

International

GENERAL AGREEMENT ON TARIFFS AND TRADE

TWENTIETH SESSION OF CONTRACTING PARTIES:

The 20th Session of the Contracting Parties to the General Agreement on Tariffs and Trade met in Geneva, Switzerland, from October 23 to November 16, 1962. The Assistant Secretary of State for Economic Affairs headed the United States Delegation.

The Contracting Parties considered an agenda of more than 60 items. A major topic was an assessment of progress made in the GATT Program for the Expansion of International Trade since it was dealt with at the 1961 GATT Ministerial Meeting. Key elements of this program are tariff reduction, improved access to markets for agricultural products, and removal of obstacles to the trade of the less developed countries.

The United States Delegation gave special attention to quantitative restrictions originally justified for balance of payments reasons, but which are now in violation of the GATT. Increasing United States concern over quantitative restrictions has led to a formal complaint against French and Italian quota restrictions which was listed on the agenda at this Session for action. Also pending is the Canadian Government's recent imposition of customs duty surcharges. The U. S. Delegation hoped to seek the earliest possible elimination of these surcharges.

The progress of regional economic groupings were reviewed, including the Latin American Free Trade Area, the Central American Free Trade Area, and particularly the Common Agricultural Policy of the European Economic Community.

At least two newly-independent nations, Trinidad and Tobago and Uganda, were to be admitted formally as contracting parties at the Session. The GATT membership has

been growing steadily now numbering 42 nations covering more than 80 percent of free world trade. The Contracting Parties were expected to consider the future relationship to the GATT of Argentina, Poland, Spain, and Yugoslavia, which now participate in the work of the GATT under various special arrangements.

The GATT is the basic international instrument guiding commercial relations among most of the principal trading nations of the world. The provisions of the GATT are designed to expand international trade and thereby to raise living standards, increase productive employment, and utilize more fully the resources of the world. The meetings of the Contracting Parties provide an international forum to discuss trade policy problems and to resolve trade difficulties in a manner conducive to the growth rather than the reduction of trade levels.

EUROPE

WEST EUROPEAN FISHERY CONFERENCE HELD IN GÖTEBORG:

On September 6, 1962, a total of 42 delegates attended the West European Fishery Conference held in Göteborg, Sweden. Belgium, Denmark, France, West Germany, Netherlands, Portugal, Spain, Great Britain, Norway, and Sweden were represented. The Conference discussed marketing problems arising from the present EEC negotiations and their effect on the fishing industry of the various countries.

The President of EUROPECHE, in his address to the conference, stressed the need for continued cooperation between fishery organizations of the member countries regardless of the outcome of the present trade-political developments in Europe. He stated that they should carefully study and observe these developments as the fishery organizations may have an opportunity to influence future market developments. The Scandinavian representatives indicated that they were of the opinion that the fishermen and fisheries organizations themselves could reach satisfactory agreements on their marketing problems, but inasmuch as the European fishing industry is only a small detail in the over-all EEC picture, that undoubtedly the final decisions affecting the industry would be made on a high political level.

In spite of the fact that the Conference did not result in any positive productive agreements, the question of territorial fishing limits was explored. During this discussion, it became apparent that if Sweden should fail to become associated with the Common Market, it would suffer with regard to its natural fishing area along the Norwegian coast. The EEC members have resisted any extension of territorial limits that would restrict the fishing rights of the member countries. It is the

International (Contd.):

intent of the EEC that a three-mile limit with regard to fishing rights be applicable in all EEC countries for all EEC members. At the present time, Norway and Sweden have an agreement that Swedish fishermen must fish outside a twelve-mile limit along the Norwegian west coast. If this situation continues and Sweden does not associate with the Common Market, it will be placed in the unenviable position of fishing outside the twelve-mile limit while her competitors will have the privilege of fishing outside the three-mile limit along the Norwegian coast. This disadvantage could seriously impair the Swedish fishing industry, which is one of the most important industries on the west coast of Sweden.

Another topic that was discussed by the delegates concerned the North Sea-Atlantic Fishery Convention of 1959. It is hoped that this Convention can be placed in effect in 1963, but this will depend upon ratification by Ireland and West Germany, the only countries concerned that have failed to sign this Convention at the present time. When this Convention takes effect, a large international research program of the fishing industry is planned and will undoubtedly concern itself with the various problems that exist at the present time for the North Sea-Atlantic fishermen.

One positive action resulting from this Conference in Goteborg was a resolution that the delegates should alert their governments to the fact that the supply of herring in the North Sea has decreased this year. It was suggested that this might be the result of overfishing in that area. Another positive action taken at the Conference was the approval of an Italian application for membership, but there was no Italian representation at the meeting.

The West European Fishery Conference, originally founded by trawler organizations in Holland and England, serves as an information organization for the member countries. The Conference was hampered and prevented from accomplishing positive results by the unsettled situation surrounding the present EEC negotiations. Because of the present EEC negotiations being carried on by certain member countries, the delegates were reluctant to express their views or to commit themselves to any definite position, pending the outcome of the EEC negotiations.

The Conference next year will be held in Denmark, and if the present situation regarding EEC developments is settled, this Conference may prove to be of much greater value to the fishing industries in Western Europe. (United States Consulate, Goteborg, September 27, 1962.)

* * * * *

SCANDINAVIAN AND BRITISH FISHERIES ASSOCIATIONS MEET:

Representatives from fisheries associations of the United Kingdom, Norway, Sweden, and Denmark met in London in mid-September 1962 to discuss mutual problems, presumably connected primarily with Common Market developments, according to Danish newspaper reports. The Danish representatives, one from each of the two largest fishermen's associations, stated that the discussions were confidential commenting only that they were for orientation purposes and gave promise of future fruitful cooperation. (European Regional Fisheries Attache, United States Embassy, Copenhagen, September 26, 1962.)

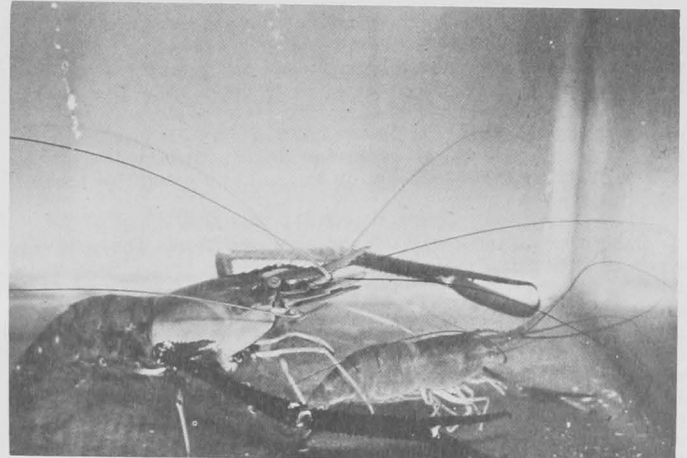
FOOD AND AGRICULTURE ORGANIZATION

ASIATIC FRESH-WATER SHRIMP CULTURE EXPERIMENTS SUCCESSFUL:

The giant fresh-water shrimp found throughout Asia has always been regarded as a choice food. In addition, nutritionists consider shrimp a high source of protein, and as such, would like to see more of it made available. Fresh-water shrimp supplies from the usual natural sources have always been scarce, and no one has yet been able to breed and grow them successfully in captivity.

Fishery scientists have for years been interested in shrimp farming, and some experiments already have been conducted in several Asiatic countries, Australia, the United States, and other countries. A fisheries biologist (Dr. Shao-Wen Ling) of the Food and Agriculture Organization, who has been experimenting in a laboratory at Penang, Malaya, is reported to have been successful in breeding and growing fresh-water shrimp.

The biggest problem in shrimp culture has always been that little is known about the biology and habits of the giant fresh-water shrimp, especially in its early stages. Baby



Larger of the two is an adult giant fresh-water shrimp (Macrobrachium rosenbergi) raised in a Malayan laboratory by a FAO biologist.

shrimp, or more properly larvae, are plentiful enough in their native habitat, but their growth has always been more or less guess work. By the time this variety of shrimp become fully grown, their numbers have always been drastically reduced. The FAO biologist, working on assignment with the Malayan Government, took two and a half years to learn about the growth of fresh-water shrimp.

For his experiments, the FAO biologist selected the giant Malayan fresh-water shrimp (Macrobrachium rosenbergi), which is also indigenous in the tropical waters of all countries of the Indo-Pacific region. His first problem was to find out something about the shrimp's actual reproductive habits. Observations showed that mating would occur only if the female was in the very short and specific mating condition. Only then would mating take place. After mating, the male would protect the female from all comers, instead of attacking her. Next, it was necessary to study the best conditions under which eggs, after a long incubation period, would hatch into healthy larvae.

Despite the apparent success to that point, it was only the beginning. The main task was to develop ways and means of growing the larval shrimp to maturity. At first, the thousands of larvae produced in the laboratory were reared in fresh-water but they all died within 4 to 5 days

International (Contd.):

after hatching. Similar failures occurred repeatedly for more than six months. The thought occurred that perhaps in their natural habitat the new-born shrimp moved to different waters. Perhaps they moved downstream to where the river was influenced by the tides and became more brackish water. The scientist then decided to add a small amount of sea water to the fresh water, and soon young larvae were kept living for as long as a week. But since it takes almost a year for a baby shrimp to become an adult, he started again with water of higher salinity and found that the shrimp lived a little longer. The experiments continued in that manner until he found that by gradually increasing the salinity of the water, he could make them live longer. But each failure meant starting all over again, and it took two years to grow the baby shrimp up from larvae to the juvenile stage, and from the juvenile to adult stage.

Meanwhile, each larva had gone through 15 different moulting periods before it grew into a juvenile, and the water had been increased in salinity until it contained 40 per cent sea water. After that, it was discovered that the juveniles put back into fresh water survived quite successfully.

As a result of these experiments, the scientist was led to believe that the larvae hatch upriver in fresh water, and then gradually move downriver toward the sea until they become juveniles in brackish water near the coast. The juvenile shrimp then move back up the river to grow to full size and breed again. At that stage they can survive in rivers, canals, ponds, or even rice fields. In fact, the fully-grown giant fresh-water shrimp are usually caught in those places.

But water salinity was not the only problem. The scientist had to find the right kinds of food, and a proper way of feeding the shrimp. He tried many foods and feeding techniques, and even imported the eggs of the *Artemia* or brine shrimp. These were hatched out and fed to the young shrimp larvae. This appeared to work out very well but was not economically practical because of the high cost. Local ocean zooplankton was tried as a food but this also proved impractical. Better results were obtained from using fish eggs, which the shrimp seemed to like, but even these were too expensive.

A simple and uncomplicated solution to the food problem was finally found. Any day in the Penang Market, as in most markets in that region, fish balls (made up of finely ground fish) can be bought. The scientist discovered that when these were broken up, they made an excellent and very cheap food for the young larval shrimp. The standard practice of feeding, he believes, will be to feed fish eggs to the very young larvae, and then, as they get larger, change their diet to crushed fish balls, with *Artemia* as a supplementary food.

The over-all problem, even at that stage, was not completely solved. While the experiments were successful under laboratory conditions, the objective was to breed shrimp on a large scale, and to achieve a process that was simple and standardized. That was the final stage of the scientist's experimental studies. He found that the problem of increasing salinity was comparatively simple. If the hatchlings or larvae were reared in large open containers, the normal evaporation process would increase the salt content, and it would require very little control by the operator who would only need to add a little fresh or salt water to keep it constant.

The scientist gradually reduced the feeding process to a set routine. Now he believes that with a little more improvement, it will be possible to evolve a simple and practical method for almost anyone, with some training, to culture giant fresh-water shrimp.

The FAO scientist believes that, in the near future, the Asian farmwife or fishermen's wife should be able to raise

and keep shrimp just as easily and profitably as the European farmwife keeps hens. (News release, September 20, 1962, Food and Agriculture Organization, Rome.)

* * * * *

FAO REQUESTS FUNDS FOR CENTRAL AMERICA FISHING INDUSTRY STUDY:

The Food and Agriculture Organization (FAO) has requested a \$2 million grant from the United Nations special fund for a three-phase regional study of the fishing industry in Central America: (1) exploration of the fish resources of Central American waters (Pacific and Caribbean); (2) possibilities of commercialization of an expanded fishing catch; (3) possibilities of industrialization, particularly canning and byproducts.

The FAO plan calls for 10 to 15 experts, some of whom would be expected to arrive in Central America in June 1963, if the project is approved and the necessary funds appropriated. (October 16, 1962, report from Guatemala.)

INTERNATIONAL ASSOCIATION OF FISH MEAL MANUFACTURERS

REPORT ON THIRD ANNUAL CONFERENCE:

Over 100 delegates and observers from 18 countries representing the principal fish meal producers in the world attended the Third Annual Conference of the International Association of Fish Meal Manufacturers (IAFMM) in London, October 9-12, 1962. Twenty-five prominent scientists from France, Germany, Iceland, Norway, Peru, Portugal, South Africa, Spain, the United States, United Kingdom, and the Argentine, as well as from the Food and Agriculture Organization (FAO) held detailed discussions on a wide range of topics of importance to the industry, among them: achieving uniform methods of analysis, nutritional matters, the use of fish oil in animal feeding, and scientific methods of promotion of increased usage of fish meal.

Manufacturers and scientists considered together matters which had been discussed at the Scientific Meetings, with particular reference to their commercial application. Other matters discussed were increase of world markets; promotion methods, particularly in underdeveloped markets or countries; expanded advisory services generally; and various nutritional matters. The Conference

International (Contd.):

received full reports from the U. S. Bureau of Commercial Fisheries on work on fish protein concentrate (fish flour) about to be undertaken in the United States; and from FAO on a large-scale pilot scheme for feeding fish protein concentrate, about to start in Peru.

Problems relating to analytical methods and quality standards in the European Common Market were discussed. FAO is preparing a new and revised edition of its publication "Animal Feedstuffs--Regulations Governing their Manufacture and Sale in European Countries." During the coming year IAFMM will consider participation in the Freedom from Hunger Campaign and the World Food Congress in 1963. It endorsed and welcomed the objects of the Campaign and the Congress.

A total of 13 national associations and 12 individual companies (in Denmark, Sweden, and the United States) belong to the IAFMM. Observers present were from the Argentine, Chile, Japan, the Fishmeal Exporters Organization (FEO), FAO, the U. S. Bureau of Commercial Fisheries, and the United States Embassy, Copenhagen. More than half of the United States companies belonging to IAFMM were represented.

A summary of the more important matters discussed in the General and Scientific Committee sessions follows.

Meeting with Brokers, Agents and Importers: An FEO member initiated the discussion by giving world figures for production of fish meal as 2,550,000 metric tons in 1961 and 2,700,000 tons in 1962 with production and demand about in balance. FEO quotas for 1963 were stated to be the same as the physical exports in 1962.

On promotional problems it was deemed helpful to summarize and circulate what had been done in various countries, and brokers, agents, and importers were asked to submit suggestions for promotion in their countries to IAFMM and FEO for consideration.

Promotion of Increased Usage of Fish Meal: FEO had decided to finance the employment of one or two experts, but was having difficulty finding the right man.

There was no urgent need for an advanced brochure on fish meal usage, but a Norwegian scientist and a British scientist were preparing a "Summary of Past Research on the Use of Fish Meal in Poultry Nutrition," to be ready by March 1, 1963.

