



## International

CODEX ALIMENTARIUS COMMISSION

THIRD SESSION MEETS IN ROME,  
OCTOBER 19-29, 1965:

The Third Session of the Codex Alimentarius (Food Standards) Commission met in Rome, October 19-29, 1965. The Commission is sponsored by the Food and Agriculture Organization (FAO) and the World Health Organization (WHO). The joint FAO/WHO program on food standards has as its purpose: (1) simplifying and integrating food standards work now carried on by many international organizations; (2) providing an effective mechanism for obtaining Government acceptance of those standards; and (3) their publication in the Codex Alimentarius.

Important actions at the Third Session of the Commission were (1) the establishment of a Codex Committee on Fish and Fishery Products, and (2) the adoption of a report on "General Principles of the Codex Alimentarius."

Codex Committee on Fish and Fishery Products: The Commission agreed to establish a Codex Committee on Fish and Fishery Products. Norway volunteered to be the host country and to provide the Chairman for the new Committee and was confirmed in that role.

The following terms of reference for the Codex Fisheries Committee were agreed upon: "The Codex Committee on Fish and Fishery Products should elaborate worldwide standards for all fresh, frozen, and otherwise processed fish, mollusks, and crustaceans."

The relation of the Fisheries Committee with other Codex Committees was stated as follows: "The Fisheries Committee will have liaison with the Frozen Foods Committee, as it will have with those for Food Hygiene, Additives, Labeling, and Sampling, and Analytical Methods -- but only as to Codes of Practice -- not as to the elaboration of the Codex Standards."

Arrangements were made for an orderly transition of work on fisheries standards from the FAO Fisheries Division (previously assigned such responsibility by the Codex Commission) to the new Codex Fisheries Committee. As of January 1, 1966, FAO was to transfer the work, and all files relating to the fish standards drafts, to the Committee.

In an informal discussion between the several fisheries representatives in attendance it was agreed that the first meeting of the Codex Fisheries Committee might be timed to take advantage of the presence in Europe of many country representatives for the Second International Congress of Food Science and Technology at Warsaw, Poland, August 22-27, 1966.

On the agenda at the first meeting of the Codex Fisheries Committee will be the establishment of rules of procedure, patterned after the guidelines already in use by other Codex Committees. It is expected that priorities for particular fishery products Codex Standards can be agreed to, and also assignments of each priority standard to 2 or 3 countries indicating interest in serving as a working group. Those working groups would report back to the full Committee when a Codex Standard had been sufficiently developed to warrant review by that Committee.

General Principles of the Codex Alimentarius: Other action by the Commission at the Third Session included the adoption of a report by the Codex Committee on General Principles which met in Paris, October 4-8, 1965. The report as adopted by the Commission included the following provisions:

### GENERAL PRINCIPLES OF THE CODEX ALIMENTARIUS

"Purpose of the Codex Alimentarius: The Codex Alimentarius is a collection of internationally adopted food standards presented in a uniform manner. These food standards aim at protecting consumers' health and ensuring fair practices in the food trade. Their publication is intended to guide and promote the elaboration

## International (Contd.):

and establishment of definitions and requirements for foods, to assist in their harmonization, and in so doing to facilitate international trade.

"Scope of the Codex Alimentarius: The Codex Alimentarius is to include standards for all the principal foods, whether processed, semiprocessed, or raw, for distribution to the consumer. Materials for further processing into foods should be included to the extent necessary to achieve the purposes of the Codex Alimentarius as defined. The Codex Alimentarius is to include provisions in respect of food hygiene, food additives, pesticide residues, contaminants, labeling and presentation, methods of analysis, and sampling.

"Nature of Codex Standards: Codex Standards contain requirements for food aimed at ensuring for the consumer a sound, wholesome food product free from adulteration, correctly labeled and presented. In particular, a Codex Standard for a given food product lays down the special requirements for that product, it being understood that the general provisions contained in the Codex Alimentarius shall apply except to the extent otherwise expressly provided for in a specific standard.

"A Codex Standard should, therefore, for any food or foods: (1) incorporate by reference the applicable hygiene, labeling, methods of analysis, and other general provisions adopted by the Commission; and (2) specify in whole or in part the following criteria, as appropriate:

(a) Product designation, definition, and composition--These should describe and define the food (including its scientific name when necessary) and cover compositional requirements which may include quality criteria.

(b) Hygiene requirements--These should include such factors as specific sanitary and other protective measures and safeguards to assure a sound, wholesome, and marketable product.

(c) Weight and measure requirements, such as fill of container, weight, measure, or count of units based on an appropriate method or criterion.

(d) Labeling requirements--These should include specific requirements for labeling and presentation.

(e) Sampling, testing, and analytical methods--These should cover specific sampling, testing, and analytical procedures.

"Acceptance of Codex Standards: A Codex Standard so defined may be accepted by a country--in respect of trade and distribution of the food within its territory--in its entirety, or accepted with a declaration of more stringent requirements, or accepted as a target which will be put into effect after a stated number of years. Acceptance in its entirety or target acceptance would imply an undertaking by the importing country not to hinder within its territorial jurisdiction the distribution of food which conforms to the standard by any legal provisions relating to the health of the consumer or to other food standard matters."

Note: See Commercial Fisheries Review, Sept. 1965 p. 55, Dec. 1964 p. 75.

## NUTRITION

## SEVENTH INTERNATIONAL CONGRESS OF NUTRITION TO MEET IN HAMBURG:

The VIIth International Congress of Nutrition will meet in Hamburg, Germany, August 3-10, 1966. A scientific program covering many aspects of nutrition has been planned. Of particular interest to the fishing industry will be discussions and reports on



(1) food habits, food patterns, and food taboos; (2) influence of imported foods on the nutritional status of developing countries; (3) methods of protein evaluation; (4) irradiation of foodstuffs; and (5) food from the sea as related to world nutrition in the future. A wide variety of other topics of general interest will also be presented. Official languages for the Congress will be German, English, and French.

Additional information may be obtained from the VIIth International Congress of Nutrition, Secretariat General, Martinistr. 52, 2000 Hamburg 20, West Germany.

## COD

## FRANCE HOLDS INTERNATIONAL CONFERENCE ON COD INDUSTRY:

A "First International Congress of the Cod Industry: Tradition and Future" was held in Fecamp, France, January 27-29, 1966, under the sponsorship of the Fondation Française d'Etudes Nordiques. The agenda for the meeting called for a discussion of cod fishing and marketing by European countries, particularly as concerns the North Atlantic fishery. Speakers for the meeting were invited from Norway, Denmark, France, West Germany, Spain, Portugal, the United Kingdom, and the Soviet Union. The cod fisheries in each of those countries were reviewed. The meeting also touched on such subjects as the construction of modern trawlers, international conventions affecting cod fishing, and the market for cod in developing countries. Reports and accounts of the discussions were published by the Fondation Française d'Etudes Nordiques.

## EUROPEAN TRADE FAIRS

## AMERICAN FISHERY PRODUCTS PROMOTED:

Processed fishery products from the United States were vigorously promoted at two

## International (Contd.):

important trade fairs in Europe during January 1966, the U. S. Bureau of Commercial Fisheries announced. The products, many of them new to European markets, were displayed at the International Hotel and Catering Show in London January 18-27, and at the U. S. Food and Agricultural Exhibit in Milan, Italy, January 19-25.

Both fairs were expected to attract many of the leading trade people in Europe, including importers, brokers, agents, and buyers. The London show featured portion control of food, and emphasized servings for institutional use. Food products from all over the world were shown at the London fair. The Milan exhibit displayed only American food and agricultural products.

A feature at London was the preparation of fishery products by an internationally famous chef who used recipes approved in the Bureau's test kitchens.

Both the Bureau and the U. S. fishing industry were highly encouraged by successful participation in European fairs held in 1965 at Cologne, West Germany, and Brussels, Belgium, where fishery products were displayed separately from other foods for the first time.

## EUROPEAN FREE TRADE ASSOCIATION

INDUSTRIAL TARIFFS REDUCED  
ANOTHER 10 PERCENT:

On December 31, 1965, a further cut of 10 percent was scheduled in the level of tariffs on industrial goods traded among the 8 member countries of the European Free Trade Association (EFTA)--Austria, Denmark, Finland, Norway, Portugal, Sweden, Switzerland, and the United Kingdom. But those fishery and agricultural products listed in Annexes D and E to the Stockholm Convention are not included in the industrial goods category.

The latest EFTA tariff cut was scheduled to bring the general level of EFTA tariffs on industrial goods down to 20 percent of their 1960 level. The final 20 percent is to be e-



limited by a single cut on December 31, 1966, with the exception that Finland (having become associated with EFTA 1 year after the Stockholm Convention came into force) will reach zero at the end of 1967 through successive cuts of 10 percent at the end of 1966 and 1967.

Those tariff reductions will accomplish the establishment of an industrial free trade area among the EFTA countries three years earlier than originally contemplated by the signatories of the Stockholm Convention. (European Free Trade Association, December 8, 1965.)

Note: See Commercial Fisheries Review, March 1965 p. 61.

## FISH MEAL

PRODUCTION AND EXPORTS FOR  
SELECTED COUNTRIES,  
JANUARY-SEPTEMBER 1965:

Member countries of the Fish Meal Exporters' Organization (FEO) account for about 90 percent of world exports of fish meal. The FEO countries are Chile, Angola, Iceland, Norway, Peru, and South Africa/South-West Africa.

Table 1 - Exports of Fish Meal by Member Countries of the FEO, January-September 1965

Country	September		Jan.-Sept.	
	1965	1964	1965	1964
	. . . .(1,000 Metric Tons). . . .			
Chile . . . . .	3.9	10.2	59.9	108.4
Angola . . . . .	1/	4.9	2/30.1	42.0
Iceland . . . . .	14.5	11.4	94.9	89.2
Norway . . . . .	23.1	9.4	170.7	139.8
Peru . . . . .	29.8	104.4	1,105.9	1,120.8
So. Africa (including S.-W. Africa) . . . .	20.2	23.1	174.9	173.3
Total . . . . .	91.5	163.4	1,636.4	1,673.5

Table 2 - Production of Fish Meal by Member Countries of the FEO, January-September 1965

Country	September		Jan.-Sept.	
	1965	1964	1965	1964
	. . . .(1,000 Metric Tons). . . .			
Chile . . . . .	0.9	6.2	51.7	109.7
Angola . . . . .	1/	4.2	2/26.6	39.9
Iceland . . . . .	20.5	13.4	105.7	99.9
Norway . . . . .	20.8	19.7	253.7	154.3
Peru . . . . .	17.1	56.1	910.1	1,065.7
So. Africa (including S.-W. Africa) . . . .	11.4	23.7	261.2	236.8
Total . . . . .	70.7	123.3	1,609.0	1,706.3

1/Data not available.

2/Data available only for January-August 1965.

International (Contd.):

Peru accounted for about 68 percent of the 1.6 million metric tons of fish meal exported by FEO countries in January-September 1965.

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WORLD PRODUCTION, SEPTEMBER 1965 WITH COMPARISONS:

World fish meal production in September 1965 was down 22 percent from the previous month. Peruvian output was very light following the closed fishing season in August. September production declined seasonally in the United States, Norway, and South Africa.

Country	September		Jan.-Sept.	
	1965	1964	1965	1964
. . . . . (Metric Tons) . . . . .				
Canada . . . . .	11,547	2,985	64,799	39,696
Denmark . . . . .	11,184	16,620	91,105	86,571
France . . . . .	1,100	1,100	9,900	9,900
German Fed. Repub. . . . .	6,347	6,521	51,214	57,176
Netherlands . . . . .	516	1,100	4,379	5,800
Spain . . . . .	1/	1/	2/13,247	1/
Sweden . . . . .	511	889	5,401	5,300
United Kingdom . . . . .	5,469	5,185	60,036	58,223
United States . . . . .	17,811	20,696	178,423	179,747
Angola . . . . .	1/	6,376	3/26,561	42,073
Iceland . . . . .	20,508	15,693	105,702	102,245
Norway . . . . .	20,814	12,257	253,659	146,815
Peru . . . . .	17,068	49,478	910,090	1,059,070
So. Afr. (including S.-W. Afr.) . . . . .	11,356	16,581	261,449	231,073
Belgium . . . . .	375	375	3,375	3,375
Chile . . . . .	851	10,777	51,696	114,236
Morocco . . . . .	1/	4,000	2/1,100	17,250
Total . . . . .	125,457	170,633	2,092,136	2,158,550

1/ Data not available.  
 2/ Data available only for January-May 1965.  
 3/ Data available only for January-August 1965.  
 Note: Japan does not report fish meal production to the International Association of Fish Meal Manufacturers at present.

World fish meal production in January-September 1965 was slightly less than in the first 9 months of 1964. Peruvian output was down 16 percent and Chilean production was also down sharply, but the decline was partly offset by increased production in Norway, Canada, and South Africa.

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

MARINE OILS

WORLD PRODUCTION AND EXPORT FORECAST FOR 1966 WITH COMPARISONS:

Total world production of marine oils (whale, sperm whale, fish, and fish-liver oil)

is forecast at 1,120,000 short tons in 1966 as compared with estimated output of 1,190,000 tons in 1965 and 1,198,000 tons in 1964.

World exports of marine oils is forecast at 715,000 tons in 1966 as compared with estimated exports of 805,000 tons in 1965 and 826,000 tons in 1964. (Fats and Oils Situation, November 1965, U. S. Department of Agriculture.)

FOOD AND AGRICULTURE ORGANIZATION

EXPANSION IN FISHERIES WORK RECOMMENDED AT CONFERENCE:

Plans to expand and intensify the work of the Food and Agriculture Organization (FAO) in the field of fisheries were approved November 25, 1965, by the major program-review body of its biennial Conference in Rome. The Conference's Commission Two, which examines the technical work of FAO, voted 50 to 6 with 3 abstentions, to raise the present Fisheries Division to departmental status. Its recommendation then was to be voted on by the Conference plenary, which is made up of the same member nations.

The recommendation provides for the first steps in an expansion program to be spread over six years. It also incorporates a proposal for setting up a permanent intergovernmental committee which would deal with such problems as harvesting the resources of oceans and inland waters in such a way that they are conserved for future generations.

The director of the present Fisheries Division is Roy Jackson of the United States, who until 1964 was the Executive Director of the International North Pacific Fisheries Commission.

The recommendations to be presented to the Conference ask the FAO Director-General to convene a technical conference on fisheries for West African countries, and another for the Near East some time in 1966-67. (Food and Agriculture Organization, Rome, November 25, 1965.)

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CUBAN PROPOSAL ON FISHING REJECTED AT CONFERENCE:

Cuba urged at the biennial Conference of the Food and Agriculture Organization (FAO) held in Rome, that developed countries "abstain from any interference or harassment" of developing nations fishing in international waters. The recommendation was included

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in a draft resolution on marine resources submitted to Commission Two of the FAO conference by Cuba's ambassador to the United Nations.

The Commission on November 25, 1965, by a vote of 26 to 10, with 26 abstentions (44 countries were absent), decided that the question raised by Cuba was outside the competence of FAO since it was the subject of an international convention now being ratified under United Nations auspices.

The Cuban draft resolution had recommended that developed countries refrain from making regulations infringing upon "legitimate rights of the developing or emerging countries to exploit international waters adjacent to their territorial seas" but outside the territorial waters of other countries. Cuba's ambassador said he was aware that the proposed resolution was outside the competence of United Nations agencies. However, he said, FAO recognized the potential of marine resources to poor nations, and therefore he was asking the developing countries not to put obstacles in the way of less advanced states. He deplored what he called "political and military reprisals," and said warships should not stop fishing vessels from pursuing their legitimate business. (Food and Agriculture Organization, Rome, November 25, 1965.)

### GREAT LAKES

#### FISHERY PROBLEMS IN THE GREAT LAKES:

Complex fishery situations have arisen in some of the Great Lakes as a result of the decline of the lake trout and other species, and the rise of others such as the alewife. A paper on the problem, using Lake Michigan as an example, was presented before the Management and Research Committee of the Great Lakes Fishery Commission at its 10th Annual Meeting in June 1965 by James W. Moffett, Director of the U. S. Bureau of Commercial Fisheries Biological Laboratory, Ann Arbor, Mich.

The paper states in part:

"Fish populations in the Great Lakes have changed significantly in recent years for one or more reasons. Each change has developed problems of adaptation for that particular group of fishermen accustomed to using the resource in a given lake. . . .

"As an example, let us review some of the changes that have occurred in Lake Michigan. These changes are typical of those elsewhere in magnitude, if not in character, and have been most intensively studied.



Fig. 1 - Fish population changes in Lake Michigan are typical of those in the other Great Lakes.

"The Lake Michigan biological community was an extremely delicate and simple one. It depended upon two predatory species in deep water (lake trout and burbot) to hold in balance a large quantity of diverse converters (chubs, sculpins, and smelt) that were moving energy from planktonic into usable vertebrate forms at a rather rapid rate. With the advent of the sea lamprey in Lake Michigan, the lake trout fishery dropped from roughly 6 million pounds per year to nothing in about five years. The burbot population also declined to insignificance. As the lake trout fishery declined the fishermen, in an effort to stay financially solvent, undertook to fish for chubs and the catch curves literally changed places. Approximately 12 million pounds of chubs were produced annually during the late 1950's to replace the 6 million pounds of lake trout that were no longer available to the fishery. Both the fishery and the continuing sea lamprey predation selected for the largest and most rapidly growing chub species.

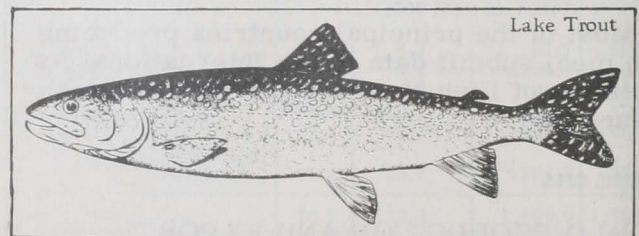


Fig. 2 - Lake Michigan biological community depended upon two predatory species in deep water (lake trout and burbot) to hold in balance a quantity of diverse converters (chubs, sculpins, and smelt).

## International (Contd.):

"This brought about a series of biological events which ultimately resulted in the decadence of the chubs to a single species community--eight species dwindled to what is now about 99 percent one species. The smallest and slowest growing species became dominant because of its undesirability to man and to the sea lamprey. Rough calculations of the poundage of chubs needed to feed the annual production of lake trout (6.0 million pounds) made on a 5 to 1 conversion basis suggested that probably 30 million pounds of chubs were left to reproduce or to be caught. We have no idea of the poundage of chubs that was consumed to maintain the standing crop of lake trout but it must have been considerably larger. There were no substitute predators in the lake to utilize these chubs, neither was there a fishery interested in taking them. Consequently, they increased greatly in number.

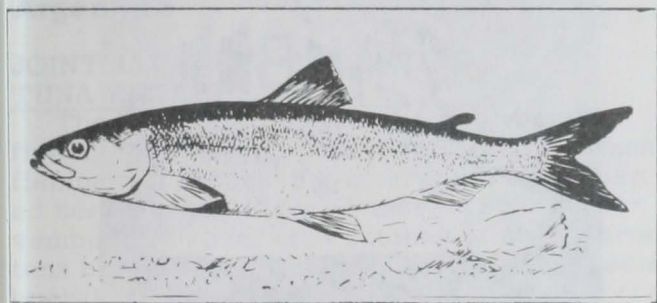


Fig. 3 - About 12 million pounds of chubs were fished annually during the late 1950's to replace the 6 million pounds of lake trout that were no longer available to the fishery.

"At about the same time the alewife, an exotic above Lake Ontario, spread to Lake Michigan where everything seemed to favor its increase. The size of the still growing alewife population overwhelms the imagination. During certain periods of the year 5 to 8 tons of alewives can be caught within 15 minutes in trawl gear. Unfortunately, with such drastic changes coming so quickly, little or nothing could be done with these animals as far as human economy is concerned.

"The fisheries needed to adapt to these changes and some attempts were made. However, the fishermen ran into a series of difficulties, some of which were their own prejudices. Problems arose in re-outfitting, financing of vessels and plants, development of new markets, . . . etc. The advent of the alewife in Lake Michigan eliminated the herring population that supported a very lively fishery. The chub fishery adjusted to large fish for smoking, became plagued with increasing catches of smaller chubs. The costs of labor to clear gill nets of the more abundant but smaller fish soon overcame the small margin of profit. Since there were no predators to hold the alewives or the smaller chubs in check, the lake soon became characterized by a large biomass of useless animals.

"This situation has been about 15 years in the making. The alewife has not yet had its full effect on the populations of Lake Michigan. The chubs are becoming larger and fewer, but it is not yet clear whether this change can be blamed on the alewife. Since the alewife and chubs are both competitors for the same food and space, it is possible that the chubs may suffer the same fate as the herring. It might be necessary to adjust fishing activities to fit this one species. Alewives are becoming so abundant that when they move into shore to reproduce, they are of such densi-

ties that they displace even the tenacious yellow perch from their accustomed grounds.

