

# INTERNATIONAL

## 1966 World Fish Catch Up Six Percent

The 1966 world catch of fish and shellfish reached 56.8 million metric tons, 125.2 billion pounds, up 6 percent from the 1965 total of 53.3 million tons. Norway took over fifth place from the U. S. Peru, Japan, Communist China, and the Soviet Union accounted for most of the increase. Their combined catch

totaled 27 million metric tons--47 percent of the world total.

Catches were smaller for the Federal Republic of Germany, the Netherlands, and the U. S. (BCF Branch of Fishery Statistics.)



### World Fisheries

The United States long was one of the world's major producers of fishery products. Before World War II and until 1959, the U. S. catch ranked second only to Japan's. In 1959, the U. S. dropped to third--behind the expanding fisheries of mainland China. The fisheries of Peru and the Union of Soviet Socialist Republics, which had been close behind, surged ahead and, in 1960, dropped the U. S. to fifth place. In 1966, Norway dropped the U. S. to sixth place.

The 1966 Norwegian fisheries catch was a record 5.8 billion pounds (live weight)--about 28 percent more than in 1965. This increase was produced by larger catches of winter herring and fat herring. There were record catches of capelin and mackerel and a substantially larger haddock catch. The short-term outlook for the Norwegian fisheries is promising. Seasonal fisheries have recorded even better results in 1967 than in 1966. The Norwegian Government has committed itself to a policy of supporting incomes of fishermen and subsidies, loans, and programs to modernize vessels, processing plants, and other facilities.

### 1966 U. S. Catch

The U. S. catch in 1966 was 5.7 billion pounds (live weight)--the smallest domestic catch since 1953. There were smaller landings of important species (tuna, jack mackerel, Pacific and Atlantic sea herring, yellowtail flounders, and shrimp) in 1966 than in 1965.

More serious was the large decline in landings of menhaden. This is the principal species taken by Atlantic and Gulf fishermen (30 percent of the 1966 catch of all species). The menhaden fishery yielded a disappointing catch of 1.3 billion pounds--435 million pounds, or 9 percent, less than in 1965, and more than 1 billion pounds below 1962's record 2.3 billion pounds.

In 1965, the domestic catch of fishery products accounted for 70 percent of the total U. S. supply of 7.6 billion pounds. By 1966, the domestic catch accounted for only 35 percent of the total U. S. supply of 12.4 billion pounds.

The U. S. failure to maintain its relative position in world fisheries can be attributed largely to its failure to maintain the catches of such important species as menhaden and pilchard. (Food and Agriculture Organization.)





## Antarctic Whaling Quota Set

Representatives of Japan, Norway, USSR, and Great Britain, met in Oslo, Norway, to set national quotas for the 3,200 blue-whale units recommended by the International Whaling Commission for the 1967/68 Antarctic Whaling season. On September 2, they agreed on these allocations, which are the same as the previous year's:

	Allocation of National Quota		Ratio of Allocation
	1967/68	1966/67	
	(Blue-Whale Units)		(%)
Japan . . . . .	1,493	1,633	46.66
USSR . . . . .	976	1,067	30.48
Norway . . . . .	731	800	22.86
Total . . . . .	3,200	3,500	100.00

The Oslo conference was the second meeting of the 4 nations to discuss national quotas. The first, held in London July 4-5, 1967, failed to produce an agreement. ("Suisan Tsushin," Sept. 5.)



## New ICES Convention May Become Effective July 1968

Because Italy alone of 16 signatories had not ratified the Convention on International Council for the Exploration of the Sea (ICES), the Convention did not come into force in July 1967. But it was thought that the 15 ratifying Governments might adopt protocol at the October meeting of ICES in Hamburg bringing the Convention into effect among themselves in July 1968. This action would accord with the Convention. (Fisheries Attaché, U. S. Embassy, Copenhagen, Aug. 25.)

### To Replace Original ICES

The Convention will replace the older ICES statutes, which were informal agreements not a treaty, adopted in 1902. The U. S., party to the earlier agreement from 1912 to World War I, ratified the new convention April 24, 1967.

Current ICES members and signatories to the new Convention are Belgium, Denmark, West Germany, Finland, France, Iceland,

Italy, Netherlands, Ireland, Norway, Poland, Portugal, Spain, Sweden, U. K., and USSR. Canada and the U. S. have applied for membership by accession.



## Complete First Cruises in Study of Eastern Tropical Pacific

Scientists and ships of the U. S., Mexico, Chile, and Peru have completed the first survey cruises for Eastropac, the largest ocean research expedition ever to study the eastern tropical Pacific. The program's first 18 months emphasized physical, chemical, and biological oceanography. From 1968 through 1970, major attention will be given to fishery investigations, including development of weather forecasting techniques, exploration, and experimental fishing.

The expedition vessels will cover the area between latitudes 20° N. and S., and from the coast of the Americas to 126° W. longitude. This is roughly from San Diego to northern Chile and some 2,000 to 4,000 miles west.

When the oceanographic work ends, Eastropac will become largely fishery oriented.

### Surveyed N-S Course

In the first survey, February-March 1967 the Eastropac vessels made scientific observations on a rectangular north-south course. They surveyed the region intensively for 40 to 50 days at opposite seasons--in February-March and August-September 1967. Another survey is planned for February-March 1968.

Before and after these multiship surveys 2 single-ship monitoring cruises, each for about 50 days, record ocean climate change at consecutive seasons by following strategically selected tracts.

### Peru and Chile Study Their Waters

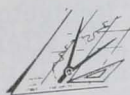
The contributions of Peru and Chile consist of observations to at least 300 miles of



their own coasts by the research vessels "Unanue" (Peru) and "Yelcho" (Chile). (Mexico's vessel is the "Yolanda.")

The first buoys used measured ocean and air temperatures, and wind velocity and direction. They monitored and accumulated information on seasonal and year-to-year variations in the ocean environment. This monitoring is considered vital to future weather forecasting.

Six information papers have been issued describing Eastropac. Copies are available from: Dr. Alan A. Longhurst, Coordinator, EASTROPAC, Fishery Oceanography Center, La Jolla, Calif. 92037.



## Minimum Trawl Mesh Recommended for South-East Atlantic Hake

The joint research project carried out by the West German vessel "Walther Herwig" and the South African "Africana II" into hake stocks off the South and South-West African coasts had markedly successful results.

The month-long joint program was designed primarily to find a "selection factor" for Cape hake (*Merluccius capensis*) which could be used as the basis for an international agreement on conservation. The factor would permit the calculation of a minimum mesh size, which would be applied by agreement in trawls of vessels fishing the area. The research team recommended one of 110 mm. ( $4\frac{5}{16}$  inches). This would allow a sufficient proportion of immature fish to escape--to minimize effect of heavy fishing.

### German Leader Sees Urgent Need

The leader of the German team believes this limitation of net mesh size is virtually the only practicable measure available to check the destructive effect of undisciplined fishing for bottomfish in South-East Atlantic. He believes too that time is running out.

The selection factor--still only in preliminary form--could form key to successful negotiation of a fishery convention for the South-East Atlantic along lines planned by FAO.

A member of German team said: "I regard it as absolutely vital that an agreement should be reached soon. I have studied catch statistics from the major trawl fishing grounds in the world and in my opinion the results we have recorded on this voyage show that at present the South-East Atlantic is as rich as any--including the great fisheries off Iceland and Labrador.

"But on one day we spent on the grounds, I counted 78 trawlers busy fishing--and no grounds can withstand that sort of attack for long without being damaged. The amazing thing is that the fishing is still as good as it is, despite the pace of it."

### Evidence of Indiscriminate Fishing

Another member revealed that the Walther Herwig's trawls had dredged up from the bottom net fragments from trawls of unknown foreign trawlers that had snagged their gear.

These fragments indicated a cod-end mesh of only  $2\frac{1}{2}$  inches (60 mm.)--well below the size used by the average South African trawler and designed to scoop fish of all sizes.

"This indiscriminate fishing is proof that action is urgently needed to regulate the mesh widths used in the trawls," he pointed out.

The researchers said that hake mature when they are over 40 cm. ( $15\frac{3}{4}$  in.) long. From a scientific viewpoint, it would be unwise to catch smaller fish. "Trawling is a selective method of fishing but nevertheless, a cod-end of specified mesh size will capture fish of a wide variety of sizes (ages).

### Recommend Mesh Size

"The current experiments were designed to establish the percentage of hake of each size class retained by a cod-end of known mesh size. From the results of fishing, a mesh selectivity factor could be calculated. This was found to be 3 to 5 and is related to the size of the fish at 50 percent retention divided by the average cod-end mesh size.

"From this selectivity factor, it is a simple task to calculate the optimum mesh size to ensure the desired escape rate of the small fish."



The researchers recommended trawl nets with mesh size of at least 110 mm. ( $4\frac{5}{16}$  in.) to conserve Cape hake. They believe that the small mesh size presently used by certain trawlers means a heavy wastage of small fish.

"Not only is this unnecessary destruction of small fish adversely affecting the hake stocks but it also represents fruitless effort." ("The South African Shipping News and Fishing Industry Review, July 1967.)



## Catch of UNDP/FAO Trawler Sold in Barbados

Fish caught by an exploratory trawler of the UN Development Program/FAO Caribbean Fisheries Development Project were sold in Barbados this summer to test recommendations made by a marketing specialist. The sale was part of the joint project involving several Caribbean countries, UNDP/FAO, and the U. S. Bureau of Commercial Fisheries.

The 19,214 pounds of fresh fish, mainly snapper, had been caught by the "Calamar," one of several new exploratory trawlers used by the Project. They were sold at normal commercial prices to the Barbados Marketing Corporation, which agreed to test modern techniques recommended by the marketing specialist--on handling, packing, storing, and retail sale--after earlier landings.

### Public Response Excellent

The iced fish, packed in an insulated fiberglass box, were sold in stalls in town and from a van that visited country districts. The day before the sale, ample publicity was given through radio and press to the sale and to stall locations and the van's route. Public response was excellent. People assembled before the stalls opened and were 4 to 6 deep at counters all day. At one stall, crowds had to be broken into small groups before being allowed to enter.

In the country, the van was overcrowded. A second van was pressed into service to complete the advertised route. On the first day, 11,000 pounds were sold. The remainder, except 1,000 pounds frozen for later use, was sold by 1:00 p.m. the next day. Further tests are planned.

In earlier cruises, 8,000 pounds of fish, mainly snapper, were sold on July 7 to two wholesalers in Kingston, Jamaica, and 11,366 pounds were sold in Georgetown, Guyana.

### "Alcyon's" Cruise

The Alcyon arrived at Kingston, Jamaica, on July 7, after a 19-day cruise for experimental snapper fishing on Pedro, Rosiland, and Walton Banks. Of the 8,000 pounds of mixed fish, about 75 percent were yellow-tail snapper. The Alcyon left Kingston on July 19 for St. Martin. It arrived on the 23rd to take on bait for 4 weeks of long-lining in the vicinity of the Virgin and Leeward Islands and off Puerto Rico.

The Calamar left Bridgetown on July 11 and returned on the 26th after a trawl cruise off Surinam and Guyana. It made a port call at Georgetown, Guyana; 30,000 pounds of fish were landed there and in Barbados after 6 days' actual trawling.

The "Fregata" left Bridgetown on July 13 after last-minute changes to ready it for bait fishing during "shakedown" cruise to Curacao area. Some live bait was taken at Bequia. Scouting for tuna schools was conducted off the Grenadines, Grenada, and the Netherlands Antillian Islands of Aruba, Bonaire, and Curacao. At least one moderate-size school of skipjack tuna was seen between Curacao and Bonaire; however, the fish would not take live bait and none was captured.



## Mexico and U. S. Hold Fisheries Talks

Mexican and U. S. officials completed discussions on mutual fishery problems in Mexico City on September 19 and reported to their Governments. Fishing industry representatives from both countries attended as observers. The delegations agreed on recommendations to their Governments which would regulate the fisheries of each country within the contiguous fishery zone of the other.

If the 2 Governments consider the reports appropriate, they will conclude a formal executive agreement.



The discussions arose out of Mexico's extension, late in 1966, of her jurisdiction over fisheries in adjacent waters to 12 nautical miles from shore. Like the Mexican law on the exclusive fishery zone, the U. S. law of 1966, which extends her fishery jurisdiction to 12 nautical miles from shore, also provides for continuation of such traditional fishing within the zone as may be recognized by the Government having jurisdiction.

#### Delegations Headed By Ambassadors

The Mexican delegation was headed by Ambassador Oscar Rabasa, Legal Adviser to the Secretary of State for External Relations. It included Antonio Gonzalez de Leon, Director General of the Diplomatic Service, Ministry of External Relations; Enrique Azuara Salas, Director General of Internal Revenue, Ministry of Finance and Public Credit; Jorge Echaniz Ruvalcaba, Director General of Fisheries and Related Industries, Ministry of Industry and Commerce; and Commander Gilberto Lopez Lira, Private Secretary of the Navy.

Co-chairmen of the U. S. delegation were Ambassador Donald L. McKernan, Special Assistant for Fisheries and Wildlife to the Secretary of State, and the United States Ambassador to Mexico, Fulton Freeman. The U. S. delegation included Raymond T. Yingling, Legal Adviser for Special Functional Problems, Department of State; William M. Terry, Assistant Director for International Affairs, BCF; Seton H. Thompson, Southeastern Regional Director, BCF; Gerald V. Howard, Pacific Southwest Regional Director, BCF; Milton J. Lindner, Director, Galveston Biological Laboratory, BCF; Lieutenant Commander C. J. Blondin, Law Enforcement Division, United States Coast Guard; and Philip M. Roedel, State of California Department of Fish and Game. (U. S. Dept. of State, Sept. 19.)



#### Soviet Fisheries Minister Visits Canada and Great Britain

Soviet Fisheries Minister Ishkov and 6 officials of his Ministry arrived in Ottawa on September 18 to start a 16-day visit to Canada's west and east coast fishing ports, research institutes, and fish-processing plants. Special attention was paid to salmon development programs on the west coast (Big Qualicum River and Babine projects).

In early October, Ishkov was scheduled to visit Expo-67 in Montreal, where the Soviets have a large fisheries exhibit, and then go on to visit Great Britain October 4-14.

Ishkov is returning the visits to the USSR of British Parliamentary Secretary for Agriculture, Fisheries and Food, J. H. Hoy, in 1965, and the Canadian Minister of Fisheries, H. J. Robinchaud, in March 1967. Minister Ishkov had invited them.

#### Contacts Increase

Accompanying Ishkov were 2 Regional Directors (for Western and Far Eastern Fisheries), 2 officials of the Ministry's Foreign Relations Department, and 2 fishery research administrators.