Feeding Trials: There is a more urgent need for further analytical work on fish meal than for further feeding trials with computed rations. It is also important to be able to distinguish a good meal from a poor one and to control the quality of the meal used in trials. Some compounders deliberately discount part of the nutrient content of fish meal on the basis of incomplete availability, but make no such deduction for soybean meal. An example is the methionine content of menhaden meal.

Analytical Methods: Discussion centered on fat determination and pepsin digestibility. For the former a strong case was made for limiting it to fat extractable with hexane or ether, and discarding methods for total fat including the badly oxidized fat. The practical significance of the latter is uncertain, and some further studies on it are in progress.

Pepsin digestibility is plagued by extreme differences in technique in different countries and the results do not correlate satisfactorily with protein quality. It would be better to abandon this test in favor of the available lysine test. However, no single amino acid is an infallible index for all others and a routine method for available methionine would be particularly helpful.

Antioxidants: There was considerable discussion as to whether oxidation of the oil in meal should be promoted, rather than hindered by addition of an antioxidant. In South Africa deliberate oxidation by heat curing is advocated to prevent later spontaneous heating. This is claimed not to reduce the nutritional value of the protein but others were concerned about oxidation products which can react with lysine and lower its availability. It was reported that contrary to earlier belief the phospholipids in fish meal do not oxidize as readily as the true fat. Solubles added to meal reduce the extent of damage if the meal is overheated. This may be because certain constituents of the solubles reinforce the action of natural antioxidants in the meal. Retention of meal for a somewhat longer time in the drier re-

International (Contd.):

duces the extent of any later spontaneous heating.

Fish Oils: Much work is going on in the United States on the use of menhaden oil in poultry nutrition. Much of it is confidential, being done by individual companies. High quality of the oil used is absolutely vital, but with good oil part or all of the fat added to the ration can be replaced by fish oil. On a calorie basis fish oil is superior to tallow and similar fatty materials now used and with broilers there is a growth response as a bonus. This feedingstuff outlet is far more important potentially than the outlet for hydrogenated fats in human use. In another direction, products prepared from fish oil can be used to alter the rumen metabolism in dairy cows to give a higher milk yield at the same food consumption. The characteristic of such foods as eggs and milk can be favorably altered by judicious use of fish oils and products made from fish oils. The unique chemical character of fish oils should be regarded as an asset rather than a disadvantage.

Fish Protein Concentrate: The Conference was fully informed of the latest developments in the United States, including distribution of a newly-issued series of leaflets issued by the U. S. Bureau of Commercial Fisheries.

The FAO observer also reported to the meeting on a large-scale pilot scheme for feeding fish protein concentrate which had been requested by the Peruvian Government and which should commence soon. Some of the initial supplies would be made available from South Africa and Chile. The Peruvian fish meal manufacturers were assisting financially and were also developing a suitable product.

Next Conference and Meetings: The IAFMM was invited to hold its Fourth Annual Conference in Lima, Peru, by the Peruvian member. The invitation will be considered at the next Executive Council Meeting. At previous Conferences there has been some doubt about meeting in either Peru or South Africa because of the travel involved for most members. Executive Council and Scientific Committee meeting dates were left to be established by the executive

officers and Director. (Regional Fisheries Attache for Europe, United States Embassy, October 24, 1962.)

Note: See Commercial Fisheries Review, September 1962 p. 56, April 1962 p. 37.

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION

RESULTS AND RECOMMENDATIONS OF SECOND SESSION:

The International Cooperative Investigation of the Tropical Atlantic (ICITA) was approved by the Intergovernmental Oceanographic Commission (IOC) at its second session held in Paris, September 20-28, 1962. Also approved was the participation in IOC meetings of any research organization, such as the International North Pacific Fisheries Commission.

One of the resolutions passed at the meeting was the recommendation that fisheries work be considered a part of the International Indian Ocean Expedition.

Note: See Commercial Fisheries Review, November 1962 p. 58.

INDO-PACIFIC FISHERIES COUNCIL

TENTH SESSION HELD IN SEOUL:

The Tenth Session of the Indo-Pacific Fisheries Council was held in Seoul, Korea, October 10-25, 1962. Representatives from 14 of the 17 member countries attended, including a United States delegate from the Bureau of Commercial Fisheries.

The Tenth Session was devoted to discussions on improvements in the fishery industries, and included both marketing and biological aspects.

The Koreans were especially interested in this conference from a technical point of view as their fishing industry holds a good potential for increasing the country's exports. Broadening the scope of their fishery activities, and participation in international conferences on the fisheries has been of particular interest to the Koreans.

The functions of the Indo-Pacific Fisheries Council are: (1) to assemble and disseminate technical information on aquatic resources, (2) to encourage and coordinate research along those lines, and (3) to recommend development programs, as they become necessary, to member governments. (Bi-weekly Economic Review No. 21, October 6-19, 1962.)

International (Contd.):

FISH MEAL

**WORLD PRODUCTION,
AUGUST 1962:**

According to preliminary data from the International Association of Fish Meal Manufacturers, world production of fish meal in August 1962 amounted to about 178,151 metric tons, an increase of 10.4 percent over world production in August 1961.

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

World Fish Meal Production by Countries, August 1962			
Country	August		Jan.-Aug.
	1962	1961	1962
..... (Metric Tons)			
Canada	3,420	4,378	52,613
Denmark	10,365	9,066	60,935
France	1,100	1,100	8,800
German Federal Republic	6,922	6,727	50,239
Netherlands	1/	700	1/2,400
Spain	1,954	1,849	17,783
Sweden	253	329	2,759
United Kingdom	6,544	6,503	51,479
United States	35,336	52,191	186,771
Angola	1/	5,125	1/15,657
Iceland	29,155	11,532	80,579
Norway	18,726	10,626	85,904
Peru	52,716	38,319	662,874
South Africa (including South-West Africa)	11,660	12,900	191,976
Total	178,151	161,345	1,470,769

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

The increase in world fish meal production this August was due mainly to more output in Peru (up 37.6 percent), Iceland (up 152.8 percent), Norway (up 76.2 percent), and Denmark (up 14.3 percent). This year through August, Peru had increased landings of anchoveta, Iceland and Norway had record landings of summer herring, and Denmark's landings of industrial fish were up. The increase was offset partly by a drop of 32.3 percent in fish meal production in the United States. The menhaden catch in the United States in August 1962 was down sharply in the New England, Middle Atlantic, and Gulf States.

Peru accounted for 29.6 percent of world fish meal production (for countries listed) in August 1962, followed by the United States with 19.8 percent, and Iceland with 16.4 percent.

During the first eight months of 1962, Peru accounted for 45.1 percent of total fish meal production, followed by South Africa with 13.1 percent, and the United States with 12.7 percent.



Argentine Republic

**JOINT JAPANESE-ARGENTINE
TUNA FISHING VENTURE:**

A Japanese company late in August 1962 was reported planning to dispatch its

tuna vessel Eikyo Maru (270 tons) to fish tuna jointly with a local firm in Argentina. The plan hinged on obtaining permission from the local government and completion of necessary arrangements. The application filed by the Japanese firm was approved by the Japanese Overseas Investment Liaison Council. The Eikyo Maru's departure was expected at the end of August or the first part of September 1962. (Suisan Tsushin, August 25, 1962.)



Australia

**WESTERN AUSTRALIA BEGINS
EXPORT OF SHRIMP:**

An initial shipment of 8,000 pounds of "tiger" shrimp from Western Australia's new Shark Bay shrimp fishery has been consigned to the United States. The shrimp were cooked and packed at sea. They averaged 7 inches in length. Shrimp from Shark Bay are counting 15 to 16 (heads-off) to the pound. The "tiger" shrimp will also be exported to France as "prawns."

The new Shark Bay shrimp fishery is based at Carnarvon. No local fishing vessels will be allowed to fish in the area without the approval of the Fisheries Department because the Government wishes to avoid overfishing. The Western Australian Government has stated that shrimp trawlers from other Australian States will not be allowed to fish in Shark Bay unless the vessels are purchased by or chartered to approved fishermen. The statement was made after a Queensland seafood processor said that some 50 trawlers might be sent from Sydney to Western Australia.

The shrimp industry on the east coast of Australia is well developed and employs 300 boats. The possibility that the shrimp potential in waters off the West Coast may equal that of the East Coast has stirred considerable interest.

A Tasmanian fisherman recently returned from Japan with a description of Japanese shrimp fishing methods in the East China Sea. He said the Japanese have equipment which tells fishermen the exact depth at which a shrimp net is fishing and just how the net mouth is open.

Australian shrimp fishermen are seeking tariff protection from shrimp meat imported

Australia (Contd.):

from India, China, and Japan. (The Fishing News, September 7, 1962.)

* * * * *

FISHERIES RESEARCH, DEVELOPMENT, AND ADMINISTRATION DISCUSSED:

A series of proposals on fisheries research, development, and administration were discussed at a meeting of the Australian Fisheries Council in October 1962. Attending the meeting were the six State Ministers responsible for fisheries, and the Commonwealth Ministers for Territories and Primary Industry. The two remaining members (the Minister for Trade, and the Minister for the Commonwealth Industrial and Scientific Research Organization) of the Council were not in attendance.

The meeting discussed the necessity for uniform regulations for the management of fisheries, with special attention given to the spiny lobster or crayfish industry of the southeastern coast. This proposal was referred for study to a special meeting in the near future of representatives of the states of New South Wales, Victoria, Tasmania, and South Australia, the Commonwealth Scientific and Industrial Research Organization, and the Department of Primary Industry.

The Ministers agreed to continue training courses for fisheries field officers, and to provide additional information on the fishing industry essential for efficient administration and research. It was also agreed to request the Department of Primary Industry and the Commonwealth Scientific and Industrial Research Organization to do research on the problems of handling, transportation, storage, and processing of fish and to investigate the requirements for fishing gear in Australia. The meeting also agreed to take action against noxious fish, especially the European carp.

The Minister for Primary Industry advised the meeting that funds would be provided to finance an earlier proposal by the Ministers to sponsor a visit to Australia by an expert on fishing boat design, to consult with the industry in all states and New Guinea.

In the opening address, the Chairman of the conference, the Minister for Primary

Industry, reviewed highlights of Australia's fisheries production in fiscal year 1961/62.

Spiny Lobster: Production reached 27.9 million pounds, only a small increase over 1960/61. Of the total fisheries exports for the year, 96 percent by value was spiny lobster, of which the great proportion was sent to the United States. There has been little change in spiny lobster production in the last three years.

Tuna: The Australian catch in 1961/62 totaled 5,457 metric tons, a new record and an increase of 12 percent over the previous year. Experimental tuna fishing off the southwest Australian coast failed to find tuna in commercial quantities. The domestic industry was further protected in 1961 from tuna imports, mainly from Japan, by a tariff increase for the most favored nation category. Despite the increase; however, imports of canned tuna have continued to rise.

Salmon-Trout: A record canned pack of 5.8 million pounds in 1961/62 showed a considerable improvement over the previous year.

Oysters: Production increased by nine percent in 1960/61 for a total of over 14 million pounds.

Imports of fishery products were still high in 1961/62 at £A8.5 million, but were below the level of the previous year of £A9.7 million. This reduction occurred primarily in canned products and was only partially offset by a small increase in frozen fish imports. (United States Embassy, Canberra, October 12, 1962.)

* * * * *

TAGGING RESULTS IN AUSTRALIAN WATERS:

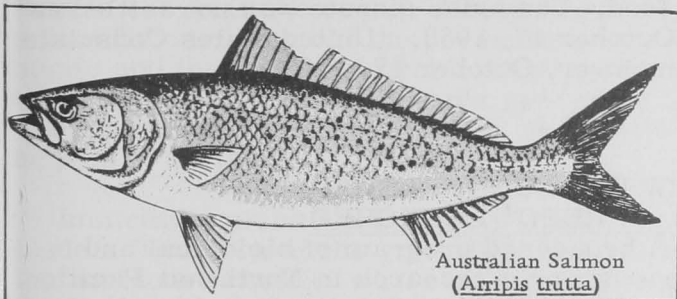
Twelve different tags or marks have been applied to 183,113 aquatic animals (whales, fish, crustacea, and shellfish) in Australian waters. Recoveries as of mid-1962 total 9,918 (5.5 percent). This is stated by the CSIRO Division of Fisheries and Oceanography.

Bluefin Tuna: The information on movements is not clear-cut, except that one fish was recaptured in South Australian waters some hundreds of miles from the tagging place off southern New South Wales, indicating that the southern and eastern stocks may be one.

Australian (Contd.):

Sea Mullet: The sea mullet program has been very successful in showing the pattern both of short-term local movements and longer-term migration paths. Valuable data on growth rates have been obtained. The Queensland study shows movements at the northern end of the mullet's range consistent with the pattern further south indicating that the adult mullet do not return southwards. There were no returns from the South Australian study, so no proof of either independence or homogeneity with eastern or western stocks has been obtained.

Australian Salmon (Trout): The tagging program has shown conclusively that the two stocks or subspecies mingle in the nursery areas of Bass Strait, but that, as maturity



nears, the western subspecies moves westward along the coast of South Australia to Western Australia where it spawns, whereas the eastern subspecies remains in the vicinity of the eastern end of Bass Strait and spawns off southeastern Australia.

School Shark: The pattern of movements of young and adult sharks in the southeastern Australian waters has been demonstrated. The school sharks of South Australian, Victorian, Tasmanian, and New South Wales waters form one intermingling stock, with free interchange across the range of distribution. It is not known to what extent there is continuity with the school sharks of southwestern Australia, because no fishery for the species exists in that area.

Western Spiny Lobster: Punch marking of western spiny lobsters proved beyond any doubt the fact believed by scientists on anatomical grounds, but disbelieved by a majority of fishermen, that the white spiny lobster are a growth phase of the normal red type. Continuous fishing tests to estimate the intensity of fishing have been carried out suc-

cessfully and data on short- and long-term movements have accumulated.



Two specimens of Australian spiny lobster.

Humpback Whales: Whale marking has shown that some degree of intermingling takes place between two humpback populations previously considered to be distinct. (Australian Fisheries Newsletter, September 1962.)



Brazil

NEW SHRIMP PROCESSING AND EXPORTING COMPANY:

The establishment of a shrimp processing and export company in Paranagua on the southeastern coast of Brazil is being considered by a Brazilian group. The Brazilian group is seeking financing for the proposed new shrimp company, according to Curitiba newspaper reports of September 4, 1962. The Governor of Parana State, Brazil, has been informed of the technical plans for the new shrimp company. (United States Consulate, Curitiba, October 5, 1962.)



Canada

FROZEN FISH TRADE MISSION TO EUROPE:

Seven members of the Canadian frozen fish industry left Ottawa on September 28, 1962, on a 5-week Frozen Fish Trade Mission to Europe. The main purpose of the mission is to examine in detail the European market for frozen fishery products. It is also hoped that the mission will focus the attention of European buyers on Canada as a dependable supplier of top-quality frozen fish, according to a press release by the Canadian Minister of Trade and Commerce of September 26, 1962. With the cooperation of Canadian Trade Commissioners in London, Paris, Hamburg, and Rome, members of the mission will visit leading importers of fishery products and government fisheries officers in important market and producing centers. The members of the mission will also see processing methods now used by frozen fish plants in Europe. The salt-fish industry will be examined briefly by visits to salt-fish plants in France and salt-fish importers in Italy.