"We turn now to the proposition of re-establishing a predator species like the lake trout in this unfamiliar situation. What are we going to do about it? Are we going to stop all fishing activities in the lake to give the planted lake trout the best chance to survive? If we do this, it means that we lose what is left of the fishery.

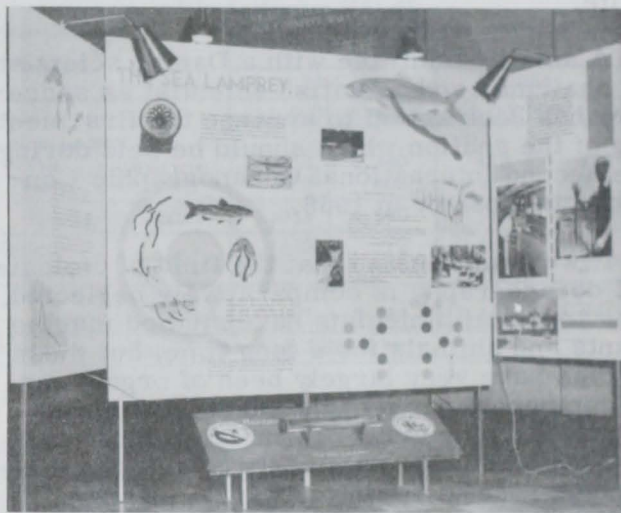


Fig. 4 - Exhibit showing sea lamprey research and control conducted by the U. S. Bureau of Commercial Fisheries under the supervision of its Ann Arbor (Mich.) Biological Laboratory.

"We have now planted about 1.2 million lake trout in Lake Michigan and it is a bit too late for us to speculate any longer. We are faced with the test. What should we do with the trawl fishery? What should we do with the gill-net fishery? What should we do with the trap-net fishery? Do we allow these to continue? What ways do we have to control them or orient them so they have the least effect on the predator we wish to re-establish--a fish which was the keystone in the economics of the fishery? Many other problems will have to be faced. Undoubtedly, we must be astute and as informed as possible because we are not going to approach these questions and find solutions to these problems without stimulating some public emotionalism. The situation is particularly delicate when we compound it with the problem of making work the ultimate introduction of two species of salmon and also possibly the introduction of striped bass.

"It will require all the study we can possibly put forth. It is going to require all the ingenuity we can devise as a group to balance the situation, keep alive an industry capability and at the same time make possible the achievement of some of the basic objectives to the Great Lakes Fishery Commission." (News Release of Ontario Department of Lands and Forests, Toronto, November 12, 1965.)

Note: See *Commercial Fisheries Review*, September 1965 p. 51.

## OCEANOGRAPHY

### BIOLOGICAL OCEANOGRAPHIC SECTION SET UP WITHIN THE INTERNATIONAL UNION OF BIOLOGICAL SCIENCES:

At the XVth General Assembly of the International Union of Biological Sciences (held

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in Prague in July 1964), a new section on Biological Oceanography was created within the Union. The new section will cover all branches of marine biology. It is designed to function as a scientific association through which marine biologists of all nations can communicate.

A small committee with a Danish scientist as chairman and a British scientist as secretary has been set up to arrange the first meeting of the section which should be held during the Second International Oceanographic Congress in Moscow in 1966.

It was emphasized that the field of biological oceanography is comparatively neglected. It is true that biologists have studied marine plants and animals for a long time, but these studies have very largely been of organisms as component parts of the plant and animal kingdoms. The study of the living communities as an integral part of the sea has by comparison received relatively little attention. That is both an important and challenging field of scientific inquiry which should advance in close cooperation with the physical and chemical aspects of oceanography. (International Marine Science, October 1965.)



## Aden

### NEW STEEL PURSE-SEINER LEADS THE WAY TO MODERNIZATION:

The Department of Fisheries, Federation of South Arabia, has sponsored the construction of the prototype steel purse-seine vessel Federal Star II in an Aden shipyard. This is a breakthrough for the local fishing industry. It has been hailed by local fishermen as a major step in modernizing the Aden fleet which now consists mostly of small wooden vessels. The construction in Aden of another 4 steel fishing vessels similar to the Federal Star II is planned and 2 are already under construction. Building the vessels in Aden saves the high freight costs and other charges of importing fishing vessels.

Initially, the Federal Star II will be used for exploratory fishing in local waters (for tuna, mackerel, and kingfish), and in the training program operated by the Federal Fisheries Department. That training pro-

gram will provide qualified fishermen to operate the new modern vessels being built.



Fig. 1 - Federal Star II ready for launching.

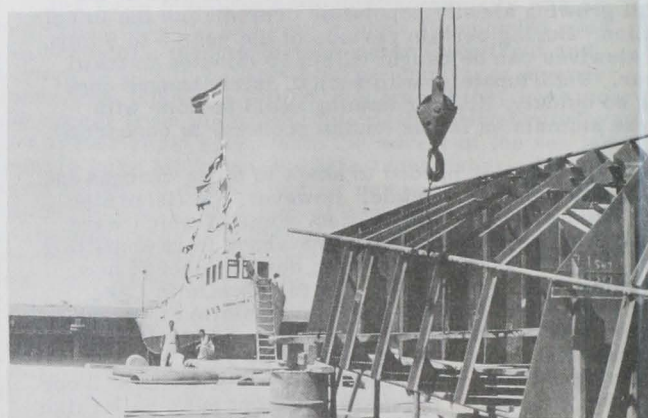


Fig. 2 - With the Federal Star II on launching boards, the Aden shipyard has already started another steel fishing vessel. The hull in the foreground is being built in the inverted position. When the hull plates have been welded, the vessel will be turned upright and completed.

The Federal Star II can be used not only for purse-seining, but also for long-lining, trawling, and other methods of fishing. It is powered by a 60-horsepower diesel engine. The dimensions of the vessel are: length 40 feet, beam 14 feet, depth 6½ feet, and draft at the heel 4½ feet. The vessel measures 35

Aden (Contd.):

gross tons and is of all-steel welded construction with the wheelhouse and main propulsion unit forward. The after part of the vessel is a large working deck with a clear run aft over the wide transom stern for handling purse seine and other nets. The vessel is also equipped with a long-line hauler supplied by a Scottish firm. A power block is to be added to the vessel in the future.

Note: See Commercial Fisheries Review, Feb. 1964 p. 66.



**Argentina**

**JOINT JAPANESE-ARGENTINE TUNA ENTERPRISE:**

The three 270-ton tuna fishing vessels fishing for the joint Japanese-Argentine tuna fishing and processing enterprise (established near Buenos Aires October 1959) in November 1965 averaged catches of about three tons of tuna per day per vessel. The vessels operate in grounds about five days from port and remain at sea for about 40-50 days. They are manned by 25-26 men, including 6-7 Argentines, but the turnover in the Argentine crew is said to be great, with many quitting after their first trip.

The rapid turnover in crew and the expense of hiring and training new fishermen, plus the procurement of fishing equipment from Japan, are reported to be the major management problems faced by that firm. As far as marketing problems are concerned, the Argentines are primarily beef-eating people but that company's canned tuna products are said to be gradually gaining local acceptance.

The joint firm, which is financed on a 50-50 basis (\$247,000 each), has a staff of 10 Japanese nationals working on land and 60 Japanese on the three tuna vessels. (Suis-ancho Nippo, November 25, 1965, and other sources.)



**Australia**

**FISHERY EXPORT TRENDS, JULY-SEPTEMBER 1965:**

Australia's exports of fishery products in July-September 1965 were valued at

A£3,022,000 (US\$6,761,000), up 78 percent from the same three months in 1964. The increased value was due to higher prices paid for frozen spiny lobster tails in foreign markets. Exports of other fishery products during the period were lower than a year earlier.

Value of Australian Exports of Leading Fishery Items, July-September 1964-65				
Product	July-September			
	1965		1964	
	A£1,000	US\$1,000	A£1,000	US\$1,000
Spiny lobster:				
Tails . . . . .	1,853	4,140	413	923
Whole . . . . .	179	400	125	279
Total spiny lobster	2,032	4,540	538	1,202
Shrimp . . . . .	435	972	466	1,041
Scallops . . . . .	120	268	147	328
Total of products shown . . . . .	2,587	5,780	1,151	2,571

Note: Australian £1.00 equals US\$2.234.

The export value of frozen spiny lobster tails in September 1965 was only half that of the previous month but the total value for the three months ending in September was 349 percent higher than in the same period of 1964.

The value of shrimp exports was only slightly lower than in the same three months of 1964. Japan continued as Australia's best market for shrimp, with a total of 171,000 pounds valued at £71,000 (\$158,600) shipped in September 1965. South Africa is becoming an increasingly important market for Australian shrimp.

France continued as the principal market for Australian scallops. The export value of that product during the period was downslightly from the same period in 1964.

Australia's exports of canned abalone are increasing, with a total of 239,000 pounds valued at £55,000 (\$122,900) shipped in July-September 1965. Australia's abalone exports near the end of 1965 were valued at £70,000 (156,400). A good part of those exports went to Malaysia and Singapore. (Australian Fisheries Newsletter, December 1965.).

Note: See Commercial Fisheries Review, March 1965 p. 67.





## Brazil

### CHANGES IN FISHERIES CODE PROPOSED:

A draft revision of the 1938 Brazilian Fisheries Code was published in the Diario Oficial, April 8, 1965. Interested persons were encouraged to submit suggestions concerning its provisions to the Superintendency for Development of Fisheries (SUDEPE).

The chief innovations proposed in the draft legislation and the "General Considerations" which precede the text were: (a) Permission for foreign fishing vessels and foreign fishermen to fish in Brazilian waters, subject to special authorization of the President of Brazil, in order to increase production and train Brazilian fishermen. (b) Studies to facilitate the importation of at least 100 motorized fishing vessels equipped with modern gear, as well as the chartering of foreign vessels for specified periods, since the Brazilian shipbuilding industry is not yet able to provide fishing vessels in the quantity needed. (c) Replacement of the paternalistic "Colonias" of fishermen by new organizations (the Director of SUDEPE favors cooperatives). (d) Conservation of fishery resources through delineation and control of inland and marine fishing areas, prohibition of pollution of those areas, regulation of seasonal fishing periods, vessels, equipment, etc., plus fines ranging from one-tenth to several multiples of the minimum salary for infractions of the Code.

Whereas the previous Fisheries Code restricted commercial fishery activities to Brazilian nationals and to Brazilian-owned vessels (an exception was made for the two Japanese companies which operate in Brazil, based on progressive nationalization of their operations), the draft code would permit foreign participation in Brazilian fishery firms in a ratio of up to 50 percent of the firm capital.

A condition for chartering foreign fishing vessels is that all exports are to be made by the Brazilian firms signing the charter agreements. Discussions were held between officials of SUDEPE and the Foreign Ministry of Brazil concerning proposed arrangements for chartering foreign vessels. (United States Embassy, Rio de Janeiro, April 30, 1965.)

Note: See Commercial Fisheries Review, October 1965 p. 64; June 1965 p. 46.

\* \* \* \* \*

### NATIONAL COMMISSION FOR OCEANOGRAPHY ESTABLISHED:

Brazil has established a National Commission for Oceanography which will include representatives from the Brazilian Ministry of the Navy, Ministry of Agriculture, University of Sao Paulo, and University of Recife. (International Marine Science, October 1965.)



## Bulgaria

### TRAWLERS TO BE BUILT FOR DOMESTIC AND SOVIET FISHERIES:

Beginning in 1966, a shipyard at Burgas on Bulgaria's Black Sea coast will specialize in the construction of fishing vessels. During Bulgaria's new 5-Year Plan (1966-1970), 220 fishing trawlers are to be produced; of those 120 are to be exported to the Soviet Union which will operate them in the North Sea, the Barents Sea, and the Baltic Sea. Plans call for this new series of trawlers to each have a 300-horsepower engine; a displacement tonnage of 311 tons, and a length of about 30 meters (98 feet). Each trawler is to be able to operate continuously for 19 days without refueling. Every vessel is to have a refrigerated hold with a volume of 100 cubic meters (3,531 cubic feet) maintained at a constant temperature of  $-4^{\circ}$  C. ( $+24.8^{\circ}$  F.). All processing is to be fully mechanized. (Zemedel'sko Zname, November 26, 1965.)

It is believed that the additions to the Soviet fleet from Bulgaria will serve mainly to replace obsolete Soviet trawlers built in the early post-World War II era in East Germany. They will not be used to further expand Soviet Baltic and North Sea operations.



## Canada

### FEDERAL GOVERNMENT TO ASSIST FISHERMEN FOR CATCH FAILURE:

Details of a Canadian Federal Government program to provide immediate assistance to fishermen who experienced a serious catch failure during the past season were announced December 3, 1965, by Canada's Fisheries Minister. The action implements an announcement on September 27, 1965, by the Prime Minister that the Government has "already taken steps to work out plans to assist the

## Canada (Contd.):

fishermen in communities where, by the end of the season, the inshore fishery has been a failure."

The special assistance will be based on records of fishing income supplied by the Unemployment Insurance Commission, but actual payment will be made by the federal Department of Fisheries from money voted by Parliament for that purpose. To be eligible for assistance, a fisherman must have at least five weeks with fishing stamps in his book that were earned in 1965. This shows that he depends on fishing for a substantial part of his income.

A fisherman with no dependents who has five weeks with fishing stamps earned in 1965 but does not have an unemployment insurance entitlement of more than C\$150 in the 1965/66 benefit period will be eligible. Also eligible will be a fisherman with dependents who has five weeks with fishing stamps earned in 1965 but does not have an unemployment insurance entitlement for more than \$200 in the same period.

The amount of special assistance paid by Canada's Department of Fisheries will depend upon the fisherman's initial entitlement to seasonal benefit in the coming winter. If he had dependents he will receive the difference between \$200 and his earned unemployment insurance entitlement to benefit. If he has no dependents he will receive the difference between \$150 and his earned unemployment insurance entitlement to benefit.

The purpose of the program is to supplement the winter income of those fishermen who suffered catch failures in 1965. The supplement of \$200 or \$150 will be made up of the initial unemployment insurance entitlement plus the special assistance which will be available from the Department of Fisheries.

Fishermen who have not made application for Unemployment Insurance benefit this winter (1965/66) because they do not have minimum contributions required for Unemployment Insurance should make such application at a local office of the Commission in the usual way if they have a minimum of five weeks with fishing stamps earned in 1965. Fishermen will not be eligible for the special assistance from the Department of Fisheries

unless they have made an application for Unemployment Insurance benefit prior to March 26, 1966.

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#### FEDERAL DEPARTMENT OF FISHERIES SETS UP NEW CONSERVATION AND PROTECTION SERVICE:

A new Director of the new Conservation and Protection Service of Canada's Federal Department of Fisheries was appointed in December 1965. The new service was created from the former Conservation and Development Service, along with the new Resource Development Service. The Conservation and Protection Service will be responsible for the administration and operation of programs designed to protect and maintain stocks of fish through regulation of fishing and to carry out and expand those activities which were originally the responsibility of the Protection Branch of the former service. (Canadian Department of Fisheries, Ottawa, December 23, 1965.)

\* \* \* \* \*

#### GOVERNMENT SPONSORS NEW COMMUNITY FISH PROCESSING CENTERS IN NEWFOUNDLAND:

Plans to spend about C\$700,000 in Newfoundland to provide additional collection depots for fresh and frozen fish and community processing centers for salt fish were announced jointly December 23, 1965, by the Canadian Federal Fisheries Minister and the Newfoundland Minister of Fisheries. This is a continuation of an assistance program begun in 1965. In 1966, the emphasis will be on building collection centers for the frozen fish trade. The program of new construction is part of the arrangements entered into by the Governments of Canada and Newfoundland to accelerate fisheries development activity. The Federal Government will meet the cost of the buildings, including supporting marine works, and the Province will undertake responsibility for making building sites available and assuring normal maintenance and operation of the facilities. (Canadian Department of Fisheries, Ottawa, December 23, 1965.)

Note: See Commercial Fisheries Review, May 1965 p. 60.

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#### ATLANTIC OFFSHORE FISHING VESSEL CONFERENCE:

Hydrodynamic tests were conducted during late 1965 at the Canadian National Research

Canada (Contd.):

Council's laboratories in Ottawa on three hull models of a Canadian-designed stern trawler for deep-sea Atlantic fishing. The tests will provide the necessary information for a final design of a trawler hull which will be suited to specific demands of a Canadian vessel entering the highly competitive offshore trawl fishery on the Northwest Atlantic. The hulls were designed by naval architects to meet requirements called for by the Industrial Development Service of the Canadian Federal Department of Fisheries.

the economic and other problems involved in their operations, and development of the fisheries generally. (Canadian Department of Fisheries, Ottawa, December 6, 1965.)

\* \* \* \* \*

BRITISH COLUMBIA CANNED SALMON PACK, 1960-1965:

The 1965 pack of canned salmon in British Columbia of 912,796 cases was the smallest since 1960. The 1965 pack was down 27 per cent from 1964 due mainly to a light pack of

British Columbia Canned Salmon Pack, 1960-1965						
Species	1965	1/1964	1/1963	1/1962	1/1961	1/1960
(Standard Cases--48 1-Lb. Cans)						
Sockeye	245,794	343,359	158,375	297,717	398,236	226,912
Spring (king)	18,886	9,127	10,000	7,174	7,927	5,935
Steelhead	841	1,262	771	815	979	530
Blueback	21,188	36,259	11,384	12,097	12,527	23,345
Coho (silver)	273,219	168,473	146,099	175,638	234,047	69,237
Pink	287,662	464,107	757,452	1,188,661	661,458	219,658
Chum	65,206	232,721	119,190	134,483	95,400	87,884
Total	912,796	1,255,308	1,203,271	1,816,585	1,410,574	633,501

1/Revised.  
Source: Canadian Department of Fisheries.

Sea-keeping qualities are not the only demands to be made on the eventual prototype of the vessel which is envisaged. Deck layout and machinery will provide for the most efficient fish and gear handling, and special attention will be given to safety factors and living and working conditions for the crew.

Canadian shipbuilders, naval architects, and the fishing industry had an opportunity to learn more about this vessel at the Canadian Atlantic Offshore Fishing Vessel Conference held in Montreal February 7-9, 1966. The final model was to be the subject of three papers, one considering it from a naval architect's viewpoint, another on its performance hydrodynamically, and the third from the viewpoint of fishing operations. More than 30 other papers were presented at the conference on many phases of the Northwest Atlantic fisheries.

The Conference was sponsored by Canada's Federal-Provincial Atlantic Fisheries Committee, which is made up of Deputy Ministers of Fisheries of the Federal Government and the governments of the five Atlantic coast provinces. Fisheries specialists from Canada, the United States, and Europe attended. Discussed were construction, design and equipment of deep-sea fishing vessels,

pink and chum salmon. Disappointing spawning runs of those species caused early closures on the fishing grounds and reduced supplies available to canneries.

Note: See Commercial Fisheries Review, Feb. 1965 p. 52.

\* \* \* \* \*

AMENDMENT OF LICENSING SYSTEM FOR COMMERCIAL FISHERIES IN BRITISH COLUMBIA PLANNED:

The Canada Department of Fisheries has announced that major changes will be made in 1966 in the British Columbia commercial fisheries licensing system. These will include an increase in the price of personal commercial fishing licenses and a system of licenses for individual fishing vessels. Additional changes are also under consideration.

Final details of the new system have not been completed. In the interim, the following procedures will apply in British Columbia. All holders of valid 1965 commercial fishing licenses will be allowed to operate under those licenses and without further payment or validation until March 31, 1966. All new applicants, and this includes everyone not covered by a 1965 license, will be issued a commercial fishing license for the usual fee and this license will be good from date of issue until

Canada (Contd.):

March 31, 1966. (Canadian Department of Fisheries, Vancouver, December 1, 1965.)

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**BRITISH COLUMBIA HERRING FISHERY  
LABOR DISPUTE SETTLED:**

After having been tied up by a labor dispute since October 16, 1965, British Columbia herring fishermen reached an agreement with processors on December 1, 1965. Terms of the agreement call for the payment of C\$17.40 a short ton for herring landed during the 1965/66 season. (The fishermen had been getting \$14.48 a ton and had asked for \$20.48 a ton.) The agreement also called for the payment to a fishermen's health and welfare plan of 20 cents for each ton of herring landed (an increase of 10 cents a ton). However, the settlement did not provide for other fringe benefits--such as a pension plan and paid vacations--that the fishermen were seeking.

Good herring catches were reported when fishing was resumed in early December 1965.

\* \* \* \* \*

**ONTARIO'S FISHERY RESEARCH  
PROGRAM ON LAKE ERIE:**

Several field stations for carrying out fisheries research in the Province of Ontario have been established by that Province's Research Branch of the Department of Lands and Forests. The station's are located in various parts of Ontario and serve the need for individual studies on the most important species of fish, as well as the need for understanding the fish population dynamics in the Province's larger bodies of water. The Lake Erie Fisheries Research Station is at Wheatley in western Lake Erie, but studies are conducted in all parts of the lake, either from that base or the field laboratory at Port Dover in eastern Lake Erie. Scientists at that station are studying the fish populations in Lake Erie in order to understand why major fluctuations and drastic changes have occurred. The information that will provide this understanding will also form the basis for subsequent management proposals designed to minimize population fluctuations, while providing the best possible utilization.

