.8 million) and engage in bottom fishing and tuna fishing. Japanese tuna vessels would be assigned to the base and part of the \$2.8 million would be used to construct tuna vessels in Japan, which would be assigned to the base. Tuna landed at that base would be exported to the United States, with exporting arrangements to be handled by a Japanese marine products trading firm.

Besides furnishing fishing vessels, Japan is to construct freezing, housing, and communication facilities at the Tandjung Periuk base. The Wakayama Fisheries Cooperative Association has been negotiating for some time with the Economic Cooperative Fund (Government fund established in February 1960 with a capital of 5.2 million yen or US\$14.4 million, to promote the development of Japanese enterprises in the undeveloped countries in Southeast Asia) to secure sufficient funds to construct the fishing base. Although press reports in April indicated that the Wakayama Association was encountering difficulty in securing a loan, the Economic Cooperative Fund is now unofficially reported to have approved a loan of 80 percent of the total investment. The Fisheries Agency is also reported to have given unofficial approval to this project. (*Shin Suisan Shimbum Sokuho*, May 22, 1962, and other publications.)



Israel

TANGANYIKANS TAKE FISHING
COURSE IN ISRAEL:

The Government of Israel has organized a four-months course for African officers of the Fisheries Section of the Tanganyikan Ministry of Agriculture. Six Africans have been selected to attend the Michmoret School for Fisheries and Navigation. (United States Embassy, Tel Aviv, May 23, 1962.)



Italy

JOINT UNITED STATES-ITALIAN
VENTURE TO CAN AND
MARKET TUNA IN ITALY:

A large United States west coast tuna canner representative in Italy reported late in May 1962 that his firm was in the final stages of concluding a joint-venture relationship with the largest Italian fishery firm in Italy. The venture includes the canning of tuna and distributing both the canned product and frozen tuna on the Italian market. The new organization was to be established during the week ending June 2, with headquarters in Rome and an office in Leghorn, the site of the Italian fishery firm's operations.

The stated object of this venture is the marketing in Italy of tuna varieties not adapted to the United States market because of color criteria, i.e., not eligible for the accepted designations of "white meat" or "light meat." Reportedly, the major source of the raw fish for the United States-Italian venture will be Japanese tuna. It is probable, however, that any of the United States firm's stations will ship to the new joint firm in Italy those portions of their catch which are not considered suitable for the United States market. (United States Consul, Milan, report of June 1, 1962.)

JAPAN SUPPORTS ITALIAN PACKERS'
MOVEMENT TO SEEK INCREASE IN
FROZEN TUNA IMPORT QUOTA:

The Japanese Foreign Ministry reportedly has instructed the Japanese Embassy in Italy to support the movement now being conducted by Italian packers who are seeking an increase in the frozen tuna import quota established by the Italian Government.

Based on recommendations made by the Common Market, the Italian Government es-

Japan (Contd.):

darin oranges per day. Completed at a cost of 30 million yen (US\$83,000), the new cannery was built to replace the smaller cannery operated by that company at Shimizu. The old cannery is to be converted into a warehouse. (Suisan Keizai Shimbun, June 29, 1962.)

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GROUP TO STUDY TUNA RESOURCE PROBLEMS:

The first meeting of the council for the problems of the skipjack tuna resources, newly established organization of the Japan Federation of Skipjack Tuna Fisheries Co-ops, was held in June 1962. The objective was to discuss tuna resources among scientists, government officials, and representatives of the industry in general. The council's function was decided to be purely to study resource problems. A meeting of the group will be held every month.

The council will dig into the problems of the tuna resources at a series of meetings. No conclusions or concrete recommendations are expected to come out of the discussions until the group has had three years to study the problems of the tuna resources.

Judging from discussions at the first meeting, the following became clear: (1) The catch ratio of yellowfin was found to be on the decrease all over the sea areas and adequate attention should be given this in the future; also the places where yellowfin live differ according to their age. (2) Resources of albacore have not been ascertained in the Indian Ocean and Atlantic. Also, in the Pacific, resources in its northern and southern parts are different. In the north, natural factors predominate and periodical changes take place every six years. (3) The structure of big-eyed resources is between yellowfin and albacore, and the farther north studies are made, the more apparent become the effects of catch. (Suisan Tsushin, June 12, 1962.)

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TUNA RESEARCH PROGRAM EXPANSION PLANNED:

The Japanese Fisheries Agency reportedly is planning to carry out an extensive tuna research program to cope with the numerous domestic and international problems that are expected to develop in the tuna fisheries. To

implement this program, the Agency plans to request a tuna research budget of approximately 53 million yen (US\$147,000) for FY 1963 (April 1963-March 1964). The funds will be used to employ about 50 research vessels and training vessels, some of which will be chartered to investigate tuna resources and tuna fishing grounds. The following types of investigations are being planned:

1. Tagging tuna to determine their migration and growth and to identify tuna stocks.
2. Surveying fishing grounds and conducting basic biological studies (investigations on fish size, sexual maturity and distribution of juvenile fish, stomach contents analyses, etc.).
3. Conducting oceanographic surveys to observe the relationship between tuna resources and changes in ocean conditions.

The Fisheries Agency also plans to charter fishing vessels to conduct extensive tagging operations in the equatorial western Pacific Ocean for yellowfin tuna and in the North Pacific Ocean for albacore tuna to estimate the survival and mortality rates of these species and to identify tuna stocks. (Suisan Keizai Shimbun, June 15, 1962.)

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ALBACORE TUNA RESEARCH:

To study albacore tuna schools moving northward, to tag albacore, and to study new fishing gear and new jigs made of synthetic resin to lure fish schools are the objectives of a cruise of the research vessel Tokaidai-gaku Maru. The vessel, operated by Tokai University, sailed from Tokyo early in June 1962 for the sea area in the West Pacific, 20°-40° N. latitude, 165° E. longitude.

The vessel formerly belonged to the Shizuoka Prefecture Fisheries Experimental Station. Since it was taken over by the University, it has been equipped with modern instruments and equipment for fishery research.

The Kanagawa Prefecture Fisheries Experimental Station in June received a report from its fisheries guidance ship, Sagami Maru, now studying tuna fishing grounds in the Pacific. The report pointed out that albacore tuna fishing was good in the spring in the sea area on the east side of Australia. Fishing in the area is promising from April through May. Heretofore, this area has been known as a good albacore fishing ground and was

Japan (Contd.):

generally believed to be so only from the fall through winter months. The Station, however, thought that it was also good from spring through summer. As a result of studies made of data gathered in the area, the Station directed the Sagami Maru to sail in April to study albacore fishing in the area during the spring and summer.

The vessel had fished 17 times in the area as of early June and had obtained a catch of some 50 metric tons. The fish were large, weighing 44 pounds each on the average. As of mid-June, the Sagami Maru was heading for the eastern Pacific to investigate fishing grounds there. (Suisan Keizai Shimbun, June 12, 1962, and other Japanese periodicals.)

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ALBACORE AND SKIPJACK TUNA FISHING CONDITIONS EARLY IN JUNE:

The Yaizu Branch of the Tohoku-ku Fisheries Research Institute released information on fishing conditions of skipjack and albacore off Japan during June 1-5, 1962. The report pointed out that for skipjack tuna, a fishing ground (considered as the best in recent years) had developed around a point 50-80 miles west of Hachijojima Island of the Izu Seven Island archipelago. Good fishing was reported on the west side of Miyakejima Island and at two other well-known fishing grounds. Catch averaged ten metric tons of fish a day.

For albacore tuna, good fishing was reported south of the isolated low temperature belt west northwest of Kinan Rock. In the sea area $31^{\circ}30' - 32^{\circ}30' N.$ latitude, $145^{\circ}30' - 147^{\circ}30' E.$ longitude, 4 or 5 tons a day had been caught. Good fishing was continuing. Around a point $31^{\circ} N.$ latitude and $152^{\circ} E.$ longitude, some 10 tons were caught daily on the average.

A later report from a different source stated that since the beginning of the season, no heavy landings of summer albacore had been reported the first half of June and poor fishing continued. The fish schools were showing the earlier tendency of dispersing gradually with the shifting of the oceanic conditions to the summer pattern. Without the usual heavy landings, possibilities are that this year's season for summer albacore fishing may come to an end early. The summer

albacore fishing this season, which was expected to yield landings of 10,000 metric tons each at Yaizu and Shimizu (the same as last year), as of mid-June was expected to yield considerably less fish.

Consequently, the fishing vessels were showing a tendency to fish for skipjack. Skipjack fishing is more stable than albacore fishing. Since the vessels that have been fishing albacore were expected to shift to skipjack fishing earlier than usual, with the exception of large vessels which would continue fishing albacore as long as it continued to be found in inshore waters, the future of albacore fishing was not bright. (Suisan Keizai Shimbun, June 15, and 19, 1962.)

A report around June 20 stated that poor summer albacore fishing continued. While albacore daily landings were but some 200 tons, skipjack landings were becoming heavy and a few days earlier 400 tons were landed at Yaizu and 180 tons at Shimizu. Packer demand for skipjack was good. But high ex-vessel prices continued, and this placed the canners in a difficult position. (Suisan Tsushin, June 21, 1962.)

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ALBACORE AND SKIPJACK TUNA FISHING CONDITIONS OFF JAPAN, JUNE 1962:

Albacore tuna fishing off the Japanese home islands in June 1962 was reported very poor and landings were averaging less than 100 metric tons a day. Due to poor fishing, ex-vessel albacore prices were not expected to drop below 165 yen to 170 yen per kilogram (US\$416-\$428 a short ton).

A total of 180 pole-and-line vessels were originally reported to be fishing for albacore off Japan. Of those vessels, over 100 vessels were reported to have switched to skipjack fishing and the remaining 80 vessels were also expected to do so early this summer.

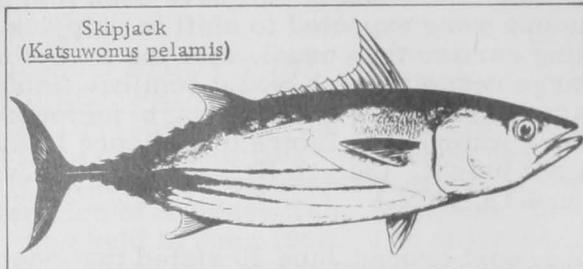
But skipjack fishing off Japan was reported to be very good in June. Packers at Yaizu and Shimizu were reported paying from 80-85 yen per kilogram (\$202-\$214 a short ton) for large skipjack (over 45 lbs.) and 45-50 yen (\$113-\$126 a short ton) for small skipjack (2.5-7 lbs.). Packers in the Sanriku district (northeastern Japan) were reported to be paying 70 yen per kilogram (\$176 a short ton) for large skipjack and about 50 yen per kilogram (\$126 a short ton) for small skipjack. (Suisan Tsushin, June 22, 1962.)

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Japan (Contd.):

SKIPJACK TUNA FISHERY TRENDS, JUNE 1962:

Some 12,000 metric tons of skipjack tuna were landed at Choshi, Chiba Prefecture, Japan, early in June 1962. The ex-vessel prices were US\$326-377 per metric ton.