The mission includes frozen fish industry representatives from the Provinces of Newfoundland, Nova Scotia, Quebec, and British Columbia, as well as a representative of the Canadian Labor Congress. The mission will be accompanied by a member of the Economics Service of the Canadian Department of Fisheries, and the Chief of the Fisheries Division in the Agriculture and Fisheries Branch, Department of Trade and Commerce, Ottawa.

Expanding European markets are open to Canadian frozen fish processors, the Minister of Trade and Commerce pointed out in announcing the mission. The United Kingdom removed import restrictions on fresh and frozen fish late in 1959. Canadian sales of frozen cod fillets and blocks to the United Kingdom jumped from 1.1 million pounds in 1960 to nearly 7 million pounds in 1961 and may set new records this year. The sale of frozen foods has greatly increased in other European countries and importers have shown considerable interest in Canadian quality fish products. (United States Embassy, Ottawa, October 1, 1962.)

* * * * *

PRICE DISAGREEMENT TIES UP BRITISH COLUMBIA HERRING FLEET:

About 80 British Columbia herring fishing vessels tied up on October 16, 1962, when some 640 Vancouver fishermen were idled because of disagreement on prices for the new herring fishing season. The fishermen want an ex-vessel price of \$16.00 a short ton for seine-caught herring going into reduction and \$20.00 a ton (or 1 cent a pound) for herring sold as food fish (for canning, salting, and other purposes). Also \$30.43 a ton for trawl-caught herring for reduction purposes but to include all costs of fuel, vessel, and net shares.

The British Columbia Fisheries Association has offered the same prices paid the herring fishermen last season--\$10.40 a ton for reduction herring, and \$16.00 for herring used as food. The price dispute was not settled as of October 17, 1962. (United States Consulate, Vancouver, October 17, 1962.)

* * * * *

NEW RESEARCH VESSEL "G. B. REED" LAUNCHED:

A broadened program of biological and oceanographic research in Northeast Pacific waters was envisaged at the launching in the summer of 1962 of the G. B. Reed, Canada's first large fisheries research vessel on the Pacific coast. The G. B. Reed is a sister-ship to the A. T. Cameron, in service on the Northwest Atlantic. Both vessels are operated by the Fisheries Research Board of Canada.

While smaller vessels have for several years provided yeoman service to the Board's biological station and oceanographic unit at Nanaimo, B. C., this service has been limited by the vessels' range, accommodations, and scientific facilities. The G. B. Reed will give vastly improved conditions. She will have a cruising range of 8,500 miles; accommodations for nine scientists; and five laboratories furnished with the latest in scientific paraphernalia.

The Director of the Nanaimo Biological Station at the launching ceremony said the construction of the new research vessel was a sign of the times. "All over the world nations are looking more and more to the sea for the food supplies of the future. Canada

Canada (Contd.):

is no exception. We have a very real stake in the resources off our coasts . . . there can be no doubt of our long-term interest in these resources, and no doubt of our increasing use of them."

Canadian fisheries research in the Pacific has expanded seaward particularly since 1953 when Canada became a member of the International North Pacific Fisheries Commission. Biological and oceanographic investigations on the high seas have produced "exciting new knowledge of where our salmon are" and have turned the northeast Pacific from one of the least known to one of the best known oceans in the world, said the Director. ". . . But we have only scratched the surface. There is still much more that is mysterious than is known in the ocean. Not only our own scientific curiosity but the pressure of economic and international problems urges us to turn ignorance of the ocean's resources into useful knowledge. The G. B. Reed will help us to do this."

Immediate plans for the G. B. Reed include a first look at the groundfish stocks in the northeast Pacific, where an international trawl fishery seems imminent. Future projects in which the new research vessel will figure may include studies of high-seas distribution of salmon stocks and ocean productivity. The vessel will also be used in exploratory fishing operations which may reveal new fisheries resources capable of supporting commercial operations.

The G. B. Reed has an over-all length of 177 feet, a breadth of 32 feet, and a loaded draft of 12 feet 10 inches. Her design is similar to east coast commercial trawlers whose sturdy, dependable characteristics under virtually all weather conditions are favorably known. In place of the usual large fish hold, the G. B. Reed is equipped with laboratories and electronic equipment. She also has special fishing gear, winches, and rigging enabling her to carry out a wide variety of exploratory fishing operations. She will carry a complement of 36, including crew and scientific personnel. Her hull is constructed of stiffened steel while the superstructure is aluminum. (Trade News, September 1962.)

Note: See Commercial Fisheries Review, February 1962 p. 62.

* * * * *

PACIFIC SALMON TAGGING:

Field operations by the four vessels chartered by the Fisheries Research Board of Canada for tagging Pacific salmon on the high seas were concluded by August 1962. Between early April and late July the vessels, using Japanese long-line gear, caught 19,500 salmon, of which 17,500 were tagged and released. All species of Pacific salmon, plus steelheads, are represented in the figures. Through August and early September 1962 more than 300 tags had been returned to the Research Board's Biological Station at Nanaimo, B.C., from localities extending from the Columbia River to Western Alaska.

Very small hooks are used to catch the fish for tagging, so that they can be released in good condition. The amount of information that can be obtained from this large program and especially the knowledge of the whereabouts of the major British Columbia salmon stocks in the ocean will depend to a great extent on the cooperation of all those who find tags. Fishermen, shoreworkers, and others are invited and urged to play their part in this important program by turning in all tags promptly to the Research Board's Biological Station at Nanaimo, to fisheries officers, or to cannery bookkeepers. (Trade News, September 1962, Canada's Department of Fisheries.)



Ceylon

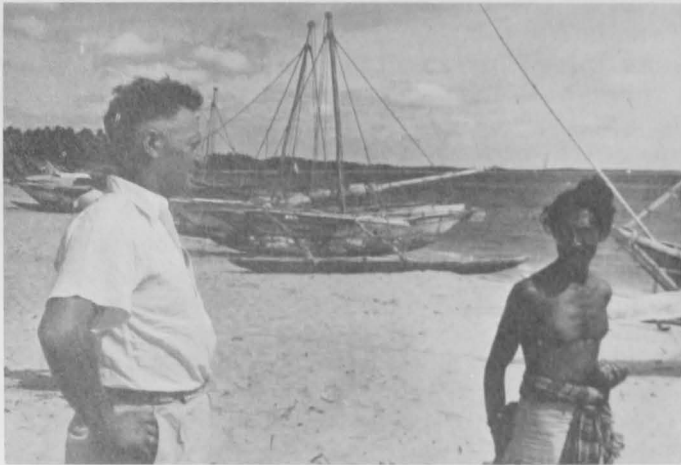
FISHERY TRENDS AND FOREIGN INVESTMENT POSSIBILITIES:

There may be opportunities for carefully planned investments by United States firms in Ceylon's changing fishing industry. Such investments would involve some unknown factors which would need careful examination. Ceylon may have abundant fishery resources, but they are largely unexplored. In 1960, Ceylonese landings totaled only 48,222 metric tons, while imports of fishery products amounted to 132,341 tons. The policy of the Government of Ceylon in regard to nationalization of businesses and repatriation of investments and profits is not clearly known and would need careful study by potential investors.

The Government of Ceylon is interested in foreign investments that would bring modern fishing equipment and technical skill to Ceylon. The Government hopes the Ceylonese can learn modern fishing techniques through participation in joint fishing ventures with foreign firms. The Government is aware of the need for regulations which will permit business interests to operate without undue restrictions. Some Ceylonese groups have shown an interest in joining with American firms to carry on fishery operations.

The Director of Ceylon's Fisheries Department has stated that his department will assist potential foreign investors in investigating fishery opportunities in Ceylon. The present Government budget includes a request for a 70-foot fishery

Ceylon (Contd.):



FAO fishery expert back in 1955 views some of the outriggers still used by fishermen on Ceylon's east coast.

research vessel. It is estimated that the vessel would cost Rs. 500,000 (US\$105,130). It would be capable of carrying out research and exploratory fishing in waters up to 400 miles from Ceylon. The Fisheries Department has been limited in the past by a shortage of research equipment.

A shortage of harbors has handicapped fisheries development in Ceylon. The Port Commission of Ceylon is building a harbor at Galle that will have 1,200 feet of alongside dock space for fishing vessels needing less than 20 feet of water. According to news reports, the Government plans to build 16 other new harbors. The minimum construction time for the 16 new harbors is estimated at from 2 to 3 years.

Ceylon has sought foreign aid in developing Galle harbor as a base for a tuna long-line fishing venture. It was hoped that a foreign investor would develop shore facilities at Galle for processing fish, furnish vessels, train the Ceylonese in modern fishing techniques, and eventually transfer all interest in the venture to the Ceylonese. The response to the Galle proposal is not known.

Ceylon has cold-storage facilities at Mutwal where two trawlers are based. According to a recent Government report, the cold-storage facilities at Mutwal must be expanded if additional trawlers are to be accommodated. Negotiations were reported to be taking place with Poland and Yugoslavia for the purchase of five trawlers, but it was later reported that the purchase may be limited to one under Yugoslav credit.

A United States company that wishes to import frozen spiny lobster tails from Ceylon has been negotiating a limited joint venture with a private Ceylonese group. The abundance of spiny lobsters in Ceylon's coastal waters is the subject of conflicting reports.

The joint firm formed by Japanese and Ceylonese interests in 1961 is now engaging in tuna fishing. The tuna is sold in Ceylon as fresh fish, but the company is completing its own freezing plant and will later undertake canning. The Japanese also fish independently in waters accessible to Ceylon and take the fish to Japan for processing and export.

In May 1962, a representative of a British firm was in Ceylon surveying the opportunities for bringing vessels and equipment to fish Ceylonese waters. He was quoted in the press as being impressed, but nothing further had developed as of mid-September 1962.

Ceylon's Fisheries Department is heavily involved in administering the mechanized vessel plan which is now in its

fourth year of operation. The United States Agency for International Development (AID) has provided Rs. 2,300,000 (US\$483,600) in local currency to support the plan. Under the plan, the Government finances the building and equipping of small 2-ton mechanized boats suitable for fishing the nearby waters. A total of 1,199 had been built by September 1962 at an average cost of Rs. 17,500 (US\$3,680) per boat including gear. The range of operation is considerably more than that of the native outrigger nonmechanized craft. In addition, there is a plan for providing outboard motors for 300 traditional craft per year.

While fish catches have increased, the increase has not met expectations and there have been many problems of boat maintenance and operation. Many borrowers have not carried through with their loan agreement. Some consideration has been given to reducing the rate of repayment. A factor in the rate of repayment is that the fisherman considers the loan in the nature of a subsidy from the Government. The rate of recovery reported for loans made in 1958-59 is 31.6 percent. The record for succeeding years ranges from 16 to 18 percent. Present plans call for more vigorous efforts to inspect vessel operations and supervise loan collections. (United States Embassy, Colombia, August 24 and September 17, 1962.)



Chile

FISHERIES TRENDS, SEPTEMBER 1962:

Fish Meal Industry Continues to Expand: Corporación de Fomento de la Producción de Chile (CORFO) is studying a proposal by a foreign concern to invest up to US\$5 million in a new fish meal plant at Arica.



Crew of Chilean fishing trawler lowering their net off of Valparaíso.

In September 1962, two new fish meal plants began operating on an experimental basis in northern Chile. They are expected to start full production upon completion of machinery tests and clearance by national

Chile (Contd.):

health authorities. One of the new plants is located in Iquique and reportedly represents an investment of about US\$1 million. With full production it should be able to process 400 metric tons of anchovies daily. Raw material will be supplied by a fleet of eight fishing vessels of 110-ton capacity. Two of the vessels were due to arrive in Iquique during September.

The other new plant is located in Pisagua. It represents a joint venture of Chilean and Norwegian capital reportedly amounting to more than US\$1 million. The plant will process fish meal and will freeze fish products for sale in local and foreign markets. It will have an average operating capacity of 60 tons of raw material per hour. Raw material is presently being supplied by the Norwegian fishing vessel Senior (400 tons). Additional fishing vessels are due to arrive from Norway in 1963.

CORFO announced in late August 1962 the approval of new loans valued at over US\$2,135,400 for the installation of other new fish meal plants in Iquique and Arica and the purchase of a number of 100-ton fishing vessels to supply the plants. The loans will include United States dollar credits of \$240,000 and the balance will be extended in Chilean currency.

Proposal to Resettle Some Italian Fishermen in Chile: During September 1962, representatives of the Food and Agriculture Organization (FAO) visited Northern Chile to study the possibility of settling Italian fishermen at ports in the area. There has been, as yet, little reaction to the proposal. The FAO representatives stated that the Italian fishermen would not displace Chileans and would not engage in any business except fishing. (United States Consulate, Antofagasta, September 28, 1962.)



Denmark

FISH FILLETS AND BLOCKS AND FISHERY INDUSTRIAL PRODUCTS EXPORTS, JANUARY-AUGUST 1962:

Denmark's exports of fresh and frozen fillets and blocks during the first eight months of this year were 17.1 percent greater than in the same period of 1961, mainly because of an increase of 132.8 percent in exports of herring fillets. Exports of flounder and sole fillets increased 14.6 percent,

but exports of cod and related species declined 7.5 percent. During the first eight months of this year exports to the United States of fresh and frozen fillets and blocks of about 9.6 million pounds (mostly cod and related species) were up from the exports of about 9.2 million pounds in the same period of 1961.

Denmark's exports of fresh and frozen fish fillets and blocks during August 1962 were 14.8 percent above exports in the same month in 1961. Of the total exports, about 0.5 million pounds (mostly cod and related species) were shipped to the United States in August 1962 as against 0.3 million pounds in the same month of 1961. The leading buyers of frozen fillets in August 1962 were the United Kingdom and the Federal Republic of Germany.

Product	August		Jan.-Aug.	
	1962	1961	1962	1961
 (1,000 Lbs.)			
Fillets and Blocks:				
Cod and related species ..	1,451	1,597	22,577	24,396
Flounder and sole	3,330	2,761	17,898	15,612
Herring	1,891	1,421	13,942	5,988
Other	30	59	477	887
Total	6,702	5,838	54,894	46,883
 (Short Tons)			
Industrial Products:				
Fish meal, fish solubles, and similar products ...	9,524	6,750	48,655	27,618

^{1/}Shipments from the Faroe Islands and Greenland direct to foreign countries not included.

Denmark's exports of fish meal, fish solubles, and similar products in January-August 1962 were 76.2 percent greater than in the same period a year earlier. Exports to the United States during the same period were 110 tons in 1962 as against 28 tons in 1961.

During August 1962, Denmark's exports of fish meal, fish solubles, and similar products were 41.1 percent above the amount shipped out in the same month of 1961. The principal buyers were the United Kingdom and West Germany. Only 110 tons were shipped to the United States.

* * * * *

U. S. MAY GET FILLETS FORMERLY SOLD TO EAST GERMANY:

Denmark's annual sale of about 2.2 million pounds of frozen cod fillets to East Germany will not occur this winter. The Danish delegation returning from negotiations in Leipzig late in September 1962, reported that the East Germans refused to pay any increase over the prices in the previous contracts. These prices will not cover their costs, according to the Danes.