The research data sought by the staff of the Lake Erie Fisheries Research Station come from observations and samples obtain-

ed from the lake from several sources. Research programs utilizing special and standard fishing and sampling gear provide data to answer particular questions. Routine "index" fishing provides a standard measure of the numbers of various species present from year to year. Trips with fishermen and samples of their catch provide estimates of the current fish populations being utilized. This latter information, when related to the commercial catch statistics, provides the only real estimate of a species abundance now available.

Most of the data on Lake Erie is collected from the research vessel Keenosauy, a 50-foot steel vessel built especially for this work. The vessel, with a crew of three, is capable of navigating and operating in all parts of Lake Erie, and in all but the most severe weather conditions. The vessel may leave for a day's operation before sunrise, fish with any of several different standard or special fishing gear, and return to harbor in the late afternoon. Information is collected on the numbers and amounts of various species present, as well as samples of individual fish for laboratory study, and information on the size and sex of the fish. They also record water transparency, water temperatures, and lake conditions. Occasionally they are required to carry out prolonged operations traveling to all parts of the lake including United States waters. Occasionally the vessel is required for operations that must be carried out continuously over a 24-hour or longer period.

For every hour spent in collecting and recording information, there is an equal or greater effort required for analyzing, interpreting, and reporting on the results. This requires adequate shore facilities including a cooler-freezer, a fish-examination laboratory, a microscopy and a chemistry laboratory, a fish-scale reading room for aging the fish, as well as equipment to store, handle, and process large quantities of data. A new laboratory and office is being provided for the Lake Erie Fisheries Research Station at Wheatley. The new laboratory will have all those facilities and others required for analyzing and reporting on the data and for storing and maintaining the research vessel and gear. (Ontario Department of Lands and Forests, Toronto, November 25, 1965.)

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Canada (Contd.):

**INDUSTRIAL PRODUCTS PRODUCTION, USE, AND FOREIGN TRADE, AUGUST 1964-JULY 1965 WITH COMPARISONS:**

**Marine Oil:** In the marketing year August 1964-July 1965, Canadian imports of marine oils were down, but domestic production was 38 percent greater than in the preceding 12 months. Exports showed little change. Most of the 1964/65 Canadian output was produced in the latter part of 1964, because herring oil output in the first 7 months of 1965 was only 346,000 pounds as compared to 10.2 million pounds in the first 7 months of 1964.

Table 1 - Canadian Production and Foreign Trade in Industrial Products, August 1964-July 1965 with Comparisons

Item	Production	Imports	Exports
	(1,000 Pounds) . . . . .		
<b>Marine Oils<sup>1/</sup>:</b>			
August 1964-July 1965	84,629	<sup>2/</sup> 2,027	18,450
August 1963-July 1964	61,140	3,187	18,222
	(Short Tons) . . . . .		
<b>Fish Meal:</b>			
August 1964-July 1965	82,356	<sup>3/</sup> 3,907	55,828
August 1963-July 1964	80,459	2,182	61,530

<sup>1/</sup>Conversion factor: 9.25 pounds per imperial gallon.  
<sup>2/</sup>Partly estimated.  
<sup>3/</sup>Data available only for August 1964-May 1965.

Wholesale prices (f.o.b. Toronto) for British Columbia herring oil were 10.2 Canadian cents a pound in August 1964, 10.7 cents in September 1964, 13.1 cents in December 1964, 12.9 cents in March 1965, 12.2 cents in June 1965, and 11.5 cents in September 1965.

With fish oil prices at a high level, there were heavy substitutions of soybean oil for marine oil in margarine production. The use of marine oils in Canadian margarine fell from 44.0 million pounds in marketing year 1963/64 to 28.7 million pounds in 1964/65.

Table 2 - Canadian Exports of Fish Meal by Country of Destination, August 1964-July 1965 with Comparisons

Product and Country of Destination	Aug. 1964-July 1965		Aug. 1963-July 1964	
	Quantity	Value	Quantity	Value
	Short Tons	C\$1,000	Short Tons	C\$1,000
<b>Herring and Pilchard Meal:</b>				
United Kingdom . . . . .	2,410	358	2,132	283
United States . . . . .	38,998	6,054	48,404	6,884
Total herring and pilchard meal . . . . .	41,408	6,412	50,536	7,167
<b>Other Fish Meal:</b>				
United Kingdom . . . . .	11,064	1,515	8,088	1,008
United States . . . . .	2,966	405	2,666	311
Other countries . . . . .	394	54	235	32
Total other fish meal . . . . .	14,424	1,974	10,989	1,351

**Fish Meal:** In the August-July period of 1964/65, Canadian production of fish meal was up slightly from the preceding 12-months period, but exports were down due to a decline in shipments of herring meal to the United States. (United States Embassy, Ottawa, October 15, 1965.)

Note: See *Commercial Fisheries Review*, July 1965 p. 62; Dec. 1964 p. 84; Aug. 1964 p. 56.



## Colombia

### JAPAN-COLOMBIA JOINT TUNA ENTERPRISE PROPOSED:

A Japanese fishing company, a subsidiary of another fishing company, together with a trading firm, hopes to establish a joint tuna fishing enterprise in Colombia. The Colombian Government is reported as looking favorably on the plan which was initially broached two years ago. Reportedly, the joint company will operate purse-seine vessels to fish for yellowfin tuna. (*Suisan Keizai Shimbun*, November 25, 1965.)

Note: The same firm is also involved in a joint trawling shrimp enterprise established October 1963 in the Malagasy Republic.



## Denmark

### EXPORTS OF FISHERY PRODUCTS AND BYPRODUCTS, JANUARY-SEPTEMBER 1965:

**Exports to All Countries:** Denmark's total exports of fishery products and byproducts to all countries in January-September 1965 to-

Table 1 - Danish Fishery Products Exports to all Countries, January-September 1965 with Comparisons

Products	1/ Jan.-Sept. 1965			Jan.-Sept. 1964		
	Quantity	Value		Quantity	Value	
	Metric Tons	1,000 Kr.	US\$ 1,000	Metric Tons	1,000 Kr.	US\$ 1,000
<b>Fish:</b>						
Fresh . . . . .	132,897	276,296	40,063	139,967	250,856	36,374
Frozen . . . . .	35,545	158,968	23,050	34,691	127,346	18,466
Salted . . . . .	3,208	13,568	1,967			
Smoked . . . . .	514	7,591	1,101	2,442	13,900	2,000
<b>Canned:</b>						
Fish . . . . .	4,055	15,937	2,311	4,182	15,800	2,300
Shellfish . . . . .	1,338	10,903	1,581	902	7,100	1,000
<b>Semipreserved Products:</b>						
Fish . . . . .	1,358	9,432	1,368			
Shellfish . . . . .	679	4,726	685	1,638	10,200	1,500
<b>Other Products:</b>						
Fish meal, solubles, ensilage, and trout food . . . . .	72,558	77,844	11,287	55,690	52,030	7,544
Total . . . . .	252,152	575,265	83,413	239,512	477,232	69,184
Fish oil <sup>2/</sup> . . . . .	40,721	55,288	8,017	18,161	21,197	3,074

<sup>1/</sup>Preliminary data from the Ministry of Fisheries.  
<sup>2/</sup>Fish oil data are shown separately as they are collected by another Ministry and often are delayed.  
Note: One Danish krone equals US\$0.145.

## Denmark (Contd.):

taled 252,152 metric tons valued at 575 million kroner (US\$83.4 million). As compared with the same period in 1964 this was an increase of 5 percent in quantity and 21 percent in value. Exports of fresh fish were down 5 percent in quantity but were up 10 percent in value; exports of fresh whole herring and flatfish fillets were lower. Exports of frozen fishery products were up 2 percent in quantity and 25 percent in value. Better

Table 2 - Value of Danish Exports of Fishery Products by Groups and Major Countries, January-September 1965 with Comparisons

Destination	1/Jan.-Sept. 1965		Jan.-Sept. 1964	
	Value			
	1,000 Kr.	US\$ 1,000	1,000 Kr.	US\$ 1,000
<b>By Groups:</b>				
Common Market (EEC) . . .	250,400	36,308	207,000	30,015
European Free Trade Assn. (EFTA - including Finland)	242,800	35,206	198,000	28,710
East Bloc countries . . . . .	23,200	3,364	22,000	3,190
Other countries . . . . .	58,900	8,541	50,000	7,250
<b>Total . . . . .</b>	<b>575,300</b>	<b>83,419</b>	<b>477,000</b>	<b>69,165</b>
<b>Major Importers by Country:</b>				
West Germany . . . . .	165,000	23,925	129,000	18,705
United Kingdom . . . . .	106,000	15,370	97,000	14,065
Sweden . . . . .	81,000	11,745	59,000	8,555
Italy . . . . .	37,000	5,365	33,000	4,785
Switzerland . . . . .	37,000	5,365	30,000	4,350
United States . . . . .	30,000	4,350	19,000	2,755

1/Preliminary data from the Ministry of Fisheries.

Table 3 - Danish Exports of Fishery Products and Byproducts to the United States, January-September 1965 with Comparisons

Product	1/Jan.-Sept. 1965			Jan.-Sept. 1964		
	Qty.	Value		Qty.	Value	
	Metric Tons	1,000 Kr.	US\$ 1,000	Metric Tons	1,000 Kr.	US\$ 1,000
<b>Fresh &amp; frozen:</b>						
Pond trout . . . . .	587	3,461	502	346	2,685	389
Other trout & salmon . . . . .	50	492	71	-	-	-
Trout eggs . . . . .	1	89	13	1	75	11
Flatfish 2/ . . . . .	156	1,590	231	227	2,020	293
<b>Fillets:</b>						
Cod . . . . .	4,096	16,226	2,352	2,154	6,729	976
Other . . . . .	7	29	4	90	393	57
Norway lobster . . . . .	112	3,039	441	160	3,105	450
<b>Total . . . . .</b>	<b>5,009</b>	<b>24,926</b>	<b>3,614</b>	<b>2,978</b>	<b>15,007</b>	<b>2,176</b>
<b>Cured products:</b>						
Salted & smoked 3/ . . . . .	9	66	10	27	103	15
<b>Canned products:</b>						
Sprats & herring . . . . .	440	2,258	327	434	2,133	309
Shrimp . . . . .	92	1,021	148	93	950	138
Mussels . . . . .	97	472	69	46	277	40
Other . . . . .	27	199	29	25	157	23
<b>Total . . . . .</b>	<b>656</b>	<b>3,950</b>	<b>573</b>	<b>598</b>	<b>3,517</b>	<b>510</b>
Semipreserved products . . . . .	24	282	41	12	153	22
Fish solubles . . . . .	600	642	93	300	284	41
<b>Grand Total . . . . .</b>	<b>6,298</b>	<b>29,866</b>	<b>4,331</b>	<b>3,915</b>	<b>19,064</b>	<b>2,764</b>

1/Preliminary data from the Ministry of Fisheries.

2/Mostly turbot, brill, plaice, and sole.

3/Mostly cod, salmon, trout, and eels.

prices were received for exports of most frozen fish. Other major fishery products were up both in quantity and value except canned fish which showed little change. Exports of semipreserved fish and shellfish (canned or jarred) were up considerably. Danish caviar, made from lumpsucker roe, is the most important semipreserved product. A single Danish company is responsible for more than half of the world production of that product, exporting it to more than 60 countries.

Exports of fish meal during the first 9 months rose from 43,000 tons in 1964 to almost 53,000 tons in 1965 and the value was up from nearly 46 million kroner (\$6.7 million) to 67 million kroner (\$9.7 million). Danish fish meal production increased in 1965 and markets were good. Exports of fish oil were up 83 percent in quantity and 117 percent in value from the same period in 1964.

**Exports to the United States:** Exports of Danish fishery products to the United States in January-September 1965 rose 61 percent in quantity and 57 percent in value from the same period a year earlier. Exports of cod fillets, mostly in the form of frozen blocks, were up 90 percent in quantity and 140 percent in value. United States buyers of frozen fish blocks were reluctant to contract early in 1964 but the situation changed in 1965. Prices for cod fillets in 1965 averaged about 25 percent higher. Exports of pond trout to the United States continued high--up 69 percent in quantity and 29 percent in value from the same period a year earlier, but the average price of those exports was down about 24 percent. (Regional Fisheries Attache for Europe, United States Embassy, Copenhagen, December 8, 1965.)

Note: See Commercial Fisheries Review, October 1965 p. 70; February 1965 p. 44.



## Ecuador

## JAPAN-ECUADOR TUNA ENTERPRISE PLANNED:

A Japanese firm plans to establish a joint tuna fisheries enterprise in Ecuador. The joint company, to be located at Guayaquil, Ecuador, is expected to commence operations with two tuna vessels. (Suisan Keizai Shim-bun, November 25, 1965.)

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Ecuador (Contd.):

#### FISHING FLEET STATUS, 1964:

The development of the domestic tuna and groundfish industry is being emphasized by the Ecuadorean Government's National Economic Planning and Coordination Board. This coincides with a growing interest on the part of United States investors in the Ecuadorean fishing industry. The following report gives an indication of the country's fisheries base:

**Tuna:** The Ecuadorean tuna fleet increased by 7 units in 1964 to a total of 51 vessels. Most of those have a limited range and concentrate their activity around the port of Manta and the Santa Elena peninsula when tuna are running. The average characteristics of those vessels are: length overall 14 meters (46 feet), 46 gross tons, 144 horsepower, and estimated value US\$14,200.

As of summer 1965, 4 tuna purse-seine vessels were operating, of which 3 (with capacities of 50 to 80 tons each) belonged to a large cannery operated at Manta by United States interests. Another United States group was reported to be setting up a plant at Manta to freeze tuna for export to Puerto Rico.

**Shrimp:** Ecuador's annual shrimp landings have leveled off at about 5,000 metric tons (live-weight basis) in recent years. Most of those landings are frozen for export mainly to the United States. The average characteristics of the 160 vessels in the Ecuadorean shrimp fleet were reported in December 1963 as follows: length overall 15 meters (49 feet), 163 horsepower, and estimated value \$19,600.

Improved refrigeration and net-handling equipment are being installed on some of the shrimp vessels, but a large part of the shrimp fleet still lacks the gear and refrigeration equipment which would permit fishing off the coast in waters of 30 fathoms or more.

**Groundfish:** The 9 vessels in the Ecuadorean groundfish fleet at the end of 1964 averaged 17 gross tons, 84 horsepower, and had an estimated average value of \$10,800.

**Miscellaneous:** In 1962, it was estimated that Ecuador had over 14,000 small independent fishermen in 209 fishing communities working mostly from small nonpower-driven craft. They used various kinds of nets (drag,

surf, trammel, stake, and casting), as well as harpoons and fishing lines. (United States Consulate, Guayaquil, December 10, 1965, and other sources.)

Note: See *Commercial Fisheries Review*, Dec. 1965 p. 54; and Aug. 1965 p. 71.



## France

### TUNA EX-VESSEL PRICES AND IMPORT QUOTAS SET FOR WEST AFRICAN 1965/1966 SEASON:

Duty-free quotas for canned tuna entering France from its former West African colonies are established each year. Ex-vessel prices are also set for tuna landed at canneries in West Africa by French-operated vessels.

The ex-vessel prices and quotas for the 1965/66 West African season (which opened November 1, 1965, for yellowfin) were reported in *Le Moniteur Africain* as follows:

**Prices:** 1.65 francs a kilo (US\$330 a metric ton) for yellowfin tuna weighing at least 3 kilos (6.6 pounds) and big-eyed tuna weighing from 3 to 35 kilos (6.6 to 77 pounds).

1.10 francs a kilo (\$220 a metric ton) for yellowfin and big-eyed tuna weighing less than 3 kilos, and skipjack weighing at least 2.5 kilos (5.5 pounds).

The proportion of skipjack in relation to the total tuna landed is fixed at 15 percent. Fishermen will receive, in addition, a bonus of 0.10 francs a kilo (\$20 a metric ton) for skipjack delivered to the factories.

The French tuna fleet scheduled to operate off West Africa in 1965/66 is about the same as in the previous season.

**Quotas:** France has reduced the quantity of canned yellowfin tuna that may be imported duty-free from West Africa. (The quotas are set on the basis of raw tuna canned.) For canned yellowfin, the 1965/66 French duty-free quotas (raw tuna weight) are 10,000 tons for Senegal, 1,600 tons for the Ivory Coast, and 400 tons for the group consisting of Mauritania, Congo-Brazzaville, and Malagasy Republic. Compared with the previous season, that is a cut of 1,000 tons for Senegal and 600 tons for the Ivory Coast.

## France (Contd.):

In Senegal, where 7 tuna canneries were in operation until 2 years ago, there are now only 3 plants in operation. The Government of Senegal, however, is planning an ambitious expansion of its tuna industry, largely with the aid of the U.S.S.R., which in 1964 granted a \$6.7 million loan for fisheries development. Senegal's 4-Year Plan calls for reducing its canned tuna exports to France to 5,000 tons (fish weight) in 1969, and increasing its exports to countries outside of the Franc Zone to 25,000 tons.

In the case of the Ivory Coast, the reduction in the French quota to 1,600 tons will further hamper the operations of the one remaining tuna cannery in Abidjan. This plant, however, had in December commenced sardine canning in a modest way, which should tend to stabilize their operation. The Ivory Coast is also developing plans for a greatly expanded tuna operation, including the construction of a 3,000-ton storage-capacity freezer plant, the establishment of a fleet of Ivorian tuna clippers, the construction of a modern tuna cannery designed to produce canned tuna competitive on the world market, a can-making factory, and a byproducts operation. (Regional Fisheries Attache, United States Embassy, Abidjan, December 7, 1965.)



## East Germany

'ATLANTIK'-CLASS FREEZER TRAWLERS BEING BUILT FOR U.S.S.R.:

The 270-foot stern-trawler Atlantik is the latest model factory freezer trawler being built for the Soviet Union by East Germany. An East German shipyard in Stralsund is reported to have contracted to deliver 103 trawlers of the Atlantik-class to the U.S.S.R. by 1970. Previously, East Germany built a number of 262-foot Tropic-class trawlers for the Soviets. Like the Tropiks, the Atlantiks will have air-conditioning and other equipment for sailing in tropical climates. The Atlantik-class vessels, however, are somewhat larger with greater processing, freezing, and storage capacity. The shipyard building the Atlantik series described the vessel as follows:

The Atlantik is a 2-decker vessel. The rear sector of the main deck has been de-

signed as the fishing deck. Below the fishing deck are processing rooms. The engineroom and refrigeration machinery are midships at a lower level. Three storage holds (2 forward and 1 aft) have a combined capacity of 1,075 cubic meters (37,963 cubic feet). The vessel also has a fish meal storage room with a capacity of 163 cubic meters (5,756 cubic feet) and fish oil bunkers with a capacity of 11 cubic meters (388 cubic feet).

The trawl catch of the vessel is passed from the fishing deck through 4 hydraulically-operated hatches into 4 prefreezing bunkers at the rear of the processing rooms.

The prefreezing bunkers have the daily capacity to chill 48 tons of fresh fish to 2° C. (35.6° F.). Each of the bunkers is provided with a bucket elevator to convey chilled fish to workrooms. From the bucket elevator, fish are dropped through a chute upon a sorting belt where they are sorted for size before freezing in blocks or individually on 2 belt-type freezers with a combined freezing capacity of 45 tons in 22 hours. Frozen fish are stored at a temperature of -25° C. (-13° F.).

The fish meal and oil reduction unit uses a wet process which can handle 35 tons of raw fish or fish offal in 24 hours.

The Atlantik is designed to sail independently for 60 days with a crew of 80. Fresh water is supplied by a desalinization plant. The vessel is equipped with 2-engine diesel propulsion, variable-pitch propeller, automatic control of fishing gear from the bridge, echo-sounding equipment (horizontal and vertical), and radar. (Regional Fisheries Attache for Europe, United States Embassy, Copenhagen, November 18, 1965, and other sources.)

Note: See Commercial Fisheries Review, June 1965 p. 81, and Nov. 1964 Supplement p. 9.



## Greenland

SALMON FISHERY TRENDS, JANUARY-NOVEMBER 1965:

Inshore: The rise of the inshore Greenland salmon catch from about 55 metric tons in 1960 to 1,400 tons in 1964 has stirred considerable interest. However, in January-November 1965, the Greenland salmon catch a-



## Greenland (Contd.):

mounted to only about 640 tons as compared with 1,300 tons in the same period of 1964. Fishing in December was expected to add little to the 1965 inshore catch. The drop in the 1965 catch to about half that in 1964 was due in large part to a diversion of fishing effort to the cod fishery.