Both Canada and Britain recently expanded their fishery contacts with East European countries and the USSR. The Canadians sent a team to study Soviet training methods for fishermen, and another team to study the expansion of fishery exports to Eastern Europe. The British sent a fisheries team to Poland, bought fishing vessels from her, and exchanged fishery scientists with the USSR.



#### Mediterranean Tuna Group Meets

The tuna research working party of the General Fisheries Council for the Mediterranean (GFCM) met in Sicily, May 22-24, and discussed catch and effort statistics, standardization of measurements, and development of a tagging program.

The participants adopted recommendations to provide separate statistical data for each species of tuna; to take into consideration various types of fishing methods when determining catch and fishing effort; to tabulate bluefin weight and length using ICES data methods; to obtain sport fishermen's cooperation in tuna recapture and tagging programs; to undertake one or more international expeditions for tuna surveying, exploratory fishing, and tagging under GFCM's aegis; and to have FAO sponsor a seminar on the dynamics of fish populations for Mediterranean research workers.

A report of the May meeting will be presented to the 9th Session of the GFCM, in Split, Yugoslavia, Dec. 4-10, 1967. (Circular 18, VII, 1967, GFCM.)





## Iceland and West Germany Protest EEC Fisheries Policy

Iceland's Ambassador to the European Economic Community (EEC) visited Robert Mansholt of the EEC Commission on September 14 to seek Community reversal of its decision to decrease Germany's tariff-free quota on iced fish (haddock, ocean perch, and flatfish) from 11,000 to 4,500 metric tons.

Excluded from the quota are cod and saithe, which will now be assessed the higher 9-percent duty; so too will haddock, ocean perch, and flatfish outside the quota. Icelanders would like tariff-free or lower-duty treatment for both categories. (U. S. Embassy, Reykjavik, Sept. 14.)

### W. Germany Protests EEC Policy

A Brussels report says the West German Government has strongly protested EEC's fisheries policy. EEC quotas on certain of the most important fish are set much lower than the West Germans desire. Also, some species that earlier were included in the customs quota have been removed just as the customs duties were increased. West Germany expressed concern that these changes will be detrimental to trade conditions for nonmember countries. The most important suppliers of fish to the EEC are the Nordic countries and Iceland. West Germany noted also that EEC countries are not capable of delivering the amount of fish needed by German importers. Further, there is a risk that the lower EEC quotas will increase prices on the German market. ("Politiken," Sept. 12; Regional Fisheries Attaché, U. S. Embassy, Copenhagen, Sept. 15.)



## Denmark Recognizes West Germany's Traditional Fishing Rights

West Germany's traditional fishing rights within Denmark's new 12-mile fishery limit have been recognized following negotiations in Copenhagen. Denmark considered the German claims in accordance with the London Fisheries Convention of 1964. German fishermen will be allowed to fish flatfish off the Danish west coast as far north as the village of Bovbjerg--and to fish for shrimp off the southern Jutland coast.

## Germany To Extend Her Limits

Preliminary discussions were held on possible Danish claims of traditional fishing when Germany extends her fishery limits in the near future. No agreement was reached on Danish claims, but the positions of the two countries were more clearly defined. ("Vestkysten," Aug. 24; Regional Fisheries Attaché, U. S. Embassy, Copenhagen, Sept. 15.)



## Norwegians to Manage Ghana Fishing Operation

On August 31, after several months of negotiation, Ghana signed an agreement with a Norwegian company to improve Ghana's fishing industry. The company is obliged to operate the State Fishing Corporation (SFC) on a strictly commercial basis--to transform the debt-ridden enterprise into a paying concern. For its part, Ghana must keep the Corporation's vessels seaworthy and provide adequate docking, loading, off-loading, and storage facilities. The contract also stipulates that the number of expatriate employees should be kept as low as possible. Since early in the year, the SFC has operated 6 stern trawlers built by the Norwegian firm. (U. S. Embassy, Accra, Sept. 10.)



## Netherlands Adds Synthetic Protein to Flour for India

A synthetic protein booster called "lysine" was added to a shipment of flour on August 22 from Rotterdam to India. The proportion was 11 tons of lysine to 5,500 tons of flour. Lysine is produced from coal and boosts the protein value of grains. It has been described by some food experts as "a product which may revolutionize the world's food problem."

Only 1 or 2 kilos added to a ton of wheat can bring wheat up to its required protein value. One kilo of lysine costs 27½ U. S. cents.

Lysine will be manufactured in large quantities in a plant in Geleen (Limburg), the Netherlands. It is scheduled to be opened by the end of 1967. (U. S. Embassy, Hague, Sept. 5.)





## World Fish Meal Production Up 3% in First Half 1967

The production of 1.9 million metric tons of fish meal during first-half 1967 was more than 3 percent above the 1966 period. Production in Peru, Norway, South Africa, Denmark, Canada, Sweden, West Germany, and the United Kingdom increased this year.

	June		Jan. -June	
	1967	1966	1967	1966
	..... (Metric Tons) .....			
Canada .....	8,729	7,190	35,665	33,851
Denmark .....	20,942	15,554	61,411	50,560
France .....	1,100	1,100	6,600	6,600
German Fed. Repub. . .	5,503	5,187	36,565	35,752
Netherlands .....	1/	1/	1/	2/ 1,510
Spain .....	1/	1/	1/	1/
Sweden .....	377	422	2,756	1,874
United Kingdom .....	7,109	6,984	40,511	47,147
United States .....	28,543	30,766	65,638	65,133
Angola .....	3,219	2,982	20,607	23,511
Iceland .....	11,695	19,134	44,762	60,638
Norway .....	60,683	56,972	282,344	232,099
Peru .....	30,636	5,922	1,029,262	968,891
So. Afr. (including S.-W. Afr.) .....	32,479	47,549	214,823	177,140
Belgium .....	375	375	2,250	2,250
Chile .....	17,148	19,698	67,648	135,472
Morocco .....	1/	1/	1/	1/
Total .....	228,538	219,835	1,910,842	1,842,428

Data not available.

Data available only for January-April 1967.

Note: Japan does not report fish meal production monthly to the International Association of Fish Meal Manufacturers. In 1965, she produced 356,000 metric tons of fish meal, according to the Food and Agriculture Organization "Yearbook of Fishery Statistics, 1965" vol. 21.

## FEO Meal Exports, Jan.-July 1967

Member countries of the Fish Meal Exporters' Organization (FEO), which accounts for about 90 percent of world exports of fish meal, are Chile, Angola, Iceland, Norway, Peru, and South Africa/South-West Africa. Their exports in January-July 1967 were:

	July		Jan. -July	
	1967	1966	1967	1966
	..... (1,000 Metric Tons) .....			
Chile .....	1.9	25.8	56.5	117.0
Angola .....	1/	5.2	1/	27.9
Iceland .....	11.1	16.0	83.2	81.3
Norway .....	37.8	17.7	259.8	129.6
Peru .....	132.7	111.0	883.4	858.3
So. Africa (including S.-W. Africa) .....	29.7	15.8	153.4	89.7
Total .....	1/	191.5	1/	1,303.8

Not available (18.4 thousand tons through May 1967.)

/129.1 thousand tons exported in August 1967; total Jan.-Aug. 1967, 1,012.5 thousand tons; Jan.-Aug. 1966, 945.3 thousand tons.



## Fish Meal Conference Held in Norway

The Seventh Annual Conference of the International Association of Fish Meal Manufacturers (IAFMM) was held in Bergen, Norway, through the week beginning September 4. Over 100 leading producers, fishing industry scientists, and nutritionists from many countries attended.

The 16-member-nation Association has liaison with FAO. It meets regularly in the member countries. This leads to better understanding of industries and problems. It helps producers and scientists advising the industry to cooperate more closely in producing and marketing a high-quality product, which is used primarily in intensive poultry and pig feeding.

The participants reviewed the present world market and methods of market research and promotion designed to ensure regular supplies of fish meal to consumers at prices that ensure maximum usage of animal feeds. Although the association considers commercial matters, its activities are advisory and do not deal with price or control of markets.

## Increased Production Was Foreseen

The participants had foreseen that during 1967 increased production would be matched by increased consumption. They stressed that considerable stocks were necessary for orderly marketing--because of seasonal fishing in some major producing countries, weather conditions, and fluctuating catches.

They reviewed methods of keeping users more aware of the high nutritional value of fish meal, particularly in countries using relatively less meal in animal feeds. An intensified program of promotion will be started.

Developments and increased interest in the manufacture of fish protein concentrate (FPC) for human consumption were discussed. This is considered a problem of economics and acceptance--rather than of manufacture.

## Analysis of Fish Meal

The Scientific Committee and Working Groups agreed on appropriate methods of analyzing fish meal. They drew attention to the effect of sampling errors and the need for detailed sampling procedures.



At a special session, leading agents, importers, and brokers in the fish meal trade discussed matters of mutual interest.



## 1967 World Trade and Output of Marine Oils

It is estimated that exports of marine oils in 1967 will be about 7 percent above 1966 and the largest since 1962. An estimated 850 short tons will be exported compared with 795 tons in 1966 and 906 in 1962. The increase reflects estimates of record net exports of fish oil, 520 tons, partly offset by a further decline in whale oil.

World production of fish oil, however, is forecast at 1,020 tons, up slightly from 1966's 1,001 tons.

Record world exports of fish oil in 1967 are forecast, continuing an upward trend. The expected increase reflects larger movements of anchovy oil from Peru and herring oil from Norway. However, exports of herring oil from Iceland, menhaden oil from the United States, and anchovy oil from Chile are expected to decline somewhat. The Peruvian fishing season again was closed during June-August 1967. The shutdown continued until the last week of September. Fishing conditions in last 3 months will be an important factor governing 1967 exports.

### Whale Oil Output Down

Production of whale oil in 1967 will continue downward--for the sixth consecutive year. This reflects further reductions in operations in compliance with reduced Antarctic pelagic catch quotas for 1966/67 season. Because whale stocks have been threatened by extinction, the International Whale Commission acted on the recommendations of scientists and cut the 1967/68 Antarctic pelagic quota to 3,200 blue-whale units--300 less than in 1966/67.

The 1966/67 catch results in blue-whale units (1965/66 bracketed) were: Japan, 1,633 (2,340); USSR, 1,069 (920); and Norway, 801 (829). The actual Antarctic catch in the 1966/67 pelagic season was 71,155 short tons, compared with 83,955 in 1965/66.

Period	Whale	Sperm Whale	Fish <sup>1/</sup>	Total
	. . . . . (1,000 Short Tons) . . . . .			
1967 <sup>2/</sup> . . . . .	155	175	520	850
1966 <sup>3/</sup> . . . . .	175	170	450	795
1965 . . . . .	211	170	430	811
1964 . . . . .	249	165	384	798
Avg. 1960-64 . . . . .	356	137	347	840
Avg. 1955-59 . . . . .	427	119	160	706

<sup>1/</sup>Includes liver oils. Net exports.  
<sup>2/</sup>Forecast.  
<sup>3/</sup>Preliminary.

Complete information on sperm oil production is not currently available. However, output this year may not differ significantly from 1966. ("World Agriculture Production and Trade," Statistical Report, U. S. Department of Agriculture, Sept. 1967.)



## New Double-Reeled Power Blocks Marketed

A Scandinavian firm is marketing 3 power blocks of a new type said to permit smoother and more rapid hauling of the purse seine. The 2 larger sizes, of 2 and 4 tons pulling capacity, have double reels separate from each other that can be rotated independently or in unison. These blocks are carried by a hydraulically operated crane.

A smaller model, of one-ton pulling capacity, is designed for use aboard smaller vessels that fish small nets, shrimp trawls, or purse seines. The two spools of this smaller unit cannot be rotated independently. ("Fiskaren," June 7; Regional Fisheries Attaché, U. S. Embassy, Copenhagen, Sept. 15.)





# FOREIGN

## CANADA

### TESTS MID-WATER HERRING TRAWL SUCCESSFULLY

A midwater trawl for herring was tested successfully in Canada. A converted scallop dragger caught 200 tons in the last week of August--including as much as 30 tons in a single 30-minute haul. The catch was made off west side of Digby Neck, Bay of Fundy, in daylight, when herring were too deep and dispersed for successful purse seining.

The vessel fished in 25 to 40 fathoms with the net 1 to 20 fathoms off the bottom. When fishing, the trawl measures 70 feet wide, 40 feet deep, 300 feet long, and is spread by steel hydrofoil otter boards each weighing 1,400 pounds.

#### Fishing Industry Interested

Early success of this government project is arousing the interest of the fishing industry. This is the first time large quantities of herring have been taken by a Canadian trawler off the Atlantic coast. Tests are continuing. (Department of Fisheries, Information Branch, Sept. 12.)

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### EXPERTS CONFER ON FISH PROTEIN CONCENTRATE

The potential of marine life as a source of protein has long been realized. But only in the past decade have technological advances made it possible to extract protein from previously underexploited sources of fish in commercial quantities. The development of fish protein concentrate (FPC) is becoming increasingly important in providing rich but inexpensive additives to such foods as cereals and rice. It may help to fill the ever-widening gap between food needed by the world's hungry millions and the amounts available to them.

#### Over 200 Participate

These possibilities have generated worldwide interest in FPC. Attesting this interest, more than 200 scientists, food and pharma-

ceutical experts, government administrators, economists, technologists, and engineers met in Ottawa on October 24 and 25. About 20 papers were submitted by Canadian, U. S., and United Nations specialists on all aspects of FPC development. These included availability of raw material, methods and costs of production, quality of product and need, markets, and techniques and equipment needed for large-scale production.

#### FPC's Future Promising

Some participants predicted that the meeting will have a great impact on both governmental and industrial FPC programs to benefit the world. Over a ten-year period, tests using FPC were conducted to improve the diets of undernourished children in Peru, Indonesia, Mexico, and other countries. They have shown remarkably good results. Besides its humanitarian aspect, FPC is thought to have great possibilities as a commercial product. Highly refined FPC has no objectionable odor or taste, which helps its cause. (Dept. of Fisheries, Ottawa, Canada, Sept. 20.)

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### TUNA FIRM INTERESTED IN ECUADORAN FREEZING PLANT

A press release of the Canadian Foreign Ministry stated that a Montreal company is interested in establishing a fish-freezing plant in Ecuador. The firm's General Manager planned to visit Ecuador to discuss this proposal with local authorities. (U. S. Embassy, Quito, Aug. 2.)

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### BRITISH COLUMBIA CHANGES SALMON EXPORT REGULATIONS

British Columbia fishery regulations have been amended to permit export of coho salmon in any form throughout the year.

Also, the amendment adds "frozen" to the forms in which pink salmon may be exported, in addition to canned, salted, smoked, and cured.

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## Canada (Contd.):

## LANDINGS DROP IN FIRST 6 MONTHS

Canadian sea fisheries landings (including Newfoundland) during January-June 1967 were 833.2 million pounds with an exvessel value of C\$49.4 million. These compare with 887 million pounds worth \$56.2 million in the 1966 period. (Excludes seaweeds.) The figures are from the June 1967 "Monthly Review of Canadian Fisheries Statistics."