Skipjack
(*Katsuwonus pelamis*)

As compared with 1961, skipjack landings were about 20 days late. The most serious problem this year was a drastic scarcity of sardines used for bait. Some boats were compelled to go as far as Kagoshima Prefecture to get bait. The boats needing 280 buckets of sardines for bait had to be satisfied with only 150 buckets. If more bait was obtainable, more skipjack would be landed.

The vessels were catching skipjack around 320 miles south southeast of Inubozaki Point in Choshi. (Suisan Keizai Shimbun, June 7, 1962.)

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ALBACORE AND SKIPJACK TUNA FISHING IN LATE JUNE 1962:

The Japanese summer albacore fishery off Japan late in June 1962 appeared to have come to an almost complete halt, with only 38 metric tons landed at Yaizu and Shimizu June 20-27. Combined cumulative landings for Yaizu and Shimizu for the period April to June 27 totaled about 4,400 tons, or about one-third the landings for the same period last year when 12,700 metric tons were landed. Almost all the live-bait boats were reported to have switched to skipjack fishing. For the remainder of the season, not more than 200 metric tons of albacore are expected to be landed. This means that this year's summer albacore catch will total less than 5,000 metric tons as compared with 14,800 metric tons for 1961 and 17,300 tons for 1960.

Of this year's albacore catch, practically all was reported to have been canned in brine for export purposes. It is estimated that the pack totals about 200,000 standard cases. Ex-vessel prices during the season ranged from 150 yen per kilogram (US\$378 per short ton) at the beginning of the season to a high of 160-170 yen per kilogram (\$403-428 per short ton) from mid-May on. Average ex-vessel prices paid by canners were in the neighborhood of 163 yen per kilogram (\$411 per short ton).

On the other hand, skipjack fishing off Japan was reported excellent and press reports indicate that as of June 25 the Japanese skipjack pole-and-line fishing vessels were still having good fishing. As of June 20, a total of 12,172 tons of skipjack was landed at Yaizu since fishing commenced in

April, an increase in landings of 1,935 metric tons over the same period in 1961. Good skipjack fishing was reported well within one day's running time and the Japanese fishing vessels were reported making 2- to 3-day trips. As many as 30 vessels per day were reported coming in to unload their catches.

Despite the heavy landings, ex-vessel skipjack prices were reported relatively firm, with some decline. Data compiled by the Fisheries Agency show that June 21-25 a total of 1,768 metric tons of skipjack was landed at Yaizu. Ex-vessel prices closed with a high of 95 yen per kilogram (\$239 per short ton) and a low of 37 yen per kilogram (\$93 per short ton) on June 25. The relatively firm prices were attributed to the almost total absence of albacore landings by the domestic fleet. Reportedly, about half of the skipjack landings are being diverted to the canneries, 10 percent to the fresh fish market, and the remainder to the dried fish market. (Suisan Keizai Shimbun, June 29, Suisan Tsushin, June 30, 1962, and other sources.)

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TUNA CATCH QUOTA FOR SOUTH PACIFIC FISHING BASES MAY BE ESTABLISHED:

Three Japanese fishing firms that are presently conducting tuna fishing operations from bases in the South Pacific Ocean (two from American Samoa and one at Espiritu Santo, New Hebrides) are seeking increases in catch quotas. Interest is being focused on what policy the Fisheries Agency will adopt to handle their requests for catch quota increases since it appears that the Fisheries Agency will no longer be able to authorize quota increases on an individual basis as before because the Japanese fishing companies are continually expanding their overseas tuna base operations. Japanese fishing companies are presently known to be planning joint tuna ventures in the South Pacific Ocean at Tahiti, New Caledonia, the Fiji Islands, and another operation at American Samoa.

The Fisheries Agency will probably first of all establish an over-all quota for the South Pacific Ocean, which it will then allocate to the bases in that area. The over-all quota will have to be determined each year, but for the time being it appears likely that the Agency will allocate quotas for only those bases where tuna fishing can be conducted this year, such as American Samoa, Espiritu Santo, French Tahiti, and French New Caledonia. (Suisan Tsushin, June 11, 1962.)

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SOUTH PACIFIC MOTHERSHIP FLEET CATCHING MOSTLY YELLOWFIN TUNA:

The Japanese Nojima Maru (8,800 gross tons) tuna mothership fleet started fishing in the Fiji Islands area on May 27, 1962. As of May 1, the mothership fleet was reported to have landed a total of 536 metric tons, mainly

Japan (Contd.):

yellowfin tuna. The mothership was reported operating in the vicinity of 2°-5° S. latitude, 172° E. longitude. (Suisan Keizai Shimbun, June 7, 1962.)

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ATLANTIC OCEAN FROZEN TUNA EXPORT PRICES RAISED:

The Japan Frozen Foods Exporters Association announced in June 1962 that export prices of frozen tuna to Europe in June 1962 were raised by an average of \$10 a metric ton for some tuna species over April-May prices.

Japanese Atlantic Ocean Tuna Export Prices, June 1962		
	Yellowfin	Big-Eyed
	.. (US\$/Metric Ton) ..	
Exports to:		
Italy ^{1/}	360	345
Yugoslavia, Tunisia ^{1/}	370	355
Czechoslovakia ^{2/}	370	355
^{1/} Prices are c.i.f., including 3 percent broker's commission.		
^{2/} Prices are c.i.f., not including 3 percent broker's commission.		

The Association also announced the following f.o.b. prices for Atlantic Ocean tuna exported to the United States: albacore--\$350 a short ton; yellowfin (gilled and gutted)--\$300 a short ton; yellowfin (dressed)--\$310 a short ton. (Suisan Tsushin, June 23, 1962.)

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ATLANTIC OCEAN TUNA FISHING CONDITIONS IN LATE JUNE 1962:

Japanese tuna fishing vessels fishing in the Atlantic Ocean were reported to total 68 vessels as of late June 1962, compared with 80 in March, 77 in April, and 69 in May. The decline in the number of vessels fishing in the Atlantic Ocean is attributed to poor tuna fishing.

Fishing vessel reports in June indicated that the peak of the yellowfin tuna fishing in the Atlantic Ocean appeared to have passed and big-eyed tuna were appearing in larger numbers in the catch, making up about 40 percent of individual vessel catches. The fishing vessels were reported to be averaging about 4-5 metric tons per day per vessel. (Suisan Tsushin, June 29, 1962.)

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PRODUCERS DISCUSS DECLINING ATLANTIC OCEAN TUNA CATCH:

The Japanese Export Frozen Tuna Producers Association held its first meeting of Fiscal Year 1962 (April 1962-March 1963) on June 4 and conferred on steps the Association should take to cope with the poor fishing in the Atlantic Ocean. According to the catch index compiled by the Tuna Producers Association based on 1959 as 100, in 1960 the catch index was 91.6, in 1961 it dropped to 80.7, and for the period January-June 1962 the index dropped to 68. (Index is compiled by dividing the total annual landings by the total number of vessels in operation for the year. The total number of vessels is derived by adding the number of vessels in operation each month.) The catch index for January-December 1962 is expected to drop below 60, since fishing is usually poorer between July-December. Considering the fact that fishing vessels are becoming larger in size every year, plus the fact that their operating efficiency has increased, the catch rate this year has actually dropped to less than half that in 1959.

The Producers Association discussed the following measures to cope with the declining Atlantic Ocean catches:

1. Prevent more vessels from being added to the Atlantic Ocean tuna fishing fleet, liberalize transshipment quotas for the Indian and Pacific Oceans, and thereby increase the efficiency of the vessels operating in those oceans.
2. Increase the operation of portable fishing vessels.
3. Give preferential treatment to fishing vessels that discover new fishing grounds.

The Association did not arrive at any conclusion concerning the above points but did agree on these points:

1. Tuna resources in the Atlantic Ocean definitely do not look favorable to the fishing industry, so the Japanese Government must be made aware of this situation.
2. Tuna demand is strong, but to meet this demand, the tuna industry must increase the efficiency of fishing vessels, instead of increasing the number of fishing vessels. (Suisan Tsushin, June 6, 1962.)

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Japan (Contd.):

FISHERIES AGENCY TO ANNOUNCE
NEW TUNA LICENSING POLICY:

The Japanese Fisheries Agency is reported to have completed a draft of a new broad policy concerning the licensing of displaced salmon fishing vessels as tuna vessels, operation of portable-vessel-carrying tuna motherships and regular tuna motherships, and the establishment of tuna bases overseas. Reportedly, the Agency was to solicit the views of the National Federation of Tuna Fisheries Cooperative Associations during the week of June 24 concerning the draft regulation, and the Agency was expected to formulate a definite policy by July 7. (Suisan Keizai Shimbun, June 23, 1962.)

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FISHING COMPANY TO BUILD TEN
TUNA VESSELS:

A large Japanese fishing company is planning to build ten 99-ton tuna vessels, as replacements for the ten salmon vessels belonging to its affiliated companies, which were displaced from the salmon fishery this year. The firm has already made tentative arrangements to have the tuna vessels built by three shipbuilding companies. The vessels will be assigned to the firm's tuna mothership fleet. (Suisan Tsushin, June 13, 1962.)

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JAPANESE GOVERNMENT APPROVES
INDONESIAN TUNA BASE:

The Japanese Overseas Fisheries Cooperative Association (a Government corporation) announced on June 20 that the Japanese Government has approved the establishment of a joint Japanese-Indonesian tuna base at Tandjung Periuk, Indonesia. Participants in this joint enterprise are the Wakayama Prefectural Fisheries Cooperative Association, a steel import-export firm of Japan, and the Government of Indonesia. The Cooperative Association also revealed in June 1962 that the Japanese Government has already tentatively approved the extension of Government loans for the venture.

The joint tuna base will be established at the port of Tandjung Periuk near Djakarta. Base installations will include a cold-storage plant, a canning plant, and medical facilities.

A total investment loan equivalent to US\$2.6 million will be advanced by the Overseas Economic Cooperative Fund (Japanese Government loan corporation) and other sources.

Initially the Wakayama Prefectural Fisheries Cooperative Association and the steel firm will participate in the joint venture. If results are favorable, other firms will be welcomed to participate in the establishment of a second base.

The Japanese Government approved the fisheries agreement in April at the conference involving the Ministries of Finance, Agriculture-Forestry, and Foreign Affairs, and the Cabinet Planning Board.

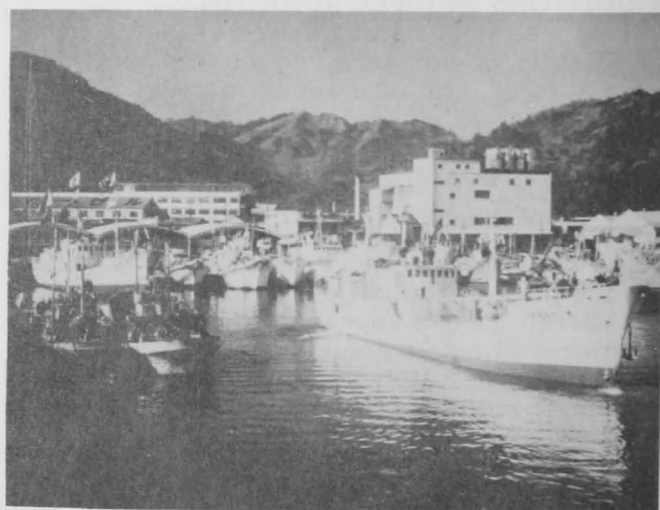
Implementation of this plan is being withheld until the Indonesian Government approves the agreement.