**Offshore:** A Faroese vessel and a Norwegian vessel fished offshore from Greenland with gill nets in 1965. The catch of the Faroese vessel was estimated to be 40 tons by the end of November 1965, at which time the vessel was still fishing. The Norwegian vessel was reported to have returned home with a catch of 12 tons. (Regional Fisheries Attache for Europe, United States Embassy, Copenhagen, December 9, 1965, and other sources.)

Note: See *Commercial Fisheries Review*, Jan. 1966 p. 75, and Nov. 1965 p. 58.



## Iceland

## EXPORT STOCKS OF PRINCIPAL FISHERY PRODUCTS, OCTOBER 31, 1965:

As of October 31, 1965, Iceland's stocks of frozen groundfish (fillets) for export to the United States totaled 2,624 metric tons, a decline of 1,505 tons from the stocks on hand September 30, 1965. (United States Embassy, Reykjavik, November 29, 1965.)

Icelandic Export Stocks 1/ of Principal Fishery Products, October 31, 1965			
Item	Qty. Metric Tons	Value	
		Million Kr.	US\$ 1,000
Groundfish, frozen:			
for export to:			
U. S. ....	2,624	69.8	1,621.0
other countries ...	4,862	92.4	2,145.8
Stockfish.....	1,800	55.8	1,295.9
Herring, frozen.....	1,710	9.7	225.3
Industrial products:			
fish meal:			
herring .....	27,954	234.8	5,452.9
other fish.....	2,089	15.4	357.6
herring oil .....	38,674	305.5	7,094.7

1/Includes only stocks intended for export.  
Note: Icelandic kronur 43.06 equal US\$1.00.

United States imports of frozen groundfish fillets from Iceland in the year 1964 totaled 17,812 metric tons of groundfish blocks and slabs, 4,669 metric tons of cod fillets, 2,791

metric tons of haddock fillets, and 548 metric tons of ocean perch fillets.

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## HERRING LANDINGS AND EXPORT TRENDS, LATE 1965:

By mid-November 1965 Iceland's herring catch surpassed the record 1964 herring catch of 553,036 metric tons, according to the Fisheries Association of Iceland. Export prices for herring products in 1965 were generally higher than in 1964. In 1964, herring products accounted for 35 percent of the value of all Icelandic exports.

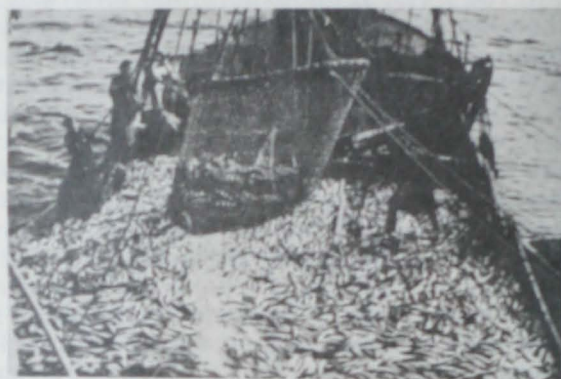


Fig. 1 - Icelandic fishing vessel brailing herring.

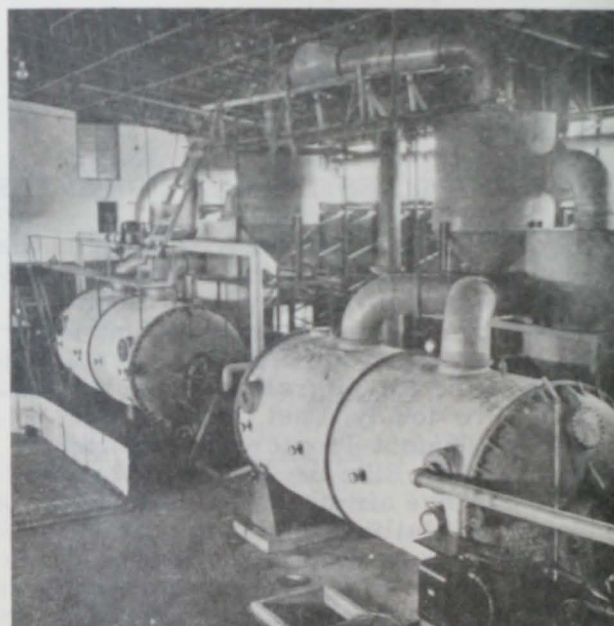


Fig. 2 - Type of evaporators used to dehydrate whole fish under vacuum in an Icelandic herring meal plant.

In January-October 1965, the total Icelandic herring catch was 546,552 metric tons as

## Iceland (Contd.):

compared to 543,089 metric tons during the same 1964 period. During the first 10 months of 1965, 473,381 metric tons of that herring catch went into reduction (meal and oil), an 11.4-percent increase over the same 1964 period; and 57,096 tons went for salting, a 7.1-percent increase over January-October 1964. But herring for freezing in January-October 1965 was only one-quarter of that in the 1964 period, a drop from 65,029 tons to 16,075 tons.

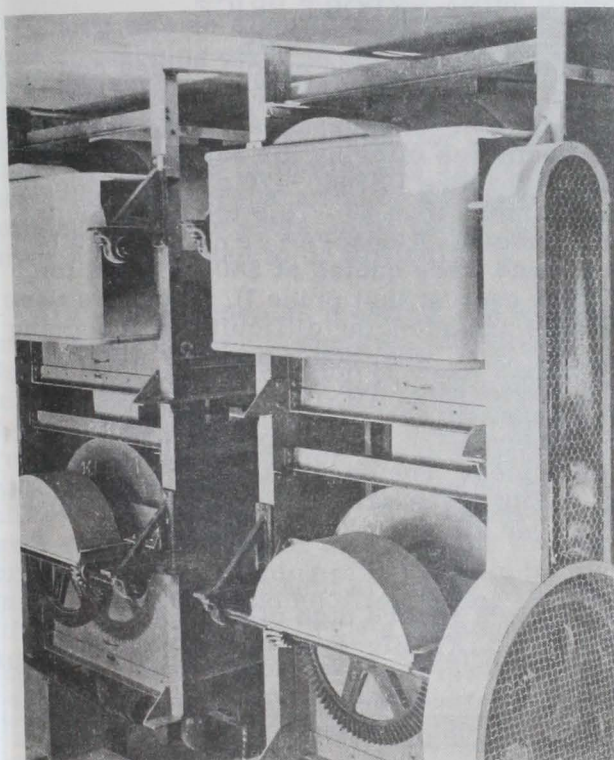


Fig. 3 - Cookers in an Icelandic herring fish meal plant.

A comparison of prices for Icelandic herring products available for export at the end of September 1965 with average 1964 export prices shows herring meal prices up 17 percent, herring oil up 4 percent, salted herring down 6 percent, and frozen herring down 3 percent. (United States Embassy, Reykjavik, November 17, 1965.)



## Japan

## FROZEN TUNA EXPORTS TO U. S. AND PUERTO RICO, OCTOBER 1965:

Japan's exports of frozen tuna to the United States and Puerto Rico in October 1965 were up 21 percent in quantity and 19 percent in value as compared with those in the previous month.

Exports to the United States were 9 percent more than in September and the value was up 17 percent.

Species	October		September	
	Quantity	Value	Quantity	Value
	Short Tons	US\$ 1,000	Short Tons	US\$ 1,000
<b>Albacore:</b>				
United States	2,593	906	2,387	798
Puerto Rico	2,734	893	1,688	501
Total	5,327	1,799	4,075	1,299
<b>Yellowfin:</b>				
United States	1,586	566	1,460	462
Puerto Rico	751	217	712	400
Total	2,337	783	2,172	862
<b>Big-eyed:</b>				
United States	9	1	2	1
Puerto Rico	34	8	100	19
Total	43	9	102	20
Total United States	4,188	1,473	3,849	1,261
Total Puerto Rico	3,519	1,118	2,500	920
Grand total	7,707	2,591	6,349	2,181

Source: Japan's Bureau of Customs.

Exports to Puerto Rico in October increased 41 percent from the previous month and the value was up 22 percent. Most of the increase in October shipments to Puerto Rico was in albacore tuna--up 62 percent in quantity and 78 percent in value. There was also some increase in yellowfin shipments to Puerto Rico but exports of big-eyed tuna were down to about one-third the quantity shipped in September. (Fisheries Attache, United States Embassy, Tokyo, December 10, 1965.)

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## EXPORT VALIDATIONS OF FRESH AND FROZEN TUNA AND TUNA LOINS, APRIL-OCTOBER 1965:

Japan's export validations of frozen tuna and cooked frozen tuna loins to the United States and Canada in October 1965 were up 12.7 percent from the same month in 1964. Albacore and yellowfin tuna accounted for

## Japan (Contd.):

82.2 percent of that month's export approvals to those countries. Included in the September 1965 shipments were 1,233 short tons to Japanese landing bases including American Samoa.

Item	To U. S. & Canada		To Other Countries		Total	
	Oct.	Apr.-Oct.	Oct.	Apr.-Oct.	Oct.	Apr.-Oct.
	. (Short Tons).		. (Metric Tons)			
Albacore, round	5,832	43,434	728	5,859	5,023	45,265
Yellowfin:						
Round . . . . .	356	2,187	160	257	483	2,241
Gilled & gutted:						
20/100 lbs.	1,204	18,282	-	2,392	1,093	18,977
100 lbs. up	8	1,716	-	-	7	1,557
Dred. with tail	464	4,547	334	14,660	755	18,786
Fillets . . . . .	-	3	-	10	5	12
Other . . . . .	435	2,426	-	-	2,200	2,200
Total . . . . .	2,487	29,161	500	17,319	4,544	43,773
Big-eyed:						
Dressed . . . . .	53	316	188	5,595	236	5,896
Other . . . . .	415	1,019	145	569	1,026	1,494
Total . . . . .	468	1,335	333	6,168	1,262	7,380
Skipped:						
Bluefin . . . . .	651	5,126	696	1,213	1,287	5,863
Dressed . . . . .	-	-	15	2,600	15	2,600
Fillets . . . . .	-	-	-	947	-	947
Other . . . . .	15	15	-	-	14	14
Total . . . . .	15	15	15	3,547	29	3,561
Loins:						
Albacore . . . . .	589	2,132	-	9	535	1,944
Yellowfin . . . . .	72	1,127	-	24	65	1,046
Total . . . . .	661	3,259	-	33	600	2,990
Grand total 1965	10,094	82,330	2,272	34,139	13,745	108,832
Grand total 1964	8,950	82,989	3,875	31,733	11,994	107,020

For the 7 months April-October 1965, Japan's frozen tuna export validations for the United States and Canada (included 7,032 tons to Japanese landing bases) were down about 1 percent from the same 7 months of 1964. (Fisheries Attache, United States Embassy, Tokyo, December 3, 1965.)

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## TUNA MARKET TRENDS, DECEMBER 1965:

An unusual tuna market situation developed in Japan in December 1965. Normally at that time of the year, domestic tuna demand is very strong due to the oncoming January holiday season. However, due to the expected arrival in Japan of 60-70 tuna vessels from the western Pacific, Indian Ocean, and Atlantic Ocean tuna grounds in December, the ex-vessel price of tuna for the domestic trade dropped about 20 percent from December 1964 prices. The decline in prices is also attributed in part to a general business downturn in Japan, the slackening demand for fish for the sashimi (raw, thinly sliced fish) trade, and to poor sales of fish sausages.

On the other hand, the export frozen tuna market was very firm and prices showed an

upward trend since November 1965. The ex-vessel price of frozen round albacore rose from 140 yen a kilogram (US\$353 a short ton) in late November to about 145 yen a kilogram (\$365 a short ton) in December. Buy offers from the United States for albacore ranged upwards to \$425 a short ton c.i.f., for albacore loin \$825-835 a ton c.i.f., and for Atlantic albacore \$360-370 per ton f.o.b. Las Palmas. (Suisan Tsushin, December 6, 1965 and other sources.)

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## FROZEN TUNA EXPORT PRICE TRENDS, NOVEMBER 1965:

Japanese frozen tuna export prices continued to trend upwards in November 1965, according to several Japanese trade periodicals. Spain was offering for Japanese-caught Atlantic albacore US\$460-470 a metric ton, c.i.f., or more than \$60-70 a ton above September prices. Albacore transhipped to Puerto Rico were quoted at \$405 a short ton, c.i.f., but even at that price U. S. buyers were said to be experiencing difficulty in procuring supplies. U. S. west coast packers were offering \$395 a short ton c.i.f. for frozen albacore shipped directly from Japan, but Japanese traders were said to be holding firm for higher prices. The ex-vessel price of albacore in Japan was said to be holding steady at 140 yen per kilogram (\$353 a short ton).

Prices of yellowfin tuna for export to Italy advanced to a record high of \$455-460 per metric ton c.i.f. Big-eyed tuna for export to that country were quoted at \$375-380 a metric ton c.i.f. (Katsuo-Maguro Tsushin, November 26; Suisan Tsushin, November 24, 1965.)

\* \* \* \* \*

## GOVERNMENT AND TUNA INDUSTRY HOLD FIFTH MEETING:

The Japanese Government and tuna industry leaders, who have been holding a series of joint meetings, to seek ways and means of aiding the depressed tuna fishery, on November 29, 1965, held their fifth and possibly final discussion meeting. Purpose was to (1) assess the present state of the tuna resources and (2) to determine the direction toward which government policy must be shaped to assist industry. With regard to resource assessment, the Government and industry leaders were divided in their views, the Government maintaining that, on the basis of data compiled by the Nankai Regional Fisheries (tuna) Re-

## Japan (Contd.):

search Laboratory, the resources have not declined to the level affecting reproduction, whereas industry claimed reproduction has been affected. Concerning the direction in which Government policies should be developed to assist the tuna fishery, Government and industry views were likewise split, with the Government asserting the present fishing effort should be maintained, while the industry argued that effort should be reduced through fleet reduction.

There was no significant division of opinions concerning other problems affecting the fishery, such as management, marketing, and labor problems. A final meeting to draft recommendations was scheduled for January 1966, but in view of the lack of agreement on key issues the preparation of a unified recommendation for submission to the Government was expected to be difficult.

At the November 29 meeting, the proposal made at an earlier discussion meeting by the Japan National Federation of Tuna Fishermen's Cooperatives (NIKKATSUREN)--i.e., to establish a corporation to handle problems related to fleet reduction and to provide financial assistance to vessel owners in difficulty--was not discussed. The Government's expression of views at that meeting that the present level of fishing effort should be maintained is interpreted as diminishing the likelihood that NIKKATSUREN's proposal will be adopted. (Suisancho Nippo, November 30, 1965.)

Note: See Commercial Fisheries Review, January 1966 p. 79; December 1965 p. 62; October 1965 p. 80; September 1965 p. 66; July 1965 p. 71.

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CANNED TUNA PACK, 1964:

Japanese canned tuna production in 1964 totaled 2,769,798 cases (48 1-pound cans), consisting of 1,134,388 cases of tuna in brine, 875,947 cases of tuna in oil, and 759,463 cases of other tuna products. In the tuna in brine pack, white meat accounted for 914,051 cases (907,664 cases solid pack and 6,387 cases flake pack) while lightmeat accounted for 220,337 cases (219,216 cases solid pack and 1,121 cases flake pack); the tuna in oil pack consisted of white meat 224,666 cases (190,636 cases solid pack and 34,030 cases flake pack) and light meat 651,281 cases (612,653 cases solid pack and 38,628 cases

flake pack). The 759,463 cases of "other tuna products" included 210,783 cases of flavored solid tuna, 353,306 cases of flavored flake tuna, 37,633 cases of jelly tuna, and 157,741 cases of other types of pack. The canned tuna in brine, both white meat and light meat, was packed principally in 7-oz. cans (48 to the case), with substantial amounts in 13-oz. cans (24 to the case), and 4-lb. cans (6 to the case). The canned tuna in oil was packed principally in 7-oz. cans. (48 to the case). (Kanzume Jiho, Vol. 44, No. 9, September 1965.)

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FIRM TO MARKET CHUNK-STYLE CANNED TUNA IN OIL IN JAPAN:

Beginning in February 1966, a Japanese firm plans to market canned tuna in oil (chunk style) packed in 7-oz. cans for the domestic market. The firm has designed an attractive label for the pack aimed at creating the image of a high-quality canned food. The pack is expected to be retailed for about 110 yen (US\$0.355) a can. (Suisan Keizai Shimbun, November 18, 1965.)

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TUNA PACKERS AND EXPORTERS FAIL TO NEGOTIATE NEW EXPORT AGREEMENT FOR CANNED TUNA IN BRINE:

Japanese tuna packers and exporters again towards the end of 1965 (as in 1964) failed to resolve their differences in renegotiating a new "Exporters Agreement" for canned tuna in brine. Prior to the termination of the old agreement, which expired November 30, 1965, the Ministry of International Trade and Industry (MITI) was reported as having proposed extending that existing agreement temporarily for three months (Note: The exporters wanted a four months extension) to February 28, with the export quota for that period set at 800,000 cases. The packers rejected the proposal since, like the exporters' proposal, it called for allocating the export quota on the basis of a 70-percent merit (actual performance) quota and 30-percent adjustment quota. The packers were reported seeking a change in the allocation system based on a merit quota of 40 percent and adjustment quota of 60 percent.

Following the failure of the exporters and packers to resolve their differences, MITI then announced that sales contracts concluded after December 1 to export canned tuna in

## Japan (Contd.):

brine to the United States would not be validated for export. On December 2 the packers and exporters met again for the second time but failed to negotiate a new agreement. At that meeting, in response to a joint letter calling for a settlement of their differences by December 15 (signed by the chief of the Agricultural and Aquatic Products Section, MITI, and the chief of the Marine Products Section, Fisheries Agency, Ministry of Agriculture and Forestry), the packers and exporters drafted a joint reply to the effect that they opposed MITI's action but would defer the responsibility of drafting an interim agreement (to extend for one month) to the two government agencies. (Suisan Tsushin, December 3 & 4; Katsuo-Maguro Tsushin, November 26, 1965, and other sources.)

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TUNA FEDERATION LAUNCHES PROMOTION ON CANNED ALBACORE TUNA IN OIL:

The Japan Federation of Tuna Fishermen's Cooperative Associations (NIKKATSUREN), which has been developing plans to promote domestic demand of canned albacore tuna in oil in an effort to stabilize albacore export prices, launched its first promotion in Tokyo on November 6, 1965. Under joint sponsorship with the Japan Canned Foods Association, NIKKATSUREN held a "tuna party" at the Nissei Theater in Tokyo, inviting 144 guests, including home economists from women's colleges, women's magazine editors, food editors for newspapers, and wives of the Minister of Agriculture and Forestry, and Diet representatives concerned with fisheries. A movie was shown and during the intermission over 10 varieties of foods prepared from canned albacore in oil were served to the guests. Through similar food sampling parties, NIKKATSUREN hopes to better acquaint consumers with canned albacore in oil which it plans to market beginning in March 1966 under its own label bearing the JAS (Japan Agricultural Standard) mark. NIKKATSUREN hopes to pack in the first year the equivalent of 150,000 cases (48 no.  $\frac{1}{2}$  7-oz. cans) of solid, which is 3 to 4 times the quantity now being produced in Japan for domestic consumption.

The November 6 "tuna party" is part of a gigantic three-year promotional program NIKKATSUREN plans to launch at a total cost of about 100 million yen (US\$278,000). Funds

for the promotion will be raised mainly by assessing Federation members. (Katsuo-Maguro Tsushin, November 10; Suisan Keizai Shimbun, November 2, 1965.)

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SKIPJACK TUNA POLE-AND-LINE FISHING IN EASTERN ATLANTIC REPORTED EXCELLENT:

The six Japanese pole-and-line vessels (one 350-ton and five 240-ton) in the eastern Atlantic in November 1965 had excellent skipjack tuna fishing. Some vessels made as many as three trips a month. The six vessels will most certainly be able to put in an average of 18 trips a year. A minimum of 12 trips per vessel per year is calculated to be necessary for the vessels to show a profit.

The skipjack, which are being landed at Tema, Ghana, and at Freetown, Sierra Leone, sold ex-vessel for US\$140 a short ton for large fish and \$110 a ton for small skipjack. At Tema large quantities of the small skipjack were being marketed locally. (Suisan Tsushin, November 26, 1965.)

\* \* \* \* \*

LARGE NUMBER OF ATLANTIC TUNA VESSELS RETURN:

Japanese tuna vessels engaged in the Atlantic fishery had returned to Japan in large numbers by early November 1965. They shifted their operations to the Pacific and Indian Oceans. The Japanese Atlantic fleet, which at the height of the fishery numbered about 140 vessels, was down to about 80 vessels, with indications that it may decline to 50 vessels by spring 1966. High prices paid for tuna landed in Japan influenced Atlantic tuna operators to shift their operations to Japan.

The rise in tuna prices in Japan is attributed to the steadily increasing demand for frozen tuna as sashimi (sliced fish served raw), the demand for which peaks in January for the holiday trade, and to the supply shortage arising from the declining catch. According to a survey made by one Japanese fishing company, yellowfin tuna landed in Japan in November 1965 sold at an average of 180 yen a kilogram (US\$454 a short ton), up 20 percent from spring, and albacore (primarily canned or exported in the round to the United States) 138-140 yen a kilogram (US\$348-353 a short ton) up 22-23 percent. (Suisan Kei-

## Japan (Contd.):

Zai Shimbun, November 11, 1965, and other sources.)