Since Denmark has a good market for fillets in the United States and the United Kingdom, it is probable the quantity formerly going to East Germany will be diverted to those markets. Offsetting the loss of the East German market is the announcement that, during the winter, it is expected that the Blue Peter line, a German shipping firm, will maintain

Denmark (Contd.):

monthly refrigerated ship transport from Danish ports to the United States. Its vessels will carry poultry from the United States to Germany and frozen fish westbound. (European Regional Fisheries Attache, United States Embassy, Copenhagen, September 26, 1962.)

* * * * *

FISHERY EXPORTS,
JANUARY-AUGUST 1962:

Denmark's total exports of fishery products in the first eight months of 1962 were 22 percent greater in value than in the same period in 1961, the record year for exports. Similarly, exports to the United States were up about 20 percent in value. (European Regional Fisheries Attache, United States Embassy, Copenhagen, September 26, 1962.)

Danish Exports of Fishery Products, January-August 1962 and 1961						
Item	1962			1961		
	Qty.	Value		Qty.	Value	
	Metric Tons	Million Kr.	US\$ 1,000	Metric Tons	Million Kr.	US\$ 1,000
Total exports	190,100	356.6	51,707	167,500	291.9	42,326
Exports to U.S.	6,700	27.7	4,017	5,800	23.0	3,335

Note: Values converted at rate of one Danish kroner equals US\$0.145.

* * * * *

FISH-REDUCTION PLANT
ODOR CONTROL STUDIED:

Because of steadily increasing complaints to health commissions throughout Denmark and a request from the Ministry of Fisheries, the Akademiet for de Tekniske Videnskaber (The Academy for the Technical Sciences) in Copenhagen established a Fiskelugtvalg (Fish Odor Committee) in 1956 to investigate the odor problems arising during the manufacture of fish meal and fish oil, the United States Regional Fisheries Attache in Europe reports. The Committee's objective was to obtain information on odor elimination in Denmark and foreign countries and to conduct research to the degree that proposals could be made for effective odor control. The Committee's work was completed earlier this year in the form of a report and the construction of a deodorizing installation in a small Danish fish-reduction plant which operates satisfactorily by burning the odor-containing gases. Also initiated was further experimentation, still under way, in Denmark's largest fish-reduction plant, located in Esbjerg.

The Committee's report, published by the Academy, is entitled *Bekaempelse af Lugtplage* (Fight against Odor Problems). It is a 167-page, illustrated, mimeographed report in Danish, containing 13 chapters and a list of 81 references on odors and odor elimination. The various chapters discuss such matters as: physiology of the sense of smell; fish odors; research on properties of fish odors; fish meal manufacture and sources of odors; diffusion of odors; deodorizing methods; deodorizing by burning; experiences with an experimental odor-burning installation; subjective examination of odors in plant area; deodorizing of raw material storage bins; design of odor-burning and deodorizing installations; absorption of fish odors.

In a summary, the Committee estimated that, in a plant, 60-80 percent of the odors came from the drying operation, 10-20 percent from the cooking operation, the same percent-

age from internal transportation of the raw material, and 2-5 percent from particles of dried meal in the air. Burning the odor-containing gases from plant operations appeared to be the cheapest solution to the odor problem. The Committee also stressed the need for controlling odors during the unloading and storage of raw material, suggesting future research in this field. Raising the quality of the raw material to that of fish for human consumption was mentioned as the most effective control method but recognized as not currently possible. Greater use of ice and other preservatives was recommended. It was stated that deodorizing methods capable of handling very large quantities of gases should be developed, and absorption in sodium hypochlorite offered significant possibilities. Odor control in the recently-installed spray-drying plants was reported to be the subject of a joint study by the Ministry of Fisheries and Denmark's largest reduction plant in Esbjerg.

Advances in odor suppression in fish meal and oil plants have been made at the large cooperative reduction plant--*Andelssildeoliefabriken*--in Esbjerg since the lengthy report issued earlier this year by the Fish Odor Committee of the Academy for the Technical Sciences, according to an interview with the production manager reported in *Vestkysten*, an Esbjerg daily paper. During work with the experimental installation based on the report, it was found that the bad odors were bound to quite small particles which went out the smoke stack. The new development is the discovery that an oil bath can be added in the closed circuit after the water bath and filtering devices. The odor apparently can be bound completely in the ordinary Diesel oil used in the oil bath. The Diesel oil may be used later for the usual purposes as it is not affected by its use as a cleaning agent. When the Diesel oil is burned, the odor particles disappear completely.

A larger experimental installation is to be constructed by a new Danish company, "Chemical Research Organization" (CRO), which operates entirely on a research basis. The CRO has supplied a newly developed Danish instrument which is one of the first in the world which is able to indicate bad odors. The apparatus was developed by Lava Olsen, an engineer in the Technological Research Laboratory of the Danish Ministry of Fisheries. The apparatus is built on a spiral principle and has been invaluable in the odor-elimination research. (European Regional Fisheries Attache, United States Embassy, Copenhagen, September 24, 1962.)

* * * * *

FISHERY LANDINGS IN DANISH PORTS,
JANUARY-AUGUST 1962:

Landings of fish, crustacea, and mollusks in Danish ports in 1962 were 21 percent ahead of 1961 for the first eight months and seven percent ahead of 1959, the record year for landings. Catches in all the important categories have been as good as, or better

Landings of Fish, Crustacea, and Mollusks in Danish Ports, January-August 1962, 1961, and 1959			
Species	January-August		
	1962	1961	1/1959
	. (1,000 Metric Tons) .		
Plaice, dabs, & flounders	37.9	37.3	28.6
Cod	46.1	48.6	45.5
Herring	199.5	174.5	199.2
Brisling	5.9	5.6	3.6
Crustacea ^{2/}	4.2	3.8	2.9
Other ^{3/}	261.9	188.3	238.7
Total	555.5	458.1	518.5

1/Year of record total catch--667,800 tons.
2/Mostly deep-water shrimp and Norway lobster.
3/Mostly sand eels or launce, sperling, whiting, and other fish for reduction to meal and oil, and for trout and animal food.

Denmark (Contd.):



Danish fisherman standing on a typical live box or float in which live plaice are held for marketing. In 1961 live plaice ex-vessel price was 10.8 cents a pound. Fish shops throughout Denmark carry live plaice.

than, in 1959. (European Regional Fisheries Attache, United States Embassy, Copenhagen, September 26, 1962.)



Fiji Islands

TUNA BASE APPROVED BY JAPANESE GOVERNMENT:

The Japanese Government, on September 3, 1962, approved the establishment of the South Pacific Ocean Fisheries Cooperative Association, which was organized for the purpose of managing the tuna base to be jointly established at Levuka, Fiji Islands, with British interests. The Association, which plans to operate thirty 99-ton medium tuna vessels during the first year of operation, reportedly is seeking a vessel tonnage allocation of 3,000 metric tons for the base and hopes to secure a minimum of 2,000 tons. The Japanese Government was expected to grant the tonnage allocation sometime in October this year. (Japanese periodicals Hokkai Suisan, September 3, Nihon Suisan Shim-bun, September 7, 1962.)

FISHERIES DIVISION TO BE ESTABLISHED:

The Fiji Department of Agriculture plans to establish a fisheries division. It will undertake the study of marine fishing techniques, the regulation and stocking of inland fisheries, the preparation and implementation of fisheries legislation, the study of fish marketing problems, and to a limited extent will carry out fisheries research. (South Pacific Bulletin, July 1962.)



Ghana

ECONOMIC COOPERATION WITH JAPAN:

A Ghanaian firm will charter six trawlers from a Japanese fishing company, according to newspaper reports in Ghana. The purpose of the vessel charter agreement was described as "the development of a deep-sea fishing industry in Ghana." The Ghanaian firm may purchase the vessels if fishing is profitable.

Ghana and Japan signed an economic and technical cooperation agreement on September 24, 1962, in Tokyo, Japan. As an initial undertaking, the Japanese Government is to establish a training center in Ghana and will provide teaching aids, materials, and machinery, as well as technicians and teaching staff. (Editor's note: Although details are lacking, it seems probable that Japanese technical assistance to Ghana will include aid to Ghana's fishing industry.) The agreement calls for the award of grants to enable Ghanaians to study in Japan. The Japanese Government will also send experts to encourage the economic and technical development of Ghana. It is understood that the cooperation agreement is for 5 years. (United States Embassy, Accra, October 9, 1962.)

SIX FISHING VESSELS TO BE PURCHASED FROM JAPAN:

According to an announcement in The Ghanaian Times, Ghana will purchase six fishing vessels from Japan. The announcement was made by Ghana's Minister of Agriculture, following consultations with a delegation of Japanese fishing experts. A two-man delegation was expected to leave for Tokyo to conclude the purchase on behalf of the Ghana Fishing Corporation, the Minister

Ghana (Contd.):

said. (United States Embassy, Accra, October 7, 1962.)

* * * * *

SOVIETS LAND FISH IN GHANA:

The landing at Tema of 500 metric tons of fish from the a Soviet fishing vessel was reported by the local press in September 1962. The consignment was accepted for a Ghana fishing corporation by the Minister of Agriculture, who announced that a second consignment of 2,500 tons was expected. The local representative of the Soviet Foreign Trade Corporation for Foodstuffs said that his organization would supply the Ghana firm with 2,000 tons of fish every month. A fleet of 25 Soviet vessels (including three with refrigeration facilities) were fishing off the west coast of Africa in September 1962, the Soviet official stated.

* * * * *

SOVIETS TO DELIVER FISHING VESSELS:

Three of the ten fishing vessels ordered by Ghana from the Soviet Union under a £1,670,000 (US\$4.7 million) agreement signed on August 26, 1961, will be delivered in 1963. The first, cited as the Pioneer, a trawler of 900 tons deadweight, was launched at the Leninskaya Kuznitsa shipyards in Kiev and is expected to arrive in Ghana in June 1963. The vessel is stated to have a speed of 13 knots, a range of 37 days, and modern navigation and refrigeration equipment. The vessel will be manned by a Soviet crew who will train Ghanaian replacements. Ghana's Minister of Agriculture announced that 80 Ghanaians were expected to leave shortly for the Soviet Union to learn how to operate the new fishing craft, according to the local press. (United States Embassy, Accra, September 25, 1962.)

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

* * * * *

GHANAIAN FISHERMEN TRAINED TO USE PURSE SEINES:

United States fishermen assisted by two British fishermen trained Ghanaian fishermen on the four new seiners purchased from a British shipyard. Fishing is being done in equatorial waters with seines 2,700 feet long and 276 feet deep. Catches ranging up to 135 tons per set have included tuna, sharks,

swordfish, rays, sea turtles, and barracuda. (Fishing News, British fishery periodical, August 24, 1962.)

**Greece**OUTBOARD MOTORS DONATED TO GREEK FISHERMEN:

Ten United States manufactured outboard motors for use in fishing vessels were donated by CARE to Greek fishing cooperatives in two small villages in northern Greece. The motors were distributed among needy fishermen who formerly were able to fish only a short distance away from shore. With engines in their fishing craft, they will now be able to fish up to about three miles offshore.

Representatives of CARE and the United States manufacturer of the outboard motors delivered the equipment to the cooperatives which were selected by the Greek Agricultural Bank and the Director of Fisheries of Greece's Ministry of Industry. (Alieia, Athens, Greece, August 1962.)

**Iceland**FISHERIES TRENDS, LATE SEPTEMBER 1962:

Trade with Communist Bloc Countries: Communist Bloc countries have engaged in barter trade with Iceland and then sold Icelandic barter trade exports to Western European countries for hard currency. The disclosure appeared in the Icelandic independent newspaper, Morgunbladid, of September 22, 1962. Specific examples cited included the sale by Hungary of Icelandic frozen fish in Austria. The newspaper article was part of a series pointing out the disadvantages of barter trade with Communist Bloc countries.

Iceland plans to import a dozen 20-ton motor fishing vessels from the U.S.S.R. The first of the vessels arrived in Iceland on board an Icelandic merchant ship. The vessels will be fitted out with motors of British manufacture. Iceland has obtained fishing vessels from East Germany, but this is the first import of Soviet-made vessels. The Soviet vessels will be subject to clearance for seaworthiness by the Director of the State Ship Inspection Service.

Iceland (Contd.):

Thorlakshofn Harbor Project: The economic importance of developing a harbor at Thorlakshofn on Iceland's south coast has been stressed by leaders inside and outside the Government. But all sorts of delays have plagued the start of such a project. After bitter controversy over which firms should receive the Thorlakshofn harbor contract, the Lighthouses and Harbors Administration early this year made the award jointly to an Icelandic and Danish building firm. Although work was supposed to begin last spring, only preparatory measures had been taken so far. The Central Bank is still negotiating financing with certain New York City banks for all or part of the cost of the \$1,050,000 project. Reportedly the financing will be for 10 years at 6½ percent interest. However, on September 4, 1962, the Central Bank loaned the Harbors Administration 8.6 million kroner (US\$199,700) as a first installment on the project.

Whaling: A total of 483 whales were taken during this year's whaling season by Icelandic whalers, as compared with the catch of 350 whales in 1961. This year's whale catch was surpassed only by the catch of 517 whales in 1957 and 508 whales in 1958. Whalers benefited from good weather this summer. Two whale catcher vessels were bought in Norway this year to replace part of Iceland's fleet of 4 whalers. (United States Embassy, Reykjavik, September 28, 1962.)



Japan

PRICE DROP IN AUGUST 1962 FOR FROZEN TUNA EXPORTS TO U. S.:

The f.o.b. Japan price for frozen tuna exported to the United States started to drop the latter part of July 1962. The Japanese ex-vessel tuna prices also dropped. At about mid-August, the ex-vessel price at Yaizu for yellowfin (20-100 pounds) dropped to US\$271 a metric ton. This was the lowest price in 1962. Compared with the highest price in the recent past, it was nearly \$75 a ton lower.

The following reasons were given for the decline: (a) ship-frozen tuna had increased since the beginning of August; (b) exporters

were selling only fish which they were sure of getting and not as in the past when they were selling futures without adequate stocks; (c) there were no sales negotiations in progress.

When the ex-vessel price dropped to \$276 a ton, Japanese canners began buying. As of mid-August 1962, the ex-vessel price for albacore tuna was still \$376 a ton for good-quality fish. (Suisan Tsushin, August 27, 1962.)

* * * * *

STATUS OF FROZEN YELLOWFIN TUNA EXPORT QUOTA:

As of July 31, 1962, Japanese production of frozen yellowfin tuna for export to the United States was being carried out faster than last year and exceeded 25,000 short tons. The total production quota this year is 35,000 tons. While there were some firms that had used up their entire quota as of the end of July, others still had 90 percent of their quota left unused, according to figures compiled by the Export Frozen Tuna Fisheries Association.

Under the circumstances, considerable opposition is raised against an increase in the quota at this time. Also, the recent slackening of exports to the United States is causing concern whether or not the remaining 10,000 tons will be used. The Association is inclined to postpone consideration of an increase in the quota for the time being.

But it is believed by some that the year's quota of 35,000 tons for frozen yellowfin tuna is inadequate and sooner or later it must be increased. The Association is of the opinion that it probably will be increased in October 1962. (Suisan Keizai Shimbun, September 14, 1962.)