Negotiations for the venture were brought to a conclusion when the chairman of the Overseas Fisheries Cooperative Association presented his proposals to the Indonesian Government in March 1962. (Shin Suisan Shimbun Sokuho, June 22, 1962.)

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TUNA LANDINGS FOR FY 1961:

Japanese landings of tuna and tuna-like fish totaled 651,355 metric tons in fiscal year 1961 (April 1961-March 1962), according to data compiled by the Fisheries Agency. This was an increase of over 105,620 metric tons over the FY 1960 (April 1960-March 1961)



A new Japanese tuna long-liner.

Japan (Contd.):

catch. The previous high catch was recorded in FY 1959 (April 1959-March 1960) when 562,991 metric tons were landed. (Suisan Keizai Shimbun, June 7, 1962.)

Landings by principal tuna fisheries as reported in the Japanese press:

Fishery	Landings	
	FY 1961	FY 1960 ^{1/}
	. . . (Metric Tons) . . .	
Skipjack pole-and-line fishery . . .	167,147	109,577
Tuna long-line fishery	351,055	322,798
Tuna mothership fishery	28,932	23,894
Atlantic Ocean tuna fishery	82,251	72,946

^{1/}Data from "Annual Report of Catch Statistics on Fishery and Agriculture, 1960," published by the Survey and Statistics Division, Ministry of Agriculture and Forestry.

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FIVE TUNA VESSELS FOR CUBA:

A Japanese shipbuilding firm in Kyushu has received an order from the Cuban Government for five tuna vessels. These vessels are now being built. The first vessel will be launched on July 21 and completely outfitted by the end of August this year. Specifications of the tuna vessels are as follows: Gross tonnage--350 tons, engine--700 hp. Diesel, cruising speed--11.5 knots. (Minato Shimbun, June 20, 1962.)

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NORTH PACIFIC MOTHERSHIP SALMON FISHERY CATCH QUOTA:

The Japanese Fisheries Agency Director announced on May 28, 1962, that the Japanese salmon catch quota of 55,000 metric tons for Area A (Treaty waters north of 45° N. latitude) agreed upon by the Soviet Union and Japan at the sixth annual meeting of the Northwest Pacific Fisheries Commission (U.S.S.R.-Japan) held at Moscow will be allocated as follows: (1) mothership-type salmon fishery--44,665 metric tons; (2) land-based gill-net fishery--10,335 metric tons. (Suisan Tsushin, May 29, 1962.)

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POSITION ON NORTH PACIFIC FISHERIES CONVENTION:

The Japanese periodical Suisan Keizai Shimbun of June 3, 1962, states that in preparation for the forthcoming interim meeting of the Japan-United States-Canada North Pacific Fisheries Commission scheduled to be held in August this year at Honolulu, the Japanese Agriculture and Forestry Ministry and the Foreign Ministry were scheduled to meet during the week of June 3 to study the

position that the Japanese Government should take regarding renegotiation of the Japan-United States-Canada Fisheries Convention. The Japanese Government was expected to focus its attention at this time on the abstention principle contained in the Tripartite Fisheries Treaty. ". . .and many Japanese hold the view that the abstention principle violates the principle of freedom of the high seas and has no biological basis whatsoever," states the periodical.

The Japanese Government is expected to study this principle carefully, for the position adopted by Japan on the Tripartite Convention is expected to have an important bearing on Japan's relations with the Soviet Union, South Korea, and Communist China. The Japanese Government is also expected to give full consideration to the matter of trade between Japan and the United States, for the United States may apply pressure in the form of trade restraints should Japan decide to withdraw from the Convention.

According to Suisan Keizai Shimbun of June 9, the Japan-United States-Canada Fisheries Research Society, composed of Japanese fishery scientists and experts in international law, which was formed in Japan in 1961 to study the Tripartite Fisheries Convention problem, had held 17 meetings to date. The Society was planning to publish a report on its findings around June 20. The report contains a study of the problems related to salmon and halibut stocks, which are on the abstention list in the Convention, examination of the abstention principle in the light of international law governing the high seas, and observations based on the biology of fish. The Japanese Government plans to refer to this report as a guide in determining the position it should take with respect to its intention concerning the Tripartite Convention.

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FROZEN HALIBUT EXPORT PRICES UP:

The halibut market in Japan was reported to be very firm and active, with ex-vessel halibut prices ranging from 160-170 yen or more per kilogram (20.1-21.4 U. S. cents per pound), compared with last year's ex-vessel price of around 120 yen per kilogram (15.1 cents per pound). June export prices for frozen halibut steaks were 45-46 cents per pound c.&f. U. S. Pacific Coast. These prices are considerably higher than last year's export prices of 37-38 cents per pound for steaks

Japan (Contd.):

and around 30 cents per pound for dressed halibut. The export of frozen dressed halibut is small.

Halibut exports to the United States in FY 1961 (April 1961-March 1962) totaled 990 short tons valued at US\$568,000; in FY 1960 (April 1960-March 1961) 411 short tons, valued at US\$260,000. (Translated from Japanese periodical Suisan Tsushin, June 18, 1962.)

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KING CRAB FALL CATCH QUOTA SET FOR BRISTOL BAY:

The Japanese Fisheries Agency called the directors of the large Japanese fishing companies for a meeting on May 28, 1962, and revealed to them the Agency's policy concerning the licensing of this year's fall king crab operations in Bristol Bay. According to the Agency, two king crab freezer factoryships will be permitted to operate in Bristol Bay this fall to pack a total of 750 metric tons of frozen king crab meat.

The two fleets are being designated as Fleet A and Fleet B. Fleet A will be operated jointly by four Japanese fishing firms and will be allowed to pack 400 metric tons of frozen king crab meat with each of the four companies sharing equally in the pack. Fleet B will be operated jointly by four other Japanese firms and will be allowed to pack 350 metric tons of frozen king crab meat. Of the firms participating in Fleet B, 3 of the companies will be allotted shares of 100 metric tons each. The fourth company's share will be 50 metric tons.

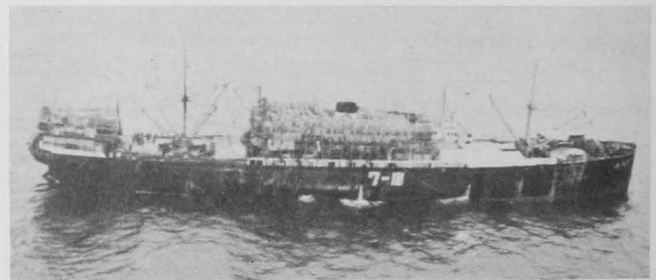
The two fleets will be permitted to depart for the Bristol Bay king crab fishing grounds after August 1 and they must return to Japan by November 30, 1962. Also, the fleets will be restricted from operating in those areas in Bristol Bay where bottom trawling is presently prohibited by the Agency. (Suisan Tsushin, May 29, 1962.)

Editor's Note: For some years, only two king crab fleets have been licensed to operate in the Bristol Bay area. They were the Tokei Maru (4,998 gross tons) fleet licensed to can king crab meat (1961 quota--80,000 cases of 48 6.5-oz. cans) and the Shinyo Maru (5,630 gross tons) fleet, whose 1961 catch quota was 200 metric tons of frozen king crab

meat. Both of those motherships operate in the Bristol Bay area in the spring and summer months.

In August 1961 the Japanese Fisheries Agency, for the first time, permitted fall king crab fishing in Bristol Bay. Six large companies were permitted to operate a total of 3 freezer vessels to process an aggregate total of 700 metric tons of frozen king crab meat, the vessels being the Banshu Maru No. 31 (1,547 gross tons), Eijin Maru (1,494 gross tons), and the Chichibu Maru No. 2 (1,500 gross tons).

Then, in December 1961, the Fisheries Agency authorized the operation of a second king crab factoryship in Bristol Bay in spring-summer 1962, and allotted a combined pack target of 130,000 cases to the two factoryships. This represents an increase of 50,000 cases over that previously allotted to the Tokei Maru, which has been operating in the Bristol Bay waters since 1953 under the joint management of 3 Japanese fishery firms. Of the two factoryships, two of the three firms are to operate jointly one factoryship with a pack target of 70,000 cases, and the third firm plus another firm are to operate the second factoryship which has been assigned a quota of 60,000 cases.



Shinyo Maru, mothership and factoryship, operates with four fishing vessels. Amidships and on poop deck can be seen large drying racks for tangle nets used by fishing vessels.

At the same time, the Fisheries Agency increased the production target of the king crab freezer vessel Shinyo Maru, operated by still another firm, an additional 100 metric tons, to a total of 300 metric tons of frozen king crab meat.

The total king crab production in Bristol Bay authorized by the Fisheries Agency in 1962 is as follows: Spring-summer 1962: two crab canning factoryships--130,000 cases of king crab; Shinyo Maru--300 metric tons of frozen king crab meat. Fall 1962: two freezer factoryships--750 metric tons of frozen king crab meat.

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Japan (Contd.):

TWO FISH CARRIERS RETURN FROM BOTTOMFISH FISHERY IN NORTH PACIFIC:

The first carrier from the bottomfish fishing grounds in the North Pacific and Bering Sea returned to Tokyo with a load of halibut and sablefish (silver cod) the early part of June 1962, according to a translation from the Japanese periodical Suisan Keizai Shim-bun, June 2, 1962. The carrier was the Banshu Maru No. 32. It had a cargo of 450 tons of fish of which 70 percent was halibut and 30 percent sablefish or silver cod. The Tokyo Central Market readily disposed of some 1,000 boxes of the first shipment because there were no stocks on hand.

The owner of the Banshu Maru No. 32 decided to fix the price of halibut, for which there was a good demand, at \$452 per metric ton. But after consultation with wholesalers and jobbers, it was agreed to tentatively make it \$427 per ton. The price was some 50 percent more than last year's \$289 per ton.

The medium-size halibut was disposed of quickly. As soon as the weather improved, it was expected that both the halibut and sablefish would be sold out without difficulty as there were practically no stocks on hand then.

The same firm's second carrier loaded with 400 tons was expected to arrive later with halibut and sablefish (silver cod) as well as with other bottomfish.

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MAKEUP OF BERING SEA BOTTOMFISH FLEET:

The Japanese periodical The Fishing Industry Weekly of June 5, 1962, lists 19 Japanese mothership-type bottomfish fleets as having been licensed to operate in the Bering



Fig. 1 - Fish meal factoryship Gyokuei Maru operating in Bering Sea.