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TUNA BAIT PRODUCTION TRENDS:

As a result of the poor saury season in 1964, Japanese tuna long-line fishermen were faced with a critical shortage of bait saury in 1965 and had to pay as much as 12 yen (US\$0.033) a fish. In anticipation of another poor saury season in 1965 (in progress the latter part of the year), the large tuna vessel operators systematically began to purchase medium and large saury for bait as soon as the season commenced in the fall. Total Japanese production of bait saury, as of October 30, was 29,200 metric tons, with an additional 8,000 tons expected to be processed by November 18.

The annual demand of bait saury is estimated at 45,000 metric tons but since 1964 many fishermen were reported to have switched to other bait fish, such as sardines, squid, and mackerel because of the high price of bait saury. In November 1965, a box containing 120-130 large bait saury was selling at the landing ports for 650-700 yen (US\$1.80-1.94), with 140-150 count fish selling for about 570 yen (\$1.58). Cost to the fishermen is estimated to be 8-9 yen (\$0.022-0.025) a fish, which is much less than what they paid a year earlier. Some saury were sold to South Korean and Formosan tuna fishermen for \$3.20 a box for 140-150 count fish, delivered American Samoa. (Suisan Tsushin, November 26, 1965.)

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PURSE SEINER TO TEST FISH FOR TUNA IN CAROLINE ISLANDS WATERS:

The 212-ton Japanese purse seiner Taikei Maru (equipped with two power blocks) was scheduled to depart Japan on November 25, 1965, to explore the tuna fishing grounds off the Caroline Islands. The vessel will make a total of five trips up to April 15, 1966, and operate in two areas: (1) the area bounded by the equator and latitude 10° N. between longitudes 130° E. and 140° E.; and (2) the Coral Sea grounds east and southeast of New Guinea between longitudes 140° E. and 160° E. Each trip is expected to take 26 days (16 days running, 7 days fishing, and 3 days unloading and taking on supplies). From April

25 to May 30 the vessel will make two trips to the tuna grounds bounded by: (1) latitudes 10° N. and 20° N. between longitudes 140° E. and 150° E. and (2) latitudes 20° N. and 30° N. between longitudes 125° E. and 130° E., but excluding the waters to the west of Nansei (Ryukyu Islands). (Suisan Keizai Shimbun, Nov. 19, 1965.)

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NEW TUNA TROLLING GEAR DEVELOPED:

A new trolling gear has been developed in Japan to help the tuna fishing industry overcome the problem of declining catch. Devised by Dr. Hamuro of the Fishing Boat Research Division of the Japanese Fisheries Agency, the new gear employs a submersible device housing a telemeter and a "fish head trapper," which is attached to the troll line near the artificial lure. In operation, first the tuna school is located by means of a fish-finder and the depth of the school determined. The telemeter in the submersible unit transmits signals to the vessel, which are plotted on the fish-finder chart. Using this information, the depth of the new gear is adjusted to the depth of the fish school by means of a hydraulic or electrically-powered winch. When the fish strikes the lure, the tension on the line releases from the submersible device the "fish head trapper" (consisting of six wire claws), which slides down the leader and "grabs" (slides over) the head of the fish, thereby preventing its escape. As the "fish head trapper" is released from the submersible device, this action simultaneously reverses the angle of the wing-shaped flaps of the unit, propelling the device upwards to the surface. The troll line is then reeled in by means of a winch and the fish retrieved.

The trolling gear consists of: (1) main line, to which are attached the submersible echo-sounder and "head trapper," leader and lure; (2) power equipment, including a hydraulic winch; (3) information-relaying devices, such as fish-finder and telemeter; and (4) other mechanical devices, such as a line-tension meter. About eight lines can be fished at one time by a 300-ton tuna vessel.

The advantages of the new gear are said to be the selectivity of depth ranges beyond the presently fished 200 meters (656 feet), wider selectivity of fishing grounds, improved freshness of fish since they can be landed immediately upon capture, elimination of shark damages, reduction in gear loss, substantial

## Japan (Contd.):

savings in operating costs through the use of artificial lures (which eliminates the need for fish bait, such as saury and squid); and reduction in manpower.

Initial gear tests conducted off Kurihama (south of Tokyo Bay) and in the South Pacific off the Samoan Islands were not completely satisfactory (partly due to the scarcity of fish and to the lateness of the season), but refinement is expected to contribute greatly to the exploitation of mid-water tuna and other species of fish. (Suisan Keizai Shimbun, November 26, 1965.)

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TUNA FISHING COMPANY  
TRIES TO CUT LABOR COSTS:

To combat rising costs and declining catch rates in the tuna fishing industry, a major Japanese company is trying to (1) reduce the size of crews on its tuna vessels, and (2) reinstate the "share" system of paying crews according to results. That cost-cutting program was described in Nihon Kogyo, November 18, 1965, as follows:

A major Japanese company is studying the restoration of the "onaka sei" system of paying tuna fishing crews according to the value of their landed catch. The company recently applied that system to 20 of its tuna vessels based at Tokyo with good results.

Furthermore, the company is trying to reduce the size of crews on its tuna vessels. The company recently sent the Hatsuhi Maru (170 tons) to the South Seas with its crew reduced from 28 to 15 men. That reduction together with the "onaka sei" system of payment resulted in savings of 3 million yen (US\$8,333).

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CRAB MEAT EXPORTS, OCTOBER 1965:

Japanese exports of canned crab meat in October 1965 amounted to 40,499 cases (48  $\frac{1}{2}$ -lb. cans) as compared with 66,308 cases during the previous month and 60,150 cases in October 1964. Of the total canned crab meat exports in October 1965, 12,404 cases were shipped to the United States, 8,775 cases to the United Kingdom, 825 cases to Canada, and 18,495 cases to other unspecified countries.

In October 1965, king crab meat exports amounted to 29,149 cases or 72 percent of total canned crab meat exported. Of the total king crab exported in that month, 10,390 cases went to the United States, 6,525 cases to the United Kingdom, and 12,234 cases to other countries.

The October 1965 Japanese canned crab meat exports also included: Kegani crab--6,953 cases, of which 1,614 cases went to the United States; Zuwai crab--4,297 cases, of which only 400 cases went to the United States; 100 cases of Hanasaki crab were shipped to unspecified countries. (Fisheries Attache, United States Embassy, Tokyo, November 30, 1965.)

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EXPORTS OF CANNED KING CRAB  
TO U. S. DECLINE:

Japan has contracted to sell to foreign countries a total of 210,000 cases (48  $\frac{1}{2}$ -lb. cans) of king crab from her 1965 pack. Sales to the United States, which in previous years consumed over half of Japan's king crab exports, have dropped and the United States as of November 1965 ranked second as the principal buyer of Japanese crab meat. France led in the importation of Japanese king crab with 65,000 cases, followed by the United States with 58,000 cases, and Great Britain with 56,000 cases. (Suisan Tsushin, November 13, 1965.)

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CANNED SHRIMP EXPORTS,  
OCTOBER 1965:

Japan's exports of canned shrimp (24  $\frac{1}{2}$ -lb. cans) during October 1965 were more than double those of the previous month but were down 62 percent from the October 1964 exports.

Compared to the previous month, the biggest increase was in shipments to the United

Japan's Exports of Canned Shrimp by Country of Destination,  
October 1965 and Comparisons

Country of Destination	1965		1964	
	Oct.	Sept.	Oct.	Sept.
. . . . (Cases of 24 $\frac{1}{2}$ -Lb. Cans) . . . .				
United States . . . .	6,900	3,000	17,700	16,275
United Kingdom . . .	18,387	3,000	44,009	37,100
Canada . . . . .	2,000	5,900	8,500	6,836
Other . . . . .	4,730	2,900	13,800	5,358
Total . . . . .	32,017	14,800	84,009	65,569

Japan (Contd.):

Kingdom; exports to the United States were up also; but shipments to Canada were down 16 percent. (Fisheries Attache, United States Embassy, Tokyo, November 30, 1965.)

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FROZEN SWORDFISH EXPORT VALIDATIONS TO THE U.S. AND CANADA, APRIL-OCTOBER 1965:

Japanese export validations of frozen broadbill swordfish (mostly fillets and chunks) to the United States and Canada in October 1965 totaled 466 short tons valued at US\$382,966. This compared with approvals of 591 tons valued at \$479,857 in the previous month and 369 tons valued at \$236,084 in October 1964.

For the 7 months April-October 1965, Japan's export validations of frozen swordfish to the same countries totaled 2,751 tons valued at \$2.1 million. Fillets of that species accounted for 64 percent of the total, with the remainder consisting of chunks and swordfish processed in other forms. For the same 7 months in 1964, the frozen swordfish export approvals totaled 2,092 tons valued at \$1.3 million. (Fisheries Attache, United States Embassy, Tokyo, December 3, 1965.)

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EXPORTS OF FROZEN RAINBOW TROUT, OCTOBER 1965:

Japan's exports of frozen rainbow trout in October 1965 were down slightly as compared with the previous month--dropped 6 percent in quantity but increased 4 percent in value. The United States continued as the principal buyer of Japanese frozen rainbow

Japan's Exports of Frozen Rainbow Trout by Country of Destination, October 1965

Destination by Country	October		September	
	Qty.	Value	Qty.	Value
	Short Tons	US\$	Short Tons	US\$
United States . . . . .	157	125,869	131	97,869
United Kingdom . . . . .	19	13,058	41	25,500
Belgium . . . . .	4	3,336	11	7,903
Canada . . . . .	18	15,531	26	19,447
Netherlands . . . . .	15	12,997	12	9,583
West Germany . . . . .	1	792	-	-
Australia . . . . .	-	-	2	1,689
Sweden . . . . .	1	469	6	3,828
Other . . . . .	1	462	-	-
<b>Total . . . . .</b>	<b>216</b>	<b>172,514</b>	<b>229</b>	<b>165,819</b>

Source: Japan's Bureau of Customs.

trout, accounting for 73 percent both in quantity and value of the total October 1965 exports.

October shipments to the United Kingdom were down to about half those of the previous month. (Fisheries Attache, United States Embassy, Tokyo, December 10, 1965.)

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EXPORTS OF MARINE PRODUCTS, JULY 1965:

Japan's exports of marine products in July 1965 included considerably more canned fish

Japan's Exports of Marine Products, July 1965

Product	Quantity	Value
	Metric Tons	US\$ 1,000
<u>Fresh &amp; frozen:</u>		
Tuna, skipjack . . . . .	519	67
Tuna, other . . . . .	18,044	5,742
Marlin . . . . .	530	386
Sea bream . . . . .	2,165	322
Mackerel . . . . .	395	61
Saury . . . . .	184	61
Salmon . . . . .	16	25
Other fish . . . . .	1,905	633
<b>Total fresh &amp; frozen</b>	<b>23,758</b>	<b>7,297</b>
Whale meat . . . . .	1,985	458
Frog legs . . . . .	111	178
<u>Cured:</u>		
Cod . . . . .	6	6
Boiled and dried . . . . .	36	17
Shark fins . . . . .	77	133
Other . . . . .	6	2
<b>Total cured . . . . .</b>	<b>125</b>	<b>158</b>
<u>Shellfish, etc.:</u>		
Scallops . . . . .	3	28
Oysters . . . . .	9	8
Shrimp . . . . .	107	236
Squid . . . . .	679	181
Octopus (fresh) . . . . .	87	39
Other . . . . .	161	72
<b>Total shellfish, etc.</b>	<b>1,046</b>	<b>564</b>
<u>Canned:</u>		
Salmon . . . . .	7,610	14,081
Tuna, skipjack . . . . .	458	347
Tuna, other . . . . .	3,198	2,850
Mackerel . . . . .	2,435	844
Saury . . . . .	416	203
Sardine . . . . .	127	53
Horse mackerel . . . . .	1,428	489
Other fish . . . . .	1,641	1,133
Crabs . . . . .	602	1,753
Shrimp . . . . .	272	653
Squid . . . . .	174	67
Other shellfish . . . . .	724	683
<b>Total canned . . . . .</b>	<b>19,085</b>	<b>23,256</b>
<u>Other products:</u>		
<u>Seaweed:</u>		
Kombu . . . . .	45	31
Laver 1/ . . . . .	121	8
Agar agar . . . . .	86	311
Whale oil (baleen) . . . . .	60	333

1/In 1,000 sheets.



## Japan (Contd.):

than was exported in the previous month, and there was some increase in shipments of fresh and frozen fishery products. Salmon accounted for much of the increase in the canned fishery products group, followed by larger exports in July of canned mackerel, crab, and shrimp.

The July 1965 exports of fresh and frozen fishery products were up 18 percent in quantity and 11 percent in value from the previous month. As compared with the previous month, exports of fresh and frozen tuna in July were up 11 percent in quantity and 12 percent in value. (Fisheries Attache, United States Embassy, Tokyo, November 18, 1965.)

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FIRM TO IMPORT SHRIMP FROM THAILAND:

A Japanese whaling firm plans to import about 500 metric tons of frozen shrimp a year from a Thailand processor. Japanese wholesale prices for imported shrimp are said to be between ¥500,000 and ¥700,000 (US\$1,389 to \$1,944) a metric ton or about 63 to 88 cents a pound. The Japanese firm may also buy shrimp in Thailand for re-export to other countries. The Japanese firm plans to give technical and managerial assistance to its Thailand associate. (Nihon Kogyo, December 7, 1965.)

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FISHERY LANDINGS IN SELECTED AREAS, JUNE 1965:

Japan's landings of fish and shellfish at 248 fishing districts and 5 major cities during June 1965 totaled 337,800 metric tons, a decrease of about 8 percent below May 1965 landings, but an increase of 15.6 percent above the landings in June 1964. Compared with the previous month, the most significant decreases in the June 1965 landings were in jack mackerel and scad, mackerel, and Alaska pollock.

Landings of the major species in June 1965 were as follows (June 1964 data in parentheses): tuna 50,700 tons (61,200 tons); jack mackerel-scad 49,100 tons (39,600 tons); mackerel 50,200 tons (37,400 tons); common squid 15,600 tons (5,500 tons); flounder 15,000 tons (8,200 tons); and Alaska pollock 23,600

tons (36,000 tons). (Fisheries Attache, United States Embassy, Tokyo, December 14, 1965.)

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LANDINGS AND UTILIZATION OF FISHERY AND OTHER MARINE PRODUCTS, APRIL 1965:

Japan's landings of fishery and other marine products at 248 major landing points in April 1965 totaled 267,593 metric tons, down about 10 percent from the previous month's landings. Fresh fish accounted for 90 percent of the total landings, with the remainder mostly frozen fish. As compared with the previous month, landings were down for mackerel and mackerel-like species, Alaska pollock, and anchovies, but increased for tuna and several flatfish species.



Fig. 1 - A large catch of yellowtail unloaded on the beach of a Japanese fishing village.



Fig. 2 - In Tokyo Bay, transferring bait from live box to fishing vessel in background.

Included in the April 1965 landings were (in metric tons): fresh and frozen tuna (in-

## Japan (Contd.):

cluding skipjack) 32,216, mackerel 40,099, horse mackerel 31,250, Alaska pollock 37,902, flounder and other flatfish 10,889, and swordfish 5,418.

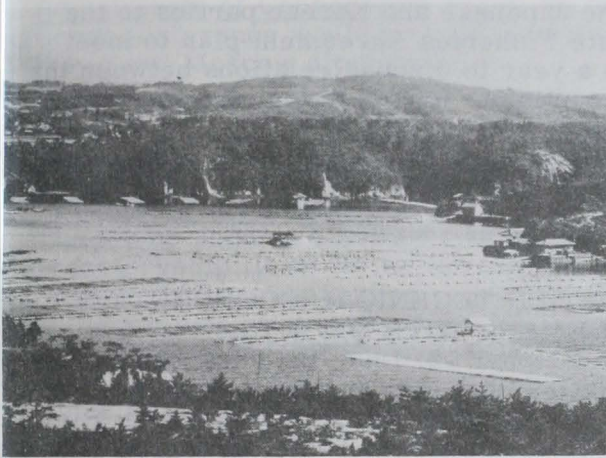


Fig. 3 - Pearl oyster rafts in Kaskiojima Ago Bay, Japan.

Of the total April 1965 landings, 134,421 tons were used fresh and 16,699 tons were frozen. About 70,000 tons were processed as edible fishery products and byproducts--8,542 tons were for canning, and about 2,000 tons manufactured as oil, feed, and fertilizer products, with the remainder processed in other forms. (Fisheries Attache, United States Embassy, Tokyo, November 12, 1965.)

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#### JAPANESE VIEWS ON FISHERIES AGREEMENT WITH SOUTH KOREA:

Under the Fisheries Agreement concluded in June 1965 between the Governments of Japan and the Republic of Korea (ROK), Japan agreed to provide substantial economic aid to South Korean fisheries. The agreement also called for Japan to recognize Korean coastal fishery limits of 12 nautical miles and provided a conservation area in the Korean Strait in which fishing will be jointly restricted. Final ratification was also expected to expand Korean fishery exports to Japan.

The Fisheries Agreement is part of an effort to normalize relations between the two countries. In December 1965, the Governments of the two countries were negotiating ways to carry out the agreement. At the same time, a private agreement concerning safe fishing conditions was being negotiated

by the Greater Japan Fisheries Association and the ROK Central Council of Fisheries Unions.

Japanese financial assistance to Korea will include a \$90-million fisheries aid fund set up under the normalization agreement, plus reparations owed to the ROK, and private loans. Korea plans to use the funds for large-scale fishing fleet expansion. Guidelines for aiding Korean fisheries while at the same time protecting Japanese interests were set forth by the Japanese Fisheries Agency, November 9, 1965, as follows:

(1) With regard to the improvement of Korean fishing ports and public distribution facilities, Japan will comply with the ROK requests as far as possible. Japan will also contribute toward a general buildup of ROK fisheries and also toward increasing the income of ROK fishermen.

(2) Japan will offer necessary commodities and services for the modernization of Korean coastal fisheries, coastal fishing vessel equipment, and even for the promotion of fish farming. However, the culture of pearls will not be regarded as an object of cooperation.

(3) The number of Japanese trawlers and purse-seine vessels which can be exported to Korea will partly depend on the size of Korean fleets in the common restricted areas, and also on the state of fishery resources in fishing grounds outside the restricted areas.

(4) The number of bonito and tuna fishing vessels which will be exported will be fixed so as not to affect Japanese fishing for bonito and tuna.

(5) Neither vessels for fishing for salmon, salmon-trout, and crab in the northern seas, nor whaling vessels will be exported, partly because measures for preserving those resources are being taken under international fisheries treaties.

Reaction of the Japanese fishing industry to the agreement has been mixed. Some of the large Japanese fishing companies are interested in joint ventures with Korean groups. On the other hand, Japanese fishermen are concerned about restrictions on their fishing grounds and the effect of increased fishery shipments from Korea.

Japan is reported to be planning to reduce the size of its fishing fleet off the eastern coast of the Korean Peninsula from about 3,000 to 1,700 vessels. Most of those involved are small coastal vessels which can't be easily converted to other fisheries.

The recognition of a 12-mile Korean fisheries limit is also causing concern. It is felt that it may serve as a precedent that will encourage other countries to expand their limits, thereby further limiting Japanese fishermen.

## Japan (Contd.):

Japanese concern over expanded Korean fishery shipments grows out of the desire to protect domestic markets. Marine products exports to Japan valued at US\$63 million in 1967 is the goal of the ROK. That would be a threefold increase over 1964. The ROK side is asking Japan for liberalization of import restrictions on cheaper fish such as saury, mackerel, and sardines.

It appears that the Japanese-Korean Fisheries Agreement may result in considerable readjustment for both countries. (Sankei, November 10, 1965, Yomiuri, November 18, 1965, and other sources.

Japanese-ROK Private Fisheries Agreement: On December 17, 1965, a Japan-ROK Private Fisheries Agreement was signed in Seoul. The parties to the Agreement are the Greater Japan Fisheries Association and the ROK Central Council of Fisheries Unions. The Agreement was reported to follow the general outline agreed upon during preliminary negotiations in Tokyo, December 1, 1965. Following are the major points outlined in the preliminary negotiations:

1. Aims of the Agreement shall be clearly stated as (1) realization of safe fishing operations by vessels of the two nations and (2) mediation for compensation for damage caused by accidents. Supplementary documents shall have stipulations concerning maintenance of order on fishing grounds.
2. The following eight items shall be the basic items of the Agreement: sea areas to which the Agreement is applicable, marks, matters to be observed in conducting fishing operations, matters concerning sailing for shelter, matters concerning anchorage and drifting, salvage, and the term of validity of the Agreement.
3. Stipulations for marks shall be established according to day and night and types of fisheries, except for those stipulated in the Government-To-Government Agreement and the International Marine Clash Prevention Rules. As for matters to be observed in conducting fishing operations, operating intervals shall be fixed according to types of fisheries.
4. Regarding the handling of accidents, an "Accident Disposition Committee" (tentative name), to be composed of private organizations of the two countries, shall be established. The Committee shall have consultations every 2 or 3 months.
5. The term of validity of the Agreement shall follow that of the Government-To-Government Agreement.