* * * * *

FROZEN TUNA EXPORTS TO U. S. DIRECT FROM JAPAN, APRIL-SEPTEMBER 1962:

According to Export Frozen Tuna Manufacturers Association, exports of frozen tuna from Japanese ports to the United States

Frozen Tuna Exports to U. S. Direct from Japan, April-September 1962		
Species	1962	1961
	. . . (Short Tons) . . .	
Albacore	10, 227	9, 138
Yellowfin	27, 258	18, 424

Japan (Contd.):

from April through September 1962 were substantially higher than during the same period a year earlier.

The exports were reported to have slowed down sharply since mid-August this year.

Note: The Japanese fiscal year begins April 1.

* * * * *

FROZEN TUNA EXPORTS TO ITALY:

Japanese exports of frozen tuna to Italy reportedly increased since Italy enlarged her frozen tuna import quota from 25,000 metric tons to 40,000 metric tons. Of Italy's total imports of 25,000 metric tons of frozen tuna as of early October 1962, imports from Japan totaled 19,000 metric tons (17,500 tons of Atlantic-caught tuna and 1,500 tons delivered from Japan proper). Price paid by Italy was reported at \$370 per metric ton, c.i.f., which is \$90 higher than the price offered during the same period in 1961.

The Japan Export Frozen Tuna Producers Association foresees a further increase in tuna exports to Italy. Direct exports from Japan proper are also increasing, due to the recent decline in frozen tuna demand in the United States and the lower freight rate now charged by non-scheduled freighters for shipments to Italy. (Nihon Suisan Shimbu, October 12, 1962.)

* * * * *

EXPORTS OF FROZEN TUNA TO THE UNITED STATES, 1961:

Table 1 - Japanese Licensed Exports of Frozen Tuna Transhipped to the United States, 1960-61

Species	1961		1960	
	Quantity	Value	Quantity	Value
	Metric Tons	US\$ 1,000	Metric Tons	US\$ 1,000
Albacore	10,357	3,151.3	8,923	2,463.0
Yellowfin	18,633	4,213.3	21,193	4,890.0
Other	2,464	484.8	-	-
Total	31,454	7,849.4	30,116	7,353.0

Table 2 - Japanese Licensed Exports of Frozen Tuna to the United States from Japanese Ports by Species and Type, 1961

Type of Products	Albacore		Yellowfin		Big-Eyed		Bluefin		Skipjack		Total all Species	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	Metric Tons	US\$ 1,000	Metric Tons	US\$ 1,000	Metric Tons	US\$ 1,000	Metric Tons	US\$ 1,000	Metric Tons	US\$ 1,000	Metric Tons	US\$ 1,000
Whole Fish	22,250	7,443.3	-	-	200	45.4	-	-	555	121.4	23,005	7,610.1
Processed Fish:												
Filletts	1	0.7	3,289	1,180.5	409	155.1	30	8.0	-	-	3,729	1,344.3
Gilled and gutted	-	-	24,799	6,897.1	-	-	-	-	-	-	24,799	6,897.1
Loins	1,398	1,057.1	2,606	1,663.5	85	48.3	6	3.8	1	0.6	4,096	2,773.3
Other	10	4.2	551	93.8	24	5.4	-	-	-	-	585	103.4
Total	23,659	8,505.3	31,245	9,834.9	718	254.2	36	11.8	556	122.0	56,214	18,728.2

Japanese licensed exports of frozen tuna products to the United States direct from Japanese ports amounted to 56,214 metric tons and included whole fish, gilled and gutted fish, fillets, loins, and other products.

* * * * *

EXPORTS OF FROZEN TUNA AND CANNED TUNA IN BRINE, FY 1961:

Shipments to the United States accounted for 66.0 percent of the quantity and 69.4 percent of the value of Japanese frozen tuna approved for export in fiscal year 1961 (April 1961-March 1962), according to data released by the Japanese Fisheries Agency.

Japanese Tuna Approved for Export in Fiscal Year 1961		
Item	Quantity	
	Metric Tons	Value
		US\$1,000
Tuna, Frozen:		
Total Japanese exports	132,900	38,306
Exports to the United States	87,700	26,578
	1,000 Cases	US\$1,000
Tuna, Canned in Brine:		
Total Japanese exports	3,701	29,734
Exports to the United States	2,205	19,179

Shipments to the United States accounted for 59.6 percent of the quantity and 64.5 percent of the value of Japanese canned tuna in brine approved for export in fiscal year 1961. (Minato Shimbu, October 9, 1962.)

* * * * *

ELEVENTH SALE OF CANNED TUNA IN BRINE FOR EXPORT TO U. S.:

The Tokyo Canned Tuna Sales Company, representing Japanese canners, announced in mid-October 1962 that 130,000 cases of canned tuna in brine (consisting of 75,000 cases of white meat tuna and 55,000 cases of light meat tuna) for export to the United States were to be offered to exporters at the eleventh canned tuna sale. Japanese exports of canned tuna in brine to the United States up to and including the eleventh sale total 2,202,960 cases, thus completely using up the quota of 2,200,000 cases established for this

Japan (Contd.):

year by the Japan Canned Foods Exporters Association for export to the United States.

Some segments of the Japanese tuna canning industry believe that the total quantity of tuna packed in brine that will enter into the United States will fall short of the 1962 United States import quota under the 12½-percent rate of duty by 100,000 to 200,000 cases. United States imports of canned tuna in brine from other countries dropped in 1962. However, in view of the softening of the canned tuna market in the United States, the Japanese Canned Foods Exporters Association is reported to be reluctant to increase the export quota until it has made a careful study of sales of canned tuna in brine on hand and the marketing conditions prevailing in the United States. (Suisan Tsushin, October 16, 1962.)

EXPORTS OF CANNED TUNA IN OIL, APRIL-JULY 1962:

A total of 298,902 cases of canned tuna in oil were approved for export during April-July 1962, according to data compiled by the Japan Export Canned Tuna Producers Association. This amounts to only 57 percent of the canned tuna in oil exported during the

Species	1962	1961
	(Number of Actual Cases)	
Albacore	76,708	128,934
Yellowfin	4,751	80,777
Big-eyed	98,117	208,424
Skipjack	74,292	34,541
Tuna flakes	45,034	68,529
Total	298,902	521,205

same period last year when 521,205 cases were sold.

Exports of canned tuna in oil for April-July 1962 by species are shown in table. Exports of yellowfin and big-eyed tuna this year are down substantially. (Suisan Tsushin, October 8, 1962.)

Note: Japanese year begins on April 1.

EXPORTS OF CANNED TUNA IN OIL, APRIL-AUGUST 1962:

Data compiled by the Japan Export Canned Tuna Producers Association reveals that canned tuna in oil approved for export during April-August 1962 totaled 433,272 cases, about 70 percent of the 618,585 cases exported during the same period in 1961. (Suisan Tsushin, October 12, 1962.)

Principal Countries of Destination	April-August	
	1962	1961
(Cases)	
West Germany	136,069	193,292
Canada	93,189	125,215
Netherlands	38,413	53,750
Belgium	34,982	26,339
England	24,950	32,854
Switzerland	17,785	30,114
Syria	15,889	13,678
Lebanon	13,356	28,531

EXPORTS OF CANNED FISHERY PRODUCTS, JANUARY-MARCH 1962:

Total Japanese exports of canned fishery products in January-March 1962 were 50.4 percent higher than in the same period of 1961. The increase was general among most of the important products with salmon and mackerel-pike showing the largest increase.

Japanese Canned Fishery Products Exports, January-March 1962 and 1961

Product	January-March 1962			Total	Jan.-March 1961 Total
	U. S.	Canada	Other Countries		
(Cases ^{1/}).				
Crab meat	35,889	1,425	55,731	93,045	78,419
Tuna:					
In oil	-	41,145	259,109	300,254	285,400
In brine	600,700	-	-	600,700	525,600
Other types	100	25	73,477	73,602	28,423
Total tuna	600,800	41,170	369,586	974,556	839,423
Mackerel-pike	13,185	200	269,974	283,359	91,743
Sardine	7,478	-	27,646	35,124	29,166
Horse-mackerel	-	-	101,825	101,825	112,728
Salmon, trout	51,031	5	626,984	678,020	219,509
Other fish	8,034	2,488	86,024	96,546	87,879
Shellfish	68,819	31,586	17,338	117,743	128,856
Other aquatic products	4,475	80	4,381	8,936	1,253
Grand total	789,711	76,954	1,522,489	2,389,154	1,588,976

^{1/}Tuna exports reported in standard cases (48 7-oz. cans); other products reported in actual cases.

Japan (Contd.):

CANNED TUNA IN OIL MARKET IN EUROPE WEAKENS:

Some weakening of the European market for Japanese tuna canned in oil was reported in mid-September 1962. The highest prices obtainable by the Japanese packers for shipments to Europe in September were US\$6.39-6.53 a case. This was a decrease of almost 28¢ a case. As previously reported, skip-jack tuna fishing off the Sanriku coast of Japan again became active early in September and the tuna packers were stepping up the packing of "in oil." (Japanese periodical Suisan Tsushin, September 17, 1962.)

TUNA VESSEL OPERATIONS IN ATLANTIC OCEAN, OCTOBER 1962:

There were 77 Japanese tuna long-liners operating in the Atlantic Ocean as of mid-October 1962--30 vessels more than fished in the Atlantic Ocean during the same period in 1961. Japanese tuna vessels fishing in the Atlantic during January to October 1962 averaged 68 vessels per month as compared with the monthly average of 58 vessels in 1961, 48 vessels in 1960, and 33 vessels in 1959.

Most of the Japanese tuna vessels in the Atlantic Ocean were concentrated in the South Atlantic off the West African coast, where they were primarily fishing for albacore tuna. Unlike the light yellowfin tuna fishing this year in the Atlantic Ocean, albacore fishing was reported to be relatively good. The 500-ton tuna vessels caught an average of eight metric tons of albacore per day.

Because export prices of Atlantic-caught tuna for the United States were down (ranging from \$300 to \$310 a short ton, delivery Dakar), exports of Atlantic-caught tuna to the United States fell-off. Exports to France however, were maintained at a price of around \$430 a metric ton, delivery at French ports of destination. (Suisan Tsushin, October 17, 1962.)

RESEARCH VESSEL TO SURVEY EASTERN PACIFIC OCEAN TUNA RESOURCES:

In order to investigate tuna resources, the Japanese Fisheries Agency's research

vessel Shoyo Maru (602 gross tons) was scheduled to depart Tokyo on November 1, 1962, on an exploratory cruise to the eastern Pacific Ocean. The waters to be surveyed are located within the yellowfin tuna fishery regulatory area recommended by the Inter-American Tropical Tuna Commission and are bound by the lines intersecting at the following points: 10° N. latitude and 110° W. longitude; 12° S. latitude and 95° W. longitude; 12° S. latitude and 125° W. longitude; 40° S. latitude and 95° W. longitude; 40° S. latitude and 85° W. longitude; 20° S. latitude and 107° W. longitude; 20° S. latitude and 80° W. longitude; 10° N. latitude and 100° W. longitude.

Research objectives are: (1) study geographical distribution and abundance of important fish; (2) study catch composition, catch quantity, and hook rate by fishing area; (3) conduct observations on water depth, water temperature, and current, and relate their effect on catch; (4) study the following fishery conditions at ports of call: (a) economic aspects of port, (b) natural conditions, (c) fishery facilities, (d) local fishing conditions, (e) economic condition of fishing industry, (f) fishery production conditions, (g) marketing and consumption of fishery products.

The Shoyo Maru is scheduled to call at Honolulu (November 16), San Diego (November 29), Callao, Peru (December 31), Valparaiso, Chile (February 8, 1963), and Papeete, Tahiti (March 2, 1963). Date of return to Tokyo is scheduled for March 31, 1963. (Minato Shimibun, October 19; Suisan Keizai Shimibun, October 12, 1962.)

TUNA EX-VESSEL PRICES AT TOKYO:

The following ex-vessel prices were reportedly paid on October 18, 1962, for 160 metric tons of tuna and tuna-like fish landed in Tokyo by the Sakura Maru No. 8. (Suisan Keizai Shimibun, October 23, 1962.)

Tokyo Ex-Vessel Tuna Prices, October 18, 1962		
Product	Price	
	Yen/Kg.	US\$ Short Ton
Yellowfin (Gilled & Gutted):		
Special large (over 120 lbs.)	95	239
Large (100-120 lbs.)	102	257
Small (20-80 lbs.)	107	270
Albacore (gilled & gutted)	133	335
Fillets:		
Yellowfin	122	308
Big-eyed	132.6-134	334-338

Japan (Contd.):

NEW REGULATIONS FOR PORTABLE-VESSEL-CARRYING TUNA MOTHERSHIPS:

The Japanese Fisheries Agency announced, on September 12, 1962, new regulations governing the operation of portable-vessel-carrying tuna motherships, effective September 11. Under the new regulations, existing portable-vessel-carrying motherships, all of which are vessels of less than 2,000 gross tons, will be classified as Class I portable-vessel-carrying motherships and those of 2,000 gross tons or more will be classified as Class II portable-vessel-carrying motherships. Class II motherships differ from Class I motherships in that the motherships in that category will not be permitted to engage directly in fishing. Reportedly, the new category was established primarily to provide a more rational vessel tonnage replacement system for that type of fishery, and thereby improve its management.

At the present, there are a total of 24 large tuna vessels, ranging in size from 471 tons to 1,913 tons gross, of which 17 are over 1,000 tons, registered as Class I portable-vessel-carrying tuna motherships. The number of portable vessels (under 20 tons gross) carried by those motherships range from 1 to 6 each, or a total of 67.

Following the Fisheries Agency's announcement, a large fishing company was reported to be planning on dispatching the Banshu Maru No. 5 (3,700 gross tons) to the Indian Ocean fishing grounds as a Class II mothership, carrying eight portable catcher vessels. The vessel was scheduled to depart Tokyo on September 22 for the fishing grounds off Madagascar in the Indian Ocean, where fishing of albacore and yellowfin tuna was reported good. The catch target is 2,400 metric tons of tuna.

Concerning the Class II portable-vessel-carrying motherships, the company's chief of fishing vessel operations commented as follows: "This type of mothership operation, in which only 20-ton portable vessels are employed in actual fishing, becomes difficult when a storm occurs at sea. However, the 20-ton portable vessel can achieve the same catch efficiency as that of a 100-ton tuna vessel, so this type of fishing operation greatly improves management efficiency of mothership-type fleet operation. Moreover, there is the advantage of mobility."

At least three more large Japanese companies are planning to operate Class II motherships in the Indian Ocean. The motherships to be used are: the Keiyo Maru (3,500 gross tons); the Ishiyama Maru (3,300 gross tons); and the Kazushima Maru (3,800 gross tons). Each of those motherships will carry at least eight portable catcher vessels. (Japanese periodicals Suisan Keizai Shimbun, September 13, 1962; Suisan Tsushin, September 14, 1962.)

* * * * *

FOUR JAPANESE FIRMS TO USE CLASS TWO TUNA MOTHERSHIPS WITH PORTABLE VESSELS:

A large Japanese firm sent the No. 5 Banshu Maru (3,700 tons) mothership, with eight 20-ton fishing vessels on board, to the Indian Ocean east of Madagascar. The vessel was to have left Tokyo on September 22, 1962, as the first mothership licensed as a Class 2 portable-fishing-vessel type operator.