Japanese Bering Sea Bottomfish Fleet, 1962				
Mothership	Size	No. Catcher Vessels	Area of Operation	Kind of Operation
	Gross Tons			
<u>No. 15 Kotobuki Maru</u>	-	2	ABC	Freezership
<u>No. 11 Seisho Maru</u>	-	2	ABC	Freezership
<u>No. 22 Seisho Maru</u>	-	2	ABC	Freezership
<u>No. 2 Chichibu Maru</u>	-	7	ABCDF	Freezership
<u>Einin Maru</u>	7,482	10	ABCDF	Factoryship (shrimp)
<u>Eiyo Maru</u>	2,600	10	ABCDF	Freezership
<u>Itsukushima Maru</u>	5,889	14	ABCDF	Freezership
<u>Kaiko Maru</u>	2,940	4	ABCDF	Factoryship (shrimp)
<u>Keiyo Maru</u>	3,700	16	ABCDF	Freezership
<u>Seifu Maru</u>	8,269	25	ABCDF	Freezership
<u>Shikishima Maru</u>	10,144	18	ABCDF	Freezership
<u>Gyokuei Maru</u>	12,100	27	DE	Fish meal factoryship
<u>Kinyo Maru</u>	9,373	27	DE	Fish meal factoryship
<u>Renshin Maru</u>	14,094	29	DE	Fish meal factoryship
<u>Soyo Maru</u>	11,192	28	DE	Fish meal factoryship
<u>Shinyo Maru</u>	5,630	6	DE	Freezership (king crab)
<u>Tenyo Maru</u>	11,581	26	F	Fish meal-oil factoryship
<u>Kyokko Maru</u>	8,601	12	-	Freezership
<u>Junko Maru</u>	-	3	-	Freezership

Note: Areas A, B, C, and D include the waters in the Bering Sea between 170° E. longitude and 170° W. longitude; Area E includes waters to the east of 170° W. longitude; and Area F is the triangular area formed by a line extending from Cape Navarin to the Aleutian Islands along 180° longitude, east to Cape Sarichef, Unimak Island, and back to Cape Navarin.

Japan (Contd.):



Fig. 2 - Wooden Japanese trawler with gear in fishing position. This vessel fishing for fish meal factoryship Kinjo Maru in Bering Sea.

Sea this year. This list is by no means complete. For example, the factoryship Chichibu Maru, which departed Japan on June 6 for the eastern Bering Sea to engage in shrimp fishing, is not included.

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SHRIMP FISHING OFF PRIBILOF ISLANDS, 1962:

The Japanese Fisheries Agency licensed 23 motherships to fish for bottomfish in the Bering Sea for the 1962 season as compared to 33 motherships licensed in 1961. Four motherships of the 1962 fleet (Kaiko Maru, Einin Maru, Kyoko Maru, and Chichibu Maru) have been licensed to catch shrimp in the course of bottomfish operations. Two of the motherships (Kaiko Maru and Einin Maru) are already on the shrimp grounds, located in the vicinity of the Pribilof Islands. The two motherships departed from Japan on May 1 and April 21, respectively. The other two vessels are now en route to that area.

The over-all shrimp catch target for the four vessels, as indicated in the license applications, is 17,564 metric tons. The Einin Maru catch target is 7,620 tons; Kaiko Maru, 4,400 tons; Kyoko Maru, 1,444 tons; and Chichibu Maru, 4,100 tons.

Shrimp production to May 31 totaled 1,186 tons, of which 974 tons were landed by catcher boats of the Einin Maru and 212 tons by the Kyoko Maru fleet. It is reported that on May 31, 16,080 cases of shrimp (24 8-oz. cans per case) had been packed on the Einin Maru. No information is available on quantities, if any, of shrimp processed as raw-peeled shrimp. Shrimp processing on the Kyoko Maru is limited to freezing only, ac-

ording to a June 11 report from the Fisheries Attache, United States Embassy, Tokyo.

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CANNED SHRIMP PACK IN BERING SEA BY FACTORYSHIP:

The Japanese shrimp factoryship Einin Maru (7,482 gross tons), operating in the eastern Bering Sea, has produced over 100,000 cases (24 8-oz. cans) of shrimp as of June 15, 1962. At the present rate of production, the factoryship is expected to exceed its target of 300,000 cases.

The Einin Maru has been on the fishing grounds since May 1 and was producing an average of 2,500-3,000 cases of shrimp per day in early June. (Suisan Keizai Shimbun, June 17, 1962.)

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BOTTOMFISH MOTHERSHIP FLEET DEPARTS FOR ALEUTIAN WATERS:

The bottomfish mothership Chichibu Maru (5,500 gross tons), accompanied by 8 catcher vessels, departed Hakodate, Hokkaido, on June 6, 1962, for Aleutian waters. The Chichibu Maru fleet will engage primarily in the production of shrimp, which it will can. The mothership is equipped with a one-line shrimp canning operation.

The same Japanese fishing company that operates the Chichibu Maru has one other mothership-type fleet operating in the Bering Sea, the Chichibu Maru No. 2 fleet, composed of the mothership Chichibu Maru No. 2 and 7 trawlers. In addition, the same firm is operating two large 1,500-ton stern trawlers, Akebono Maru Nos. 51 and 52, in the eastern Bering Sea.

The stern trawler Akebono Maru No. 50 (1,470 gross tons), also belonging to the same company, departed Japan on May 23, for the trawl fishing grounds off the coast of Australia. (Suisan Tsushin and Shin Suisan Shimbun Sokuho, June 5, 1962.)

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EXPORTS OF FROZEN FISHERY PRODUCTS (EXCLUDING TUNA) TO THE U. S., FISCAL YEAR 1961:

There were some sharp declines and some sharp increases in Japanese exports of frozen fishery products other than tuna to the United States during fiscal year 1961

Japan (Contd.):

Japanese Frozen Fishery Products Exports to U. S., Fiscal Years 1960-1961		
Product	FY 1961	FY 1960
 (Short Tons)	
Frog legs	399	321
Rainbow trout	972	1,030
Shrimp	902	935
Halibut	990	411
Smelt	52	103
Black marlin	265	268
Sea bream	556	632
Cuttlefish	196	331
Octopus	909	811
Butterfish	40	61
Dolphin	356	395
Other fish	864	281
Whale meat	2,905	5,717
Crab.	17	56
Oyster	59	32
Shellfish, misc.	217	170
Other products	54	3

(April 1961-March 1962), according to Suisan Tsushin of June 7, 1962.

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U. S. S. R. REACTION TO CERTAIN JAPANESE FISHERY PROPOSALS:

The Japanese Fisheries Agency on June 5 published the reply from the Soviet Union through diplomatic channels on certain Japanese fishery proposals.

(1) Rejected was the proposal for Soviet permission for Japanese Hokkaido fishermen to take sea tangle or kelp in Soviet "territorial waters" around the Habomae and Shikotan Islands under a license issued by the Japan Fishery Society, with license fee eventually being paid to the Soviets. But sale of Soviet-taken sea tangle or kelp to the Japanese may be considered. Soviet Premier Khrushchev declared that entry of Japanese fishing vessels into Soviet waters absolutely could not be allowed until a peace treaty was concluded between the two countries. Reportedly, the Soviet Union's attitude represents a complete reversal of the friendly attitude that had prevailed during the talks on this subject held between Agriculture and Forestry Minister Kono and Premier Khrushchev in Moscow during this year's Japan-Soviet fisheries negotiations.

(2) The selling of fresh salmon to the Japanese was being studied by Soviet specialists. The specialists were scheduled to go to Japan by June 15, with information as to the quantity, method of sale, delivery place, etc.

(3) As to the artificial propagation of salmon in Siberian rivers, the matter will

be deliberated at the 1963 Northwest Pacific Fisheries Commission meeting, when both Japan and the U. S. S. R. would reveal their plans to each other.

(4) The Soviets are interested in the purchase of a tuna fishing fleet. Whether existing vessels would be bought or newly-built boats would be procured shall be studied by the Soviet Trade Ministry. (Translations of Japanese newspaper articles, June 6, 1962.)

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PARTICIPATION IN NORTHWEST ATLANTIC FISHERIES COMMISSION BEING CONSIDERED:

The Japanese fishing industry is showing interest in the meeting of the Northwest Atlantic Fisheries Commission which convened in Moscow on June 4, 1962. Although Japanese vessels do not presently fish in the northwest Atlantic Ocean, the Japanese fishing industry feels that the Commission, consisting of 13 nations, will eventually come to exercise an important influence in guiding the world's fishery conservation policy. Therefore, Japan reportedly is considering participating in this Commission in the near future as an observer. (Minato Shimbun, June 10, 1962.)

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GOVERNMENT STUDYING NORTHWEST ATLANTIC TRAWL FISHERY:

The Japanese Fisheries Agency in June 1962 was reported to have received several inquiries from Japanese firms concerning the licensing of Japanese trawling operations in the northwest Atlantic Ocean. Reportedly, the Fisheries Agency is conducting a study of the northwest Atlantic trawl fishery and is shortly expected to announce its views concerning this matter. (Shin Suisan Shimbun Sokuho, June 16, 1962.)

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TRAWL SURVEY TO BE MADE IN OKHOTSK SEA:

The Japanese Fisheries Agency's research vessel Taiyo Maru No. 15 was scheduled to depart Otaru, Hokkaido, on June 17, 1962, to conduct a survey of the bottom fishing grounds in the waters off West Kamchatka. The research vessel will operate in the areas east of 148° E. longitude between 53° N. and 56° N. latitude. (Minato Shimbun, June 16, 1962.)

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Japan (Contd.):

LARGE STERN TRAWLER COMPLETED:

A Japanese fishing company took delivery of its new large stern trawler Nichinan Maru (2,518 gross tons) on June 21. After a test run off Japan, the Nichinan Maru, which was constructed as a replacement for the Tatsuta Maru (561 gross tons), was dispatched to the trawling grounds off West Africa on July 2. (Minato Shimbun, June 20, 1962.)

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TRAWLERS DEPART FOR WEST AFRICA AND AUSTRALIA:

A large Japanese fishing company's trawler, the Taiyo Maru No. 56 (744 gross tons), which early in June 1962 returned from the fishing grounds off South Africa, departed Shimonoseki, Japan, for the trawl fishing grounds off northwest Australia on June 8. The same firm's 1,500-ton stern trawler Taiyo Maru No. 63 was scheduled to depart for West Africa on June 9 and will operate out of that company's base at Las Palmas, Canary Islands.

Four other trawlers, each of 499 tons gross, also belonging to the same Japanese firm, were due to arrive at Shimonoseki with capacity loads between June 11 and 23. They are the trawlers Taiyo Maru, and Taiyo Maru Nos. 2, 3, and 5, which operated off Australia since April. (Minato Shimbun, June 9, 1962.)

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HERRING BOUGHT FROM U. S. S. R.:

The Hokkaido Federation of Fisheries Cooperatives the latter part of May 1962 decided to import 1,189 metric tons (worth US\$113,000) of fresh herring from the Soviet Union. A fleet of Japanese vessels, led by the Taisei Maru (402 tons) was scheduled to sail from Wakkanai, Hokkaido, to load the fish at a Russian port.

This is the third time the Hokkaido Federation has imported fresh herring from Russia. (Suisan Keizai Shimbun, May 30, 1962.)

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STUDY OF WORLD FISHERY TRENDS PLANNED:

The Japanese Fisheries Agency is reported to be planning on launching a 3-year foreign fisheries investigation program to

analyze world fishery trends and to formulate a basic policy dealing with international fishery problems. Among the problems to be considered are fishing regulations and trade restrictions by foreign countries that are bound to affect Japan's fishing industry, as well as Japanese aid to underdeveloped countries. The Agency hopes to start the program in FY 1963 (April 1963-March 1964) and is currently preparing a budget for the program. The program will be carried out in three phases:

FY 1963--Investigation of the structures of fishery organizations in European and North and South American countries, particularly their price support systems, marketing conditions, and trends in supply and demand of fishery products.