The concluding negotiations in Seoul were concerned mainly with the handling of accidents and damage compensation. It was agreed that accidents should be settled mutual-

ly, if possible, through negotiations between the vessels involved. Private organizations of the two countries will assume responsibility for adjusting compensation when agreement can't be reached by the fishing vessels concerned.

The Japanese and Korean parties to the Private Fisheries Agreement plan to meet twice a year to discuss relations between the two countries. (Nihon Keizai, December 2 and 18, 1965.)

Note: See Commercial Fisheries Review, Dec. 1965 pp. 64 and 72; and Dec. 1964 p. 104.

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#### PROPOSED TECHNICAL COOPERATION AGREEMENT WITH SOVIETS:

On October 12, 1965, the Japanese Fisheries Agency met with Japanese trade groups to explain a proposal for technical cooperation between Japanese and Soviet fisheries. The Soviet Fisheries Minister had recommended such cooperation when the Japanese Minister of Agriculture and Forestry visited Japan in May 1965. It was hoped that the proposal could be given formal recognition on the occasion of the Soviet Fisheries Minister's visit to Japan which is anticipated in the spring of 1966.

The proposal aims at scientific and technical cooperation (excluding salmon for which cooperative agreements have already been concluded) to improve Japanese and Soviet fisheries. Following are the main provisions of the Japanese Fisheries Agency draft of the 5-year "Japan-Soviet Fisheries Scientific, Technical Cooperation Plan" as published in Nihon Keizai, October 12, 1965:

Exchange of Information and Data: Would include (1) fishery statistics, (2) periodical publications, and (3) books.

Joint Surveys of Fish Resources: Would include (1) joint surveys of mackerel pike in which Japanese officials would board a Soviet vessel, (2) joint surveys of bottom fish (after the second year); and (3) joint surveys of tuna (after the fourth year).

Inspection and Study Activities, and Interchange of Specialists: Would include (1) inspection for surveying fishing implements and fishing methods (the first year); (2) inspection of study and development programs and sur-

## Japan (Contd.):

vey vessels (the second year); (3) inspection of fishery hatcheries and breeding methods (the third year); and (4) inspection of the use of processed marine products (the fourth year).

Adjustments of Cooperation Plan: An adjustment conference would be held once a year in Tokyo and Moscow alternately.

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#### MAJOR FIRMS PLAN EXPANSION OF MINCED FISH OPERATION:

The major Japanese fishing firms operating factoryship fleets in the Bering Sea in November 1965 were planning to greatly expand their minced fish operations. A large fishing company dispatched the 11,581-ton factoryship Tenyo Maru (accompanied by 6 trawlers in the 270- to 370-ton class) to the Bering Sea around December 1, 1965. The fleet is scheduled to return to Japan in late March 1966. The fleet's production target is 4,500 metric tons of minced fish meat, 1,000 tons of frozen fish, 2,000 tons fish meal and 300 tons of fish oil. That firm is also contemplating using its 11,193-ton factoryship Soyo Maru for processing minced fish in 1966.

Another major Japanese firm is converting its 10,357-ton fish meal factoryship Gyokuei Maru to increase the factoryship's minced fish production capacity threefold, to 30 metric tons a day. However, Gyokuei Maru will continue to serve primarily as a fish-meal factoryship.

Two other large firms also have under study plans to engage in minced fish meat production in 1966. One firm is expected to engage in minced fish production on an experimental basis in 1966.

The interest of the major Japanese fishing firms to engage in or expand their minced fish operation (Note: Alaska pollock is the primary species used in minced fish production) is attributed to the increased demand in Japan for minced fish (used extensively as a fish sausage and cake ingredient), large resource of Alaska pollock available in the Bering Sea, excellent yield, and high prices paid for minced fish meat. It is reported that 100 metric tons of Alaska pollock yield as much as 25 tons of minced fish as compared to 16 tons of fish meal (Note: Alaska pollock are

also used extensively by Japan in the production of fish meal). Good quality minced fish meat fetches as much as 130,000 yen (US\$361) a metric ton as compared to 73,000 yen (US\$203) a ton for fish meal. Thus, it would be more profitable to process minced fish despite the somewhat high cost of processing that product. (Suisan Keizai Shimbun, November 15, 1965.)

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#### INDUSTRIAL PRODUCTS PRODUCTION, USE, AND FOREIGN TRADE, 1964-1965 AND FORECAST 1966:

Fish Meal: Japan is an importer of fish meal despite sizable domestic production. Forecasts call for 1966 (calendar year) Japanese fish meal production to equal the estimated 1965 output of 285,000 metric tons. Imports in 1966 are expected to continue at the 1965 level of 100,000 tons. Japanese imports of fish meal in January-July 1965 totaled 79,200 tons.

Table 1 - Japanese Fish Meal Supply Situation and Foreign Trade, Calendar Years 1964-1965 and Forecast 1966

Item	1/1966	2/1965	1964
	.. (1,000 Metric Tons) ..		
Production . . . . .	285.0	285.0	271.4
Imports:			
Year . . . . .	100.0	100.0	102.3
January-July . . . . .	-	79.2	68.5
Exports:			
Year . . . . .	10.0	10.0	6.2
January-July . . . . .	-	6.0	3.2
1/Forecast.			
2/Estimated.			

Marine Oil: In the past, the Japanese marine oil industry has satisfied domestic needs and yielded large quantities of whale oil and sperm oil for export. But forecasts indicate declining production will reduce export stocks in 1966.

The margarine and shortening industry is the main domestic user of edible marine oils. It will take 21,300 tons of whale and 26,200 tons of fish oil in fiscal year 1965 (April 1965-March 1966), according to estimates by the Japanese Ministry of Agriculture and Forestry. Other domestic food uses should account for an additional 1,300 tons of marine oil in fiscal 1965. The estimates indicate that for domestic nonfood uses in fiscal 1965 a total of 19,600 tons of sperm oil and 6,200 tons of fish oil will be consumed.

Whale and Sperm Oil: Japanese estimated 1965 (calendar year) whale oil produc-

## Japan (Contd.):

Item	1/1966	2/1965	1964
. . . . (1,000 Metric Tons) . .			
<b>Edible Marine Oil:</b>			
<b>Fish-Liver Oil:</b>			
Production . . . . .	8.0	8.0	8.9
<b>Exports:</b>			
Year . . . . .	1.0	1.0	1.8
January-July . . . . .	-	.5	1.0
<b>Fish Oil:</b>			
Production . . . . .	19.0	19.0	18.1
Opening stocks . . . . .	7.0	7.2	9.9
<b>Whale Oil:</b>			
Production . . . . .	90.0	100.0	115.3
Opening stocks . . . . .	4.0	3.7	5.9
<b>Exports:</b>			
Year . . . . .	60.0	72.0	80.7
January-July . . . . .	-	71.6	80.6
<b>Inedible Marine Oil:</b>			
<b>Sperm Oil:</b>			
Production . . . . .	30.0	37.0	46.5
Opening stocks . . . . .	2.0	2.2	7.3
<b>Exports:</b>			
Year . . . . .	4.0	10.0	25.0
January-July . . . . .	-	8.4	24.6
1/Forecast.			
2/Estimated.			

tion of 100,000 metric tons was down 13 percent from 1964. Sperm whale oil output in 1965 of 37,000 tons was down 20 percent. Further declines are forecast in 1966 because of Antarctic conservation measures.

Exports declined with the supply in 1965. Forecasts call for baleen whale oil exports to drop from 100,000 tons in 1965 to 90,000 tons in 1966. Sperm whale oil exports are expected to drop to a very low level in 1966 as the Japanese Antarctic fleet concentrates mainly on catching baleen whales.

**Fish-Body Oil:** Japanese production of fish oil in 1964 dropped 17 percent from the 24,000 metric tons produced in 1963. The estimated output in 1965 amounted to 19,000 tons, and 1966 production is expected to continue at the same level. Japanese foreign trade in fish-body oils is limited.

**Fish-Liver Oil:** Japanese production of fish-liver oil is estimated at 8,000 metric tons in 1965 and forecast at the same level in 1966. Exports of 1,000 metric tons are estimated for 1965 and forecast for 1966. (United States Embassy, Tokyo, October 8, 1965.)

Note: See *Commercial Fisheries Review*, Aug. 1965 p. 87; and July 1965 p. 77.

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### FISHERIES AGENCY TO ASK TIGHTER REGULATION OF CULTURED PEARL INDUSTRY:

In late 1965, the Japanese Fisheries Agency was preparing a "White Paper" on problems in Japan's valuable cultured pearl industry. That industry yielded export products valued at 20 billion yen (US\$55.6 million) in 1964. Now, however, overcrowding is creating problems in the industry. The Fisheries Agency "White Paper" will be mainly concerned with ways to (1) avoid overcrowding of culture beds and (2) improve quality control.

At the pearl beds of Ago Bay in Mie Prefecture (where about 40 percent of Japanese pearls are turned out) and in the Prefectures of Ehime and Oita, the abuses of congested culture have already become quite clear. Recently, only about 3.75 kilograms (8.3 pounds) of pearls were taken out of 10,000 mother-of-pearl at those beds, as against an average of about 5.6 kilograms (12.3 pounds) until several years ago.



Pearl oyster rafts in Kaskiojima Bay, Japan.

The major recommendations to be announced in the Japanese Fisheries Agency "White Paper" on pearls were reported in *Nihon Keizai*, October 19, 1965, as follows:

**Problems and Recommendations:** At present, local public entities in Japan are permitted to exercise jurisdiction over pearl fisheries as they like. For the overall coordination of administration over pearl fisheries, the central Government should intervene in this field of administration. It is necessary to establish a "maximum-limit formula" for the licensing of pearl culture, through such methods as (1) specifying the standard size for pearl beds, (2) establishing suitable conditions to be required for the starting of new enterprises, and (3) setting a proper scale for each

## Japan (Contd.):

pearl fishery ground corresponding with productivity.

Many Japanese pearl fishery enterprises are short of funds and, consequently, hasten to raise products from small beds. It is necessary to give financial aid to those enterprises. An agency to stabilize the prices of pearls by such measures as coordination and stockpiling must be established in order to prevent a decline in prices due to overproduction in small beds. The present Japanese Pearl Fisheries Law must be revised mainly for the purpose of restricting the issuance of licenses to new pearl fishery enterprises.

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#### COMPOSITION OF DISTANT WATER TUNA FLEET:

A total of 843 Japanese vessels were engaged in the distant-water long-line tuna fisheries as of January 1, 1965. Of that number, 669 vessels (194,797 gross tons) were long-liners and 50 were factory-type mother-ships (55,055 gross tons) carrying 124 portable-type fishing craft.

Most of the long-liners were vessels ranging from 180 to 500 gross tons; 5 were of 500 to 700 gross tons; and 2 were over 700 gross tons. The factory-type motherships ranged from 500 to 3,000 gross tons; 3 were of 3,000 gross tons and over. The 124 portable vessels totaled 2,242 gross tons. (Fisheries Attache, United States Embassy, Tokyo, November 17, 1965.)

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#### TUNA FEDERATION CHARTERS OIL TANKER TO REFUEL VESSELS AT SEA:

The Japan National Federation of Tuna Fishermen's Cooperative Associations (NIK-KATSUREN) again chartered the 1,983-ton tanker Tofuku Maru to conduct high-seas refueling in the eastern Pacific Ocean. NIK-KATSUREN expected to assign a doctor to the tanker to provide medical services to the fishermen at sea.

The Tofuku Maru, which was scheduled to depart Japan November 11, 1965, expected to call at Maui Island, Hawaii, before proceeding to Balboa, Panama, to pick up additional fuel and supplies. On her first leg across the Pacific, the vessel was expected to refuel and provision a total of 30-40 fishing

vessels. (Katsuo-Maguro Tsushin, November 5 & 10, 1965.)

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#### APPLICATIONS FOR DISTANT-WATER TRAWL FISHERY:

In July 1965, the Japanese Government approved the licensing of 22 trawlers over 500 gross tons to engage in the distant-water trawl fishery, which includes all ocean areas except the waters north of 10° N. latitude in the Pacific Ocean, north of 40° N. latitude in the Atlantic Ocean, the Mediterranean Sea, Gulf of Aden, and the Red Sea. Closing date for receiving license applications was set as October 5, 1965. As of October 12, the Central Office of the Fisheries Agency had received a total of 95 applications, but the figure was not final since the Agency had not yet heard from all the regions. However, the Agency was reported as not expecting to receive more than 100 applications. (Suisan Tsushin, November 13, 1965, and other sources.)

(Note: The first licensing of trawlers for the distant-water trawl fishery was announced in July 1963. At that time, the Japanese Government announced that it would approve the operation of a total of 48 "standard" (50- to 300-ton) trawlers, not including those vessels already operating in the fishery. The Government also established a conversion system, which allowed for the construction of larger trawlers on the basis of one large trawler for x number of "standard" vessels, and in November of that year approved the licensing of 18 trawlers, ranging in size from 300-3,500 tons, mainly for operation in the Atlantic Ocean. Available data as of the end of November 1965 indicated that there were about 45 large trawlers, mostly in the 1,500- to 3,000-ton class, operating in the Atlantic Ocean off West Africa and South Africa. The 22 trawlers over 500 tons to be newly licensed are also expected to operate mainly in the Atlantic Ocean.)

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#### FIRM PURCHASES CARGO VESSEL FOR KING CRAB FACTORYSHIP:

A Japanese firm has purchased the 7,292-ton cargo vessel Kyowa Maru as a replacement for the 5,385-ton king crab factoryship Tokei Maru which was lost at sea off the Philippine Islands in October 1965. The Kyowa Maru, purchased at a price of about

Japan (Contd.):

230 million yen (US\$639,000), will undergo extensive modifications and is expected to be ready for service by March 1966. (Suisan Tsushin, December 2, 1965.)

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#### WHALING OPERATIONS AFFECTED BY LABOR DISPUTE:

Some of the Japanese whaling fleets in the Antarctic and the Bering Sea were hit by a 12-hour work stoppage on December 12, 1965, the opening day of the Antarctic season. The fleets of only one whaling company were affected. Involved were the Nisshin Maru and Nisshin Maru No. 3 fleets in the Antarctic (2 of the 5 Japanese fleets in the Antarctic) and the Tenyo Maru fleet in the Bering Sea.

The work stoppage arose out of a labor dispute in which processing workers in the whaling fleets were asking for a basic pay increase of ¥4,800 (US\$13.33) and a 30-percent increase over the previous season in special allowances. The whaling company had offered a basic increase of ¥3,000 (\$8.33) and a 7-percent increase in special allowances.

A Union representative said additional work stoppages might be called if negotiations failed to produce a settlement. The seamen involved are members of the All-Japan Seamen's Union which in early December 1965 was involved in a nationwide work stoppage. But seamen on the high seas, including the whaling fleets, had previously been exempted from the walk-out. (Japan Times, December 14, 1965.)

日本

#### Republic of Korea

##### FIVE TUNA VESSELS ORDERED FROM WEST GERMANY:

South Korean interests have commissioned a West German shipyard in Leer to build five tuna long-line vessels, according to a report in the German periodical Allgemeine Fischwirtschafts-Zeitung, November 27, 1965. The first vessel, the No. 1 Kum Yong, is scheduled for completion early in 1966. The other four vessels are also expected to be delivered in 1966.

The vessels will have an overall length of about 115 feet. Length between perpendiculars will be about 100 feet, molded breadth about 20 feet, and draft about 8 feet. The vessels will measure under 200 gross registered tons and have a fish-hold for storing about 130 metric tons of fish. Each vessel will be equipped with freezing equipment with a capacity of 4 metric tons per hour. Each vessel will be powered by a diesel engine of 460 horsepower giving a cruising speed of 10 knots. Reportedly, the vessels will be capable of launching long lines with a maximum length of about 80 kilometers (50 miles). Perpendicular lines which carry hooks with bait are attached at intervals of about 25 meters (82 feet). The long line will be launched and hauled aboard with the help of a high-speed special winch manufactured in Japan.

The vessels will each carry a crew of 27 and are designed to remain at sea about 40 days. Reportedly, they will operate in southern Atlantic waters, landing their frozen catch in West Africa. (United States Consulate, Bremen, December 3, 1965.)



#### Mauritania

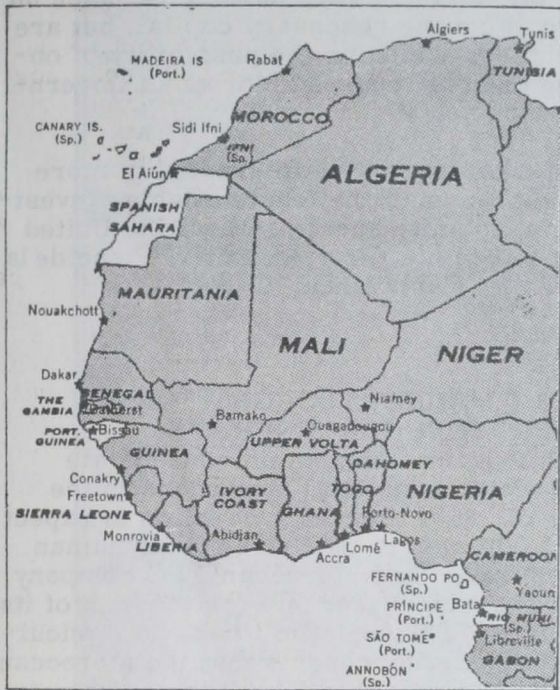
##### FISH-PROCESSING COMPLEX TO BE BUILT BY SPAIN:

Spain has agreed to construct three fish-processing plants in Port Etienne, Mauritania (West Africa), representing a capital investment of over US\$4 million. The money will be invested in return for preferential rights for Spanish fishermen in Mauritanian coastal waters. As a result, 100 to 200 Spanish fishing vessels will operate in inshore waters to supply the three plants.

To be constructed are (1) a fish-meal plant to process 100 metric tons of fish daily; (2) a canning plant with a yearly output of 3,000 tons; and (3) a salting and drying plant designed to produce 6,000 tons in its first year of operation. Construction of the meal and salting plants was to begin in November 1965.

Also called for is the construction by Spain of an administration building, houses, and schools for the plant workers and their fami-

Mauritania (Contd.):



lies. Further, the Spanish will train Mauritanian fishermen and will furnish 50 small trawlers to them. (United States Embassy, Nouakchott, October 16, 1965.)

Note: See Commercial Fisheries Review, February 1965 p. 83; July 1964 p. 67.



Morocco

TUNA FISHERY EXPANSION TRIED:

An expanded tuna fishery is desired by both Government and industry leaders in Morocco. All agree that the local industry needs larger, more modern vessels with much greater cruising range than the present fleet.

In the summer of 1964, the Moroccan Government contracted with a French group to supply the 300-ton refrigerated tuna vessel Danguy to investigate the possibilities of nearby tuna fishing grounds off Morocco. The Danguy was equipped with a purse-seine net 700 meters (2,296 feet) by 125 meters (410 feet) and carried out its research work for a year, ending the contract in September 1965. According to industry sources, the explorations of the Danguy were disappointing. Little tuna was caught in the areas investi-

gated, possibly because the Danguy encountered adverse weather and sea conditions close to the Moroccan coast.

In another attempt to expand the Moroccan tuna catch, a group of Agadir vessel owners in early 1965 sent an expedition of seven vessels to fish off Senegal and the Ivory Coast. The expedition gave the Moroccan captains and crews experience in extended long-range fishing, but it was not a financial success. The Agadir Chamber of Commerce has called for Government support for the owners of the vessels involved. The expedition reemphasized the need for larger Moroccan vessels equipped with refrigeration. (United States Embassy, Rabat, November 17, 1965.)

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TANGIER CANNERY SHORT OF RAW TUNA FOR CANNING:

A tuna cannery in Tangier completed its second operating season in 1965, processing about 1,000 metric tons of bluefin tuna (Thunnus thynnus). The pack was put up in olive oil for domestic and export markets in Italy (imports 15 tons annually in 11-pound cans) and other European countries. At present, cost factors prevent the cannery from packing tuna in a style suitable for export to the United States.

A major problem for the cannery has been a shortage of tuna for canning. During May, June, and July, the cannery receives a total of about 700 tons of bluefin tuna from the madrague (fixed net) fishery off the Moroccan Atlantic coast. An additional 300 tons are trucked from Safi and Agadir to enable the cannery to operate for 6 months of the year. The average tuna caught by the madragues weighs about 400 pounds and some as much as 600 pounds each.

If it could operate year-round, the cannery could almost double its current production. Tuna supplies could be held until needed in the Tangier cold-storage plant which has freezing facilities and a cold-storage capacity of 1,100 square meters (38,846 square feet). Unfortunately, the short range of the Moroccan tuna fleet limits domestic supplies, and the importation of foreign tuna for processing and re-export is not profitable due to customs duties. (Moroccan customs authorities assess a duty on the gross weight of tuna imported even if it is to be canned for re-export.) Efforts to adapt the Moroccan tuna



Morocco (Contd.):

fleet for offshore fishing may help solve the problem. (United States Consulate, Tangier, December 1, 1965, and other sources.)