The eight catchers would catch an average of 25 metric tons a day, mainly yellowfin and albacore tuna. A total catch of 2,400

tons is expected to be caught by the end of February 1963. Besides the one firm, three others were said to be planning to send similar mothership expeditions to the same fishing ground on much the same scale as the No. 5 Banshu Maru.

Pelagic tuna vessels, which previous to the change in regulations were considered motherships with portable fishing vessels, are now classified Class 1. There are 24 such motherships with a total of 67 portable fishing vessels. The total gross tonnage of the "motherships" is 28,216 tons. (Suisan Tsushin, Japanese periodical, September 14, 1962.)

The existing tuna motherships with portable vessels classified Class 1 should be smaller than 2,000 gross tons in size. The new Class 2 motherships should be larger than 2,000 gross tons in size and the mothership itself cannot fish in contrast to Class 1 motherships which can fish.

* * * * *

TUNA MOTHERSHIP OPERATION IN INDIAN OCEAN:

A large Japanese fishing company's Class II portable-vessel-carrying tuna mothership Banshu Maru No. 5 (3,700 gross tons), which departed Tokyo on September 22, 1962, for the fishing grounds in the Indian Ocean, was reported to have started fishing on October 16 in the vicinity of 8°14' S. latitude and 53°33' E. longitude. During the first two days, the eight catcher vessels carried by the mothership landed a total of 25 metric tons of fish, which is somewhat below the planned daily catch of 16 metric tons. Composition of the catch was about as follows: yellowfin 60 percent; big-eyed 25 percent; spearfish 9 percent; other species 6 percent. The albacore tuna catch was extremely light. Other fishing vessels operating in that area also reported poor fishing the latter part of October.

The Banshu Maru No. 5 is the first Class II portable-vessel-carrying tuna mothership to be dispatched to the fishing grounds since the revised tuna mothership regulations were put into effect on September 11. Under the revised regulations, Class II tuna motherships (over 2,000 gross tons) are not permitted to engage directly in fishing and must use portable vessels for the actual fishing. (Suisan Tsushin, October 22, 1962.)

* * * * *

Japan (Contd.):

**YAIZU FISHERY LANDINGS,
JANUARY-AUGUST 1962:**

A total of US\$25.6 million worth of fishery products was landed at Yaizu (leading Japanese tuna port) during January-August 1962. The landings this year have been higher in quantity, but lower in value. The total landings in 1961 were worth \$27.8 million. The quantity landed this year through August amounted to 96,214 metric tons, 5 percent more than in the same period of 1961.

Yaizu Fishery Landings, August 1962		
Species	Quantity	Value
	Metric Tons	US\$ 1,000
Tuna (excl. albacore & skipjack) . . .	4,565	1,339
Albacore	510	194
Skipjack	2,650	568
Mackerel	46	8
Others	529	106
Total	8,300	2,215
January-August 1962	96,214	25,654
" " 1961	91,622	23,544

Landings in August 1962 totaled 8,300 tons, worth \$2,215,330. (Suisan Keizai Shim-bun, Sept. 19, 1962.)

* * * * *

**FROZEN TUNA HEADS
EXPORTED FOR BAIT:**

A Japanese fishery plant in Kesenuma exported 20 metric tons of frozen skipjack tuna heads to Australia. They are to be used as bait in crab and spiny lobster fishing on the coasts of Australia. The offer to buy the heads was made to the Japanese plant last year.

On the Australian coasts, cuttlefish in a basket is now being used for bait to attract spiny lobster and crab. When the shellfish are gathered around that bait, another type of bait is used to hook them. The supply of cuttlefish, however, is not only insufficient but also high-priced, and it was decided to use the heads of skipjack that are now discarded. Good results have been obtained by Australian fishermen using the heads of Alaska pollock from Hokkaido. If the use of skipjack heads proves satisfactory, a large export trade in that product is expected. (Suisan Keizai Shim-bun, Japanese periodical, September 19, 1962.)

* * * * *

**FROZEN HALIBUT EXPORT
TRENDS, AUGUST 1962:**

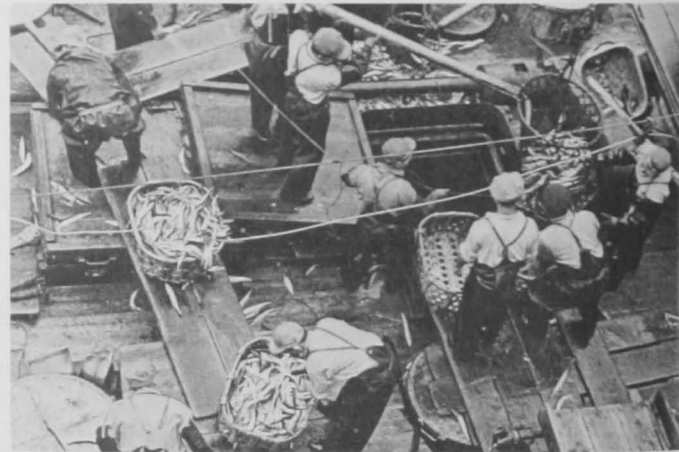
Japanese exports of frozen halibut towards the end of August 1962 were reported continuing satisfactorily. Early in August inquiries became more active and the market was firmer, according to the Japanese periodical Suisan Tsushin of August 29, 1962. At the end of August the price c. & f. delivered on the east coast of the United States was 8-10 cents higher than in the same period last year.

By July this year, some 600 short tons of frozen halibut (believed to be mostly steaks) were estimated to have been shipped. The quantity contracted for export was said to be in excess of 1,000 tons. It is felt that this year's exports will exceed last year's 1,150 tons--990 tons to the United States and 160 tons to other countries.

* * * * *

**CANNED JACK MACKEREL SALES,
APRIL-SEPTEMBER 1962:**

According to data compiled by the Japan Canned Sardine and Saury Sales Company, export canned jack mackerel consigned to the Sales Company during the period of April 1 to September 15, 1962, totaled 439,500 cases,



Washing and packing mackerel aboard a Japanese fishing vessel.

Japanese Exports of Canned Jack Mackerel by Principal Destinations, April 1-September 15, 1962	
Country or Area of Destination	No. of Cases
Near and Middle East	13,360
West Africa	31,111
Ceylon	31,554
Indonesia	22,100
Singapore (Malaya)	69,120
Borneo	15,930
New Guinea	17,257

Note: The Japanese year begins on April 1.

Japan (Contd.):

of which 215,000 cases were contracted for sales. Consignments and sales of export canned jack mackerel have shown a decline compared with the corresponding period last year.

Export sales to countries contracting for more than 10,000 cases each during April 1 to September 15, 1962, are shown in table. (Minato Shimbun, October 2, 1962.)

* * * * *

UNITED STATES-JAPAN AGREE ON SANITATION STANDARDS FOR FRESH OR FROZEN OYSTERS:

The United States and Japan on October 23, 1962, signed an agreement directed toward improving sanitation standards and practices in production and handling of fresh or frozen oysters, clams, and mussels intended for shipment between the two countries. The Agreement provides for establishment of mutually acceptable sanitation standards, exchange of information on the state of compliance with sanitation standards by industries of the respective countries, and a system of certification for fresh or frozen oysters, clams, and mussels shipped from Japan to the United States.

The Agreement is similar to the United States-Canada shellfish sanitation agreement signed in 1948. Practically all oysters, clams, and mussels sold in the United States and Canada are produced under arrangements whereby each is assured that the other is carrying out sanitary surveys of growing areas and preventing harvesting from condemned waters.

Signing the Agreement on behalf of the United States was the Assistant Secretary of State for Far Eastern Affairs, and for Japan was the Ambassador of Japan to the United States. Subsequent implementing arrangements were signed by the Surgeon General of the U. S. Public Health Service and the Counselor of the Embassy of Japan.

* * * * *

STERN TRAWLER DEPARTS FOR WEST AFRICAN WATERS:

The Japanese stern trawler Akebono Maru No. 53 (1,450 gross tons) departed Shimono-seki, Japan, on September 27, 1962, for the trawl fishing grounds off the western coast

of Africa. The trawler is scheduled to conduct operations for a period of one year and two months.

The vessel, which will be based at Las Palmas, Canary Islands, has a catch target of 3,600 metric tons of sea bream, squid, and other fish. The catches will be transported back to Japan by 1,500-ton freezerships which will be dispatched to the Atlantic fishing grounds from Japan.

A stern trawler, Akebono Maru No. 50 (1,430 gross tons), belonging to the same company that owns the Akebono Maru No. 53, is currently operating in the West African waters. (Nihon Suisan Shimbun, October 3, 1962.)



Republic of Korea

KOREAN GROUP VISITS ITALY TO IMPLEMENT LOAN TO BUILD FISHING VESSELS:

At the end of September 1962, a group of Koreans departed for Italy and France to negotiate arrangements for implementing the contract for a loan of approximately US\$120 million for Korea's fishing industry.

There has been no progress report on the negotiations for implementation of the contract (with an Italian-French combine) which was signed on August 8 and which provided for a substantial increase in Korea's fishing fleet. New fishing vessels with a total tonnage of 118,000 tons are to be built with the loan. (United States Embassy, Seoul, October 5, 1962.)



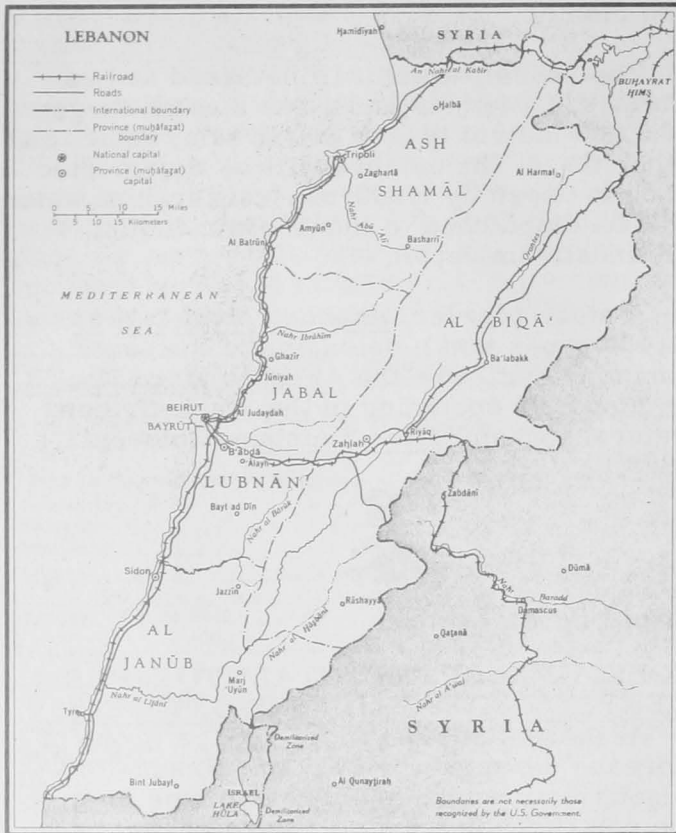
Lebanon

FISHERIES TRENDS:

A survey of Lebanon's fishing industry was completed in August 1962. The survey concludes that Lebanon's meager annual fishery catch could be increased tenfold. There are at present 3,255 fishermen on 970 fishing vessels catching annually only 2,320 tons of fish. Current consumption is low, and over 42 percent of it is met by imports.

A group of Japanese experts last year said that deep-sea and bottom fishing was the answer to Lebanon's small catch. The

Lebanon (Contd.):



lack of a major river emptying into the Mediterranean and the subsequent lack of plankton in coastal waters probably account for the small stocks off Lebanon's coast. The fishery stocks have been further depleted by the widespread practice of dynamiting for fish. In addition to increasing production of this cheap source of protein, the planners are faced with another problem, changing Lebanese consumption habits. (United States Embassy, Beirut, August 17, 1962.)



Malaya

JOINT JAPANESE-MALAYAN CANNERY REPORTED PACKING TUNA IN BRINE:

According to information received by Japanese trading firms, the Malayan Marine Industries, a tuna cannery managed by the Japanese Overseas Fishing Company, appeared to have finally begun packing canned tuna in brine for export to the United States. In December 1961, the Malayan cannery was authorized to annually export 36,000 cases of canned tuna to the United States, but due

to the unprofitable operation of the venture, tuna packing had been suspended.

Considerable attention is focused on the method of sale of the canned tuna packed by the Malayan plant. In particular, interest is focused on the following points: (1) What firm will handle the sales of Malayan canned tuna? (2) Will the export price be the same as that established for Japanese canned tuna exports? (3) How will quality compare with the Japanese product?

If any of the 18 Japanese export agencies that are currently handling exports of Japanese canned tuna undertake the sale of Malayan-packed tuna, the Japanese packers may raise an objection. Any other firm that handles exports of the Malayan production will be closely watched by the Japanese packers as to fairness of export price. (Suisan Tshun, November 6, 1962.)



Mexico

SHRIMP FISHERY TRENDS, AUGUST-SEPTEMBER 1962:

West Coast Price Dispute Settled: Although Mexican west coast shrimp vessels were fishing toward the latter part of September, boat owners and cooperatives did not agree on final contract terms until September 29. Some 200 vessels had been tied up for more than a week because of a price dispute, but they started fishing on the basis of a tentative agreement reached on September 22. The 1961/62 west coast shrimp fishing season was originally scheduled to start on September 15, 1962.

The contract negotiations were finally concluded on October 1, 1962, and included a concept that is entirely new in Mexico's west coast shrimp fishery. The new contracts between boat owners and cooperatives now provide that the cooperative fishermen are to get 45 percent of the sales value of the shrimp they catch. Ever since the start of Mexico's shrimp fishery as a joint enterprise between boat owners and cooperatives, contracts (like those in effect at Mexico's Gulf ports) were based around a fixed price per ton of shrimp.

Shrimp fishing in Mexico has been reserved for the cooperative fishermen since 1940. Most of the shrimp vessels are privately owned, but are operated by cooperative fishermen on a contract basis approved by the Government. Recent reports were that some of the West Coast vessel owners were considering selling their vessels to the cooperatives.

The new contracts between boat owners and cooperatives on Mexico's west coast are for 3 years and remain in force until August 31, 1965. The principal terms of the contracts are:

1. In delivery of the shrimp, cooperatives are to receive 45 percent of the advance sales price of which only 45 percent of the freezing and packing expenses can be deducted. Shrimp freezing and packing expenses for the entire west coast of Mexico are fixed at 2 pesos a kilogram (7.3 cents a pound). It is customary for consignees to ad-

Mexico (Contd.):

vance the consignors 70 percent of the current shrimp market price at time of shipment. The current market price is determined from Market News Service "Fishery Products Reports" issued by the U. S. Bureau of Commercial Fisheries at San Pedro, Calif. The arrangements are presumed to be only for raw headless shrimp and do not cover processed shrimp such as peeled and deveined.

2. When final sales of shrimp are made, the cooperatives are to receive 45 percent of the difference between the advance price and final price. Also 45 percent of the sales costs will be charged to the cooperatives. Principal sales costs are: (a) brokerage fee, which by these contracts is limited to 7.5 percent; (b) freight; (c) export duty.

3. In addition to paying 45 percent of the freezing, packing and sales costs, the cooperatives are to pay for: (a) crew's food; (b) severance tax; (c) crew's salary and share; (d) crew's social security.

4. The boat owner is to pay for 55 percent of freezing, packing, and sales costs.

5. In addition, the boat owner is to pay all operating and maintenance costs of the vessels. These include all other costs not shown under "3."