Landings and exvessel values of principal species:

	Jan.-June		Jan.-June	
	1967	1966	1967	1966
	Landings		Value	
	.. (1,000 Lbs.) ..		.. (1,000 C\$) ..	
<b>Atlantic Coast:</b>				
Cod . . . . .	186,012	239,123	8,232	10,453
Haddock . . . . .	60,251	65,130	4,170	4,659
Pollock . . . . .	27,121	18,345	621	722
Flounder & sole . . . . .	102,713	94,465	3,477	3,204
Herring . . . . .	236,632	144,915	2,615	1,658
Ocean perch . . . . .	27,121	40,678	687	1,078
Swordfish . . . . .	439	623	294	379
Lobsters . . . . .	20,097	23,797	12,882	13,669
Scallops . . . . .	5,803	7,540	3,171	2,909
<b>Pacific Coast:</b>				
Halibut . . . . .	9,471	15,056	2,334	5,195
Herring . . . . .	89,244	137,853	1,488	2,305
Salmon . . . . .	8,602	7,954	3,698	3,495
Cod . . . . .	5,589	14,293	396	987

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## OYSTER FISHING IN NEW BRUNSWICK

Public fishing for oysters will be allowed from October 1 to November 30 inclusive in the Richibucto River, New Brunswick, Canada. The area is upstream of the Main River Bridge to Brown's Yard, in a section of the Molus River downstream from Warman's Point and in the Nicholas River upstream from Methodist Point.

The decision to allow a 2-month oyster season this fall was prompted by the severe loss of income from poor lobster catches in District 8 this season, and the inadequate use of the main river, and no use at all of the St. Nicholas River, during the spring season for oysters now allowed. (Dept. of Fisheries, Ottawa, Canada, Sept. 19.)

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## REPORT ON TRADE IN FISH MEAL AND MARINE OILS

Production of fish meal for first-half 1967 was 31 million pounds (15,500 short tons), up 21.4 percent from first-half 1966. Despite this production increase, exports of fish meal declined slightly, to 11.9 million pounds (5,950 short tons), by June 30, 1967.

Production of marine oils during first-half 1967 of 3.1 million U. S. gallons was 3.3 percent above the 3 million U. S. gallons in the 1966 period. Almost all was herring oil, with insignificant quantities of seal and other marine oils included.

	January-June	
	1967	1966
	. . . . (1,000 Lbs.) . . . .	
<b>Fish Meal:</b>		
Exports . . . . .	1/11,920	1/12,286
Imports . . . . .	-	8
<b>Marine Oils:</b>		
<b>Exports:</b>		
Cod liver . . . . .	2,453	2,338
Herring . . . . .	2,493	100
Whale . . . . .	1,845	697
Other . . . . .	421	1,054
Total . . . . .	7,212	4,189
Imports . . . . .	7,310	2,414
1/Mostly to United Kingdom and U. S.		

Exports of marine oils increased from 4.2 million pounds for first-half 1966 to 7.2 million pounds this year. Imports, however, increased even more--to 7.3 million pounds this year, compared with only 2.4 million pounds a year earlier. (Foreign Agricultural Service, U. S. Embassy, Ottawa, Oct. 6.)





## LATIN AMERICA

### Mexico

#### JAPAN TO NEGOTIATE FISHING RIGHTS IN MEXICO'S 12-MILE ZONE

Japan will seek Mexico's permission this year for Japanese tuna long-liners to continue fishing within the latter's 12-mile fishery zone. Mexico's new law, which became effective in January, established a 3-mile exclusive fishing zone beyond the present 9-mile territorial sea limit. However, it allows foreign nationals already fishing within the 12-mile zone to continue without restrictions for one year.

#### Fishing Extension Can Be Negotiated

During that year, Mexico would negotiate with those countries conditions under which their nationals would be permitted to continue fishing for five more years, beginning January 1968. When the new law was enacted, Japan made a representation to Mexico claiming she could not recognize the fishing zone established unilaterally and that such a law has no effect internationally. ("Suisan Keizai Shimbun," Sept. 5.)

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#### WEST GERMANY TO GIVE MEXICO \$1 MILLION RESEARCH VESSEL

The German Federal Republic is giving Mexico a US\$1 million fishery research vessel. The 100-foot vessel will be built as a practical fishing craft. With a crew of 10 and 6 scientists, she will conduct exploratory fishing under the Mexican Department of Fisheries. This action is part of a U. N. Special Fund Fisheries Development Project awaiting final approval and expected to be operating soon. Details remain to be worked out.

Mexican technicians will visit Hamburg to familiarize themselves with the vessel scheduled to be completed next year. During August, 2 representatives of the W. German President visited Mexico to discuss the vessel.

\* \* \*

#### SELLS 6 SHRIMP VESSELS TO VENEZUELA

Six shrimp vessels built in Mazatlan, Mexico, have been sold to Venezuela. Each cost

US\$90,000, is 22 meters (72 feet) long and 6 meters (19.7 feet) wide, and has a 380-hp. engine. They were delivered to Lacustre de Pesca, Maricaibo. ("El Rio," Aug. 21.)

\* \* \*

#### FIRMS MAKE SHIPBOARD FISH MEAL PLANTS

Portable fish meal plants, designed for use aboard shrimp trawlers, are available through these 2 firms: Ing. Hector Vargas, Productos Marinos Industrializados, S. A., Avenida Chapultepec 151-1, Mexico, D. F.; Ing. Carlos Diez de Sollano, Montevideo No. 29, Mexico 14, D. F.

Plants are the "instantaneous" type: fish go into hopper and come out as meal in a short time. The meal produced is good quality but high in moisture and oil content. Quality varies with species. Best results are reported with lean fish. Meal has a good market in Mexico, where law requires local product to be used before imported meal. Plant with a capacity of 5 metric tons of raw fish per 24 hours (1 ton meal) costs US\$11,200. It can be run off ship's engine.

Plants have not been tested in U. S., although fresh-water rough-fish control agencies are interested. (U. S. Fisheries Attaché, Mexico, Sept. 6.)



### Brazil

#### FISHERIES STUDY GROUP FORMED

The Sao Paulo fishing industry has formed a working group under auspices of the Sao Paulo State Department of Agriculture to recommend methods of developing fishing, fish processing, and distribution within the State. The Department will work with the State's marketing agency (CEASA) and the Federal agency in charge of fisheries development (SUDEPE) to implement measures to be recommended by the working group.

The new group has identified the industry's major need as the creation of an adequate infrastructure for industrialization of fishing and distribution of fish to consumers.



## Brazil (Contd.):

SUDEPE and the Department emphasized that adequate funds to finance development projects are available from several Brazilian Government and foreign sources. (U. S. Consulate, Sao Paulo, Aug. 15.)



## Argentina

### REPORT ON FISHING INDUSTRY

The 1966 Argentine fish catch was 250,825 metric tons. In 1965, it was 205,044 metric tons; in 1964, 168,542.

The 1966 sea catch of 211,066 tons was up 47 percent from 1965, and the freshwater catch of 10,091 tons was down 31 percent. About 48 percent of the catch went to canning, salting, freezing, and filleting plants; about 40 percent to fish oil and meal processing plants.

Over 92 percent of the 1966 fish catch was delivered to Mar del Plata, which has become the center of the fishing industry because it has plants for fillets, fish meal and oil, and canning.

#### Processing Facilities

There are an estimated 65 firms engaged in fishery enterprises, many integrated plant operations. There are an estimated 52 canneries, 40 filleting and freezing plants, 67 salting and drying plants, and 12 fish meal and oil plants.

In 1966 and early 1967, 7 additional fish meal plants were opened in Mar del Plata, Necochea, and Quequen. (Only 8 plants were operating in early September 1967.)

During 1966, about 40 percent of the catch was used for reduction. Fish meal factories operated at about 65 percent capacity. Nevertheless, fish meal and oil production are the only industrial sectors showing advances.

Processors of canned fish products have been forced to hold down production due to a leveling off of domestic consumption, which resulted in early 1967 in a stock build-up.

Plant investments of all fish industrial activities total more than 3.14 billion pesos (US\$8.97 million).

Fish meal production was 21,282 metric tons, or 44.6 percent more than 1965's 14,716 tons. Fish oil production of 1,464 tons was 55.6 percent over 1965's 941 tons.

The potential of anchovy resources has been determined by a national laboratory and FAO as one million tons per year.

In late 1966, Machiavello S. A. opened its PROMASA fish meal factory in Mar del Plata, with an estimated investment of US\$300,000. Annual capacity of the plant is 9,000 tons of fish meal and 2,250 tons of oil.

#### Exports Rose

Exports of fish products in 1966 were 13,210 metric tons, triple the 1964 figure of 4,585 metric tons. Fish meal and oil have a market in Western Europe and the U. S.

Imports during 1966 rose to 10,608 metric tons from the 1964 level of 4,746 metric tons. They consist of crustaceans and molluscs from Chile, Peru, and Uruguay. Imports of frozen bonito and green cod have begun to fall off, due to the increased catch beginning in early 1967. In 1965, Argentina was a net importer of 11,905 metric tons of fish meal; in 1966, she was a net exporter of 1,571 metric tons. Most meal exports go to West Germany; most imports come from Peru.



## Ecuador

### FISHERY PRODUCTION AND EXPORTS DROPPED IN 1966

Ecuador's fishery catch in 1966 dropped to 48,200 metric tons from 53,500 tons in 1965. Exports also declined in 1966: 9,200 tons of fishery products bringing US\$4,200,000 compared with 1965's 10,300 tons worth \$4,400,000. Fishery products ranked fifth as an earner of foreign exchange.

Government plans to bolster the fishing industry have been hampered by lack of



## Ecuador (Contd.):

modern vessels. Despite large red shrimp beds discovered offshore, the lack of suitable vessels limited the shrimp catch to inshore areas yielding "titi," "pomada," and "tigre" varieties.

A few small seiners fished experimentally for tuna, but most of the catch continues to be caught by pole-and-line fishing. No tuna vessels had refrigeration at the end of 1966. The spiny lobster catch was incidental.

Landings and Exports of Fishery Items, 1962-1966					
	1966	1965	1964	1963	1962
	. . . . . (1,000 Metric Tons) . . . . .				
Tuna landings . . . . .	12.0	14.8	9.8	13.5	11.5
Shrimp landings . . . . .	5.3	5.7	5.0	5.2	4.7
Spiny lobster landings . . . . .	0.2	0.3	0.3	0.4	0.2
Total whole frozen tuna exports . . . . .	5.0	5.1	3.1	3.7	3.8
<b>Exports to U. S.:</b>					
Canned tuna . . . . .	1.7	2.0	1.8	1.4	1/
Whole frozen tuna . . . . .	4.9	5.0	2.4	2.1	1/
Shrimp, frozen . . . . .	2.4	2.6	2.4	2.4	2.2
Spiny lobster, frozen . . . . .	0.1	0.1	0.1	0.1	1/

1/Not available.

Several fish meal plants were added to process waste, but lack of fish resources probably would hinder an expansion of production.



## Peru

## TROUBLED FISH MEAL INDUSTRY STARTS SLOWLY

The fishing season opened in Peru on September 1, but producers refused to open their plants because they wanted tax relief. Fishermen wanted more jobs and increased wages. The Government wanted increased wages for fishermen, higher import and export taxes, and retention in Peru of 40 percent of export profits. There were premature reports early in September that some vessels had started to fish.

In August, the Government had granted minor tax relief and authorized the Navy to limit crew size, but industry considered these reforms insufficient to begin production. The Labor Ministry decreed a return to work on September 21, and on September 22 all sides

agreed to begin fishing. Fishermen and vessel owners agreed not to interfere with production by increasing costs or stopping work. About 80 percent of the fleet was fishing in late September; the rest were getting ready. Crew size remained unchanged. This was not a major issue with producers because the crew's share is the same regardless of size. The Congress is considering further relief.

## Industry in Crisis

The fish meal industry has been in crisis since late 1966. Its future is bleak for the remainder of 1967 and far into 1968. Lower world demand and prices for Peruvian fish meal, combined with higher production costs, placed the industry in a financial crisis from which it shows no signs of recovering.

Currency devaluation on September 1 may reduce some local costs--but may greatly increase cost of imported equipment and supplies.

In mid-September, stocks probably were about 350,000 metric tons and sold for future delivery. With future production (October-December) estimated at 200,000 tons a month, and shipments running about 130,000 tons a month, stocks at year end may approach the half-million-ton mark. This would depend on length of shutdowns because of strikes, lockouts, or closed seasons.

The price of fish meal, f.o.b. Peruvian ports, fell early in 1967 to unexpected lows. They remained down until early September, when they were reported to have dropped slightly with expectation that fishing would be resumed soon.

## Record First Half Production

In first-half 1967, Peru produced a record 1,029,242 tons of fish meal, despite a four-week closed season and, for the last three months of fishing, a reduction of work week to 5 days. Added to 501,509 tons produced in second-half 1966 (despite 6-week strike), this produced 1966/67 fishing season total of 1,530,751 tons.

It is estimated that production for second-half 1967, during which 1967/68 fishing season will begin, may be over 500,000 tons. This would depend on availability of anchovy, absence of prolonged strikes, lockouts, or new closed seasons.



## Peru (Contd.):

In 1966, Peru shipped 1,304,482 metric tons of fish meal. By middle 1967, 750,663 tons had been shipped--slightly better than same date of 1966 but much below the 1965 level. By September 15, 1967, shipments for the year were believed considerably above one million tons.



## Venezuela

### LEAFLET DISCUSSES FISHERIES OF VENEZUELA

A new leaflet on Venezuela's fisheries for 1965 and 1966 was issued recently by the U. S. Bureau of Commercial Fisheries (BCF). During these years, 2 of the 3 major commercial fisheries experienced a prolonged severe shortage of their basic raw materials--shrimp and sardines. Shrimp trawlers and lake fishermen turned to finfish, and processing plants were forced to close. Only one shrimp plant experimented with frozen fish fillets (fresh-water catfish steaks) and those were for the U. S. market. The canneries increased slightly their processing of tuna and "pepitones" or turkey wings ("Arca zebra"), but there was no one species available in ample supply to offset the prolonged absence of the sardine.

Editor's Note: In late April 1967, sardines returned to the eastern coast, and by May all canneries were in production. The shrimp reappeared in the Gulf of Venezuela in March 1967, but very few have been located throughout mid-1967 in Lake Maracaibo. No commercial supply of shrimp has been found in Venezuela's eastern waters.

### No Sardine Exports In 1966

Short supply of sardines forced Venezuela out of the export market in 1966 because pro-

duction was required to meet local demand. Japanese importers moved into the shrimp market in April 1967. They continue to buy most of the shipments of the premium grades of pink and brown at prices well above those paid by the U. S. market.