Note: See Commercial Fisheries Review, April 1964 p. 65.

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#### LOBSTER FISHERY INVESTMENT OPPORTUNITY:

Moroccan interests in Asilah (about 25 miles south of Tangier on the Atlantic Coast) are seeking the assistance of United States firms in developing a lobster fishing venture.

A detailed scientific study of the lobster beds off northern Morocco has never been made. According to available information, lobster fishing with traps is conducted on a commercial scale near Asilah by three French vessels during March, April, and May. The catch varies from 2,000 to 6,000 lobsters (4 to 12 metric tons) a month. About 150 large basket-like traps are fished which usually yield 4 or 5 lobsters at each haul. The French vessels weigh about 37 tons and have a hold capacity of from 600 to 700 lobsters (1.2 to 1.4 tons). The vessels are licensed by the National Maritime Fishing Office and operate in rotation to take the lobster catch to Marseilles.

Reportedly, both lobster with claws (family Homaridae) and spiny lobster without claws (family Palinuridae) are found in Moroccan waters, the latter being the most common type. The spiny lobster weigh about 4 pounds each. Lobster have been reported in Moroccan territorial waters from Tangier to Kenitra. However, the best known Moroccan area for lobster fishing is a spot of about 4 square miles located 1 mile immediately offshore from Asilah, where the ocean depth is from 10 to 20 fathoms. Other areas where lobster are said to be plentiful are near Moulay, Bousselham, and Kenitra. The ocean floor is reportedly rocky all along the coast.

Only one Moroccan fisherman in Asilah specializes in lobster fishing. He said that he has caught up to 6,000 lobsters (about 12 tons) during the season which runs from February to October. (Lobster fishing is prohibited from October 1 to February 1 by the Moroccan National Maritime Fishing Office.) However, he uses a net and does not limit his fishing to the area immediately off Asilah. He said that he has sought unsuccess-

fully to interest his fellow townsmen in forming a cooperative to build up a local industry based on lobster. They have so far been unable to raise the necessary capital, but are presently considering the possibility of obtaining credits from the Moroccan Government.

United States firms interested in more information about the lobster fishing investment opportunity should contact the United States Consulate General, No. 1, Place de la Fraternite, Casablanca, Morocco.

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#### EXPORT MARKETS SOUGHT FOR FISH PROTEIN CONCENTRATE:

A Moroccan fish protein concentrate (FPC) plant began trial operations in the spring of 1965. Annual production is expected to be 1,500 metric tons of FPC for human consumption. The Moroccan FPC company is seeking export markets for the bulk of its production. Although the Food and Agriculture Organization reports that the Moroccan FPC is of excellent quality, the company is having some difficulty finding markets, and production to date has been sold for animal feed. (United States Embassy, Rabat, November 17, 1965.)



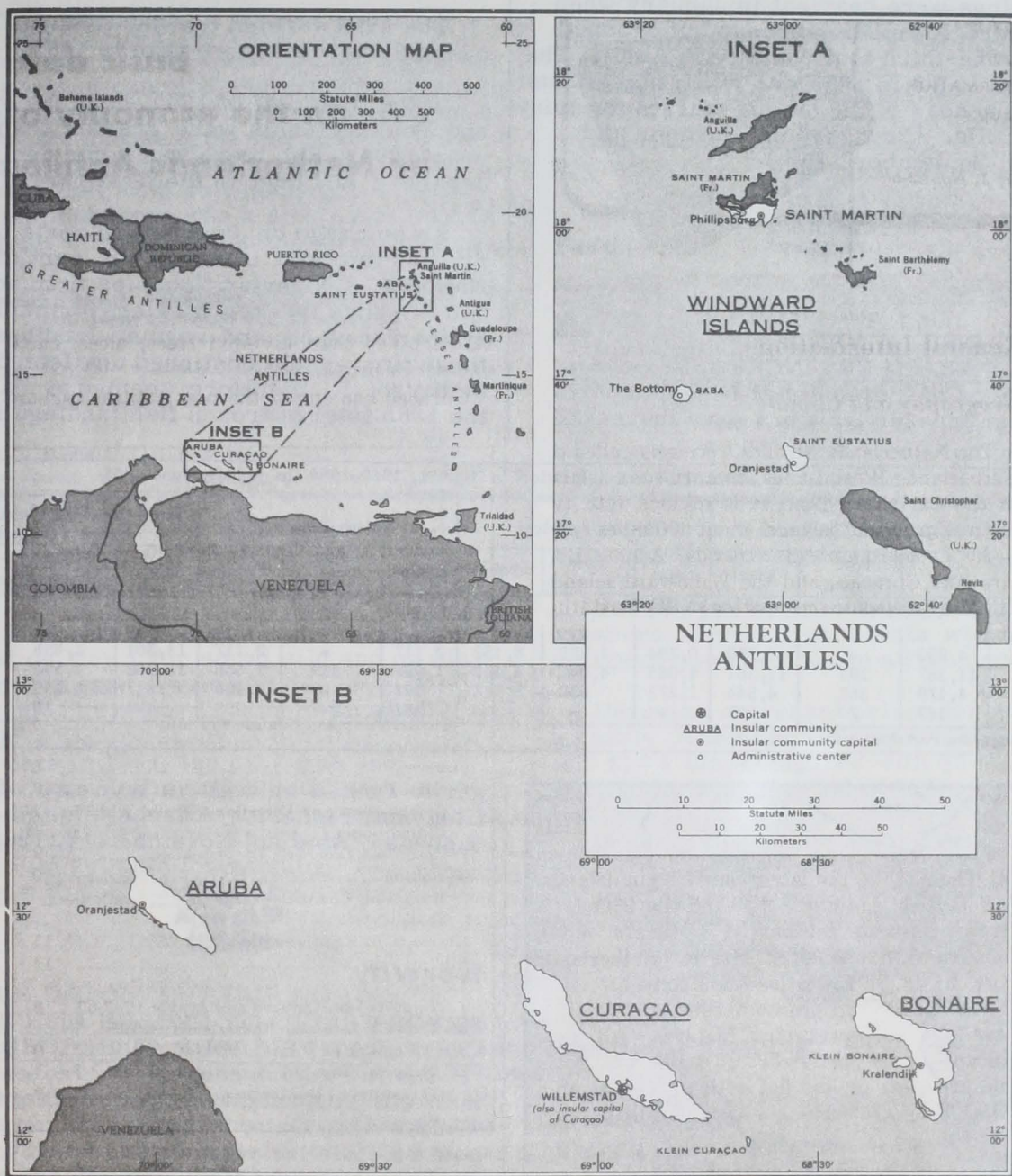
#### Netherlands West Indies

##### FISHERIES TRENDS AS OF JUNE 1965:

Cold-storage facilities with a capacity of 1,100 tons of fish were completed at Saint Martin Island (located east of Puerto Rico), Netherlands West Indies, about mid-1965 by Japanese interests. In addition, 100 tons of fish can be chilled in a separate room, and another 600 tons can be stored in one of the permanently based trawlers at the pier. In all, about 50 trawlers use the pier facilities. Between 10 and 15 trawlers land their catch at Saint Martin each month. The catch is processed on the premises and exported, principally to Puerto Rico and nearby islands, and also to the United States. Previous plans for a cannery were postponed for the time being.

The catch by local fishermen in the Netherlands Antilles islands off the coast of Venezuela has not been sufficient for the demand and this has resulted in increased imports of frozen fishery products.

Netherlands West Indies (Contd.):



**New Zealand**

**SPINY LOBSTER PRODUCTION, JANUARY-APRIL 1965:**

New Zealand's landings of spiny lobster in January-April 1965 totaled 3.7 million pounds valued at US\$1.4 million (£500,346), an increase of 12 percent in quantity and 61 percent in value as compared with the same period in 1964.

The cultivation of clams along the island shores is being studied, and another study indicated that shrimp would probably thrive if introduced at specific points around Willemstad in Curacao. (United States Consulate, Curacao, June 4, 1965.)

Note: See *Commercial Fisheries Review*, August 1964 p. 81; May 1964 p. 69.



New Zealand (Contd.):

Landings were heaviest in January when they totaled 1.4 million pounds but dropped to about one-third that quantity in April. The ex-vessel value in 1965 was much higher than in 1964 because of the strong market for spiny lobster tails. (New Zealand Harbour and Shipping, September 1965.)



**Nigeria**

**FROZEN FISH LANDINGS BY FOREIGN TRAWLERS INCREASE:**

Landings of frozen fish at Nigerian ports by foreign freezer trawlers have increased

sharply since the beginning of this trade in 1962.

The 1964 foreign trawler landings were over 200 percent more than in 1963.

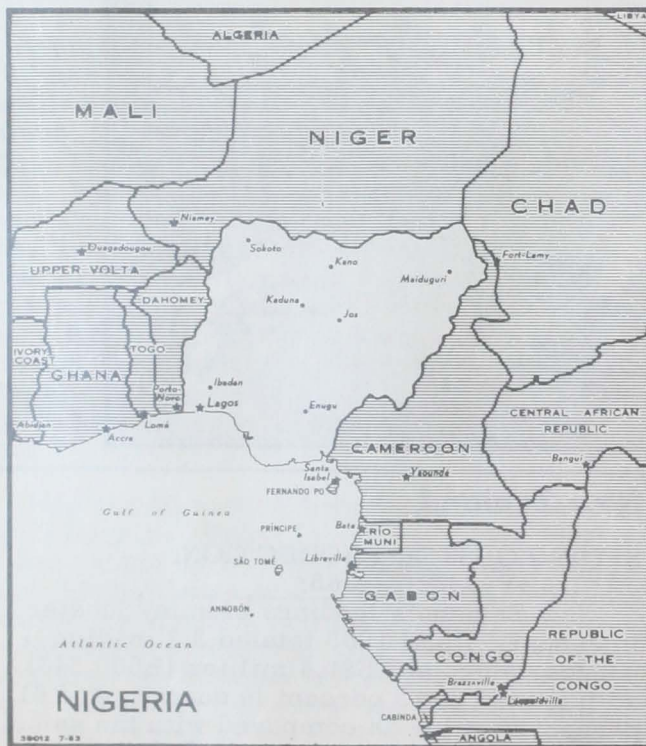
In the first half of 1965, landings by Soviet and Polish vessels were greater than in the year 1964. But there was some decline in Japanese landings in the first part of 1965.

An embargo on Japanese imports to Nigeria was imposed in the latter part of 1965. However, a Nigerian fisheries firm acquired two offshore freezer trawlers formerly used by the Japanese, and regular landings from those two vessels continued unaffected by the embargo. It therefore seemed probable that the 1965 total of frozen fish landings in Ni-

Landings of Frozen Fish by Foreign Trawlers in Nigeria, 1962-1964 and January-June 1965

Year	Japanese Trawlers			Soviet Trawlers			Polish Trawlers			Total Japanese, Soviet, and Polish Trawlers		
	Lagos	Port Harcourt	Total	Lagos	Port Harcourt	Total	Lagos	Port Harcourt	Total	Lagos	Port Harcourt	Total
.....(Metric Tons).....												
Jan.-June 1965	4,950	-	4,950	6,294	1,858	8,152	2,117	-	2,117	13,361	1,858	15,219
1964	11,367	194	11,561	4,088	4,062	8,150	1,527	339	1,866	16,982	4,595	21,577
1963	4,179	365	4,544	1,272	850	2,122	396	-	396	5,847	1,215	7,062
1962	167	70	237	-	-	-	257	-	257	424	70	494

Source: Nigerian Port Authority.



geria would be well in excess of 1964. (Regional Fisheries Attache, United States Embassy, Abidjan, November 13, 1965.)



**Norway**

**EXPORT SALES OF FROZEN FISH BY COOPERATIVE GROUP AT RECORD LEVEL:**

The Norwegian cooperative frozen fish marketing organization, Frionor Norsk Frosenfisk A/L, Oslo, had record home and export sales in the year ending June 30, 1965. Total sales by the firm, including subsidiary companies, were 48,300 metric tons worth US\$31 million. Exports amounted to 44,500 tons. Great Britain was the largest market. Of total production, 36,000 tons consisted of frozen fish fillets. (The Export Council of Norway, December 1965.)

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Norway (Contd.):

**CANNED FISH EXPORTS,  
JANUARY 1-JULY 24, 1965:**

Preliminary data show that Norway's total exports of canned fishery products during January 1-July 24, 1965, were down about 6 percent from those in the same period of 1964. Exports were somewhat lower in 1965 for smoked small sild, soft herring roe, and shellfish, but there was a small increase in shipments of brisling and kippered herring.

all countries was reduced from 8,000 blue-whale units in 1964/65 to 4,500 units in 1965/66. By informal agreement, Norway was assigned 28 percent of the total quota in both seasons.)

Note: See Commercial Fisheries Review, Oct. 1965 p. 91; and June 1965 p. 69.



Norwegian Exports of Principal Canned Fishery Products, Jan. 1-July 24, 1965, with Comparisons

Product	1965	1964
	Jan. 1-July 24	Jan. 1-July 25
	. . . . . (Metric Tons). . . . .	
Brisling . . . . .	3,458	3,392
Smoked small sild . .	7,160	7,572
Kippered herring . .	1,931	1,830
Soft herring roe . .	618	982
Sild delicatessen . .	326	240
Shellfish . . . . .	741	961
Other fishery products	1,539	1,757
Total . . . . .	15,773	16,734

**Peru**

**FISH MEAL INDUSTRY TRENDS,  
NOVEMBER-DECEMBER 1965:**

Anchoveta fishing improved markedly all along the Peruvian coast during the latter part of November 1965. Peruvian fish meal production in the last half of November 1965 was about 78,000 metric tons compared with only 38,590 tons during the first half of the month. (In 1964 production was 120,000 tons during the first half of November and 91,000 tons during the second half.)

In 1965, the Norwegian canning season opened on May 1 for small sild and on May 19 for brisling. By August 14, 1965, the pack was 258,615 standard cases of small sild and 258,910 standard cases of brisling. At the same date in 1964, the pack was 262,901 cases of small sild and 299,993 standard cases of brisling. The declines were due to disappointingly small catches of brisling and small sild suitable for canning. (Norwegian Canners Export Journal, September 1965.)

The December 1965 catches included large numbers of small anchoveta which may be a sign of good catches in a few months.

Peruvian ex-vessel prices for anchoveta in early December 1965 were between US\$12 and \$14 a ton, compared with \$9 to \$10 a ton during the same period of 1964.

In early December 1965, Peruvian prices for fish meal declined to about \$150 a ton f.o.b. Peru. (United States Embassy, Lima, December 15, 1965.)

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**WHALE OIL OUTPUT DURING 1965/66  
ANTARCTIC SEASON SOLD IN ADVANCE:**

The Norwegian press has reported the advance sale of all the whale oil produced by the two Norwegian expeditions during the 1965/66 Antarctic whaling season. The oil has been sold to European continental dealers and to the Norwegian marine oil hardening industry. (United States Embassy, Copenhagen, December 6, 1965.)

(Editor's Note: Output for 1965/66 is uncertain. Norway has only two whaling fleets in the Antarctic this season as compared with four fleets in 1964/65. The two Norwegian fleets operating in the Antarctic this season are reported to have produced about 17,700 metric tons of whale oil during the previous season. The Antarctic total catch quota for



**Philippine Republic**

**FISH FARM DEVELOPMENT PROGRAM  
TO BE FINANCED BY  
AUSTRALIAN GROUP:**

The Australian Freedom-From-Hunger Campaign-Committee is to finance a 5-year fisheries program in the Philippines. Under the program, fresh-water and brackish-water fish and oyster farms are to be established to develop inland fisheries in the Philippines. (Current Affairs Bulletin, Indo-Pacific Fisheries Council, Food and Agriculture Organization, No. 43, August 1965.)



## Rumania

### ATLANTIC TRAWLING OPERATIONS SHIFTED TO WEST AFRICAN COAST:

In late 1965, the large Rumanian stern-trawler Galati was reported fishing for mackerel and other species off Morocco's southern coast. The vessel stopped at Casablanca for fuel and supplies. Earlier in 1965, the Galati and her sistership, the Costanta, had fished off the Atlantic coast of the United States. The Galati reportedly caught 500 metric tons of herring and some cod while in the Northwest Atlantic. (La Peche Maritime, November 1965.)

Note: See Commercial Fisheries Review, Dec. 1965 p. 41; and April 1965 p. 82.



## South Africa Republic

### FISHERIES TRENDS, AUGUST-SEPTEMBER 1965:

Pelagic Fishery: On the Cape West Coast, the main pelagic fishing season closed with a catch for January-July 1965 of 441,097 short tons (mostly pilchard, maasbanker, mackerel, and anchovy). Anchovy fishing continued, but the catch was only 5,350 tons in August 1965 and 31,204 tons in September 1965. Including incidental pilchard and maasbanker catches, the Cape West Coast total shoal catch in January-September 1965 was 478,702 tons.

In the Territory of South-West Africa, the pilchard catch was 123,618 tons in July, 73,280 tons in August, and 17,968 tons in September 1965, bringing the pilchard catch for the Territory in January-September 1965 to 730,745 tons.

The total shoal catch for the South Africa Republic and the Territory of South-West Africa combined in January-September 1965 was 1,209,447 tons.

At Walvis Bay in South-West Africa all factories had completed their pilchard quota by the end of September 1965. The regular pilchard season in South-West Africa was not expected to resume until February 1966, although one factory had a special license to take 10,000 tons of pilchard for processing as frozen fillets for domestic and export markets. None of the Walvis Bay factories planned to fish for anchovy during the off-

season, but some of the factories were looking into other fisheries such as shrimp, lobster, and groundfish.

Shrimp and Spiny Lobster: Two pilchard factories at Walvis Bay have acquired interests in a company which has a concession to investigate the shrimp and spiny lobster potential in the area north and south of Walvis Bay. The project got under way in September 1965 with exploratory fishing by the fishing vessel Takbok. At the start the work was hampered by bad weather and considerable damage was done to nets.

Another group from Walvis Bay was also exploring for spiny lobster off the coast between the Hoanib and Kunene Rivers. Their initial efforts were unproductive.

Groundfish: During the off-season for pilchard, one Walvis Bay factory was conducting groundfish operations with three line-fishing vessels and the new fiberglass trawler Benguella Stroom. Another Walvis Bay factory was fishing for groundfish with the trawlers Karin and Gnufi.

Snoek: Several of the Walvis Bay factories planned to carry out their usual snoek fishing during the off-season for pilchard.

Research: Considerable expansion is being planned for the South-West Africa Administration marine research laboratory at Walvis Bay.

The laboratory is to acquire a new 145-foot all-steel research vessel which will be equipped for oceanographic work as well as for exploratory fishing with electronic gear. It will also be used for stern-trawl investigations of the groundfish resource.

The staff of the research laboratory is to be increased from 10 to 27. Six fishery inspectors are also to be appointed. (South African Shipping News and Fishing Industry Review, October and November 1965.)

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### FOREIGN FISHING OPERATIONS OFF WEST COAST, NOVEMBER 1965:

Two additional nations--West Germany and Italy--have joined the eight foreign countries with established fishing operations off South-West Africa, according to a report in

## South Africa Republic (Contd.):

the Namib Times, Cape Town, November 19, 1965. At that time the foreign fleets were said to be making excellent catches about 100 miles south of Walvis Bay. The foreign fleets have mostly concentrated on groundfish and shown little interest in pilchard. In 1966, British trawlers may begin fishing off South-West Africa. More West German and Soviet trawlers are also expected.

Following is a listing of the foreign vessels operating off South-West Africa in the fall of 1965, as reported in the Namib Times, November 19, 1965.

An Italian group operates the 1,000-ton Genepesca I. The vessel formerly operated off the coast of Labrador in the North Atlantic.

West Germany is represented by the 2,145-ton factory-trawler Sagitta Maris.

Two Israeli vessels--the Azgad 2 and the Azgad 3--are operating in the South Atlantic.

There is one Japanese vessel of about 2,500 tons.

The Soviets have a fleet of over 40 vessels off South Africa. Some of those are on lease to Ghana and Poland and, although flying the flags of those countries, are still manned mainly by Russians.

Bulgaria has two known trawlers operating off South Africa--the Feniks and the Albatross. It is understood that those vessels are to be joined by another four in 1966.

Spain has over 40 vessels fishing off South Africa, and that fleet may be expanded to 150 vessels in 1966.

Belgium has the stern-trawler Narwal operating off South Africa. The vessel can process up to 25 metric tons of fish a day. In mid-November 1965, the Narwal called at Walvis Bay where she transferred 120 tons of frozen fish to the Mohasi for shipment back to Antwerp.

Note: See Commercial Fisheries Review, Dec. 1965 p. 80.