6. The boat owner has the right to pack and sell the product wherever he chooses.

7. Marketable fish caught while fishing for shrimp are to be divided equally between the cooperative and the boat owner.

8. A portion (the amount to be determined by Mexico's Secretariat of Industry and Commerce) of the money the cooperatives receive from the sales of shrimp is to be deposited in the National Bank for Cooperative Development. This fund is to be used for the maintenance and acquisition of cooperative boats and plants.

East Coast Shrimp Contracts: Contract agreements covering Mexico's shrimp fishery at Gulf of Mexico ports were concluded earlier in September. They remain in force for two years until August 31, 1964, and contain the same terms as previous contracts. The Carmen contract calls for an increase to the fishermen of 30 centavos a kilo (about 1.1 U.S. cents a pound) for large headless shrimp. No increase was granted for small shrimp. The breaking point between large and small headless shrimp is between 30 and 31 count to the pound. In addition, the boat owners agreed to an increase of 1 peso (8 cents) per-man-per-day for food (which brings the daily per-man rate to 72 cents), and to pay 300 pesos (\$24) per-boat-per-month for medical services.

Fishing vessel crew shares on shrimp catches in Mexico's east coast fishery are shown in the following table.

Table 1 - Fishing Vessel Crew Shares at Mexican Gulf Ports

Crew Member	Large Shrimp (less than 30/31 count heads-off)	Small Shrimp (over 30/31 count heads-off)
 (U.S. ¢/lb.)	
Captain . . .	3.34	1.31
Engineer . .	2.62	1.13
Winchman .	1.74	.87
Cook	1.74	.80

In addition, it is customary for boat owners to pay bonuses to the crew. These may at times be more than double those shown in the cents per pound crew shares for selected crew members. The Campeche shrimp contracts are only slightly different from those covering Ciudad del Carmen.

Shrimp Export Duties Increased: Mexico's shrimp export duties were increased about 38 percent during the latter part of August 1962 (published in Diario Oficial, August 27, 1962). Frozen shrimp exported from east coast points, and from Salina Cruz, Oaxaca, and Santa Rosalia, Baja California, now has a Federal export tax of about 3.5 cents a pound. The export duty on frozen shrimp from the rest of Mexico's west coast is about 3.7 cents a pound. In the State of Campeche, there is an additional local tax of about 2.2 cents a pound on shrimp exports.

Cooperative Buys Shrimp Freezing Plant: The first shrimp freezing plant in Mexico to be owned by cooperative fishermen was purchased by the Regional Federation of Cooperative Societies "Southern Sonora" during August. The plant, which is located in Guaymas and was formerly the "Mariscos Congelados del Pacifico," was bought with funds from a loan of about \$136,000 from Mexico's National Bank for Cooperative Development.

Fishing Port being Developed with Dutch Funds: A fishing port at Alvarado, Veracruz, is to be developed with funds from a loan of about \$6 million granted by Dutch interests in Amsterdam to the National Bank for Cooperative Development. The total cost of developing the fishing port is estimated at a little more than \$6 million, with completion date for the project set at two years. The project will include port and harbor works, 5 multipurpose fishing vessels, freezing, canning, smoking and drying facilities, and also ice-making and fishmeal plants. (United States Embassy, Mexico City, dispatch dated October 5, 1962.)



Morocco

TERRITORIAL WATERS EXTENDED:

Morocco has declared a 12-mile limit on her territorial waters in the Mediterranean Sea and the Atlantic Ocean, and a 6-mile limit on the waters off the coast of southern Morocco, according to information received by the Japanese Fisheries Agency.

Reportedly, this measure was taken to protect Morocco's domestic fishing industry. The 12-mile limit will affect Japanese trawl fishing in West African waters, particularly off the north-western coast of Africa, where 12 to 13 large Japanese trawlers are regularly trawl fishing. (Suisan Keizai Shimbun, October 16, 1962.)

FROZEN SARDINE EXPORTS TO FRANCE TO BE RESUMED:

Moroccan frozen sardine exports to France were expected to be resumed in October 1962. It was anticipated that the supply from French sources would be insufficient to meet the demand. Exports of frozen sardines to France were suspended in July 1962.

A total of 2,000 metric tons of frozen tuna were to be exported to France also.

Morocco (Contd.):

The Moroccan fishing and freezing industries are heavily dependent upon exports of frozen fish to France. The loss of that market has been a hard blow to them. (Based on a newspaper article as reported by the United States Embassy, Rabat, October 8, 1962.)



Mozambique

SEEKS JOINT FISHING
VENTURE WITH JAPAN:

The Japan Export Trade Promotion Association and the Japan Fisheries Society reportedly have received an inquiry from fishing interests in Mozambique, Africa (Portuguese possession) which are said to be seeking a joint Japanese-Portuguese fishing venture in Beira, Mozambique. Mozambique does not have a large fishery, although her extensive eastern coast abounds in high quality fish, especially shrimp. Bottomfish fishing is prohibited in Mozambique, but the territorial government is said to have recently approved seining and trawling.

In Beira, three small fishing vessels were engaged in fishing as of November 1962, but fishing on such a small scale cannot possibly meet market demands. Therefore, by linking up with the Japanese, the fishing interests in Beira hope to introduce Japanese investments and fishing techniques to increase Mozambique's fish production. A large potential consumer market for fish exists in Rhodesia where good transportation facilities are available. The Mozambique Government is also reported to have approved the establishment of a joint venture with Japanese investments. (Suisan Tsushin, November 7, 1962.)



Nigeria

POLAND SENDS FACTORY
TRAWLER TO NIGERIA:

The Neptun, a Polish vessel of the 280-foot Dalmor-class factory stern trawler, in August 1962 departed on a 10-months' trip to West African waters to fish for a joint Nigerian-Polish company at Lagos. The firm will service the vessel and additional Polish trawlers which will be delivering

catches to Nigeria. (Polish Press Digest, September 2, 1962.)



Norway

TUNA LANDINGS AS OF
SEPTEMBER 9, 1962:

Tuna landings by Norwegian fishermen amounted to 6,352 metric tons as of September 9, 1962--about 650 tons more than for the same period in 1961. Earlier reports this season indicated that the catch would be less than in 1961, but it now appears that it may be as good or better. Norway's total 1961 tuna landings were 6,582 tons with an export value of about \$2 million. The tuna fishing season in Norway is from July to October, with the main fishery for this species off West Norway.

Three tuna (weighing from 450 to 550 pounds) bearing United States tags were caught off Norway's coast since August 1962. (News of Norway, September 27, 1962.)

* * * * *

HERRING FISHERY TRENDS,
SEPTEMBER 1962:

Summer Herring Catch: The Norwegian summer herring fishery off the coast of Iceland yielded a record catch of 139,500 metric tons in 1962. Fishermen were aided by unusually good weather in the summer of 1962. The good summer herring catch has considerably improved the prospects for Norwegian exports of industrial fish products.

Icelandic summer herring have provided Norwegian fishermen with an off-season fishery for many years. The fishery has become more important in recent years because of the declining Norwegian winter herring catch. The Icelandic summer herring is actually the same as the Norwegian winter herring. In the summer, the herring move from the coast of Norway to waters off Northern Iceland.

The decline of the Norwegian winter herring fishery left the West Coast meal and oil industry heavily overexpanded. The industry has been dependent on Government subsidy for a long time. It sought Government financing to ease the closing of some of the marginal producers. But the Department of Industry of Norway was reported to be re-

Norway (Contd.):

sisting the plan. (United States Embassy, Oslo, October 1, 1962.)

* * * * *

FISHERY SALES ORGANIZATION'S SALES AND EXPORTS SET RECORDS:

The joint sales organization of some 90 Norwegian fish freezing plants (Norsk Fros-senfisk A/S) reported in October 1962 record sales and exports of its brand frozen fish products. In the operating year that ended June 30, 1962, sales rose 10,100 tons to total 37,000 metric tons. Total sales were valued at Kr. 128 million (US\$17.9 million), an increase of over Kr. 30.4 million (\$4.2 million), or 32.6 percent as compared with the 1960/61 fiscal year.

Nearly 34,000 tons went to export markets. This was 9,000 tons more than in 1960/61. The value of the exports rose 38 percent. Sales to the United States increased 50 percent, from about 4,000 tons to over 6,000 tons.

Despite these encouraging developments, the organization's annual report sounds a somber note about what will be in store if Norway does not join the European Economic Community. In that event, it says, the EEC import duty on frozen fish would give the Common Market frozen fish industry an 18 percent price advantage. In the long run, this would tend to reduce Norwegian exports to EEC. (News of Norway, October 25, 1962.)

* * * * *

NEARLY ALL EX-WHALERS HAVE SHORE JOBS:

Early November 1962 reports from Vestfold, the heart of Norway's whaling industry, state that nearly all of the whalers idled by the reduction of the Antarctic whaling fleet from 7 to 4 expeditions had found jobs in industry, shipping, and agriculture. Only those over 60 have any real job problems. Business, however, is feeling the effect of the cutback as whaling companies spend much less locally.

In the 1961 season, about 130 residents of Larvik were employed as whalers. But, though none went to the Antarctic this fall, only two ex-whalers were unemployed. What the situation will be when the winter slack sets in remains to be seen.

A year earlier about 1,100 whalers came from Sandefjord and Sandar. In 1962, the number dropped to 600. Yet, only some 15-20 of the 500 whalers who had to stay on shore were registered as unemployed as of October 1. All the others have jobs.

A similar development is reported from Tonsberg, Notteroy, and Sem. In those three districts, some 700 whalers were recruited last season, and only half as many in the fall of 1962. Nevertheless, very few of the ex-whalers are idle. And these are all in the 60 and over age bracket. (Norwegian News of Norway, November 8, 1962.)

* * * * *

NEW NORWEGIAN STERN TRAWLER "HEKKTIND":

The annual marketable catch of the first Norwegian stern trawler Hekktind is expected to be about 1,800 metric tons of fresh iced gutted and headed cod. Built recently by a firm in Bergen, Norway, the Hekktind is a 151-foot welded vessel, 630 gross tons, equipped with a controllable pitch propeller, and a 1,300 b. hp. Diesel engine giving a speed of about 12 knots. There are two through steel decks.

The Hekktind is the product of extensive research in fishing vessel design and a detailed analysis of the fishing conditions under which it would operate. It has met expectations. The value of the Hekktind's catch in the first six months of 1962 was 885,000 kroner (US\$123,952), while operating costs including wages and bonuses to the crew amounted to 767,700 kroner (US\$107,524). The Hekktind lost only 8 hours fishing time in 1961 due to bad weather. It has hauled as much as 40 metric tons of fish through the stern chute without difficulty. The Hekktind's net has been hauled, emptied on deck, and reset on the bottom with 300 fathoms of cable out in only 15½ minutes. Hydraulic winches haul the net at an average rate of one fathom per second. Net handling and emptying time on deck amounts to less than 5 minutes. The trawl is handled on the upper deck while the fish are dressed on the lower deck. The fish hold is located midships for two reasons--shortest transportation from working space to hold and the practically nonexistent influence of the hold cargo on fore and aft trim of the vessel.

A catch of 159 metric tons can be unloaded from the Hekktind in 3 hours with

Norway (Contd.):

the use of forklifts because fish are stored in boxes on pallets. Fish are stored in welded aluminum boxes between layers of flake ice. The boxed fish are placed on pallets in the chilled hold where the temperature is kept at 0° to -2° C. (32° to 28.4° F.) by air circulating past cooling batteries. In order to have proper and evenly distributed chilling, the boxes are kept apart by pressed warts in the sides of the boxes. Fresh cod stored in this manner keep almost twice as long as fresh cod stored in the white painted wooden boxes on traditional vessels. Even ten-day-old cod from the Hekktind has passed as prime quality, whereas Norwegian fish inspectors do not usually accept fresh cod more than 4-6 days old as prime cod for filleting or freezing. The aluminum boxes can be kept clean and the boxes are stored on pallets in such a manner that drainage from a box does not contaminate the boxes underneath. The use of the pallet system reduces fish handling.

Since the Hekktind was designed mainly to land fresh fish for the filleting and freezing plants on the north coast of Norway, it does not have freezing equipment. It does have a chilling installation in the hold. The only processing equipment on board the vessel is a cod-liver oil plant which has not been found profitable.

The designers of the Hekktind have stated that they are willing to sell their designs for construction abroad. The vessel was built mainly for use in the Norwegian trawl fishery for cod, but the designers also had in mind using the vessel as a midwater trawler or a purse-seiner. Before the Hekktind was built, the designers made a study of sea and weather conditions throughout the year on the banks of the north coast of Norway, in the White Sea, and on the Bear Island and Spitsbergen grounds. They also tried to assess the possible total out-of-port time and the division of out-of-port time into actual fishing time (with the gear on the bottom), net handling time, and transport time. The assessment made them decide to build the vessel as a seagoing tug. The shelter deck design which was used makes it easier to store and preserve fish and adds to the safety and comfort of the crew.

Different trawls were studied and an analysis made of various methods of shooting

and hauling the gear. The emphasis was on finding the gear handling method which required the least time and a minimum effort on the part of the crew. The analysis guided the layout, length, and equipment of the trawl deck.

The lines and propulsion arrangement were developed by the Ship Model Test Basin attached to the Norwegian Technical University in Trondheim, Norway. The one hull form was agreed upon and tested according to normal test procedure. The hull form was also model-tested in waves of varying length, both from astern and ahead. The waves height-length ratio was held at 1:38. The tests showed that the model's movements (setting and pitching) were heaviest at wavelengths corresponding length between perpendiculars x 1.25. Also the center of gyration, as intended, was clearly aft of midships. Thus the movements on the aftership should be reasonable and the water level at the ramp generally constant.

The captain of the vessel maintains that it will be able to fish under worse conditions than the British Fairy-type vessels. The designers took into account the icing capacity of the vessel in studying the stability problem. The Hekktind's rightening arm (G. Z.) is at the maximum between 45-55° and tends to disappear at 80-90° under all conditions. The initial stability (G. M.) light vessel is 8½ inches and the total load of ice evenly distributed with half cargo and generally half empty tanks throughout is about 130 tons.

The designers of the Hekktind have built another stern trawler which is named the Vaagtind. The Vaagtind is similar to the Hekktind although the new vessel is described as having improvements to the bridge arrangements and handling facilities on the trawl deck.

The cost of constructing the Hekktind is not known but shipyard construction costs for fishing vessels in Norway average about as follows: labor and overhead costs 35 percent; steel and aluminum 20 percent; other materials and services (engines, pumps, subcontractor items, etc.) 45 percent. The cost of fishing gear for the Hekktind amounted to 160,000 kroner (US\$22,410).

The operating costs of the Hekktind during the first six months of 1962 were broken down as follows:

Norway (Contd.):

	Kroner	US\$
Compensation to 25-man fishing crew:		
Wages	63,000	8,824
Bonuses	305,500	42,788
Total compensation ^{1/}	368,500	51,612
Management and administrative costs:		
Insurance on vessel and catch	56,000	7,843
Management and administration	14,800	2,073
Incidentals	3,000	420
Travel	13,400	1,877
Dues to fisheries association	23,700	3,319
Total management and administrative costs	110,900	15,532
Fuel and supplies:		
Provisions	14,600	2,045
Fuel and lubrication oil	125,300	17,550
Maintenance	53,300	7,465
Stores, deck machinery, etc.	9,100	1,275
Maintenance of gear	86,000	12,045
Total fuel and supplies	288,300	40,380
Total costs	767,700	107,524

^{1/}Crew compensation averages about 35 percent of the value of the catch.