### Government Obtains UN Aid

The Government is optimistic over Venezuela's marine resource development potential, but it is concerned over the lack of knowledge of the resources. It has obtained the assistance of the United Nations Special Fund in a project designed to provide the scientific and economic basis for rational development. The five-year project, which should be initiated before the end of the year, will be financed jointly: the Venezuelan Government will contribute some US\$4 million and the Special Fund \$1 million.

The leaflet discusses Government policy and programs; shrimp, fresh fish, canning, tuna, and fish reduction industries; shellfish other than shrimp, including spiny lobsters. It includes detailed data on landings by species and ports, exports, etc.



## Colombia

### DEBATE RESUMES ON 200-MILE TERRITORIAL SEA BILL

A motion to begin Senate debate on Colombia's contemplated 200-mile territorial sea was introduced the week of October 8. A bill to extend maritime jurisdiction was introduced in the House of Representatives in February. It passed and went to the Senate. It remained in committee since then.





## EUROPE

### USSR

#### TINRO'S DIRECTOR REVIEWS SOVIET PACIFIC FISHERIES

In a recent article, Prof. I. V. Kizevetter, Director of the USSR's Pacific Scientific Research Institute for Fisheries and Oceanography (TINRO), reviewed the Soviet Pacific fisheries. He stated that in 1960 the Far Eastern Fisheries Administration landed only about 800,000 metric tons--but in 1966 the total catch was over 2 million tons (including a small Indian Ocean fishery).

During the current 5-Year Plan (1966-1970), Soviet Far Eastern catches will increase by one-third over 1965, to about 3 million tons. Despite these large increases, the USSR will take, in 1970, only about 8 percent of the total Pacific catch of all nations.

Kizevetter noted the changed species composition of the Soviet landings. New species now caught are: ocean perch, hake, fat herring, saury, tuna, etc. He added: "Intense fishing, conducted by the fishing fleets of Soviet Union and Japan during the last half decade in the Northern Pacific did have an effect on stocks of flounders and ocean perch. In this connection, the problem of unavoidable regulation of this fishery by interested countries has risen."

#### His Complaints About Soviets' Pacific Fishing

He chided the Far Eastern Fisheries Administration fleet for not doing more deep-water trawling in the "area of the Continental Shelf of the Bering Sea where commercial concentrations of valuable fish species, for example, halibut and sablefish, are available". He complained that "long-lining for cod, halibut, and sablefish has not been given enough attention. He deplored the "weak development of Pacific shrimp fishing" and insufficient use of Alaska pollock, saury, seaweed, etc.

Of Pacific Northwest hake, Kizevetter said it was "an interesting species of our trawl fishing" and that its stocks permit an annual fishery of over 100,000 metric tons.

As for the new Soviet Pacific fisheries, they will be developed in tropical and subtropical zones; pelagic fishing will predominate. The Soviet tuna fishery must be organized so that "the resources will be fully utilized" and the USSR will earn a "leading position in world tuna fishing." In 1966, the Soviets caught only about 6,000 metric tons of tuna--4,400 tons in the Indian Ocean and the balance in the southern Atlantic.

In the tropical eastern Pacific, the Soviets will go after mackerel, sardines, small tuna, sailfishes, swordfish, and pike-mackerel (southeastern Pacific saury).

In the southern Pacific, the expansion will be principally in horse mackerel, tuna, gilt-heads, jacks, various species of perch, red snappers, and others.

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#### KOSYGIN INSPECTS BALTIC FISHING INDUSTRY

While vacationing in Lithuania, Soviet Prime Minister Kosygin visited the fishing port at Klajpeda. He toured a cannery, a processing mothership, and a large stern factory trawler just returned from the Northwest Atlantic. Kosygin was interested mostly in quality of fishery products and "the life and working conditions of fishermen and their families."

While returning to Moscow, Kosygin also inspected the fishing port at Kalinigrad.

This is twice in as many months that top Soviet administrators paid special attention to the fishing industry. It could be that the poor performance of the Soviet fishing industry under the new economic system ("not production but productivity") is one of the reasons for these visits.

In June 1967, the Soviet Ministry of Fisheries was 9 percent (about 20 million rubles) below the 1967 semiannual "profit" quota. Of 23 other Soviet ministries only that of the meat and milk industries had a poorer "profit" performance (10 percent below the semiannual quota).



## USSR (Contd.):

East German source reports that Deputy Prime Minister Novikov visited shipyards at Stralsund where East Germans construct latest series of 3,200-gross-ton stern factory freezer trawlers for the Soviets (over 100 freezer trawlers were ordered in 1965 for 1967-1970 delivery).

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TUNA FACTORY MOTHERSHIP  
FISHES IN ATLANTIC

In late 1964, the Japanese delivered to Sudoimport, the Soviets' ship-importing firm, a 5,300-gross-ton tuna factory mothership for the Western Fisheries Administration in Riga. The vessel, "Solnechnii Luch" (Sunlight), cost about US\$3.6 million. She is 380 feet long, 57 feet wide; her speed is 14 knots and cruising range 120 days. By mid-1965, 5 identical motherships had been delivered. Each carries six 22-ton catcher boats.

The "Solnechnii Luch" departed January 20, 1965, on its maiden voyage from the Far Eastern port of Nakhodka. By the end of February, she was fishing near the Galapagos Islands and along the Mexican and U. S. coasts. She passed through Panama Canal, resupplied at Havana, and then continued towards Brazil. By April 24, she was fishing off the coast of northeastern Brazil, then continued towards west Africa. The last leg of her journey is described by the fishery scientist V. G. Iurov, Atlantic Scientific Research Institute for Fisheries and Oceanography, in the November 1966 issue of "Rybnoe Khoziastvo."

Iurov wrote that the tuna factory mothership Solnechnii Luch operated along Brazil's northeastern coast from April 24 to May 2, 1965. Adverse weather made launching and hoisting tuna fishing boats very difficult and hampered fishing.

The search for tuna in the region could not be aided by any guiding hydrological factor affecting the distribution of the fish. The sites for the setting of long lines were therefore selected on the basis of non-Soviet statistical data, taking into account changes in the hydrometeorological regime. Five long lines were set radially at 2 to 3 a.m. The catch is tabulated in table.

## Catch Mostly Yellowfin Tuna

Most of the catch was yellowfin tuna (40.6 percent) 52 to 155 cm. (20.5-61.0 inches) and 8 to 96 kg. (17.6-211.6 pounds). The average size of male yellowfin tuna gradually increased, reaching 150 cm. (59.1 inches) by end of fishing period (end of April). At that time, the females varied more widely in size--from 127 to 145 cm. The sex ratio in catch averaged 1:1. Most captured specimens were close to spawning. As fishing shifted south, proportion of return spawners and sexually immature individuals decreased; large specimens with almost mature sexual products began to predominate. Tuna feed mainly on squid and small fish. The feeding rate was low.

Other species found were big-eyed tuna, albacore tuna, marlin, spearfish, swordfish, and wahoo. Although bluefin tuna provide the bulk of the winter catch off northeastern Brazil, only one was caught during the entire fishing period.

The Solnechnii Luch operated during May 6-19 in the region of the South Trade Winds. Weather conditions generally were favorable to fishing.

## Marlin Found Often

Marlin were found frequently in the central and southern sectors of this region. Yellowfin and big-eyed tuna were caught only in early May, the beginning of the fishing period. Tuna reappeared in the northern part with a commercial school of spawning swordfish.

Catch of Solnechnii Luch, April 24-July 6, 1965

Fishing Region	Total Catch	Composition						Catch Per 100 Hooks	Hooks Cleaned
		Tuna	Sailfish	Shark	Swordfish	Marlin	Mackerel		
(Metric Tons)									
N. E. Coast of Brazil . . . . .	10.74	8.64	1.62	0.48	-	-	-	49.7	21,800
South Trade Winds Current Region . . .	50.06	20.34	0.29	17.04	10.33	2.09	-	97.8	51,700
Sherbro-Conakry Region <sup>1/</sup> . . . . .	274.61	80.25	7.90	168.31	14.68	2.27	1.20	160.0	171,370
Total Catch . . .	335.41	109.23	9.81	185.83	25.01	4.36	1.20		

<sup>1/</sup>Off the coast of Sierra Leone and Guinea.



USSR (Contd.):

Big-eyed tuna ranged from 100 to 179 cm. (39.4-70.5 inches). Sexually immature fish were not included. Most of the catch were individuals close to spawning.

Swordfish were second in importance to big-eyed tuna. They ranged from 120 to 205 cm. (47.2-80.7 inches). The females were slightly larger than the males. At first the sex ratio was 1:1, but later the proportion of males began to increase. Small numbers of return spawners were found. This indicates that spawning of swordfish is not completed by late May. Both sexes were actively feeding. Large squids, luminous anchovies, and macroplankton were found in their stomachs. Judging from their food, the swordfish inhabited deep waters.

#### Time of Setting Long Line Important

An important factor in tuna fishing is the time of setting the long line. The fishermen used both the traditional method of throwing the long line at 2-3 a.m., and completing the set at dawn--and a new procedure that markedly increased the catch.

In the new method, the setting began at 4-5 p.m., drifting continued till 9-10 a.m. the following day, and the line was lifted from 9-10 a.m. to 3-4 p.m. The tuna fishing boats using this new method returned to the main vessel after setting long lines equipped with radio buoys. From 6 a.m. the following day, the boats dispersed in the direction of their radio buoys and began hauling. The long lines were fished at dawn and dusk, when tunas bite most avidly. Pacific saury was used as bait. This fish does not lose its palatability even after 14-18 hours in the water. Long-line fishing at night is possible where the danger of sharks eating the catch is not great. (In the case of albacore the long line would be set below 100 meters, 328 feet.)

#### Fished Sherbro-Conakry Area

From May 23 to July 6, 1965, the Solnechnii Luch operated in the Sherbro-Conakry area (off coast of Sierra Leone and Guinea). There yellowfin tuna formed the bulk of the catch. The average length of male and female was 150-160 cm. (59.1-63.0 inches) and 137-145 cm. (53.9-57.0 inches). These figures varied daily with the arrival or disappearance of groups of small, sexually immature tuna. The stock fished had not reached the spawning stage.

Peak catches (up to 150-200 kg. or 331-441 pounds per 100 hooks) were obtained at the boundary between warm and cold waters.

The general warming of the fishing region due to the northward advance of the Equatorial Countercurrent proceeded irregularly and often was offset by northerly winds. Operations were impeded by constant changes in the oceanologic structure of the region. Small schools of tuna scattered over the whole region often migrated southward because of the northerly winds. The force and duration of the winds determined the extent of these local migrations; usually they did not exceed 30-40 miles. However, this did not affect the seasonal northward migration of tuna, which corresponded with the movement of the boundary between the Equatorial Current and the Canary Current.

#### Maiden Voyage Data Confirm Earlier Research

The results obtained on the maiden voyage of the Solnechnii Luch in Atlantic tropical waters confirmed the data on spring and summer distribution of tuna stocks established by previous expeditions of the Atlantic Scientific Research Institute of Marine Fisheries and Oceanography.

In late spring, tuna vessels accompanied by an exploratory vessel can operate profitably in the eastern part of the tropical Atlantic--Angola and the open waters of the Gulf of Guinea.

Catches were highly varied: during the first 8 days of fishing, 10.7 metric tons of fish were landed, or 1.3 tons per day; during the next 13 days, 50 tons were landed, giving a daily catch of 3.8 tons; and during the last 44 days off West Africa, 274.6 tons were caught, or over 6 tons per day. The average daily catch per day by long-lining during the 35 fishing days was slightly below 10.0 metric tons. Tuna catches were low--1-2 tons per day (see table).

The Solnechnii Luch returned to Kaliningrad on July 22, 1965, with about 800 metric tons of tuna and other fish. The trip lasted about 180 days; daily catches per trip day were about 4.3 metric tons. Since the vessel carries 180 men, the average catch per crew member was about 24 kilograms per trip day.

\* \* \*



USSR (Contd.):

### CONDUCTS FISHERY RESEARCH OFF CALIFORNIA

Early in August, the "Iskatel" (Seeker), a scientific research vessel of the Pacific Institute for Fisheries and Oceanography (TINRO), arrived at Vladivostok after a long cruise off the U. S. west coast. On a previous cruise to the same areas in 1966, Iskatel found large concentrations of sardines, anchovies, and mackerel off California. The 1967 cruise was scheduled to confirm earlier data. It would appear that the Soviets intend to begin a fishery for the 3 species in the near future.

As of mid-September, surveillance flights of the California Fish and Game Commission and other sources indicated no Soviet fishery off California for these species.

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### POLAND BUILDS OCEANOGRAPHIC RESEARCH VESSEL FOR USSR

The oceanographic research vessel "Musson" was launched recently at the Warski shipyard at Szczecin, Poland, for delivery to the USSR. The Musson has a displacement of 3,700 tons. She is 86 meters long, and 13.8 meters wide.

The vessel is adapted for fishing in both tropical and subarctic zones. The storage capacity enables her to remain at sea for 90 days and cruise 15,000 nautical miles without calling at a port. A special device designed by the Szczecin shipyard enables the vessel to anchor in ocean depths down to 6,000 meters. She can accommodate 60 scientists and technicians in 23 laboratories equipped with modern instruments. These labs will facilitate oceanographic observations and synoptic research in meteorology measuring direct heating power of sun's rays and soundings of the atmosphere with rockets and radiosonics.

Polish press stressed the expertise needed to construct ships of this kind. The design work was done entirely by Polish technicians and the plans accepted readily by the Soviets. The designers were presented with an award of excellence by the Polish Council of State. (U. S. Embassy, Warsaw, Aug. 25.)

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### TINRO STUDIES USE OF SEAWEED

Large beds of sea flax (*Phyllospadix*) stretch along the Siberian coast not far from Vladivostok and around the southern tip of Sakhalin Island. The Soviet estimate is that up to 10,000 metric tons of dry *Phyllospadix* could be produced from those beds each year.

Experiments conducted by Pacific Institute for Fisheries and Oceanography (TINRO) technologists have proved fibers of sea flax to be exceptionally strong and able to withstand rot. Further testing will determine if the flax has any practical use.

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### COOPERATES WITH JAPAN IN FISHERIES RESEARCH

In recent months the USSR and Japan have exchanged fishery and research teams. On July 20, a Japanese delegation of fishery research scientists from Kushiro (Hokkaido) Salmon Research Institute arrived at the Sakhalin Branch of TINRO (Pacific Ocean Scientific Research Institute of Fisheries and Oceanography) for a week of talks on cooperative salmon programs. On July 23, a Soviet delegation visited the Shimonoseki sea urchin processing factory, fishing port, shipyards, net factory, and a fish meal plant. In mid-September, 4 Soviet scientists arrived in Japan to participate (aboard a Japanese research vessel) in a 45-day research cruise to study saury resources off Japan. In 1966, a similar joint research project was undertaken aboard a Soviet research vessel. (U. S. Embassy, Tokyo, Sept. 1, and other sources.)