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SPINY LOBSTER TRANSPORT "GILLIAN GAGGINS" DELIVERED FOR FISHERY IN TRISTAN DA CUNHA ISLANDS:

The largest single vessel order ever placed with a South African shipyard was fulfilled

in mid-1965 when the 1,180-ton spiny lobster processing vessel Gillian Gaggins was handed over to her owners in Cape Town. The 162-foot floating factory and refrigerated transport is the largest vessel yet built for the South African fishing fleet.

Gillian Gaggins was built at a cost of about R500,000 (US\$700,000) to replace the 316-ton Francis Repetto which, with the Tristania, has been responsible for building up the spiny lobster fishing industry around the Tristan da Cunha group of islands in the middle of the South Atlantic.

The Tristan spiny lobster venture started with the expedition to the islands--Tristan da Cunha Geogh, Nightingale, and Inaccessible--of the 181-ton wooden vessel Pequena in 1948. The expedition was backed by a South African development company.

In 1949, the Pequena made her first commercial catch of spiny lobsters in the Tristan Islands, and the frozen tails she brought back were the first of a steady stream which has since flowed to markets in the United States. A year later the trawler Tristania was acquired for the operation. The pioneer ship Pequena was later withdrawn and replaced by the Francis Repetto, which in turn has now been replaced by the Gillian Gaggins, whose capacity for spiny lobster tails exceeds the total of the Francis Repetto and Tristan combined.

The Gillian Gaggins has an all-welded hull, and the latest prefabrication methods were used in her construction. The vessel has a range of 16,500 miles on one engine, or 11,700 miles on both engines. She will carry up to 75 men with fuel and supplies for extended periods. The vessel will receive spiny lobster catches and hold them at subzero temperatures until she returns to the Cape. (South African Digest, October 29, 1965.)

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FISHERIES EXHIBITION IN OCTOBER 1966 PLANNED:

South Africa's first large exhibition of fishing gear and fish-processing equipment will be held at the Goodwood Showgrounds near Cape Town, October 11-15, 1966. The exhibition will be sponsored jointly by Government and industry.

The latest developments in equipment will be displayed including echosounding and electronic fish-finding gear.

### South Africa Republic (Contd.):

Local and foreign suppliers are expected to exhibit.

The Southern African region offers a growing market to fishing industry suppliers. In an average year, the fishing industry in the South Africa Republic is said to need 40 or 50 new vessels. The trawling section of the industry is reported to spend R3.0 million (US\$4.17 million) a year on nets. A wide range of processing equipment is also needed.

The exhibition is timed to take place in the closed fishing season so that fishermen will be free to attend. Fishermen in the South Africa Republic, South-West Africa, Angola, Mozambique, and other fishing centers are to be invited to the exhibition.

The rate for any stand at the exhibition is R2.50 (\$3.48) per square foot. Shell stands will be provided for all exhibitors without charge. For additional information write to the South African Exhibition Organizers. (Pty.) Ltd., P. O. Box 667, Cape Town, South Africa Republic. (United States Consulate, Cape Town, November 23 and 30, 1965.)



## Republic of Togo

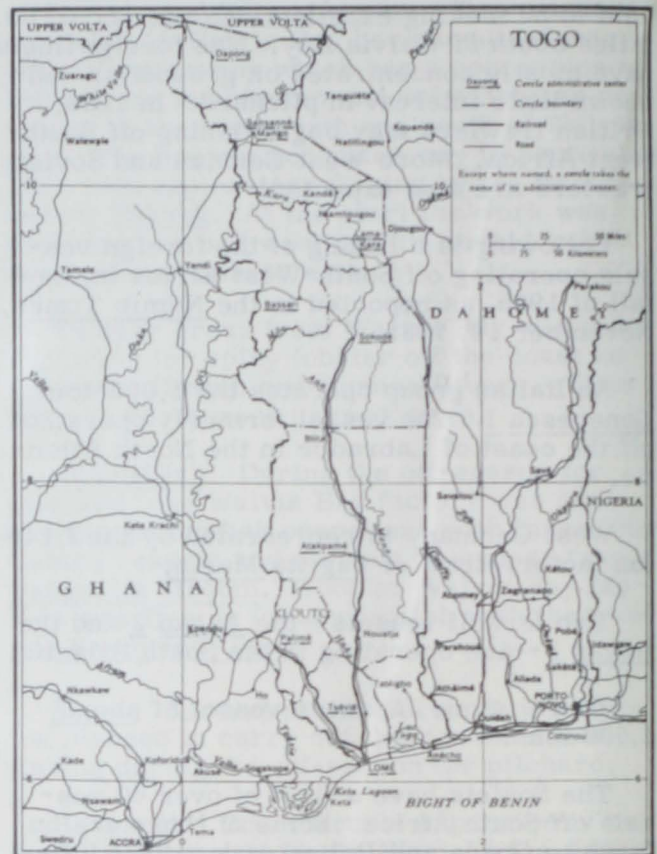
### FISHERIES TRENDS, 1964-65:

Some progress was made in Togo's fisheries during 1965. By the latter part of the year, the fish dock planned for the Port of Lome was expected to be extended sufficiently so that it could provide protected docking facilities for fishing vessels.

A Togolese commercial fishery organization, the Societe Industrielle et Commerciale de Peche, was formed with local capital in early 1965, and there was interest by United States parties in the establishment of a shrimp cannery at the new port. Also, West Germany planned to provide two fishing vessels to be used for training local fishermen.

Japanese and Soviet fishing vessels operating off the African coast freeze part of their catch, and some is landed and sold along the coast. Most of the local fishing in Togo is done by villagers along the coast who either sell their catch locally or use it directly. As

a result, the catches are not recorded in official fishery statistics.



The value of Togo's fishery imports was up in 1964 but the quantity dropped 10 percent. Exports of fishery products are negligible and in 1964 they were even less, possibly indicating increased local consumption. (United States Embassy, Lome, May 24, 1965.)



## Tunisia

### FISHERIES DEVELOPMENT AIDED BY SWEDISH LOANS:

In 1963, Sweden signed an agreement with Tunisia providing for financial and technical assistance to develop a fishing harbor and a vocational school to train fishermen. The project is concentrated in the Kelibia District of northeastern Tunisia. The financial aid extended by Sweden under the agreement has been in the form of development credits to enlarge pier and harbor facilities to accommodate approximately 10 fishing trawlers and

## Tunisia (Contd.):

a number of smaller boats. Sweden provides three-fourths and Tunisia one-fourth of the funds for the harbor works.

The first credit of SKr. 6.0 million (US\$1.16 million) was arranged in 1963. A second loan for SKr. 6.0 million was agreed to on October 22, 1965. Tunisia is to make the equivalent of a SKr. 2.0 million (\$386,100) contribution. Both Swedish loans bear a 2-percent interest rate and a 20-year maturity including a 5-year grace period. After the grace period the repayments during the first 10 years are scheduled to amortize 5 percent of the loan annually. (United States Embassy, Stockholm, October 29, 1965.)

Note: See Commercial Fisheries Review, May 1964 p. 74.



## U.S.S.R.

## SOVIETS PLAN 50-PERCENT INCREASE IN FISHERY LANDINGS BY 1970:

Soviet fishery landings of about 8.5 million metric tons in 1970 are called for by the preliminary 5-Year (1966-1970) Plan for Soviet fisheries development. Of that total, 7.8 million tons would be fish and shellfish, and the rest whales, marine animals, and other aquatic products. Most of the fish would be caught on the high seas. In 1964, the Soviet Union caught 4,475,000 tons of fish and 650,000 tons of other aquatic products. In 1965, the Sovi-

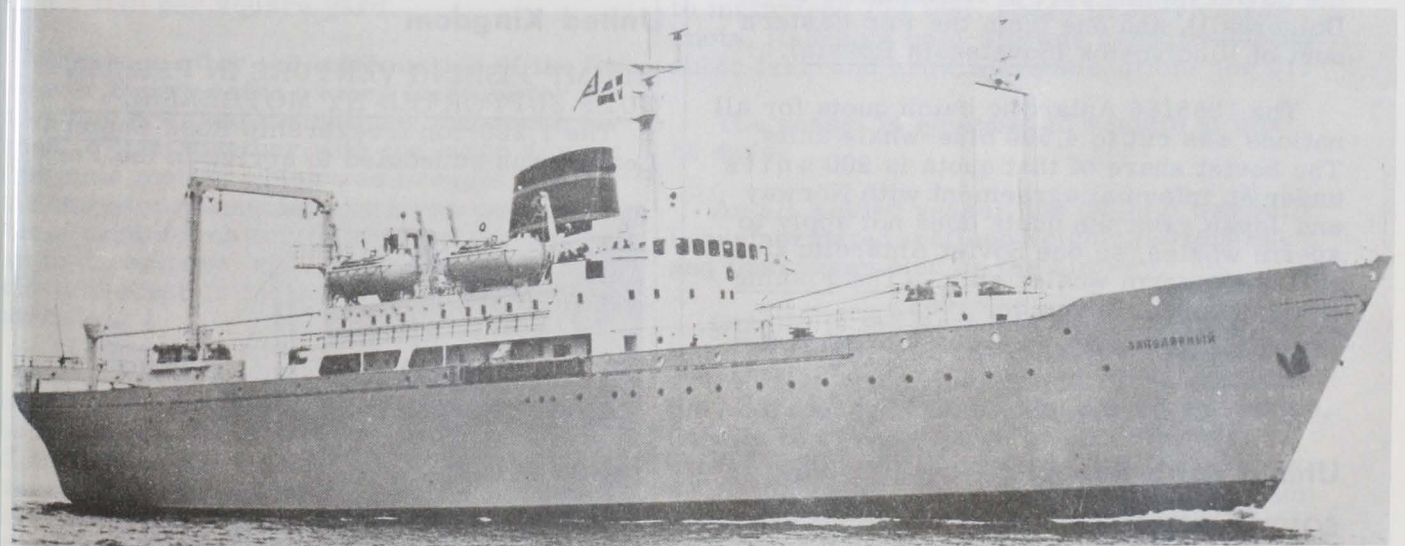
ets expected to land 5,600,000 tons of fish and other aquatic products. According to Soviet sources, most Soviet Fishery Administrations have fulfilled their individual 1965 quotas, and the actual 1965 landings may even surpass the planned estimates. (The Fishing News, London, November 19, 1965, and other sources.)

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FREEZER-TRAWLER "ZAPOLJARNYJ"  
DELIVERED TO SOVIETS  
BY DANISH SHIPYARD:

The 2,570-ton freezer-trawler M/S Zapoljarnyj was delivered to V/O Sudoimport, Moscow, by a Copenhagen shipyard November 25, 1965. Launched March 30, 1965, the vessel is part of a series of 15 freezer trawlers for the U.S.S.R. being built by the Danish shipyard to the following specifications: length between perpendiculars 91 meters (298.5 feet), breadth 16 meters (52.5 feet), and deadweight tonnage 2,550 to 2,600 metric tons. The first vessel in the series was the M/S Skryplev launched May 10, 1962.

The Zapoljarnyj can operate as a stern trawler, but it is designed primarily to operate as a freezer ship, receiving catches from other trawlers. The catches are headed, gutted, and frozen aboard the Zapoljarnyj. The vessel carries two heading machines, although dressing the fish is still mainly a hand operation. For freezing, the dressed fish are placed in metal pans with firmly fastened covers and conveyed through an air-blast freezer. The use of the metal pans apparently produces smooth blocks of fairly uni-



The freezer ship M/S Zapoljarnyj which can also be used as a stern trawler.



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

form dimensions. (Regional Fisheries Attache for Europe, United States Embassy, Copenhagen, December 2, 1965.)

Note: See Commercial Fisheries Review, June 1965 p. 79.

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#### JAPAN LAUNCHES FIFTH IN SERIES OF FACTORYSHIPS FOR SOVIETS:

Severodonetsk, the fifth of eight 18,000-gross-ton factoryships being built for the U.S.S.R. by a Yokohama shipyard, was launched December 14, 1965. The vessel should be completed by July 1966. It will act as a mothership, supplying fuel and provisions to Soviet trawler fleets and processing their catches. Specifications of the vessel are length over all 174 meters (571 feet), depth 14.8 meters (48.5 feet), breadth 24 meters (79 feet), and main diesel engine 5,500 horsepower at 125 r.p.m. (Shipping and Trade News, December 16, 1965.)

Note: See Commercial Fisheries Review, July 1965 p. 94.

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#### ANTARCTIC WHALING PLANS FOR 1965/66 SEASON:

As in the previous years, the Soviet Union sent four whale factoryships (with supporting catcher vessels) to take part in the 1965/66 Antarctic whaling season which opened December 12, 1965. Two of those factoryships were from the Soviet Black Sea port of Odesa (Sovetskaia Ukraina and Slava), one from the Soviet fishing port of Kaliningrad (Iurii Dolgorukii), and one from the Far Eastern port of Vladivostok (Sovetskaia Rossia).

The 1965/66 Antarctic catch quota for all nations was cut to 4,500 blue-whale units. The Soviet share of that quota is 900 units under an informal agreement with Norway and Japan. But the quota does not apply to sperm whales, so one Soviet Antarctic fleet will hunt sperm whales only. (The Fishing News, London, November 1965.)

Note: See Commercial Fisheries Review, Oct. 1965 p. 65.



#### United Arab Republic

##### SOVIET-EGYPTIAN FISHING AGREEMENT SIGNED:

A fishing agreement between the Soviet Union and the United Arab Republic (UAR)

was signed about mid-1965, according to a Cairo press report. A Soviet delegation had been in Cairo for about a week to carry out the negotiations.

The agreement calls for the Soviet Union to supply 17,000 metric tons of fish to the United Arab Republic during the 1965/66 fishing season, with the first shipment delivered at Suez and Alexandria during summer 1965.

The agreement includes a provision for conducting research for one year in uncovering new fishing grounds in the Mediterranean. Soviet experts were to go to Egypt to develop the fisheries and to establish a fisheries training center. Also, 200 Egyptian students and fishery people are expected to be sent to the Soviet Union to study fishing methods from 5 to 7 years. On their return to Egypt they will form the nucleus of a UAR College of Fisheries.

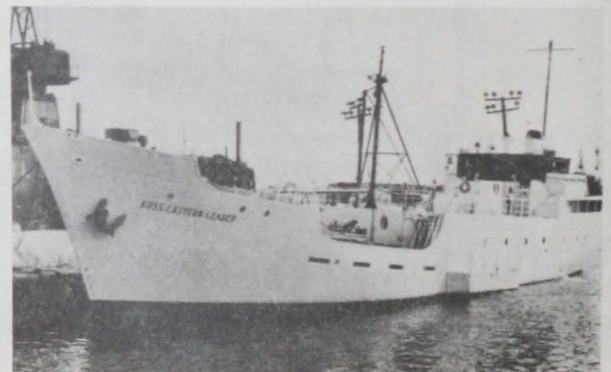
A joint UAR-Soviet fisheries development agreement in early 1964 called for the Soviets to furnish radar-equipped fishing vessels and training, and for the Egyptians to build a community on the Red Sea coast for both Soviet and Egyptian fishermen. The project it was said would cost LE 3 million (US\$6.9 million). Soviet and Egyptian vessels are to carry out coordinated fishing activities in the south Red Sea and Indian Ocean. (United States Embassy, Cairo, June 9, 1965.)



#### United Kingdom

##### SHRIMP FISHING VENTURE IN PERSIAN GULF SUPPORTED BY MOTHERSHIP:

The 1,200-ton freezer ship Ross Eastern Leader was scheduled to arrive in the Per-



Ross Eastern Leader shortly before sailing for the Persian Gulf.

United Kingdom (Contd.):

Iran Gulf in late January 1966 to serve as a mothership for seven 70-foot shrimp trawlers based at Bahrain. The operation is backed by a British firm and managed by United States experts.

The Ross Eastern Leader will collect and freeze shrimp catches. It has a freezing capacity of 30 tons a day and a cold-storage capacity of 300 tons. The vessel was equipped in Florida by United States outfitters.

See Commercial Fisheries Review, Dec. 1965 p. 78.

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#### PLAICE REARING EXPERIMENT POINTS UP PROBLEMS OF MARINE FISH FARMING:

In August 1965, the British White Fish Authority began an unusual fish-farming experiment by moving some 200,000 young plaice from a hatchery in the Isle of Man to a Scottish sea loch at Ardtoe. An arm of the loch had previously been dammed in order to provide a holding pond of about 5 acres.

During transshipment from the Isle of Man, the death rate of the plaice, then about 10 millimeters (0.79 inches) in length, was low--approximately 16 percent.

The fish appeared to settle down well in their new outdoor environment and began to feed both in the holding pond, where they were kept at about 50 fish per square yard, and in the main pond, where the density was only about 5 fish per square yard.

Very soon after the introduction of the fish, however, heavy rains caused fresh water to enter the loch, and the salinity was much reduced. That, together with the large amount of organic matter which was brought down with the rain water, and the large concentration of organic matter in the sand which began to decompose, reduced the oxygen available to the fish in the water and caused heavy mortality.

Although the dam on the loch had been constructed to allow the salinity and oxygen of the nursery area to be regulated by running off the foul water and allowing fresh sea water into the enclosure, it was apparent that additional measures would have to be taken to provide ideal conditions for fish in the future.

Large numbers of predators also reduced the plaice population in the enclosure. An incursion of crab, eel, and other fish all preyed on the small plaice. This will require that either larger fish capable of avoiding the predators are introduced in the future, or that the predators are controlled more effectively.

The surviving plaice in the enclosure appeared to be growing well, and control measures were being established in readiness for the introduction of the next batch of fish in 1966.

The experiment pointed up some of the problems which have to be resolved before the new science of farming marine fish can be developed into a commercial technique of rearing plaice to marketable size. (Fishing News, October 1, 1965.)

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#### FREEZER-TRAWLER "OTHELLO" LAUNCHED FOR HULL FIRM:

The freezer stern-trawler Othello was launched December 9, 1965, by a Scottish shipyard in Glasgow. The Othello is the first of four similar vessels being built in Glasgow for a British fishing firm at Hull. The new vessels will be the first complete freezer-ships in the Hull firm's fleet of more than 30 trawlers.

The main particulars of Othello are: length overall 224 feet, length between perpendiculars 194 feet, breadth moulded 39 feet, depth moulded to upper deck 25 feet, depth moulded to main deck 17½ feet, speed in service 13½ knots, fishroom cold-storage capacity 27,000 cubic feet, and crew accommodations for 51.

The vessel is equipped to remain at sea 58 days.

An all welded vessel, the Othello was built in prefabricated sections weighing 40 tons each, and then assembled on the slipway.

Othello is the first British stern trawler to be arranged with the main machinery space at the after end of the vessel. This enables the cold storage space to be placed amidships. Othello is to be powered by an 8-cylinder diesel engine which develops 2,350 horsepower at 400 r.p.m. She has a controllable-pitch propeller which can be controlled from the wheelhouse.

## United Kingdom (Contd.):

The design of Othello is the result of extensive investigation by the owners and builders into the plans and performances of many contemporary stern trawlers, both British and foreign. As a result of the investigation, a hull form was developed and a model underwent a series of tests at the Feltham Tank of the British National Physical Laboratory (NPL). The owner's specification called for an "easy" motion in heavy seas, and the NPL tests demonstrated that Othello and her sisterships should be good sea boats. Passive water stabilization tanks are fitted to minimize roll and improve working conditions for the crew.

The Othello has a factory deck with a large clear area where filleting machinery can be installed if it is decided to turn the vessel in-

to a factoryship at a later date. Initially, the Othello's catch will be headed and gutted, and then frozen in vertical plate freezers discharging directly into the holds.

The upper deck aft has the trawl winch 80 feet from the top of the ramp, which will allow the trawl to be brought aboard quickly. Twin fish hatches with chutes to the factory deck are provided on either side of the ramp.

A control position is provided on the aft side of the wheelhouse for the skipper when hauling in gear. From this point he can control engines, steering, and the trawl winch with a clear view of the trawl winch and the upper deck aft.



## TUNA-CHUTNEY DIP

Here's a dip that's really different! You'll really keep them guessing with this one. Canned tuna, one of America's favorite foods, combines with cream cheese and chutney in the tastiest, dippiest blend yet. Dip-wise, this is a thrifty as well as delectable snack. The Tuna Research Foundation reminds us that tuna's in good supply at good prices. Stock up so you're always prepared for unexpected guests.

Tuna-Chutney Dip is a snap to fix and it's all planned to make a lot for a big party. All you have to do is blend the mild, delicate tuna chunks with the other ingredients in a simple one-bowl operation. Serve with crackers, pretzels, or chips.

## TUNA-CHUTNEY DIP

2 8-ounce packages cream cheese	$\frac{1}{4}$ teaspoon cayenne
$\frac{1}{2}$ cup mayonnaise	4 cans (6 $\frac{1}{2}$ or 7 ounces each) tuna in vegetable oil
$\frac{1}{4}$ cup prepared mustard	$\frac{1}{2}$ cup chopped chutney

Cream together cream cheese, mayonnaise, and mustard; stir in cayenne. Add tuna and chutney; blend well. Serve with crisp crackers. Makes about 5 cups of dip.