The Hekktind's logbook shows that out-of-transport time in 1961 was broken down as follows: transport to and from the fishing grounds--33.2 percent; trawling with gear on the bottom--53 percent; gear handling--9.8 percent; and miscellaneous interruptions--4 percent. The owners hope to keep the Hekktind at sea for 320 days a year. The plan is based on full use of the pallet system for unloading and taking on ice and allows for twice yearly dry-docking.

About 75 percent of the actual catch of the vessel as landed on deck consists of marketable cod. The remainder (flatfish, a few ocean perch or redfish, and some undersized cod) is discarded. Heading and gutting the cod results in a loss in weight of 8 to 10 percent for viscera and 16 to 20 percent for heads. In early October, the Norwegian ex-vessel price for prime headed and gutted cod was 0.9 to 1.0 kroner per kilogram (6.4 U. S. cents a pound). About 90 percent of the Hekktind's catch of marketable cod meets the test for prime fresh cod and is sold for filleting and freezing. The balance of the cod is sold for drying at a somewhat lower price.

Up to 85 percent of the cost of constructing Norwegian fishing vessels may be provided by low-interest Government loans. The Fisheries Bank may finance 60 percent of construction costs with a long-term loan bearing 2-3 percent annual interest. The North Norway Development Fund may finance an additional 20 to 25 percent of the costs with a loan at 4 percent interest repayable usually in 12 years. In some cases the first repayment on loans is not due for 4 or 5 years. Norwegian trawlers are also aided by the current subsidy on cod landings which amounts to 0.05 kroner per kilogram (32

U. S. cents per 100 pounds). (European Regional Fisheries Attache, United States Embassy, Copenhagen, September 26 and October 3, 1962.)

Note: One Norwegian kroner equals US\$0.14.



Peru

EXPORTS OF PRINCIPAL MARINE PRODUCTS, JANUARY-JUNE 1962:

Item	Quantity	Value ^{1/}	
		Metric Tons	Million Soles
Fish meal	588,481	1,473.6	54,965
Fish oil	61,238	155.7	5,808
Fish (froz., canned, etc.)	16,644	117.1	4,368
Fertilizer (guano)	4,427	11.9	444
Sperm oil	2,463	8.6	321
Whale meal	1,564	2.5	93

^{1/}F.o.b. values converted at rate of 26.81 soles equal US\$1. (United States Embassy, Lima, October 3, 1962.)

* * * * *

FISH MEAL MARKETING ORGANIZATION GAINS LEGAL CONTROL OVER PERUVIAN FISH MEAL EXPORTS:

A Peruvian Decree-Law No. 14228 has the effect of giving the Consorcio Pesquero del Peru S. A. (Peruvian marketing organization for fish meal producers) complete control over all Peruvian fish meal exports. The Decree was published November 5, 1962, in El Peruano by the Peruvian Government. The Decree applies to the export of raw materials (materias primas). (Editor's note: fish meal is classified as a raw material by the Peruvian Government.) The Decree establishes the requirement that where two-thirds of the producers of a raw material, accounting for two-thirds of the national production, are formed into an export cooperative, all other producers must sell through the cooperative. (United States Embassy, Lima, November 8, 1962.)

* * * * *

GOVERNMENT'S NEW PROCEDURES FOR FISH MEAL PLANT LICENSES:

New requirements for issuance of licenses to fish meal plants in Peru are included in a law published in El Peruano, August 29, 1962. When published, the law was erroneously designated as Decree-Law No. 14195. The correct title is Supreme Decree No. 11.

Regulations covering procedures under Supreme Decree No. 11 are contained in

Peru (Contd.):

Ministerial Resolution No. 4965, dated September 27, 1962, which was published in El Peruano, October 31, 1962. (United States Embassy, Lima, November 5, 1962.)



Ryukyu Islands

TUNA FISHING TRENDS:

Japanese tuna vessels have always been in demand by tuna fishermen of Okinawa. In the fall of 1962, a 196-ton vessel registered at Ishmomaki, Japan, was sold to a Naha, Okinawa, firm.

At Naha, there are some 20 skipjack tuna vessels of more than 100 tons each operating. Naha is used as their base. Also, about 100 Japanese fishing vessels from 80-350 tons each are engaged in tuna long-line, skipjack hook-and-line, and mackerel fishing in southern (Pacific) fishing grounds and in inshore waters.

In tuna fishing, a 200-ton-class vessel can catch US\$18,000 worth of fish per fishing trip lasting about two months. This nets each crew member \$150-\$300. One-third of the catch is consumed on Okinawa and two-thirds is exported to the United States. While albacore and yellowfin tuna are high-priced, bluefin tuna are sold at fairly low prices in Okinawa. Fishing firms in Okinawa are either chartering vessels from Japan or buying them, since equipment and techniques of local shipbuilding are not up to the recognized standards. (Suisan Keizai Shimbun, October 5, 1962.)



South Africa Republic

NEW DIRECT SHIPPING POINT FOR FISH MEAL:

Saldanha Bay, north of Cape Town, may become a new direct shipping point for fish meal produced in South Africa. Formerly, ocean cargo from the Bay area was shipped by rail or coastal vessel to Cape Town. It is hoped that the recent initial shipment of 590 tons of bagged fish meal will prove the feasibility of loading ocean freighters at

Saldanha. (South African Shipping News and Fishing Industry Review, July 1962.)

* * * * *

PARTICIPATION IN INDIAN OCEAN RESEARCH:

The South African research vessel Africana II this summer completed a 30-day cruise of about 4,200 miles to the southern Indian Ocean as part of that country's contribution to the International Indian Ocean Project being conducted by 12 countries. South Africa is the only continental African country taking part in that study. (various sources.)



Spain

BILBAO TUNA FISHERIES TRENDS, THIRD QUARTER 1962:

Landings of "bonito" (the local name for albacore tuna) in the Bilbao area of Spain from Cantabrian waters during the 1962 season were about the same as in 1961. The demand for canned tuna in the domestic and foreign markets was good. Average ex-vessel prices this year were reported as 30-31 pesetas a kilogram (US\$500-517 a metric ton) for round or whole albacore tuna as compared with 23-24 pesetas a kilogram (\$384-400 a metric ton) in 1961. Retail prices for fresh albacore in 1962 averaged 60 pesetas a kilogram (45 U. S. cents a pound) as compared with 45 pesetas a kilogram (34 cents a pound) in 1961.

During October 1962, negotiations were under way between local fishing vessels and the United States canning firm, which handled their catches during the winter fishing season off the west coast of central Africa. The United States firm has expanded its freezing facilities on Africa's west coast. There seemed to be some interest in the vessels making trips to West Africa, but part of the local fishing fleet was going to change its plans of operation, and for the first time will get support from Spanish vessel owners.

A Bilbao fishing vessel owner remodeled the former coast cargo vessel Barazar by installing a freezing unit on the vessel. The Barazar, which has a maximum cargo-carrying capacity of 930 metric tons, was built in Bilbao in 1957, and will accompany the fleet

Spain (Contd.):

to the African fishing grounds. Ten fishing vessels will transfer their tuna catches to the Barazar to be frozen, and will in turn be supplied with ice, provisions, and any medical assistance that is needed. The remodeled vessel was expected to be operating in the very near future.

For the 1963/64 tuna fishing season, the same firm also plans to operate a sistership to the Barazar, which is now being built in a local shipyard. In addition, the company will send another vessel, the Aralar with a capacity of 800 metric tons, to operate as a refrigerator vessel. The Aralar is now being built with Government financing at an estimated cost of 40 million pesetas (about US\$667,000). The Aralar will bring frozen fish to Spain from the Barazar, and will in turn supply the freezer vessel with provisions, medical supplies, and mail from Spain. (United States Consulate, Bilbao, October 11, 1962.)



Tunisia

TERRITORIAL WATERS EXTENDED:

Formal notice of Tunisia's claim to extended territorial waters was given by the publication of Law No. 62-35, October 16, 1962, in the Tunisian Official Journal of the same date. Subsequently, the Chief of the American Section in the Foreign Affairs Secretariat reported that Tunisia's claims were as published, with particular reference to the extension of her territorial waters to the fifty-meter isobath line from south of Ras Kapoudia to the Libyan frontier. (United States Embassy, Tunis, November 2, 1962.)



U.S.S.R.

FISHERY EXPLORATION IN BERING SEA:

Two Soviet medium trawlers this summer were exploring for fish in the central Bering Sea. Some drags were made at depths of 700 meters (2,300 feet) and attempts were to be made to fish down to a depth of 1,000 meters (3,280 feet). One haul yielded about 1,750 pounds of sablefish and ocean perch. (Unpublished sources.)

* * * * *

FISHING FLEET EXPANSION AND 1961 CATCHES:

In the next ten years, the Soviet Union expects to add about 1,000 large and medium fishing vessels to the fleet.

In 1961, catches by medium trawlers (SRT's) varied widely. SRT's operating out of Murmansk each took 600 metric tons during the year; Leningrad craft caught 500 tons per vessel; and the Far East fleet averaged 1,200 tons per trawler. Fishing time per vessel ranged from 23 percent to 46 percent of total time away from port. (Unpublished sources.)

* * * * *

STERN TRAWLER RETURNS FROM WEST AFRICA:

The Tropik, new Soviet stern trawler built especially for operations in tropical waters, completed its maiden voyage to West African waters this summer. The vessel and its equipment reportedly did not meet expectations. (Unpublished sources.)

* * * * *

TWO-BOAT TRAWL USED IN NORTH ATLANTIC:

Two Soviet medium trawlers this summer were fishing a two-boat trawl in the North Atlantic. Catches ranged up to 40 metric tons of herring per haul. (Unpublished sources.)



United Kingdom

FISHERY STUDIES BY HUMBER LABORATORY:

Expansions carried out at the Humber Laboratory, Hull, England, over the past nine years were to enable closer liaison with and to solve special problems of the English fishing industry. The current program of work of the laboratory can be summarized as follows:

1. The development of a trawler with a vertical plate freezer for catch-freezing at sea.
2. Pilot plant for the dielectric thawing of frozen fish blocks, using a current of 5,000 volts at a frequency of 36 megacycles per second. (Fish blocks are thawed from an

United Kingdom (Contd.):

original temperature of -20° F. to $+30^{\circ}$ F. in a period of 15 minutes.)

3. An improved sampling technique for testing fish freshness on arrival at port by measuring the quantity of trimethylamine present in fish.

4. An apparatus for measuring the toughness of fish meat. A small sample of fish is broken up in water mechanically, and the resultant opacity of the mixture is measured in

a colorimeter which provides a direct indication of toughness.

5. A survey to establish the edible value of fish exposed to temperatures ranging from 30° to 80° F.

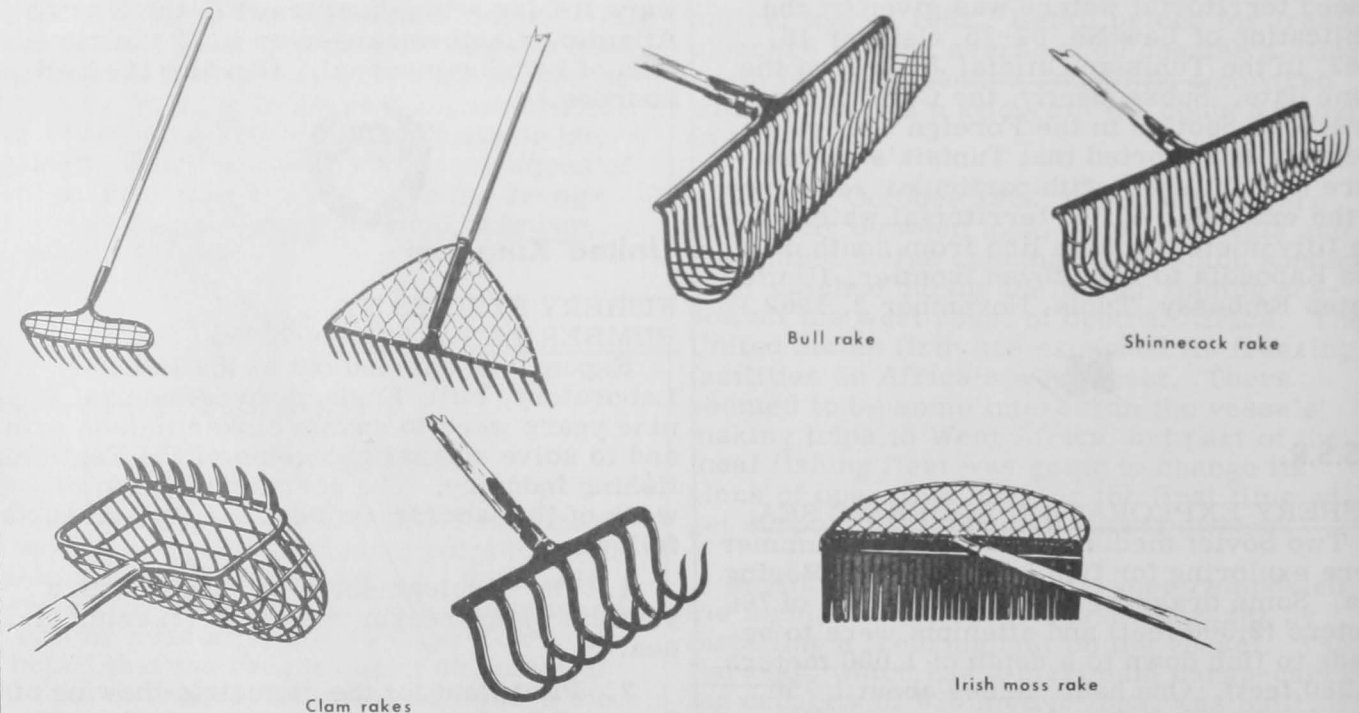
6. The development of a resistance spear thermometer that provides an instantaneous temperature reading of fish in transit and which can also be utilized in cold storage plants and laboratories; the instrument has an accuracy of $\pm 0.2^{\circ}$ F. (Bulletin de L'Institut International du Froid, Vol. XLII, no. 4, 1962.)



RAKES

There are two different types of rakes used in the commercial fisheries. They are the common clam rake and the bull rake. The common rake for clams is much like a garden rake except that the teeth are longer and sharper. It is equipped with a wire mesh basket or apron which holds the catch. It is generally used in very shallow water. There are many modifications which are used in different areas. One of the modifications, in Maine, is used for gathering Irish moss. The bull rake is a large implement with a head between twenty and thirty inches wide. It has long curved teeth about nine inches long and unlike the common hand rake it does not have a basket or apron. Its handle is usually longer and is fished in deeper water than the hand rake. The bull rake is used generally in New England.

The Shinnecock rake is a modified New England bull rake used only in Maryland. The long curved teeth are progressively smaller towards the ends of the rake head. This forms a basket on which the clams rest as they are raised from the bottom.



Bull rake

Shinnecock rake

Clam rakes

Irish moss rake

Note: Excerpt from Circular 109, Commercial Fishing Gear of the United States, for sale from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., single copy, 40 cents.