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### FISHERY RESEARCH OFF AUSTRALIA

The Soviet research vessel "Lira," TINRO flagship, returned from a 7-month cruise to the South Pacific in early Sept. 1967. Its primary purpose was to investigate the commercial potential of fishery resources in Great Australian Bight during fall and winter. The Soviet scientific party's leader was N. A. Kulikov, a TINRO biologist who used to research Antarctic whales. Soviet sources report the party collected many biologic samples, data on hydrology, and other information that "made the cruise highly successful." This probably means the Far Eastern Fisheries



## USSR (Contd.):

Administration wants to begin a large-scale commercial fishery off Australia as soon as possible.

Australian fisheries officials seem to understand this and are concerned over Soviet expansion plans.

Despite the position of provincial fishery officials, Australia does permit Soviet fishery research vessels to come into her ports. ("The Australian Fish Trades Digest," July.)



## Denmark

LANDINGS RISE 12 PERCENT  
IN FIRST-HALF 1967

Landings by Danish fishing craft during January-June 1967 increased about 12 percent above the 1966 period's--from 462,500 metric tons to 520,000 tons. Nearly all categories were up. Exceptions were the cod-like species, eels, and Norway lobster. Catches of herring and brisling were up significantly from the 1966 period. Mackerel catches more than tripled. The supply of pond trout was little changed.

The quantity of processed products--79,000 tons--increased in all categories over 1966 except for fresh and frozen fillets, which declined nearly 15 percent. Both cod and flatfish have been in good supply recently, so the decline in production of fillets indicates a diversion of these fish into sales channels for fresh fish. This diversion further reflects the price decline in western markets for frozen blocks of cod fillets. Among industrial fish products, significantly more fish meal, oil, and solubles were produced than in the 1966 period.

## Exports Increase But Value Down

Exports of fishery products increased slightly in quantity but decreased in value compared with January-June 1966. Over 169,000 tons of fishery products worth US\$55 million were exported in first-half 1967, compared with 163,000 tons worth \$58 million a year earlier.

The major factors behind the decline in value were substantial decreases in value of

fillets, fish meal, and fish oil exported. The quantity of fillets exported also decreased. However, quantities of meal and oil increased, and the decline in the value of these exports reflects lower prices in recent months. The quantity and value of pond trout exported were up slightly from the 1966 period. Also, the canned category increased by 20 percent in quantity and 10 percent in value.

## Exports to U. S.

Exports to the U. S. during first-half 1967 of about 2,500 tons (\$1.8 million) were only about half the 1966 period in value and quantity. Frozen blocks of cod fillets are the predominant export to the U. S. These declined more than 60 percent in quantity and nearly 70 percent in value. Pond trout, the other major frozen export to the U. S., were up substantially in quantity and value.

	Jan.-June		Jan.-Dec.
	1967	1966	1966
	. . . . . (Metric Tons) . . . . .		
<u>Fresh and frozen:</u>			
Pond trout . . . . .	326	189	502
Cod fillets . . . . .	1,674	4,174	15,372
Flatfish fillets . . . . .	2	12	163
Other . . . . .	148	98	808
Total . . . . .	2,150	4,473	16,845

The important canned items--sprats, herring, shrimp, and mussels--all declined in quantity and value. There were no reports of industrial fishery products exported to the U. S. (U. S. Embassy, Copenhagen, Sept. 1.)

\* \* \*

## NEW FISHING PORT OPENS

Denmark's new North Sea fishing port of Hanstholm was opened officially on September 8--50 years after it was conceived.

The new harbor is protected by a breakwater formed of giant precast-concrete caissons. It offers moorage for 200 fishing cutters and will later be expanded to accommodate 400. A large new auction hall provides excellent facilities for selling catches from North Sea fishing grounds. Also, an attractive, modern town has sprung up which will expand rapidly as fishing vessels, processing plants, and supporting activities shift their base of operations to the new harbor. (Regional Fisheries Attaché, U. S. Embassy, Copenhagen, Sept. 15.)

\* \* \*



Denmark (Contd.):

#### FISHERMEN MAY USE MOTHERSHIP OPERATION

A mothership operation may be used this season by Danish fishermen from the port of Esbjerg. Last year they made excellent salmon catches along the North Norwegian coast, but they were not permitted to land their catches in Norway for transshipment to Denmark. The loss of valuable fishing time and increased cost prompted fishermen to negotiate with the owner of a large steel cutter to convert it into a mothership to transport the catches. Salmon fishing in the area was scheduled to begin in September. ("Fiskaren," Aug. 16, U. S. Embassy, Copenhagen, Aug. 25.)

\* \* \*

#### STEEL VESSELS ARE GALVANIZED

Steel trawlers that have been used in Danish fisheries for some time are being cold-galvanized. If not broken by impact, or removed by abrasion, the galvanized finish is expected to last about 7 years. Molten zinc is sprayed onto the hull using a pressure spraygun-torch apparatus.

As an example, the 180-ton "Signe Anthonisen" was scraped and cold-galvanized for about \$2,400 by 4 men in about 6 weeks. In all, 10 steel vessels at Skagen have been galvanized. ("Vestkysten," Sept. 9; Regional Fisheries Attaché, U. S. Embassy, Copenhagen, Sept. 15.)

\* \* \*

#### DANE ATTEMPTS MARINE FISH FARMING

A fisherman on the Danish island of Hirtsholm in the Kattegat has stocked 1,200 small plaice in a 1,600-square-meter enclosure of nylon netting. The fish weighed 600 kilograms (1,320 pounds) when stocked and are said to be gaining weight rapidly on two feedings a day of wheat germ.

A biologist of the Danish Institute for Fisheries and Marine Research stated that plaice

are not primarily plant-eaters and that the "experiment" was doomed from the very beginning. The fishfarmer, ignoring this warning, points out that many fishermen know of particularly fat and tasty plaice caught near shipwrecks containing grain.

Fish farming projects are also underway in the United Kingdom. ("Vestkysten," Aug. 26; U. S. Embassy, Copenhagen, Sept. 15.)

\* \* \*

#### BEST OYSTER SEASON IN YEARS

Prospects are that 1967 may be the best season for oysters Denmark has experienced in several years. Ideal growth conditions for the shellfish have prevailed this year. Production is expected to be about one million oysters, somewhat more than the harvest in each of the last 5 or 6 years. Landings, however, will not approach the 4 million mark reached several years ago. (Børsen, Aug. 3; U. S. Embassy, Copenhagen, Sept. 15.)



#### Greenland

##### SEAL SKIN SALE

At the auction of Greenland seal skins on September 5, 18,055 skins were offered for sale. Nearly 99 percent--17,797--were sold. The auction was held at the Danish Fur Sale, Copenhagen, for the account of the Royal Greenland Trade Department.

Prices were considered fair: skins in the middle-quality grades increased about 15 percent. The price decline evident at the April 12 sale appeared stopped. In April, only 21,039 (78 percent) of 27,279 skins offered were sold.

The next auction of Greenland seal skins will be held in spring 1968 at Danish Fur Sales, 60 Langagervej, Glostrup, Copenhagen. A sale of Greenland fox skins and polar bear skins will be held December 14, 1967, at the same location. (Regional Fisheries Attaché, U. S. Embassy, Copenhagen, Sept. 20.)





## Ireland

### \$1.1 MILLION FISH MEAL PLANT TO BE BUILT

The Irish fishing industry has received a strong boost from the announcement that a fish meal plant will be built at Burrow Point by Chr. Salvesen & Co. Ltd., of Leith, Scotland. The plant is scheduled to be in operation by next summer. It will have an annual intake of 35,000 metric tons of fish and an output of up to 10,000 tons of meal and oil.

A grant for the £400,000 (US\$1.1 million) project has been approved by the Grants Board An Foras Tionscal.

### Experienced Company

The company has obtained considerable experience in fish meal and industrial fishing operations. It is constantly looking round the world for suitable fish meal plant locations. The decisive factor in selecting Ireland was the suitable climate for growth in her fishing industry. This potential attracted the Salvesen Company in the first instance.

The plant will be highly automated and have one of the most up-to-date odor-suppression systems.

### Boon to East Coast Fishermen

Ireland imports nearly all her requirements of fish meal at an estimated annual cost of £800,000 (US\$2.2 million). The new company hopes to produce nearly 10,000 tons of meal and oil yearly, which would require 35,000 tons of industrial fish. This equals Ireland's current landings of food fish. The additional revenue will open a new era for the east coast fishermen supplying the plant. ("The Fishing News," Sept. 8.)

\* \* \*

### QUALITY FISH STANDARDS USED FOR FIRST TIME

The first use of Ireland's quality fish standards was recently awarded to a Dublin firm. The standards, oriented towards consumer requirements, are the first standard specifications of their kind for processed fish in Western Europe. Ireland is attempting to make inroads into the world market and is

emphasizing quality. She will introduce regulations covering fish handling next Jan. 1.

A license to apply the symbol to a product is granted by the Institute for Industrial Research and standards. A license may be granted only if a specification exists for the product, and the manufacturer has a quality-control system in operation. Adequate records must be maintained by the processor, and the government may make random tests on his product.

Ireland's exports of fishery products showed an impressive 25-percent rise in value last year. Greater potential is there. ("The Irish Skipper," Sept. 1967.)

\* \* \*

### TESTS MARINE FISH FARMING

Rearing flatfish under artificial conditions is being tested in Ireland and is encountering difficulties. Sole stocked at Hunterston were of poor quality and hatchery fish mortality was high. But the survivors grew and gained weight throughout the winter. In fall 1966, 50,000 plaice joined the 1965 survivors of the sea-lock enclosure at Ardtoe--and a substantial number survived the winter. The Port Erin hatchery produced 3,000 plaice and 5,000 sole in 1966, instead of the expected 100,000 of each species. Biggest cause of mortality was a change in source of food supply for larvae.

Ireland is well situated to develop fish farms because the many indentations along her coastline are ideal for fish farming. ("The Irish Skipper," Sept. 1967.)



## United Kingdom

### BLOCKADE BROKEN ON FOREIGN LANDINGS

The partial blockade on foreign cod landings in the United Kingdom fishing port of Grimsby was broken on September 14 when the Belgian trawler "Stella Maris" was unloaded by an association formed by the city's 350 fish dealers. Local trawler owners earlier held control of the unloading apparatus and had been able to limit the unloading of



## United Kingdom (Contd.):

foreign vessels. The fish dealers reacted by forming their own association. They say they are prepared to handle any amount of foreign-caught fish. Foreign fishermen were reported extremely enthusiastic about the breaking of the blockade. ("Bør-sen," Sept. 14; U. S. Embassy, Copenhagen, Sept. 15.)

\* \* \*

## EEC REPORTS ON UNITED KINGDOM MEMBERSHIP

A comprehensive report by the European Economic Commission on October 7 strongly supports opening negotiations for accepting the United Kingdom, Ireland, Denmark, and Norway into the European Economic Community (EEC).

The report presented several obstacles to Britain's membership--most important, the role of the pound sterling as an international reserve. This problem, tied in with balance-of-payment problems, is one Britain believes she has solved by a policy designed to get balance of payments into surplus. Moreover, Britain is willing to discuss any change in international monetary arrangements with the EEC.

### Other Obstacles

Other obstacles to British entry are political: (1) she has not broken away sufficiently from U. S.; (2) her joining possibly would weaken Common Market by diluting it into a loose free-trade area; (3) possible adverse effect on East-West negotiations; and (4) present members need more time to consider effects among themselves of Britain's membership.

Britain is hopeful that negotiations, which might begin in November, will be short, quick, and effective. Only full membership interests the United Kingdom, not associate nor probationary membership. ("British Record," Oct. 12.)



## Poland

### GDANSK BUILDS 50TH FACTORY STERN TRAWLER

On September 15, State-owned Gdansk shipyards completed their 50th factory stern trawler, the "Perlamuter," ordered by the Soviet import firm Sudoimport of Moscow.



Factory stern trawler, Perlamuter. (Photo: "Polish Maritime News")

Poland began building large factory stern trawlers in late 1958. The first vessels were the B-15 or "Leskov" class, but later they were modernized as the B-26 or "Kosmos" class.

The B-26-class vessels, designed for stern fishing like their predecessors, processed the catch into fish fillets and the offal and incidental catch into fish meal. The fillets are frozen and stored at  $-25^{\circ}\text{C}$ . ( $-13^{\circ}\text{F}$ ). Frozen whole-fish blocks can also be produced. About 30 metric tons of fish can be frozen daily. The maximum capacity of the fish meal plant is also 30 tons of raw fish per day. In addition, each vessel also has a liver-oil producing plant and a cannery that can pack 200 cans of fish-liver paste daily.

### The B-26

B-26-class vessels are 83 meters (272 feet) long and 13.8 meters wide (45.3 feet); their gross tonnage is 2,890 tons. The crew is about 110 persons. A 2,400-hp. main engine can generate a speed of 12.5 knots. An electrically driven trawl winch can pull 12 tons with a rope speed of about 72 meters (236 feet) per minute.



## Poland (Contd.):

Much of their machinery is Polish-made, including the fish meal plant and main engine. Previously, the plants were bought from Norway. Radio-navigational equipment is imported from the USSR and the automatic pilot from Denmark.

At present, the Poles are refining the B-26. They have built a prototype of a new class, the B-22, and are fitting it out. The B-22 will be built for the domestic industry. The B-15 and B-26 were constructed mainly for the Soviet Union.

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## FISH TUNA FOR FUN

Crews aboard 6 Polish stern trawlers fishing for bottomfish species off the western coast of Africa spend their leisure time angling for tuna. They use natural bait and, apparently, have been successful. During 20 days in February, they landed about 90 metric tons of tuna. ("Polish Maritime News," April.)



## Portugal

## ESTABLISHES 12-MILE FISHING LIMIT

Portugal's new 12-mile fishing limit prohibits foreign vessels to fish, prepare to fish, or to carry on activities harmful to fishing within these "jurisdictional fishing waters." However, the new law does not prohibit the Government from granting foreign vessels--under terms of conventions, international agreements, or for historical reasons--the right to fish permanently or during a negotiated period in all or part of the jurisdictional waters. But these foreign vessels would be subject to the same regulations and penalties as national vessels.

For violators, the penalties are arrest, detention of vessels with gear and catch, along with varying fines. The measure is applicable to Portugal and to her overseas provinces. (U.S. Embassy, Lisbon, Sept. 31.)

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CANNED FISH PACK ROSE SLIGHTLY  
IN FIRST-HALF 1967

The Portuguese pack of canned fish in oil or sauce during January-June 1967 was up slightly in weight from the 1966 pack.