FY 1964 (April 1964-March 1965)--Investigation of fishing ground management programs, regulatory and enforcement measures, and methods of settling disputes in foreign countries, including international fisheries commissions.

FY 1965 (April 1965-March 1966)--Investigation on extent of foreign economic aid on fishery provided by other countries of the world; investigation of foreign fishery competition (for example, trawl fishing and tuna fishing), and of technological and economic competition.

The Fisheries Agency hopes to conduct the above investigations through field investigations where possible and by subscribing to and examining foreign publications. Assistance of other Japanese Government agencies will be sought. In FY 1963, the foreign countries to be studied will be the United States, Great Britain, Canada, Australia, Germany, France, Norway, Communist China, South Korea, and the Soviet Union.

At the same time, in investigating and analyzing foreign fishery developments and trends, the Fisheries Agency hopes to undertake a study, beginning in FY 1963, of its own domestic fishery for the purpose of establishing a long-range fishery program to insure a rational development of its fisheries. (Suisan Tsushin, July 2, and Suisan Keizai Shimbun, July 1, 1962.)

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CANNED FISHERY PRODUCTS EXPORTS, 1961:

Exports of canned fishery products in 1961 dropped 7.4 percent from those in 1960.

Japan (Contd.):

Japanese Canned Fishery Products Exports, 1961 and 1960					
Product	Jan. -Dec. 1961				Jan. -Dec. 1960
	To United States	To Canada	To Other Countries	Total	Total
Crab meat	211,461	4,927	248,852	465,240	489,095
Tuna:			(Actual Cases)		
In oil		186,888	1,300,371	1,487,259	1,401,297
In brine	2,218,857	-	-	2,218,857	2,035,195
Other types	633	7,413	215,252	223,298	104,822
Mackerel-pike	9,577	170	320,590	330,337	1,042,095
Sardines	5,191	30	275,170	280,391	718,645
Horse-mackerel	45	-	706,971	707,016	472,378
Salmon, trout	99,601	258	1,134,591	1,234,450	1,671,914
Other fish	20,751	8,825	585,002	614,578	328,266
Shellfish	340,510	112,183	74,122	526,815	476,899
Other aquatic products	6,970	233	7,119	14,322	7,391
Total	2,913,596	320,927	4,868,040	8,102,563	8,747,997

The decline was steep for several of the important products. Exports of canned mackerel-pike were 68.3 percent lower than in 1960; sardines declined 61 percent; and salmon dropped 26.2 percent. Declines in those products were somewhat offset by an 11-percent increase in canned tuna exports, and gains in unclassified fish and shellfish.



Republic of Korea

ITALY TO BUILD LARGE NUMBER OF FISHING VESSELS FOR SOUTH KOREA:

An agreement providing for the building and purchase of 950 fishing vessels from an Italian group by the Republic of Korea was signed in February 1962. Some of the details appeared in the *Tonga Ilbo* of February 12, 1962.

Since the announcement in February that the Italians and Koreans were working on an arrangement whereby fishing vessels would be supplied to the Koreans from Italy, there have been discussions concerning the type and tonnage of the vessels, the country where the vessels are to be built, insurance coverage, and other functional and administrative problems. As of June 1962, an effective resolution of those problems had not been announced.

A translation of the *Tonga Ilbo* news items follows.

An agreement was formally signed (February 11, 1962) between the Government and an Italian business representative to import US\$100 million worth of construction materials for fishing boats, to be financed from Italian private loans. The agreement was concluded between Korean Subcommittee Chairman Tong-Ha Kim and a representative of the Italian Trading Office, on behalf of the Italian Shipbuilding Corporation.

Under the agreement, Korea will import a total 120,000 tons of fishing vessel construction materials from Italy with loans from that country, with which some 950 vessels can be built. This inducement of foreign private loan investment is expected to make a turning point in the development of Korea's fisheries and marine industries, Kim told reporters after the signing of the agreement.

In accordance with this agreement, the Korean Government will build a shipbuilding yard to construct the planned 950 fishing vessels within three years. The Italian shipbuilding firm is to provide technical assistance for the building of the vessels under the agreement. The Government also plans to set up a fisheries and marine industry center at the shipbuilding yard by installing refrigeration, ice-making, and processing facilities for fish and other marine products.

The shipbuilding materials to be imported under the agreement will be worth more than \$100 million at world market prices. The Government will repay the loans on an annual installment basis for 7 to 8 years, at an interest rate of 6 percent per year. After all the planned 950 fishing vessels are built and operating, the annual catch of fish will be boosted from the present average of 390,000 metric tons to 620,000 tons, Kim said.

The land base for the fisheries and marine center, meanwhile, will be put under the control of the Government, and will be denationalized through gradual transfer to private business, Kim said. Further, the Government plans to form a fisheries and marine industry development committee, designed to help develop the industry. The shipbuilding materials to be imported under the agreement will build: 10 trawlers of 500 tons each and 20 of 300 tons each; 760 drag-net fishing boats of 100 tons each; 50 purse-seiners of 100 tons each; 57 line-fishing boats of 100 tons each; 3 whaling motherships of 1,500 tons each; 10 other whaling vessels of 200 tons each; 20 other vessels of 500 tons each and 20 of 150 tons each. (United States Embassy, Seoul, June 18, 1962.)



Kuwait

STATUS OF FISHING INDUSTRY:

While the Kuwait market continued in 1961 to be supplied with fish mainly by the traditional fishermen and fishing fleet, the modern commercial shrimp operation which was started in 1959 and prospered in 1960 continued to grow throughout 1961.

Of the two fishery companies formed at the end of 1960, the one with headquarters in Kuwait and Dubai remained more or less a paper company awaiting the proper international connection which could offer technical skills along with financial participation. That firm hopes to focus on the processing and packing of tuna, mackerel, and the production of fish meal and oil.

The other fishery company continued on shrimp fishing, freezing shrimp aboard the vessel, and transfer of the frozen shrimp to vessels going to the United States.

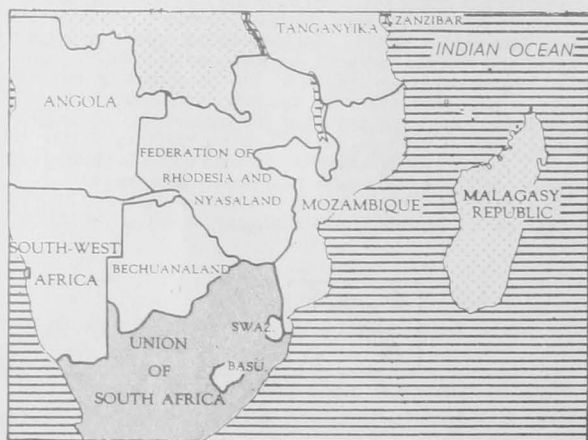
Some of the popular fish varieties on the Kuwait market were also brought in, frozen and fresh, for stocking the new retail outlet of the company which was started in the beginning of 1962. Arrangements were made to begin in 1962 the export of fish by air to neighboring countries, especially Lebanon. (United States Embassy, Kuwait, report of May 20, 1962.)



Malagasy Republic

JOINT FISHERY FIRM TO BE ESTABLISHED BY JAPAN:

An application to establish a joint company on Madagascar Island submitted by two



Japanese firms (a trading company and a fisheries company) is reported to have been approved by the Japanese Overseas Investment Liaison Council. The joint company's main office will be located at Tananariva and its field offices at Majunga and Tamatave, where cold-storage facilities exist. Reportedly, the joint company will purchase shrimp, which it will freeze, and alligators (which it will process for their hides) from local sources. The frozen shrimp and hides will be exported to the Common Market nations, and the company hopes to export some hides to the United States. (Suisan Tsushin, July 2, 1962.)



Malaya

EX-VESSEL TUNA PRICES INCREASED:

The Japanese Overseas Fisheries Company which manages the joint Japanese-Malayan tuna fishing and canning company at Penang, Malaya, held a meeting on June 9 and announced the company's new tuna purchasing prices. The prices are up from 10 to 20 percent.

Ex-Vessel Tuna Prices in Malaya, June 1962								
	Clipper-Frozen Fish				Iced Fish			
	New		Old		New		Old	
	Yen/kg.	\$/Short Ton	Yen/kg.	\$/Short Ton	Yen/kg.	\$/Short Ton	Yen/kg.	\$/Short Ton
Albacore	130	109	328	275	106	96	267	242
Yellowfin (gilled & gutted):								
20-100 lbs.	110	99	277	250	100	75	252	189
Over 100 lbs.	100	85	252	214	80	67	202	169
Indian bluefin	-	-	-	-	75	61	189	154

At the meeting, to which tuna fishermen from all parts of Japan were invited, the Overseas Fisheries Company stated that the new purchasing prices of the company were more than 20 percent higher than prices paid at other bases in the South Pacific Ocean. The company stressed the fact that fishing vessels delivering tuna to its Penang base averaged 25 days per trip, counting the days it took to unload catches, and strongly urged vessel owners to send ice-carrying tuna fishing vessels to Penang. (Suisan Tsushin, June 13, 1962.)



Mexico

SHRIMP FISHERY TRENDS, APRIL-JUNE 1962:

Mazatlan's shrimp industry in the Province of Sinaloa, Mexico, was in good shape during

Mexico (Contd.):

the second quarter of 1962. Boat owners, and the freezing and packing plants made money because of higher shrimp prices in the United States.

As a result of the very good season, plans have been made for the construction of 70 more shrimp trawlers which will cost from 500,000 to 600,000 pesos (US\$40,000 to \$48,000) each. The new trawlers are expected to be in operation during the 1963 shrimp fishing season. The closed season for shrimp fishing this year began on July 15 and will end on September 15. (Report from United States Consulate, Mazatlan, July 12, 1962.)

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SPINY LOBSTER CATCH IN BAJA CALIFORNIA, 1961/62 SEASON:

The catch of live spiny lobsters this season along the coast of Mexico's Baja California was good, reportedly exceeding last season's production by 11 percent, or 160,000 pounds. The legal season is October 1-March 15.

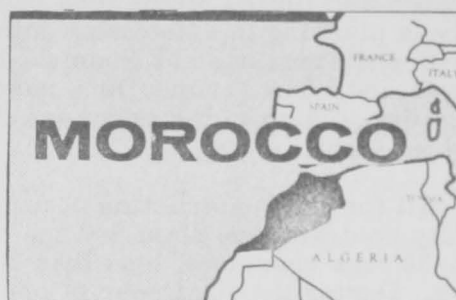
These are preliminary data from Banco Fomento Cooperativo and other sources in Ensenada, where the bulk of the Baja California lobster catch is landed. Excluded is the production of four fishing cooperatives in the Territory of Baja California which do not belong to the Federacion Regional de Sociedades Cooperativas de la Industria Pesquera in Ensenada; also a great quantity of lobsters, estimated in some circles to be as high as 30-40 percent of the total reported production, which was retailed directly by fishermen outside of the cooperatives. The Federacion consists of 11 fishing cooperatives with 880 registered lobster fishermen this past season, but all together there were perhaps 2,000 families engaged in the business.