	1967		1966	
	Jan.-June		Jan.-June	
	Metric Tons	1,000 Cases	Metric Tons	1,000 Cases
<u>In oil or sauce:</u>				
Sardines . . . . .	8,616	453	9,122	480
Chinchards . . . . .	839	44	248	13
Mackerel . . . . .	1,282	51	2,074	83
Tuna & tunalike . . . .	4,015	134	2,274	76
Anchovy fillets . . . .	2,475	248	2,977	298
Others . . . . .	576	30	508	27
Total . . . . .	17,803	960	17,203	977

The important sardine pack was down, so was the mackerel pack, but the canned tuna pack increased. ("Conservas de Peixe," August 1967.)

\* \* \*

## CANNED FISH EXPORTS DROP

Portugal's exports of canned fish in oil or sauce in January-June 1967 were down about 10 percent from the 1966 period due mainly to lower shipments of mackerel and tuna.

	1967		1966	
	Jan.-June		Jan.-June	
	Metric Tons	1,000 Cases	Metric Tons	1,000 Cases
<u>In oil or sauce:</u>				
Sardines . . . . .	24,015	1,264	24,052	1,266
Chinchards . . . . .	219	11	216	11
Mackerel . . . . .	1,597	64	4,367	175
Tuna & tunalike . . . .	626	21	1,462	49
Anchovy fillets . . . .	2,270	227	1,958	196
Others . . . . .	347	18	391	20
Total . . . . .	29,074	1,605	32,446	1,717

Portugal's principal canned-fish buyers in January-June 1967 were: West Germany, 4,377 tons; France, 3,040 tons; the United Kingdom, 4,303 tons; Italy, 2,284 tons; the U. S., 2,406 tons; and Belgium-Luxembourg 2,544 tons. ("Conservas de Peixe," August 1967.)

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## TO BUY JAPANESE SQUID FOR BAIT

A Japanese trading firm recently contracted to export 1,000 metric tons of Hokkaido-produced squid to Portugal. The squid, which will be used as tuna bait, reportedly were sold at between US\$170-200 a metric



## Portugal (Contd.):



Boxing squid at Choshi (Boso Peninsula near Tokyo).  
(Photo: Edelsberg)

ton<sup>1</sup>. In 1966, the Japanese firm won a bid to supply 500 tons of squid to Portugal. ("Suisan Keizai Shimbun," Sept. 12.)

<sup>1</sup>/Article does not mention whether price is c.i.f. or f.o.b.



## Iceland

## EXPORTS OF FISHERY PRODUCTS DECLINE

In January-June 1967, Iceland's exports of all major categories of fresh, frozen, and salted fish were lower than the 1966 period. Exports were up slightly for fish meal but down for fish oil. (Icelandic "Statistical Bulletin," Aug. 1967.)

## HERRING CATCH DROPS SHARPLY

The herring catch through September 23 was only half last year's production during the same period, despite improved catches in early September.

Herring catches off the southern coast of Iceland were good during the summer and totaled 47,027 tons (42,135 tons in 1966). No herring were caught there after August 18.

For the northeastern herring stocks, the fleet had to operate during August and early September near Jan Mayen and Spitzbergen, 700 to 800 miles from Iceland's shores. The herring caught so far away were unfit for salting when they reached shore and could be used only for oil or meal. In September, however, the herring moved to within 400 miles of the coast. The herring were obliging.

## Herring Movement Studied

The movement of herring towards Iceland is followed with considerable interest. Its study is facilitated by the Marine Research Institute's acquisition this summer of an English-built 450 G.R.T. fisheries research vessel, the "Arni Fridriksson." Reportedly, the northern extremity of the herring stock is being extensively fished by the Soviet Union.

Recently, Icelandic ships have been experimenting successfully with onboard salting. Some herring also have been successfully transported under refrigeration for salting

	Sept. 23, 1967	Sept. 23, 1966
	. . . . . (Metric Tons) . . . . .	
Salting . . . . .	1/1,446	2/53,322
Freezing . . . . .	120	1,698
Reduction . . . . .	207,653	359,126
Exported on ice . . . . .	6,650	-
Total . . . . .	215,859	414,146
	1/9,907 barrels.	
	2/365,221 barrels.	

	Jan.-June 1967			Jan.-June 1966		
	Qty. Metric Tons	Value (f.o.b.)		Qty. Metric Tons	Value (f.o.b.)	
		1,000 Kr.	US\$ 1,000		1,000 Kr.	US\$ 1,000
Salted herring . . . . .	10,683	137,646	3,193	12,098	150,058	3,481
Other salted fish . . . . .	14,681	280,922	6,517	22,458	432,436	10,033
Stockfish . . . . .	3,088	94,084	2,183	2,831	90,458	2,099
Herring, frozen . . . . .	10,656	67,446	1,565	13,443	87,056	2,020
Fish fillets, frozen . . . . .	16,571	373,501	8,665	20,033	532,814	12,361
Shrimp & lobster, frozen . . . . .	317	36,924	857	431	44,297	1,028
Fish and whale oil . . . . .	44,343	274,752	6,374	50,468	400,602	9,294
Fish meal . . . . .	66,115	424,694	9,853	65,236	499,651	11,592

Note: Values converted at rate of 1 krona equal 2.32 U. S. cents.

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## Iceland (Contd.):

in Iceland. Advance sales of salted herring this year are close to 400,000 barrels. It is not certain whether these commitments can be met.

By value, herring were 49.3 percent of 1966 fish exports. The important lag in catch this year is only one of several indications of a significant decrease in value of exports. During first-half 1967, value was 25 percent lower than 1966. (U. S. Embassy, Reykjavik, Sept. 29.)

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FISHERMEN PAY FOR  
HERRING SEARCH SHIP

A vessel now on its first voyage for the Fisheries Research Institute in Iceland was considered so necessary for finding herring that boat owners and fishermen are paying for it from a voluntary levy. It is the 136-foot "Arni Fridriksson," a herring search vessel and mobile laboratory capable of spending long periods at sea seeking the herring shoals that, in 1966, yielded nearly 680,000 metric tons of fish to Iceland.

The vessel is working northeast of Iceland investigating the disturbing movements of the Atlanto-Scandian herring stocks. These herring are the basis of the summer fishery. They once moved west as far as the northern Icelandic coast but, since about 1960, the shoals have been stopping farther and farther east. This year they also veered north, and Icelandic boats had to travel up to 800 miles to find fish. With the Arni Fridriksson, and a 900-ton ship to be ordered later this year, the research institute in Reykjavik hopes to keep closer track of these movements and find some reasons for them.

The vessel has a length between perpendiculars of 117 ft. 6 in., a moulded breadth of 32 feet, and a moulded depth of 15 feet 6 inches. It is operated by the Lowestoft Laboratory of the Ministry of Agriculture, Fisheries, and Food. ("The Fishing News," Oct. 13.)



## Norway

EXPORT TRENDS FOR  
JANUARY-JUNE 1967

Frozen Fillets: Norwegian exports of frozen fillets in first-half 1967 increased about 7 percent from the 1966 period. Shipments of all major products were up.

Exports of Selected Fishery Products		
	Jan.-June	
	1967	1966
... (Metric Tons) ...		
<b>Frozen fillets:</b>		
Haddock . . . . .	5,866	5,311
Cod . . . . .	16,703	16,308
Coalfish . . . . .	8,806	7,769
Herring . . . . .	6,919	6,236
Other . . . . .	3,219	2,995
Total frozen fillets . . . . .	41,513	38,619
Frozen herring . . . . .	10,617	9,434
<b>Canned fishery products:</b>		
Brisling . . . . .	4,257	3,849
Small sild sardines . . . . .	6,241	5,782
Kippers . . . . .	1,795	1,643
Shellfish . . . . .	500	477
Other . . . . .	2,586	2,418
Total canned fish . . . . .	15,379	14,169
Fish meal . . . . .	226,759	118,662
Herring oil, crude . . . . .	25,608	22,831

Canned Fish: In early 1967, exports of canned brisling ran somewhat behind the previous year when shipments were exceptionally high, but 1967 shipments through June were ahead of the year-earlier totals. Exports of small sild sardines were up about 8 percent. The main canning season for brisling and sild sardines begins in the spring.

Industrial Fish: Exports of fish meal in Jan.-June 1967 were up 90 percent from the 1966 period. The large stocks on hand at the start of 1967 contributed to the gain. Landings of fish for industrial purposes continued at a high level in early 1967. Fish meal output ran slightly ahead of the first half of 1966. The gain was due to larger landings of capelin and mackerel. ("Fiskets Gang," July 6 and 27.)

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CATCH OF HERRING  
IN NORTH SEA TO STABILIZE

Norway's North Sea herring catch is likely to stabilize at 700,000 to 800,000 metric tons a year, according to a Norwegian marine biologist. During 1950-1963, the catch of all nations averaged 700,000 tons annually. By 1965,



## Norway (Contd.):

the total catch had risen to 1.3 million tons, with Norway taking about half. In 1966, production dropped 30 percent from 1965; catch per unit of effort also decreased, from 2,000 to 1,300 tons. Norway hopes to continue taking about 50 percent of the catch.

Only 13 Norwegian purse seiners participated in the fishery in 1963--and over 300 in 1966. If profits decline, the fleet could shift to other grounds or fish herring for human consumption (present catch is used only for meal production).

### Overfishing May Become Problem

Overfishing may become a problem, however, because the factors affecting herring year-class strength are little known. There is no clear evidence that stock size and recruitment are related. Increased fishing may decimate the stock so that recruitment will be diminished. Overfishing will be indicated if the total catch for some years drops below 700,000 tons. If this happens, regulatory measures will be necessary. (Regional Fisheries Attaché, U. S. Embassy, Copenhagen, Sept. 8.)

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### ONLY ONE EXPEDITION SLATED FOR ANTARCTIC WHALING

Norway will use only one expedition in the 1967/68 Antarctic whaling season because of her reduced share of the international whaling quota. During the last 2 seasons, the Norwegians were assisted by 5 Japanese catcher boats in an agreement with a Japanese company that included selling the whale meat to Japan. That contract was cancelled this season, partly because of oversupply of whale meat in Japan. All whale meat to be produced this season by "Kosmos IV" has been sold to European buyers. (U. S. Embassy, Oslo, Sept. 21.)

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### NEW MARKETING ORGANIZATION FORMED

A new Norwegian marketing organization, the Nordic Group A/L, was formed by 14 independent producers of frozen fish fillets. The group, which begins operations this fall, emphasizes the U. S. market.

A press release said the new export organization was motivated by an offer of the

Ministry of Fisheries to extend general export rights to all markets except Eastern Europe to the 14 firms if they established a joint export organization.

Since 1955, the Ministry of Fisheries has centralized exports of frozen fish fillets to most significant markets: All Eastern European countries, Sweden, Denmark (for frozen saithe fillets only), France, Belgium, the Netherlands, Switzerland, Austria, Israel, the U. S., Canada, and Australia. Exclusive export rights to these markets have been granted to Norsk Frossenfisk A/L (Frionor), a voluntary combine of 120 companies, and A/S Findus, a subsidiary of Nestle and the single largest company in Norway's fish processing industry. Frionor's export rights cover all the above markets, but Findus' are confined to markets in Western Europe.

### The 14 Had Other Markets

The 14 firms withstood all efforts by Frionor, fishermen's organizations, and the authorities over the years to join the Frionor group. They contented themselves with exports to other markets (the most important are Great Britain, West Germany, and Finland) and occasional export licenses for shipments to France and the U. S. Despite these limitations, the 14 independents were quite successful. In 1966, their joint exports were 11,000 metric tons of frozen fish fillets, or more than 16 percent of Norway's total exports of such products. Their 1967 exports are estimated at more than 20 percent of the total.

The initiative of the Ministry of Fisheries has been severely criticized in fisheries circles, particularly by the Frionor group and Norges Faafisklag, the marketing organization handling the bulk of first-hand sales of fish for filleting purposes. The critics particularly stress that the new markets for Norwegian frozen fish fillets which will be opened for the Nordic Group, have been developed at great cost by Frionor; also, that Nordic will reap gains at Frionor's expense. Frionor will further have to bear the burden of supplying the reportedly less profitable Eastern European markets.

### Nordic Will Get Export Rights

Despite these objections, it is believed the Nordic Group will be granted their new export rights. This is mainly because the Ministry of Fisheries offer has a rider stating that all frozen fish fillet export markets will be reserved by the Ministry for Frionor and Nordic, but with no infringement on the current rights of Findus. Norges Raafisklag, a very



## Norway (Contd.):

influential element in fisheries policy, has strongly advocated for many years that individual companies should be denied access to frozen fish fillet export markets because of alleged adverse effects on exports of such products (competitive price-cutting, products uneven in quality, etc.). Although the Ministry's proposal does not meet another "de-sideratum" of Raafisklaget in this matter--exclusive export rights for Frionor--it will probably be accepted as a step in the right direction.

It seems too early to form any well-founded opinion on the possible impact on the U. S. frozen fish fillet market of the Nordic Group's planned sales drive. According to Nordic's press release, some member companies are already represented in the U. S. for other fish products and seem optimistic about marketing their frozen fish fillet also. However, Norwegian frozen fish fillets have not done too well in the U. S. lately. During the first seven months of 1967, Norway's exports of such products were 3,691 metric tons, or 24 percent less than during the 1966 period. (U. S. Embassy, Oslo, Sept. 28.)

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## REPORT ON NORWAY'S FISHING INDUSTRY

The season for brisling reopened on July 20 and sufficient quantities were caught in seines by August 10 to cover industry needs for this season. Brisling caught after August 10 was to be used for reduction.

Most factories resumed work at the end of July or early August. Packing continued at full capacity, especially with brisling, but partly with sild sardines. During first-half 1967, about 1 million cases of 100 quarter cans per 25-lb. case, or about 25 million lbs. of sardines, kippered herring, and soft herring roes had been produced. This was achieved despite difficulties with raw material, working conditions, closed season, and many spring holidays. There is a fair possibility that industry in 1967 may produce more of its main products than the 1.9 million cases (in quarter cans) during 1966.

### Exports Exceed Production

Production is increasing, but it will be difficult to produce surplus stocks. Stocks

of sild sardines in 1966 were much too small; now they are increasing slowly to a fair level. Since Jan. 1, exports have been 10 percent greater than production.

The export of sild sardines has exceeded this year's pack. This, plus domestic sales, has reduced stocks since beginning of 1967. Brisling exports in early September were about 40,000 cases behind last year's figures, but stocks remain low. The main reason for lower exports is the continued reduction in deliveries to England. Exports and stocks of kippered herring are about the same as last year; the same applies to stocks of soft herring roe. ("Tidsskrift for Hermetikindustri," Norwegian Canners Export Journal, Sept. 1967.)

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## NORWAY EXPORTS 13 DEEP-SEA VESSELS TO ICELAND

The largest shipyard in northern Norway has delivered, or has contracted for, 13 deep-sea fishing vessels for Icelandic owners. The 13 are worth 30 million Norwegian kroner (about US\$4 million). They are an interesting example of exports Norway has developed in this field in recent years.

The entire production of the Norwegian shipyard is characterized by serial production. Since the first fishing vessels were delivered in 1958, the shipyard has concentrated on the same specialized basic designs.

### First Purse Seiner With 3 Propellers

In 1964, the shipyard delivered the world's first purse seiner fitted out with 3 propellers. This feature previously had been reserved for ferryboats and vessels in line service--to improve maneuverability in foul waters and during difficult weather conditions. The shipyard tested this system's advantages on a vessel delivered to Iceland in 1964. It proved so successful that it became a feature of many vessels built for Norwegian and Icelandic owners.

Building capacity has been exploited to the limit in recent years. Demand has exceeded capacity. To meet Icelandic demand, some operations have been transferred to subcontractors. ("Norwegian Fishing and Maritime News," No. 3, 1967.)







Harvesting seaweed at Shirahama, South of Tokyo.

(Photo: E. Edelsberg)



## ASIA

### Japan

#### 1967 MOTHERSHIP-TYPE SALMON FISHERY SUCCEEDS EARLY

The 1967 Japanese North Pacific mother-ship-type salmon fishery began on May 20 in Area A (north of 45° N. latitude) and all fleets (11 motherships accompanied by 369 catcher vessels) attained their catch targets by July 15--ahead of schedule. Total production was 42,635 metric tons, averaging 115.5 tons per catcher vessel. Compared with 1966, the 1967 fleet quota was 3,654 tons higher, averaging about 10 tons more per catcher vessel.

Catch composition was 40 percent red, 33 percent chum, 25 percent pink, and 2 percent silver and king. In 1966, landings were 40.3 percent red, 47 percent chum, 8.4 percent pink, and 4.3 percent silver and king. The poor catch of Bristol Bay red salmon was offset by the good harvest of Asian reds.

#### Asian Stocks Stabilized

The goals were reached early primarily because Asian salmon stocks had stabilized. Good weather and favorable ocean conditions also contributed. An abundance of salmon harvestable in 1968 was observed. This raised hopes in the salmon industry for another good year, although 1968 will be a poor pink year.

All 11 fleets began operations in the central fishing grounds between 165° E.-170° E. longitudes and 46° N.-48° N. latitudes. From late May to June, 3 fleets shifted operations eastward seeking Bristol Bay red. They were joined by another fleet. Later, 2 of the remaining fleets moved southwest of Attu Island.

From late June until July, 8 fleets deployed in the Olyutorski region. One fleet moved into the silver salmon grounds at 170° E.-175° E. longitudes and 46° N.-47° N. latitudes. The fleet in the central fishing grounds moved northwest off Cape Kozlova. The fleets fished in these positions until they reached catch targets.

#### Salmon In Wide Area

The 1967 mothership-type salmon fishery was characterized by the occurrence of salm-

on of all species over a wide area. This enabled fleets to disperse. Fishing had to be suspended 2-6 days because of fleet movements, and 3-4 days due to bad weather.

The land-based, gill-net fleet in Area A, and gill-net and long-line fleets in Area B (south of 45° N. latitude) attained their respective catch quotas of 9,865 metric tons and 55,500 metric tons. They ended operations on June 23, also ahead of schedule. Land-based gill-net catches were predominantly chum and red, but sizable quantities of Asian pink were taken by the long-line fishery. ("Nihon Suisan Shimibun," September 6 & 9.)

\* \* \*

#### TUNA FLEET IN ATLANTIC DECREASES

The Japanese Atlantic tuna fleet, which several years ago totaled over 150 vessels during peak periods, has declined sharply. In August 1967, it had only 39 vessels. The decline, despite higher catch rates in the Atlantic than in the Pacific and Indian Oceans, is attributed to greater efforts of fishing firms to improve the freezing facilities of their vessels rather than enlarge their fleets.

Operators of large vessels are reported competing to install better freezing equipment to quick-freeze at -40° C. (-40° F.) temperatures. This would improve the keeping quality of the catch--and fish with good color and texture bring much higher prices on the domestic fresh-fish market.

#### 1 Trip A Year

These large, better-equipped vessels have reduced their Atlantic operations to about one trip per year. Now only about three 1,000-ton vessels operate there regularly. The rest of the fleet is mostly smaller long-liners in the 200- to 500-ton class.

Atlantic fishing is concentrated in 3 areas: albacore off Saint Martin Island (east of Puerto Rico) and Angola, and yellowfin off the Ivory Coast. Fishing is reported good. Daily catches per vessel average 3.5-4 metric tons. ("Suisan Tsushin," Sept. 6.)

\* \* \*



Japan (Contd.):

### SURVEY OF EASTERN ATLANTIC TUNA RESOURCES IS SCHEDULED

The Japanese Government has commissioned the 416-gross-ton fishery training vessel "Shin Miyagi Maru," owned by the Miyagi Prefectural Government, to conduct a tuna resource survey in the Atlantic Ocean for one year beginning in November. The purpose is to gain a better knowledge of the actual condition of Atlantic tuna resources. This would strengthen Japan's position of leadership in the International Convention for the Conservation of Atlantic Tunas, expected to go into effect shortly.

### South of Equator In 1967

The Shin Miyagi Maru was scheduled to depart Japan in early October and proceed directly to Cape Town, Union of South Africa. From there she will begin surveying equatorial Atlantic off the Africa coast from early November 1967. She will explore south of the equator from 0°-45° S. latitudes in 1967, and north from 0°-45° N. latitudes in 1968. The vessel is equipped with the latest scientific instruments for collecting oceanographic and biological data about the tunas. ("Suisan Keizai Shimbun," Sept. 18.)

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### MINCED FISH MEAT PRODUCTION INCREASES

Japan's annual production of minced fish meat (ingredient for fish sausages and cakes) continues to rise. Undertaken experimentally in 1965, production has been spurred by the rising sales of fish cakes. The fish-cake industry produced 270,000 metric tons in 1966. It is experiencing a "silent boom," with consumption jumping at least 10 percent since 1963.

In 1967, minced meat production will reach 68,000 metric tons, a 50-percent over 1966. The minced meat is prepared mainly from Alaska pollock, mackerel, and flatfish. It is produced by factoryships in the Bering Sea and North Pacific, Hokkaido land-based processors, and Isei (China Sea west of 128° E. long.) fishery operators.

Producer's prices are quoted at about US\$340 a short ton for factoryship products, \$315 a short ton for minced Alaska pollock,

Produced by	Production		
	1965	1966	1967 (Est.)
	. . . . . (Metric Tons) . . . . .		
Factoryship	6,900	13,700	30,000
Hokkaido	23,500	25,000	28,000
Isei fishery	5,000	7,000	10,000
Total	35,400	45,700	68,000

and \$454 a short ton for minced flatfish processed in Hokkaido. ("Suisan Tsushin," Sept. 5, & "Nihon Suisan Shimbun," Sept. 4.)

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### PLANS LARGE PROGRAM OF RESOURCE DEVELOPMENT

The Japanese Fisheries Agency has submitted to the Finance Ministry a preliminary budget request totaling about US\$97.9 million for fiscal year 1968 (April 1968-March 1969). This is a 30-percent increase over the FY 1967 fishery budget of \$74 million.

For FY 1968 programs, much importance is attached to high-seas fishery resource investigations. The Agency is requesting \$3.08 million for these, more than ten times the \$237,475 appropriated in FY 1967.

For tuna resource development, the Agency has developed the following 5-year plan: first and second year--survey the South Pacific Ocean between 170° W.-90° W. longitudes and 40° S.-56° S. latitudes (south of Samoa to the coast of Chile); third year--explore areas south of Alaska; fourth and fifth years--survey the South Atlantic Ocean off Argentina ("Katsuro-maguro Tsushin," Sept. 8, and other sources.)

\* \* \*

### MORE VESSELS ARE USING AUTO REEL

About 150 government and industry members attended a meeting in Tokyo on September 4 to evaluate the performance of the long-line "auto reel" device. The device mechanizes long-line setting and retrieving--thereby reducing the need for labor by about 6 men per vessel. The meeting was sponsored by the Japan Federation of Tuna Fishery Research Society. The participants noted steady progress in the use of this gear.

The auto reel, developed over a year ago, has been installed on about 50 tuna vessels. Another 20 plan to adopt it shortly. Two problems discussed were: crews were not yet fully



Japan (Contd.):

accustomed to using the equipment--and vessels suitable for this gear must be at least 200 gross tons. However, because the auto reel reduces manpower requirements substantially, the Fisheries Agency intends to encourage its adoption by the tuna fishing industry. ("Suisan Keizai Shimibun," September 6.)

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#### WHALE OIL PRICE IS UP

In early July, 1,400 metric tons of finback oil produced in the North Pacific were sold to independent companies in Europe at US\$173 per ton c.i.f. for delivery in Rotterdam October and November. At the same time, 4,300 tons of oil were sold for domestic use at \$178 per ton. This is the first contract for export and domestic sales of North Pacific whale oil.

The sale of 34,000 tons of finback whale oil in March to a Dutch firm included unsold stocks from the North Pacific and the Antarctic whaling seasons. The price was \$166 per ton c.i.f. Thus, even oil produced during the Antarctic whaling season was sold at a very low price. (The 1966 price was \$258.)

The contract price with independent firms is now only a little higher than that offered the Dutch firm this spring. However, since no Dutch offer has been received, it is assumed some time will pass before the next contract is concluded. For the present, the export price for finback whale oil will be \$166 to \$173. (Fishery Attaché, U. S. Embassy, Tokyo, Aug. 9.)

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#### FROZEN SHRIMP IMPORTS ARE UP

Japanese imports of frozen shrimp in August 1967 totaled 3,908 metric tons worth about US\$5.9 million on a customs-clearance basis. Imports from the Soviet Union were the largest by far, totaling 1,407 tons of red shrimp. Other leading suppliers were Thailand, 488 tons; Mexico, 446 tons; and Australia, 247 tons.

Imports during January-August 1967 totaled 28,713 tons, compared with 24,708 tons for the 1966 period. Imports from Communist China during January-August 1967 declined over 50 percent from the 1966 period,

	Quantity Imported		
	Aug.	Jan.-Aug.	
	1967	1967	1966
	(Metric Tons)		
Soviet Union . . . . .	1,407	8,831	6,001
Mexico . . . . .	446	5,050	3,194
Communist China . .	186	3,559	7,843
Thailand . . . . .	488	3,329	2,171
Hong Kong . . . . .	168	1,839	193
India . . . . .	166	819	651
Sabah (N. Borneo) . .	163	723	503
Saudi Arabia . . . . .	-	620	125
Australia . . . . .	247	609	388
South Korea . . . . .	40	560	550
Formosa . . . . .	57	474	-
Others . . . . .	540	2,300	3,089
Total . . . . .	3,908	28,713	24,708

while purchases from Mexico and the Soviet Union increased by more than 60 percent and 16 percent. ("Suisan Keizai Shimibun," September 19.)

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#### TUNA LANDINGS AT YAIZU DECLINE

August 1967 fish landings at the Japanese port of Yaizu totaled 8,526 metric tons worth about US\$4 million, down 26 percent in quantity and 14 percent in value from the 1966 period, according to the Yaizu Fishery Cooperative Association.

Product	Quantity			Avg. Price		
	1967		1966	1967		1966
	Aug.	July	Aug.	Aug.	July	Aug.
	. . . (Metric Tons)			(US\$/Short Ton)		
<b>Tuna:</b>						
Bluefin <sup>1/</sup> . . . . .	3,787	3,454	6,149	625	573	479
Albacore . . . . .	670	697	753	461	455	428
Skipjack . . . . .	2,810	6,154	3,711	247	237	192
Mackerel . . . . .	451	143	119	108	129	83
Others . . . . .	808	531	713	-	-	-
Total . . . . .	8,526	10,979	11,445			

<sup>1/</sup>Includes yellowfin and big-eyed tuna.

Compared with July, landings were down by 2,453 tons or 22 percent. The decline is attributed to poor fishing in both the bait-boat and long-line tuna fisheries. ("Nihon Suisan Shimibun," Sept. 16.)

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#### FROZEN TUNA EXPORT PRICES RISE

Frozen tuna exports direct from Japan to the U. S. during April-August 1967 were



## Japan (Contd.):

17,288 short tons--albacore, 11,564 tons, and yellowfin, 5,724 tons--according to the Japan Frozen Tuna Producers Association.

August 1967 Frozen Tuna Export Prices for Direct Shipments						
Product	Export Price, f.o.b. Japan					
	High		Low		Average	
	1967	1966	1967	1966	1967	1966
	. . . . . (US\$/Short Ton) . . . . .					
Albacore, round	493	450	450	430	472	438
Yellowfin, gilled & gutted	418	395	378	325	397	385
Albacore loins	990	943	840	917	948	933
Yellowfin loins	900	791	893	785	897	787

Tuna loin exports to the U. S. and Canada during the same period were 594 tons. Frozen tuna export prices for August were up. ("Suisancho Nippo," October 2.)

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## CANNED TUNA EXPORT PRICE MAY RISE

The Japanese Canned Tuna Sales Company heard a report on September 18 from its 3-man survey team just returned from a 3-week trip to the U. S. It also discussed plans to raise canned tuna prices from October.

The purpose of the U. S. tour was to survey actual market conditions there before carrying out any price changes. Details of the survey report are not yet available, but it appears that discussion based on that report favored a substantial price increase. This could be between US\$1-1.50 a case (7 oz. 48's) for canned whitemeat tuna in brine.

## Canned Tuna Holdings

The Sales Company's inventory of canned whitemeat tuna in brine is practically exhausted. Holdings at the packers level are estimated to be 500,000 cases, which include about 300,000 cases of 4-lb. 6's. The Sales Company's holdings of canned lightmeat tuna in brine are reported to be about 140,000 cases. Export of canned lightmeat tuna is stagnant due to slow movement on the U. S. market, where it is being outsold by the U. S. pack. ("Kanzume Nippo," Sept. 20, "Nihon Suisan Shimbun," Sept. 15.)

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## TUNA CANNERS ARE SHORT OF RAW FISH

Japanese tuna packers in Shizuoka, near the tuna Port of Yaizu, who switched from fruit canning to tuna packing in September, were operating under extremely difficult conditions: they were short of raw tuna. The recent decline in tuna landings at the two major fishing ports in Shizuoka Prefecture compelled most tuna packers, primarily putting up canned tuna in oil, to sharply reduce operations. Moreover, the high cost of raw material, averaging about US\$252 a short ton for skipjack, is said to allow packers little or no margin of profit. ("Kanzume Nippo," September 29.)