A New York City importing firm through its Los Angeles representative contracted with the Federacion for the purchase of the entire lobster production in the State this season. The contract price was 69 $\frac{1}{4}$ U. S. cents a pound, but this appears to have been only for "medida" (young) lobsters. A price of 59 $\frac{1}{4}$ cents was paid for "burro" (old and large) lobsters, while "colas" (tails) brought \$1.00 per pound. Outside the cooperatives fishermen were able to realize US\$5 per dozen for small lobsters and \$10 for the large ones in direct retail sales.

Legal production this season, represented by total sales to the New York City firm, amounted to 1,561,054 pounds; 78.8 percent "medida," 16.1 percent "burro," and 5.1 percent "colas." (United States Consulate, Tijuana, report of March 23, 1962.)

**Morocco****SARDINE PACK TARGET FOR 1962/63 SEASON:**

The pack targets for Morocco's 1962/63 season (began June 1, 1962) for sardines has been set at 2,450,000 cases. The previous season's target was 2,350,000, although actual



production was 2,550,000 cases. The carry-over on May 31, 1962, was estimated at 400,000 cases. (United States Embassy, Rabat, report of June 1, 1962.)

**Netherlands****FISHERY PRODUCTS INCLUDED IN RESTRICTED IMPORT LIST:**

A number of fishery items are included in a list of products subject to possible quantitative import restrictions issued by the Netherlands Government. The intent of the list puts Dutch importers on notice that certain products may be restricted without further notice if foreign competition unduly harms domestic producers.

Fishery items subject to possible quantitative restrictions include: (1) fresh, chilled, or frozen eels; (2) fresh or frozen sea fish, livers, and fish roe, except smelt and sprat; (3) herring and livers, roe and fish meal, other than canned; (4) fresh, chilled, frozen, dried, salted, pickled, or boiled shrimp in the shell; and (5) cooked and peeled shrimp, including frozen, but not otherwise prepared.

Netherlands (Contd.):

Fishing nets were among certain industrial products removed from the restrictive import list. (Foreign Commerce Weekly, June 11, 1962.)



New Caledonia

JAPANESE-FRENCH TUNA BASE PLANNED:

A large Japanese fishing company (the same one that recently submitted an application to the Fisheries Agency to establish a large tuna base at French Tahiti together with a French and United States tuna packer) reportedly is planning to establish a joint Japanese-French tuna base at Noumea, New Caledonia Island. The Noumea tuna base will be similar in size to the tuna base contemplated for Tahiti.

Plans call for the construction of a 2,000-ton capacity cold-storage plant and the operation of 35-50 tuna vessels of less than 200 tons gross. During the first year of operation, 25 vessels would be based at Noumea and their annual catch is expected to total 12,000 metric tons. Fish landed at that base will be exported to France and the United States.

Poor quality fish unsuitable for export will be brought back to Japan. Of the two tuna bases (the one at Tahiti and the other at Noumea) which the Japanese firm hopes to establish, the Noumea base will be built first because of its favorable location. (Suisan Tsushin, June 6, 1962.)



Nicaragua

SHRIMP AND LOBSTER FISHING AT CORINTO:

At Corinto, on the Pacific Coast of Nicaragua, a fishery firm has been operating since September 1961. No annual catch figures for shrimp or lobsters are available. Monthly catches of shrimp were averaging 200,000 pounds earlier this year, but as of early June had dropped to half that amount. Spiny lobsters are caught, but not in large quantity, and on an irregular basis.

There are no clearly demarcated fishing grounds off Nicaragua's Pacific Coast. Shrimp are caught all along the coast. However, particularly good areas in the past have been off Corinto and Masachapa.

No estimates of the shrimp and lobster potential in the Corinto area are available. The Government is requesting experts from the Food and Agriculture Organization to make a survey of fish resources, but it is not known when this will be completed. In the meantime, no new fishing licenses are being granted.

As many as 25 vessels were fishing out of Corinto earlier this year, but owing to labor difficulties and the temporary disappearance of shrimp a number have gone to Guatemala. As of early June, 11 vessels were fishing for the fishery firm at Corinto. The firm is establishing a plant at Corinto with a capacity of 30,000 pounds per day. A second company is building a plant farther south on the coast at Puerto Somoza. (United States Embassy, Managua, June 15, 1962.)



Nigeria

JAPANESE PLAN TO ESTABLISH FISHING BASE:

A large Japanese fishing company, which has been working on a plan to establish a joint fishing base at Lagos, Nigeria, since October 1961, is reported to have the support of the Japanese Foreign Ministry, which wants to promote trade between Japan and Nigeria. Also, prospects of the firm obtaining a loan from the Economic Cooperative Fund, a government fund established in February 1960 to promote development of Japanese business enterprises in underdeveloped countries, are reported good.

For this joint venture, Japan is to contribute 30 percent of the investment and Nigeria 70 percent. The Japanese investment will be shared between the Japanese fishing firm and a steel import-export firm. For the present, the fishing firm's investment will include two two-boat trawlers (Akashi Maru Nos. 23 and 25) each of 75 gross tons, which the firm hopes to dispatch to Lagos as soon as final agreement is reached with Nigeria. Eventually, a total of six two-boat trawlers are scheduled to be assigned to that base, where, under

Nigeria (Contd.):

present agreement, a 500-ton capacity cold-storage plant is to be constructed.

To conclude final arrangements for the proposed joint venture, the Japanese fishing firm planned to send a representative to Nigeria toward the end of July. (Minato Shim-bun, July 15, and Shin Suisan Shim-bun Soku-ho, July 7, 1962, and October 27, 1961.)



Norway

NEW MACHINE SORTS HERRING BY SIZE:

A machine which will separate herring according to the length of each fish is under development in Norway. Work on the prototype has been going on during the last two years, and the first tests took place in June 1962. The machine is expected to go into production soon. The price is likely to be about \$2,800. It is designed for installation as a stationary land-based unit.

A machine which will feed the herring into the automatic sorter is also expected to be ready for testing soon. (Fish Trades Gazette, June 30, 1962.)

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SOVIET-NORWEGIAN FISHERIES AGREEMENT RATIFIED:

The Norwegian Parliament has sanctioned ratification of the fisheries agreement between Norway and the Soviet Union. Although the approval was unanimous, both Labor and opposition speakers voiced the opinion that the pact could have been much more advantageous for Norway.

The chairman of the Norwegian Fisheries Committee said the Committee unanimously urged ratification only as a means of assuring good relations between the two countries, which might lead to more effective regulations for protecting the young fish stock in the Barents Sea.

Norway's Foreign Minister declared that Soviet recognition of the new Norwegian fisheries zone was the main reason why the Government had urged that the pact be ratified. He also pointed out that both countries would have possibilities for suggesting revisions if fundamental changes should occur in fishing conditions.

The fisheries agreement, which extends to October 31, 1970, permits Soviet fishing vessels to operate in a 6 to 12 mile zone off the Norwegian coast. Norwegians may fish in Soviet territorial waters in the Varangerfjord between 6 and 12 miles, and also in an 8 to 12 mile zone off the Soviet coast. The privilege of fishing in the 8 to 12 mile zone will be granted as long as Soviet vessels are allowed to load and unload at a distance of 4 miles off Jan Mayen Island. (News of Norway, June 28, 1962.)

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WINTER HERRING CATCH AGAIN VERY LIGHT:

For the fifth consecutive year the traditionally rich Norwegian winter herring season was a virtual failure. The 1962 winter herring catch is expected to amount to 70,000 metric tons as compared to a 1-million-ton catch five years ago. Although the fishermen were prepared for a poor season and did not suffer the financial loss experienced in the immediately preceding years, the loss of the traditional substantial income from the export of herring, in its many forms, was again a blow to the Norwegian economy.

Long-term projections indicate that the present development in the herring fishery is part of a cycle and that the winter herring will continue to move farther north and reach the Norwegian coast in smaller numbers for some time to come.

The Norwegian Government is trying to encourage larger and more efficient fishing vessels and equipment in order to improve the annual fish catch. (United States Embassy, Oslo, report of June 12, 1962.)

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FISHERY TRENDS, FIRST QUARTER 1962:

Lofoten Cod Fishery: Participation in this fishery of North Norway (which in recent years has averaged about 9,000 fishermen as against up to 30,000 in a really good season of yore) is now down to a low of some 7,000 fishermen, manning 2,144 vessels.

Antarctic Whaling: Norway's seven expeditions this season produced 285,130 barrels of whale oil in the first 68 days of the 116-day season. This was 64 percent of the quantity which the same expeditions produced in the same number of days last season.

Norway (Contd.):

Fisheries Delegation to Nigeria: A Norwegian fisheries delegation in March 1962 left for Lagos, Nigeria, to study tuna fishing off West Africa as well as fish distribution and harbor conditions. (News of Norway, March 22, 1962.)

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STATUS OF FISHERIES, 1961:

Landings: Norway's total landings of all fishery products in 1961 amounted to 1.3 million metric tons valued at 674.6 million kroner (US\$94.4 million) ex-vessel. Compared to 1961, the 1960 catch was about the same, but the ex-vessel value was down about 10 million kroner (US\$1.4 million).



Part-time fisherman in Norway casting off to check his lobster pots.

Unfavorable weather conditions to some extent accounted for the further drop of winter herring catches to 69,000 tons--less than one-fourth of the 1960 catch, and only about 6 percent of the 1956 record catch. On the other hand, the capelin fishery in Northern Norway was good--it started in the second half of February and lasted until mid-April. A total of 217,000 tons of capelin were landed in 1961 as compared with about 93,000 tons in 1960. The fat content of capelin proved to be unusually high, up to 12 percent as against the usual 4 to 6 percent. The fat herring fishery catch increased more than 70 percent, while the small herring fishery in the North Sea was more or less unsatisfactory, partly on account of unfavorable weather conditions.

Norway's cod fisheries improved in 1961 and cod production (including byproducts) reached a total of 252,100 tons. During the

Finnmark cod fishery, 140 trawlers landed 33,700 tons out of a total of 77,400 tons. Some 1,800 other vessels participated in that fishery.

The general trend in the Norwegian fisheries is that the setback resulting from the failing winter herring fishery is being gradually overcome through intensified activities in other fisheries. Norway's fisheries for species other than winter herring have been showing steady progress for years, with the ex-vessel value increasing by more than 90 million kroner (\$12.6 million) since 1958.

New stern trawlers built or being built in Norway and abroad for Norwegian owners are considered important stages in the development of the Norwegian fisheries.

Exports: The value of Norway's exports of fish and fish products in 1961 of 875 million kroner (US\$122.5 million) was down about 5 percent as compared with that for 1960 of 925 million kroner (\$129.5 million). Exports of fresh, frozen, and salted herring products were lower in 1961 because of the drop in winter herring catches. Also, klipfish and stockfish exports dropped considerably, with klipfish exports dropping from 30,000 tons in 1961 to 23,000 tons in 1960. Exports of herring meal and fish meal increased because of larger capelin and herring catches in Northern Norway, and successful herring fishing by Norwegian vessels in Icelandic waters.