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## PRICES RISE ON CANNED-IN-BRINE TUNA FOR EXPORT

The directors of the Japan Tuna Packers Association, at their September 27 meeting, raised prices for canned tuna in brine exports to the U. S., effective October 1. For both whitemeat and lightmeat tuna, price increases on 7-oz. 48's were highest--US\$1 per case for

Canned Tuna in Brine Export Prices, Effective October 1				
Can Size & No. Cans	New Price	Old Price	Net Increase	Price at Beginning of FY 1967 (Apr. 1967)
	. . . . . (F.o.b. US\$/Case) . . . . .			
<u>Whitemeat solid:</u>				
7-oz. 48's	11.20	10.20	1.00	11.50
13-oz. 24's	10.50	10.00	.50	10.80
66 $\frac{1}{2}$ -oz. 6's	12.25	11.65	.60	12.65
3 $\frac{1}{2}$ -oz. 48's	6.70	6.60	.10	6.90
6 $\frac{1}{2}$ -oz. 48's	8.20	8.00	.20	8.45
<u>Lightmeat solid:</u>				
7-oz. 48's	8.70	8.15	.50	9.15
13-oz. 24's	8.00	7.80	.20	8.60
66 $\frac{1}{2}$ -oz. 6's	9.55	9.40	.15	10.40
3 $\frac{1}{2}$ -oz. 48's	5.20	5.10	.10	5.80

whitemeat and 50¢ per case for lightmeat. The lower net increase for the canned lightmeat tuna was due to slow sales on the U. S. market. ("Suisan Keizai Shimbun," Oct. 2, and other sources.)

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## FISHING HAKE OFF U. S. PACIFIC NORTHWEST

The Japanese factoryship "Hoyo Maru No. 2" (3,456 gross tons) owned by Hokuyo Suisan, which began fishing experimentally for hake



## Japan (Contd.):

off Vancouver Island from September 19 with three 250-gross-ton trawlers, took 485 metric tons of fish (70 percent hake and 30 percent rockfish) in 13 days. The catch was processed into minced fish meat and fish meal. The fleet's production was reported running behind schedule due to loss of fishing time caused by collision between 2 accompanying trawlers.

## Second Fleet Fishing

The second fleet to participate in the Pacific northwest fishing departed Japan on October 3. It consisted of mothership "Kashima Maru" (7,163 gross tons) accompanied by 8 trawlers. It is assigned a target of 35,000 tons of hake and 5,500 tons of other bottom-fish. ("Suisancho Nippo," Oct. 2 & 4.)



## South Korea

### SOUTH KOREA-JAPAN MINISTERIAL TALKS INCLUDE FISHERY PROBLEMS

A 3-day Ministerial Conference between Japan and South Korea in Tokyo, which ended on August 11, paid much attention to fishery relations. Directors of both nations' fisheries agencies participated. The most important statement in the joint communique was that a Japanese loan of US\$50 million, put up by private firms, would be made to joint fishery ventures and foreign markets. A Japanese newspaper reported that this announcement stimulated much interest in Japan, especially in the tuna industry. There, the use of South Korean labor could substantially reduce production costs and alleviate the acute labor shortage in its distant-water fisheries.

The 2 nations also agreed on joint development of South Korea's coastal marine fish culture if the products do not compete with Japanese products. The Japanese negotiators stated that their recently passed "Law to Control Foreign Fishery Firms" was not intended to prevent Korean fishing vessels calling at their ports.

### Agreements Incomplete

Complete agreement was not reached on approval of Japanese exports for the Korean shipbuilding industry. Private Japanese

firms apparently offered Korea another US\$30 million loan to buy Japanese-built fishing vessels. The Koreans are trying to develop low-cost domestic shipbuilding and find Japanese vessel prices extremely high. They "strongly requested" that part of the \$30 million be used for exports not only of vessels--but of construction materials and machinery to help build fishing vessels more cheaply in Korea. The Japanese, however, were noncommittal and promised only "to study the matter."

Total Japanese private credits of US\$90 million for South Korean fisheries developments also were confirmed. (Joint Communique of Japan-Republic of Korea 1967 Ministerial Conference, and "Suisan Keizai Shim-bun," Aug. 24.)



## North Korea

### ORDERS 2 LARGE FISH-PROCESSING VESSELS FROM NETHERLANDS

A North Korean state-owned firm has placed a US\$13.8-million order with the Verolme United Shipyards of Rotterdam to construct 2 fish-processing vessels. The 7,050-gross-ton vessels will be capable of processing 125 metric tons of fish a day. Their daily freezing capacity of 180 tons reportedly is the world's largest. Each vessel will be equipped with a 5,500-hp. main engine and have a crew of about 250. Negotiations to construct 2 more similar vessels are still in progress. (U. S. Embassy, the Hague, Sept. 12.)

### Third Fish-Processing Vessel

This is the third fish-processing vessel North Korea has bought from the Netherlands. In January 1965, a 7,200-gross-ton vessel was delivered by the same shipyards. The "Top Van Witte Berg" has a 120-metric-ton daily processing capacity. It was used in the herring, flatfish, and Alaska pollock fisheries in the Sea of Okhotsk.

In 1966, North Korea concluded a fisheries cooperation agreement with the USSR soon after Soviet Fisheries Minister Ishkov visited. North Korean fishermen and technicians train on Soviet fishing and support vessel operating out of Far Eastern ports.





## India

### FISHERY EXPORT CRISIS APPROACHES

A near crisis is developing in India's exports of marine products. It is attributed largely to (a) shortage of available raw shrimp, until now believed abundant along Kerala coast; (b) a combination of spiraling domestic prices motivated by increased rupee earnings as a result of rupee's devaluation in June 1966, coupled with higher living costs; and (c) bumper catches in Mexico and the U. S. stiffened competition with Indian products and forced prices down, reportedly 40-50 percent.

It is reported that in late August a few firms in and around Ernakulam-Cochin in Kerala State had ceased canning and freezing operations, while others were using only part of plant capacity. Processors and exporters have urged the Government to restore the former incentive schemes to enable the marine foods industry to withstand the crisis.

### Exports Rose In Past Few Years

Exports of marine products have increased in the past several years in quantity and value. Exports of nearly 12,000 metric tons worth rupees 37.4 million (US\$7.8 million) in 1962 rose to the peak of over 19,000 tons valued at rupees 135.2 million (\$18 million) in 1966. A further stimulus was provided by devaluation of the rupee with exports totaling 21,100 tons valued at rupees 173.7 million (\$23.1 million) in 1966/67. This was a 38-percent increase in quantity (over 15,300 tons worth rupees 70.6 million or \$14.8 million) exported in 1965/66.

Officials of the Marine Products Export Promotion Council in Ernakulam, Kerala State, had said after rupee devaluation in June 1966 that their problem lay in locating and catching sufficient supplies of shrimp to satisfy increasing U. S. demands. However, recent discussions with Indian officials have revealed the developing crisis resulting from reduced catches, rising local prices, and growing competition from foreign countries. (U. S. Consulate, Madras, Aug. 30.)

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## SYMPOSIUM ON MOLLUSCA

A Symposium on Mollusca is scheduled by the Marine Biological Association of India for Jan. 12-16, 1968, in Cochin/Ernakulam. Subjects to be discussed: Taxonomy, Phylogeny and Evolution, Distribution, Morphology and Anatomy, General Biology, Radiation Biology, Reproduction, Early Development, Ecology and Behavior, Physiology, Boring and Fouling Molluscs, Parasitism and Commensalism, Culture, Economics and Fishery.

This is the third Association-sponsored symposium. The first, in 1962, dealt with Scombroid Fishes; the second, on Crustacea, was held in 1965.



## Ceylon

### LARGE-SCALE TUNA FISHING PLANNED

On its maiden fishing voyage in September the Ceylonese tuna vessel "Kalmunai" unloaded its catch of 85 metric tons of tuna and marlin at Penang, Malaysia, for processing by a joint Japanese-Malaysian company. Three Japanese experts assisted the Kalmunai's crew.

The vessel is one of two tuna vessels recently purchased by the Ceylon Fisheries Corporation. It spent the summer fishing in the Indian Ocean. The other vessel, the "Mirissa," was fishing in the same area in September.

The processors are the Malayan Marine Industries, Ltd., in Penang. They also process Japanese and Taiwanese catches for export to the U. S., Britain, and Italy.

The Ceylon Government plans to embark soon on large-scale tuna fishing. ("Fishing News International," Sept.).





## SOUTH PACIFIC

### Australia

#### FISHERY EXPORTS ARE UP

Australian exports of marine products rose about US\$928,000 to a record \$30.7 million in 1966/67 (July-June 30), according to the Commonwealth Bureau of Census and Statistics.

A drop of \$1.6 million in value of spiny lobster tail and whole spiny lobster exports was offset by increases of \$747,000 in value of shrimp exports, \$722,000 in scallop exports, and \$1.1 million in canned and frozen abalone shipments.

Exports	1966/67		1965/66	
	1,000 Lbs.	US\$ 1,000	1,000 Lbs.	US\$ 1,000
Spiny lobster tails . . .	10,312	18,929	9,735	19,887
Whole spiny lobster . . .	1,339	1,402	2,037	2,107
Shrimp . . . . .	2,556	2,785	2,169	2,037
Scallop . . . . .	2,488	1,659	1,791	936
Frozen abalone . . . .	765	424	498	285
Other crustaceans and molluscs . . . . .	151	61	130	80
Tuna . . . . .	832	164	4,783	828
Other fish . . . . .	149	65	74	32
Canned abalone . . . .	2,195	1,349	708	370
Canned fish, crustacea and molluscs . . . . .	752	402	453	239
Total edible . . . . .	21,539	27,240	22,378	26,801
Pearls . . . . .	-	2,139	-	1,716
Shell . . . . .	12	609	11	480
Other . . . . .	156	153	72	49
Whale oil . . . . .	Gals. 1,118	512	Gals. 1,546	1/692
Grand total . . . . .		30,653		29,738

1/Includes \$9,900 worth of whale meat, meal, and solubles.

Exports of edibles--fish, crustacean, and molluscs--were worth \$27.2 million, compared with \$26.8 million in 1965/66.

Lobster tail exports increased by 577,000 lbs., but value fell \$958,000. The weight of whole spiny lobster exported fell 698,000 lbs. and the value \$705,000.

Of edible products, exports of whale products fell, but cultured pearl exports were valued at nearly \$2.2 million, up about \$440,000 over the previous year. ("Australian Fisheries Newsletter," September.)

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#### EXPORTS OF SPINY LOBSTER TAILS DECLINE

Australian exports of frozen spiny lobster tails for the 9-month period ended March 31, 1967, totaled 7.3 million lbs. and were worth US\$12.6 million. This was a drop of 6.4 percent in quantity and 15 percent in value compared with the 1965/66 period.

Exports from 5 states were: Western Australia, 5.3 million lbs. (2 percent more than 1965/66 period); Victoria, 1 million lbs. (up 1 percent); South Australia, 600,000 lbs. (down 30 percent); Tasmania, 400,000 lbs. (down 20 percent); and New South Wales 100,000 lbs. (down 50 percent). ("Australian Fisheries Newsletter," June.)



### New Zealand

#### JAPANESE SHOW LITTLE INTEREST IN JOINT TUNA VENTURE

New Zealand's proposal for a joint tuna venture with Japan was revealed by the Executive Secretary, Fishing Industry Board, who visited Japan recently to discuss cooperative fishing, gear purchase, and trade. The proposed venture reportedly has not been received enthusiastically by the Japanese industry since it calls for delivering only such tuna species as yellowfin and albacore to New Zealand packers.

Japanese vessel owners claim they cannot make profits unloading only part of their catches in New Zealand because this would damage other fish in the holds. Tuna catches off New Zealand are predominantly bluefin which, in good condition, bring better prices on the Japanese fresh-fish market, so vessel owners prefer bringing their catches home. The prospects for a joint venture are dim. ("Suisan Keizai Shimibun," Sept. 15.)





## AFRICA

### South Africa

#### SHIPS WHALE MEAT TO JAPAN

The first shipment of whale meat from South Africa was exported to Japan recently. This represents an important new export market for the fishing industry.

World production of whale meat is about 150,000 metric tons a year. Most of it is consumed in Japan, although it is also popular in many other countries, including Norway.

The South African whaling company, whose fleet of catchers operates up to 200 miles off the Durban coast, planned to produce 2,000 tons of whale meat during the current whaling season (February to September). The company also is introducing whale meat to the local market. The two main types of edible whale in great demand by consumers are the sei and the fin. ("South African Digest," Sept. 22.)

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#### SHOAL FISH CATCH CONTINUES UP

The Cape west coast shoal fish catch in the first six months of 1967 was 74,730 short tons pilchards, 8,940 tons maasbanker, 153,095 tons mackerel, 169,635 tons anchovy, and 13,966 tons of red-eye herring. The total catch was 410,367 tons.

In the same period of 1966, the total catch was 314,317 tons: 115,166 tons pilchards, 21,955 tons maasbanker, 61,274 tons mackerel, 110,959 tons anchovy, and 4,963 tons of red-eye herring.

In 1965, the total catch was 381,855 tons: 222,291 tons pilchards, 42,096 tons maasbanker, 43,967 tons mackerel, 73,501 tons anchovy, and 100 tons of red-eye herring.

#### June Catch

According to figures of the Division of Sea Fisheries, the June catch comprised 3,612 tons pilchards and 35,392 tons anchovy. In

June 1966, the catch was 6,401 tons pilchards, 8,498 tons maasbanker, 41 tons mackerel, 64,836 tons anchovy, and 60 tons of red-eye herring. In June 1965: 15,571 tons pilchards, 11,521 tons maasbanker, 40,889 tons anchovy.

The June 1967 catch yielded 8,864 short tons of fish meal, 270,076 imperial gallons of fish body oil, and 76,860 lbs. of canned pilchards.

In South-West Africa, the June shoal catch was 106,925 tons pilchards, 1,650 tons anchovy, and 100 tons maasbanker, yielding 26,928 tons of fish meal and 4,730 long tons of fish body oil. ("The South African Shipping News and Fishing Industry Review," Aug.)



### South-West Africa

#### PILCHARD FISHING POOR

Pilchard fishing at Walvis Bay was very poor in July. The fish were erratic and had moved far north--almost to the Kunene River mouth. Some had moved 10 to 12 hours' steaming from port. When the fish arrived at the plant, most were not suitable for canning.

The 7 pilchard factories (6 with canning licenses) worked at reduced capacity. Towards the end of July, there were some signs of the fish moving south again.

#### Abnormal Weather

Although the fish are plentiful to the north, the fact that they are not to be found close to Walvis Bay is ascribed to weather conditions. The weather has been abnormal this year with an almost complete absence of southwest winds. The water temperatures off Walvis Bay have been unusually high, and more anchovy than usual have intruded from the north. ("The South African Shipping News and Fishing Industry Review," Aug.)