Exports by the Association of Norwegian fish filleting plants (Norsk Frossenfisk A/L) have increased steadily, according to a statement by the Managing Director of the Association. The increase was from 28,000 tons in 1960 to 33,000 tons in 1961. The 1961 exports were valued at 115 million kroner (\$16.1 million). A further increase to 40,000 tons is expected in 1962. Sales by the Association increased on the domestic market and all foreign markets. (Norwegian Fishing and Maritime News, No. 4, 1961.)

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FISHERMEN'S 1960 AVERAGE EARNINGS:

A statistical study in Norway of fishermen's earnings in 1960, covering about 6 percent of all Norwegian fishermen, showed an average annual income of Kr. 8,109 (US\$1,134) per man. This was 3.7 percent more than in 1959. (News of Norway, April 5, 1962.)

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Norway (Contd.):

STERN TRAWLERS BEING BUILT FOR OFFSHORE FISHING:

A Norwegian cooperative company owned by fish filleting and freezing plants in Finmark and North Troms in June 1962 accepted delivery of the 984-gross-ton stern trawler Hans Egede, Norway's largest fishing vessel. The Kr. 7.3 million (US\$1.0 million) craft, which has an over-all length of 220 feet, was built at Bremerhaven, Germany. In September 1962, the West German shipyard will deliver a sister vessel also to the same company.

Hans Egede is one of the seven ocean-going stern trawlers recommended for construction by a committee of the District Development Fund to provide fresh fish for North Norway freezing plants. Between 30 and 40 percent of the building cost will be financed by the Development Fund.

Construction of the 630-gross-ton Hekktind, owned by a firm at Melbu was also made possible through assistance from the Fund. The 151-foot long stern trawler was designed and built by a Bergen firm.

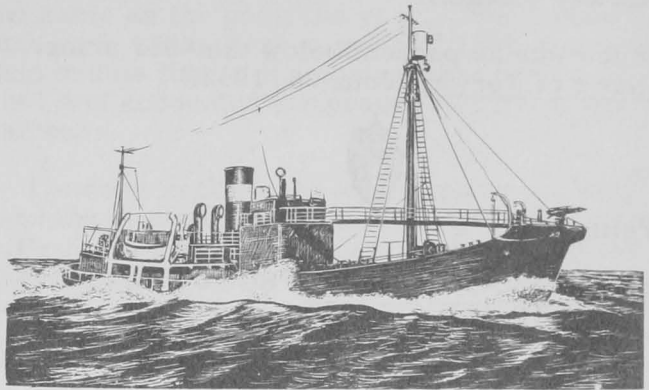
The shipyard at Aalesund will soon launch a specially designed stern trawler for delivery to the local fishing company. The 900-gross ton factory vessel will be able to operate for up to 4 months in distant waters before returning with some 400 tons of frozen fillets. (News of Norway, June 14, 1962.)

STERN TRAWLER HAS DEVICE TO RECORD POSITION AND OPENING OF TRAWL NET:

The stern trawler Hekktind is the first fishing vessel in Norway to install a trawl "sonde," a device which together with the echo depth-sounder makes it possible to record the gear-bottom distance and controls the opening of the trawl. (News of Norway, April 5, 1962.)

NATIONAL WHALE QUOTA FOR 1961/62 ANTARCTIC SEASON:

In October 1961, Norway established a national whale quota of 5,100 blue-whale units for the Norwegian expeditions participating in the 1961/62 Antarctic whaling season. The quota was 700 units less than the



A catcher boat used by Norwegians during Antarctic whaling expedition.

previous season, reflecting the number of units transferred to Japan with the sale of the Norwegian Kosmos III expedition. Seven Norwegian whaling factory vessels, using 71 whale catching boats, took part in the current season. (United States Embassy, Oslo, March 13, 1962.)

WHALE AND SPERM OIL PRODUCTION FOR 1962 IS DOWN:

The final results of the 7 Norwegian pelagic Antarctic whaling expeditions indicate a 15-percent decline in the output of whale and sperm oil in 1962. The Norwegian expeditions produced 498,717 barrels of whale oil and 19,587 barrels of sperm oil during the 117 days of this year's Antarctic whaling season. Production last season, which was 16 days shorter, was 590,752 barrels of whale oil and 67,511 barrels of sperm oil, if the output of Kosmos III fleet, which was sold to Japan, is discounted.

The drop in whale oil prices this year also contributed to reduced income from whaling, and added to the general pessimism as to the continued profitability of pelagic whaling. (United States Embassy, Oslo, report of June 12, 1962.)

WHALE OIL PRICES LOWER IN 1962:

Norwegian whaling companies sold 41,000 long tons of their 1961/62 whale oil production by mid-year of 1962, leaving over 42,000 tons which were then still unsold. About mid-year, 24,000 tons were sold to the largest British buyer and user at £45 (about US\$126) per long ton (about 5.6 U. S. cents a pound),

Norway (Contd.):

which was 30 percent below the 1961 price. (News of Norway, June 28, 1962.)



Peru

EXPORTS OF MARINE PRODUCTS,
JANUARY-MARCH 1962:

Peruvian Exports of Principal Marine Products			
Marine Products	January-March 1962		
	Quantity	Value ^{1/}	
	Metric Tons	Million Soles	US\$ 1,000
Fish meal	343,430	844.8	31,499
Fish (frozen, canned, etc.)	7,843	55.7	2,077
Fish oil	40,796	107.1	3,993
Sperm oil	2,463	8.6	321
Fertilizer (guano)	4,019	10.8	403
Whale meal	1,054	1.7	63

^{1/}F.o.b. values, converted at rate of 26.82 soles equal US\$1.



Philippines

UNITED STATES FIRM SEEKS DANISH
CUTTERS FOR PHILIPPINES:

A United States canning company of California has been negotiating with fishing vessel owners in Skagen, a Danish fishing port in North Jutland, Denmark, to participate in fishing operations in the Philippines. The company is seeking 4 Danish cutters of over 100 tons each, 3 to fish for sardines and 1 for shrimp. Later, the number of cutters may be increased to 18 with vessels of 50-60 tons being considered. Vessel charters would be for three years. Danish crews would be signed for a year, although it is hoped the skippers and engineers would remain for a three-year period. Provisions of a preliminary contract provide for payment of \$12 per ton for fish, the cost of the trip to the Philippines and back, and the daily cost of ice and boxes.

Catches will be delivered first to a her-ring reduction plant and later to a canning plant which is being constructed by the United States firm in cooperation with the largest fisheries company in the Philippines. During the first year the vessels will carry full Danish crews. Thereafter, Philippine crew members will be carried and trained in the fisheries. The company's wish that the cutters sail under the flag of the Philippines and oth-

er contract provisions are still under discussion. (Fisheries Attache, United States Embassy, Copenhagen, July 4, 1962.)



Portugal

SELECTED FISHERY LANDINGS, 1961:

Portugal's 1961 sardine landings of 135,204 metric tons were up 2.4 percent from the previous year's 131,972 tons. But the ex-vessel value of the landings--403.9 million escudos (US\$14.0 million)--dropped 12.5 percent from 1960. Except for 1958, the quantity of the sardine landings in 1960 was the highest in 10 years. Of the sardine landings, 74,461 tons were used for canning. The canners paid 235.3 million escudos (US\$8.2 million) for that amount, or almost \$110 a metric ton.

Landings of chinchards in 1961 totaled 41,867 tons, a 20-percent increase from the previous year's 35,143 tons. The anchovy landings of 9,498 tons in 1961 were more than double those in 1960 when 3,992 tons were landed.

Matosinhos ranked as Portugal's foremost sardine port in 1961 with 96,074 tons, an increase of 15 percent from the previous year. Peniche followed as the second largest sardine port with 13,588 tons, or 10 percent more than in 1960. But sardine landings of only 8,691 tons at Portimao were about 35 percent lower than in 1960.

Although Portugal's sardine landings and pack were at a record high, 1961 did not turn out to be as profitable as anticipated. Both the quantity and value of canned sardine exports were also at a record high in 1961. The lower profits to the canning industry in 1961 were partly attributed to unstable prices and some defects in selling policy.

Portugal's canned fish pack (in oil and in brine) in 1961 totaled 84,000 tons. (Conser-vas de Peixe, April 1962.)

Notes: (1) See Commercial Fisheries Review, May 1962, p. 67.
(2) Values converted at rate of 28.80 escudos equal US\$1 in 1961.

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OUTLOOK FOR CANNED
SARDINE MARKET IN 1962:

The Portuguese outlook for a successful 1962 canned sardine pack depends to a large extent on the availability of medium-size fish.

Portugal (Contd.):

This size fish is canned 6 to 8 fish to the $\frac{1}{4}$ -club can, which is the type of pack preferred by Great Britain, Germany, and Belgium.

The Moroccan canned sardine industry has offered considerable competition to Portugal because of lower prices. Moroccan exports of canned sardines to Italy increased greatly in 1961. This has been viewed as a trend that might spread to other of Portugal's present markets, unless some action is taken to stem the tide. The danger, from the Portuguese point of view, is even greater because of its high production costs.

Other countries increasing their canned sardine production include Spain, which has in the past two years redoubled its efforts to place her surplus in foreign markets.

Portugal's frequent price fluctuations for canned fish are unfavorable to its export trade. When there is a drop in the rate of exchange, which occurs often, importers feel the full effects. This understandably cuts down buying of the Portuguese products and causes prospective buyers to turn to other countries with more stable prices.

More collaboration between Portugal's fishing and the canning segments of the industry is sought if their mutual economic interests are to improve. (Conservas de Peixe, April 1962.)

Note: See Commercial Fisheries Review, May 1962 p. 67.

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FROZEN FISHERY PRODUCTS EXPORTS, 1961:

Portugal's exports of frozen fishery products in 1961 amounted to 1,748 metric tons. Sardine with 657 tons was the largest single frozen fish species exported--more than one-third of the total frozen fish exports. Among other frozen fish and shellfish exported by Portugal were: tuna (23 tons), swordfish (13 tons), and spiny lobster (2 tons). (Conservas de Peixe, April 1962.)

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CANNED FISH PACK, JANUARY-MARCH 1962:

Portugal's total pack of canned fish in oil or sauce for the first quarter of 1962 was up 4.5 percent as compared with the same period in 1961. The sardine pack and the anchovy fillet pack combined accounted for 87 percent

of the total pack, and those packs were about the same as the previous year. The canned tuna pack in the first quarter of 1962 was more than double that of the comparable period in 1961 and accounted for practically all of the increase.

Canners in the main producing areas were working at capacity during February-March, with the March pack of anchovy fillets (60,000 cases) exceeding the February pack by 17.6 percent. The total pack of all canned fish in oil or sauce during March 1962 was up 24 percent as compared with the previous month.

Products	Jan.-Mar. 1962		Jan.-Mar. 1961	
	Metric Tons	1,000 Cases	Metric Tons	1,000 Cases
In Oil or Sauce:				
Sardines	1,699	89	1,715	90
Chinchards	27	1	17	1
Mackerel	22	1	32	1
Tuna and tuna-like . .	428	14	178	6
Anchovy fillets	1,701	170	1,718	172
Others	29	1	78	4
Total	3,906	276	3,738	274

Landings of sardines started to fall off by the end of the first quarter, and prices for anchovy fillets were high. (Conservas de Peixe, May 1962.)

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CANNED FISH EXPORTS, JANUARY-MARCH 1962:

Portugal's exports of canned fish during the first quarter of 1962 dropped 8.6 percent from the same period in 1961. Sardines accounted for 81.3 percent of the 1962 exports of canned fish, followed by anchovy fillets with 11.1 percent. The sardine pack during the first 3 months of 1962 was down from the same period the previous year, but the mackerel pack was three times greater than in 1961.

Product	Jan.-Mar. 1962		Jan.-Mar. 1961	
	Metric Tons	1,000 Cases	Metric Tons	1,000 Cases
Sardines	12,226	643	13,753	723
Chinchards	310	16	277	14
Mackerel	290	12	95	4
Tuna and tuna-like . .	487	16	570	20
Anchovy fillets	1,664	166	1,685	169
Others	67	3	88	4
Total	15,044	856	16,468	934

Portugal's principal canned fish buyers during the first quarter of 1962 were Germany with 2,510 metric tons, followed by the United States with 2,058 tons; United Kingdom with 1,835 tons; France, 1,514 tons; and Italy, 1,437 tons. (Conservas de Peixe, May 1962.)

Seychelles

ESTABLISHMENT OF TUNA INDUSTRY UNDER STUDY:

The East African Standard of June 29, 1962, carried a brief article concerning the possible establishment of a tuna fishing industry in the Seychelles, a large group of islands in the Indian Ocean off the east coast of Africa.

Two representatives of a Geneva firm visited the Seychelles this summer to investigate the feasibility of setting up a base for deep-freezing for export of tuna and similar types of fish now caught by Chinese and Japanese fishing vessels. Since these vessels work farther afield than the local fishing boats, it is not expected that the use of the Chinese and Japanese catch would adversely affect the local Seychelles fishing industry.

The company's representatives are said to envisage the construction of a 1,000-ton cold-storage plant and the operation of approximately 10 fishing vessels of the 100-ton class. Twenty percent of each vessel's crew will be Seychellois. As more are trained, it is expected that Seychellois eventually will take over the running of all the vessels. The company also feels that at a later date it might build a tuna cannery and finance the construction locally of tuna fishing vessels capable of operating within a range of 500 miles. (United States Consulate, Nairobi, report of July 3, 1962.)



Spain

BILBAO FISHERIES TRENDS, FIRST QUARTER, 1962:

Landings of anchovies in the Bilbao area of Spain were very good during the fishing season which opened March 19, 1962. Wholesale prices of these earlier than usual catches ranged from 8.50 pesetas a kilo (6.4 U. S. cents a pound) down to 3.00 pesetas a kilo (2.3 U. S. cents a pound). These were all sold for immediate consumption because the price was too high for the canners.

The Fishermen's Brotherhoods of Vizcaya, Guipuzcoa, and Santander, for the second consecutive year voluntarily agreed to limit anchovy catches, and to maintain minimum sale prices. The minimum price was fixed at 2.00 pesetas a kilo (1.5 U. S. cents a pound),



Unloading anchovies from the hold of a Spanish anchovy auxiliary craft.

or about 20 U. S. cents per 100 pounds more than in 1961. The daily maximum catch limit per vessel was fixed at 8 metric tons. Transfer of anchovy catches from one vessel to another while at sea was prohibited. Vessels were permitted to fish anchovies from 12:00 noon on Monday through 1:00 p.m. on Saturday.

Although representatives from Lugo Province were not present in Bilbao when the agreement was reached on February 17, 1962 (it entered into force on March 19, when the season officially started), it was reported they would support and accept the agreement. Oviedo's acceptance was taken for granted at the meeting. The Comisaria de Abastecimientos y Transportes promised to consider buying surplus fish at the minimum sale price for marketing in inland provinces.

Spain's tuna fishery in African waters was to end on March 31, but there were indications that the fishing fleet would remain longer, probably through April. The vessels were then to return to their home ports and prepare for the albacore and tuna fishing season in the waters of northern Spain. This would mean those fishing vessels will have adopted a cycle of fishing for tuna in African waters from December through April, and in northern Spain from May through November. The anchovy fishing season in Spanish waters would then be left to smaller vessels, and those which have not yet attempted sailing to Africa because of the higher operating costs involved.

The recent regulations concerning the law on the Renovation of the Fishing Fleet received mixed reactions. One opinion was that, at least up to now, the large proportion of

Spain (Contd.):

small fishing vessel operators is not enthusiastic about its application because they are afraid the large firms will get most of the benefits. Another opinion was that the small operator would be reluctant to scrap his old vessel since the construction of a new one involves a substantial investment which he cannot afford. Added to that is his belief that any request for credit would not be approved. Also, the rate of interest is high, and the terms for the refund of the loan too short. Other sources state they are prepared to renovate their fishing fleet even without government subsidies, and have ordered the construction of new vessels. Such vessel owners are encouraged and satisfied with the regulations under the law for governing the Renovation of the Fishing Fleet. It was even added that some shipowners would be satisfied with a subsidy of only 50 percent of the value to be repaid in 10 years at 4 percent interest. Further, these shipowners believe that the terms of the present law might encourage new vessel owners, who formerly were inactive, to join and give financial support to those already familiar with fishing operations.

Regardless of the views held, it appeared that the new law resulted in a temporary work slump in small shipyards. It also prompted some prospective vessel owners to have further construction halted so as to take advantage of any benefits under the new law.

A new fish-packing plant in Bilbao, and a cold-storage plant in Bermeo, Vizcaya, were placed in operation during the first quarter of 1962. These were planned as an improvement in local handling facilities. (United States Consulate, Bilbao, April 6, 1962.)



U.S.S.R.

FISHING IN NORTHWEST ATLANTIC SOUTH OF NOVA SCOTIA:

In 1962, the Soviets started commercial fishing in the International Commission for the Northwest Atlantic Fisheries (ICNAF) subarea 4, south of Nova Scotia between the Grand Banks and Georges Bank. Up to early June this year, a total of 15 Soviet vessels fished in that area and produced 7,000 metric tons of fish, mostly groundfish. In previous

years, Soviet fishing in that area was limited to exploratory fishing. (Proceedings of Annual Meeting, ICNAF, Moscow, June 1962.)

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NEW BALTIC FISHING PORT:

Construction was begun in mid-1962 on a large fishing port in the Baltic Republic of Estonia. The port, located at Tallinn on the Gulf of Finland, will accommodate the largest vessels in the Soviet fishing fleets. Included in the 175-acre facility will be cold-storage and canning plants. (Le Marin, newspaper, Rennes, France, June 8, 1962.)

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FISHING INDUSTRY URGED TO PRODUCE MORE:

The Soviet Council of Ministers and the Communist Party Central Committee recently criticized the fishing industry's past performance and called for increased productivity. To meet this call and to fill the Soviet need for more food, crews will be trained in methods of fishing and processing catches on designated "demonstration" vessels.

In the Kamchatka area of the North Pacific, a fleet of several vessels has already been designated to demonstrate fishing for ocean perch, herring, and flounder. (Press reports and unpublished sources.)

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OCEANOGRAPHIC RESEARCH IN INDIAN OCEAN:

The Vityaz of the Oceanology Institute, U. S. S. R. Academy of Sciences, left Vladivostok in late June 1962 for oceanographic research in the Eastern and Central Indian Ocean. The vessel, participating in the international study of the Indian Ocean, will make summer observations for comparison with data obtained in previous winter voyages.

Scientists from India, Indonesia, and Ceylon, and "four stipendiaries of the United Nations" will be aboard on the 150-day voyage. Also on board for short periods will be scientists from Australia, Japan, and Great Britain. (Unpublished sources.)

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TALKS ON COOPERATION BETWEEN FISHING INDUSTRIES OF RUSSIA, POLAND, AND EAST GERMANY:

A Soviet fish industry delegation, headed by the State Committee on Fisheries Chair-

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

man, left Moscow June 22, 1962, for Warsaw. According to Pravda (June 23), talks will be held with Poland and East Germany regarding an agreement on cooperation between the fishing industries of the three countries. (United States Embassy, Moscow, June 29, 1962.)

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STUDIES ON PRESERVATION
OF FISH, 1961:

During 1961, studies were carried out at the VNIRO (Soviet Institute for Fishery and Oceanography) and the NHRMP (Institute of Scientific Research for the Mechanization of the Fishing Industry) to establish a theory for the cold preservation of fish and to improve the techniques of chilling and freezing.

Heat and mass transfer methods were tried for freezing fish in air under different conditions (different temperatures, humidities, and air speeds). There were also organoleptic studies into biochemical and chemical-physical changes in fish tissue on cooling, freezing, and cold storage, and into their relationship with fish of a given quality. During the studies, special attention was devoted to the definition of the effect of the thawing method on the quality of the fish.

A study was made of the possible use of antibiotics for extending the storage life of chilled fish. Experimental work in this field was carried out to determine (1) the efficiency of ice when using chlortetracycline during the transport of fresh fish on board vessels; (2) the decomposition during subsequent use (cooking, baking, canning, smoking, and salting) of chlortetracycline penetration in the fish; other antibiotics that can be used for fish storage. (Bulletin de l'Institut International du Froid, Tome XLII, No. 2, 1962.)



United Kingdom

CANNED SALMON IMPORTS
LOWER IN 1961:

The United Kingdom total canned salmon imports from all countries in 1961 amounted to 52.6 million pounds valued at US\$42.8 million. This was a 27-percent drop in quantity and a 29-percent drop in value from the 72.1 million pounds valued at \$60.1 million imported in 1960.

Canned salmon exports by the United States in 1961 amounted to 7.2 million pounds of which 3.9 million pounds went to the United Kingdom. In 1960, the United Kingdom received 8.3 million pounds of the 11.9 million pounds of canned salmon exported by the United States.

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LIVE FRESH-WATER CRAYFISH
IMPORTED FROM RUSSIA:

A London food importer in the first half of this year imported a shipment of live fresh-water crayfish from Russia. Better known as "ecrevisses," these shellfish, which have not been brought to England in many years, were distributed to the catering trade by an English food firm.

Among the first to receive supplies of the new arrivals were the Savoy Hotel, London, and a group of restaurants. The subsequent demand was so great that further quantities were ordered immediately.

The crayfish were caught in the lakes and rivers of White Russia near Vitebsk. They were then taken by motor trucks to the nearest airport, and flown to London in pressurized containers.

The shellfish seemed to be no worse for the experience, as all of the first consignment arrived alive. (Fish Trades Gazette, June 16, 1962.)



Venezuela

CANNED SARDINE ESTIMATED
PACK FOR 1962:

The President of the Asociacion de Pescadores de Margarita, who is familiar with the canned sardine situation as a result of a recent trip to the United States, anticipates a Venezuelan canned sardine pack for calendar year 1962 of about 800,000 cases (100 cans per case, $3\frac{3}{4}$ ounces per can).

However, he states that the pack could be increased without undue difficulty to 1.5 to 2 million cases since the industry is operating only at 50 percent capacity. The major problems to boost production would be rapid procurement of sufficient oil and sheet metal and absolute guarantee of market by a reliable private or public organization.

Big catches of sardines off Venezuela began around mid-June. (United States Embassy, Caracas, report of June 12.)

