

INTERNATIONAL

Report on Food From the Sea Issued by UN

The United Nations has published a large study of the sea's resources. The first part is entitled, "Food Resources of the Sea Beyond the Continental Shelf Excluding Fish." It was prepared for the UN Economic and Social Council by C. P. Idyll, Institute of Marine Sciences, University of Miami, Coral Gables, Florida.

The second part covers minerals and was prepared jointly by Frank Wang, Marine Geologist of the U.S. Department of the Interior's Geological Survey, and the UN Secretariat.

The report on food resources assesses the use of food from the sea to help feed the world's rapidly increasing population. It weighs the use of plankton, squids, whales, seals, sea lions, and walrus. It looks at the promises and limitations of aquaculture. It outlines the research required to exploit the open sea efficiently. And the report makes clear: "At present, the chief problems of obtaining more food from the sea revolves around the cost of the extraction."

The following is a condensation of major parts of the food resources report:

The Plant Plankton

Plants make up the largest part of the living material on land and in the sea. On land, plants provide much greater amounts of human food than do animals; the opposite is true for the sea. The amount of sea plants is much greater than that of land plants. But, the UN report says, "sea plants are different from those on land, and the differences render them much less useful to man directly."

Land plants are relatively large and can be transformed easily into "edible and palatable food" for man and for the large herbivorous animals that man eats. Most sea plants are "extremely small, one-celled individuals which usually cannot be seen let alone harvested readily." Altogether, these plants form a great amount of living substance--but they

are spread over the vast ocean and so are hard to harvest. Because these plants are very small, the typical marine herbivore also is very small. "The grazers of the sea that serve to transform plant substance into meat, drift in immense clouds in the water. These drifters are collectively called plankton."

The report evaluates the possible use of plant plankton: "The plants of the ocean are so small that they would be hard to harvest; they sometimes have toxic qualities that would make them unpleasant if not actually dangerous to eat; and most of them possess harsh shells. The prospects of using planktonic plants as human food are poor."

The Animal Plankton

The most numerous and important plankton animals are the crustaceans, especially the copepods and euphausiids. "The copepods are the chief grazers of the sea, devouring plants and converting their substance into animal tissue. Then, in turn, they are eaten by fishes, sea mammals and birds."

The euphausiids are usually larger than the copepods. One principal species of the euphausiids is the *Euphausia superba*, 1½-2 inches long, better known as "krill." There are fantastically large amounts of this animal in the Antarctic.

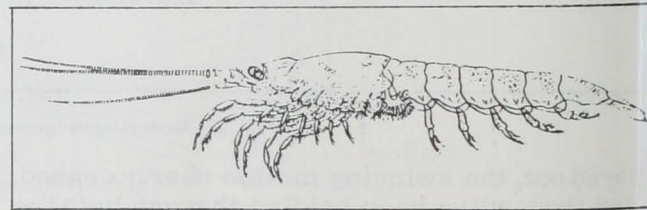


Fig. 1 - Krill.

As for the value of the animal plankton as human food, the report states: "Copepods, euphausiids and other crustaceans in the plankton are rarely poisonous or distasteful, and their shells are usually so soft that they offer no major problems in human consumption, although the proportion of shell to meat is higher than in the larger crustaceans such as shrimp and crabs."

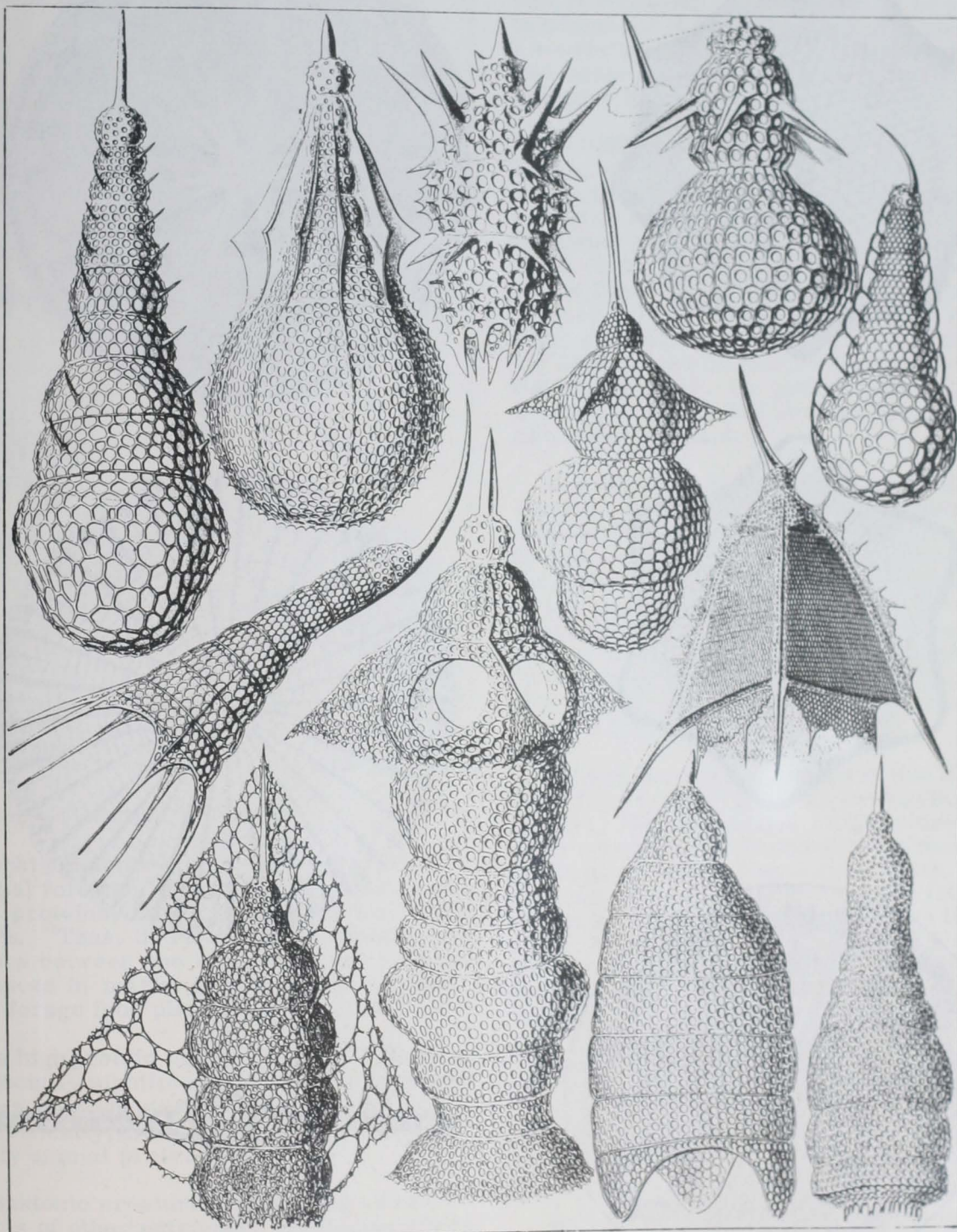


Fig. 2 - Skeletons of radiolarians magnified 200-500 diameters. Radiolaria are single-celled animal organisms found among plankton. ("The Voyage of H.M.S. Challenger": Radiolaria, plate 75)

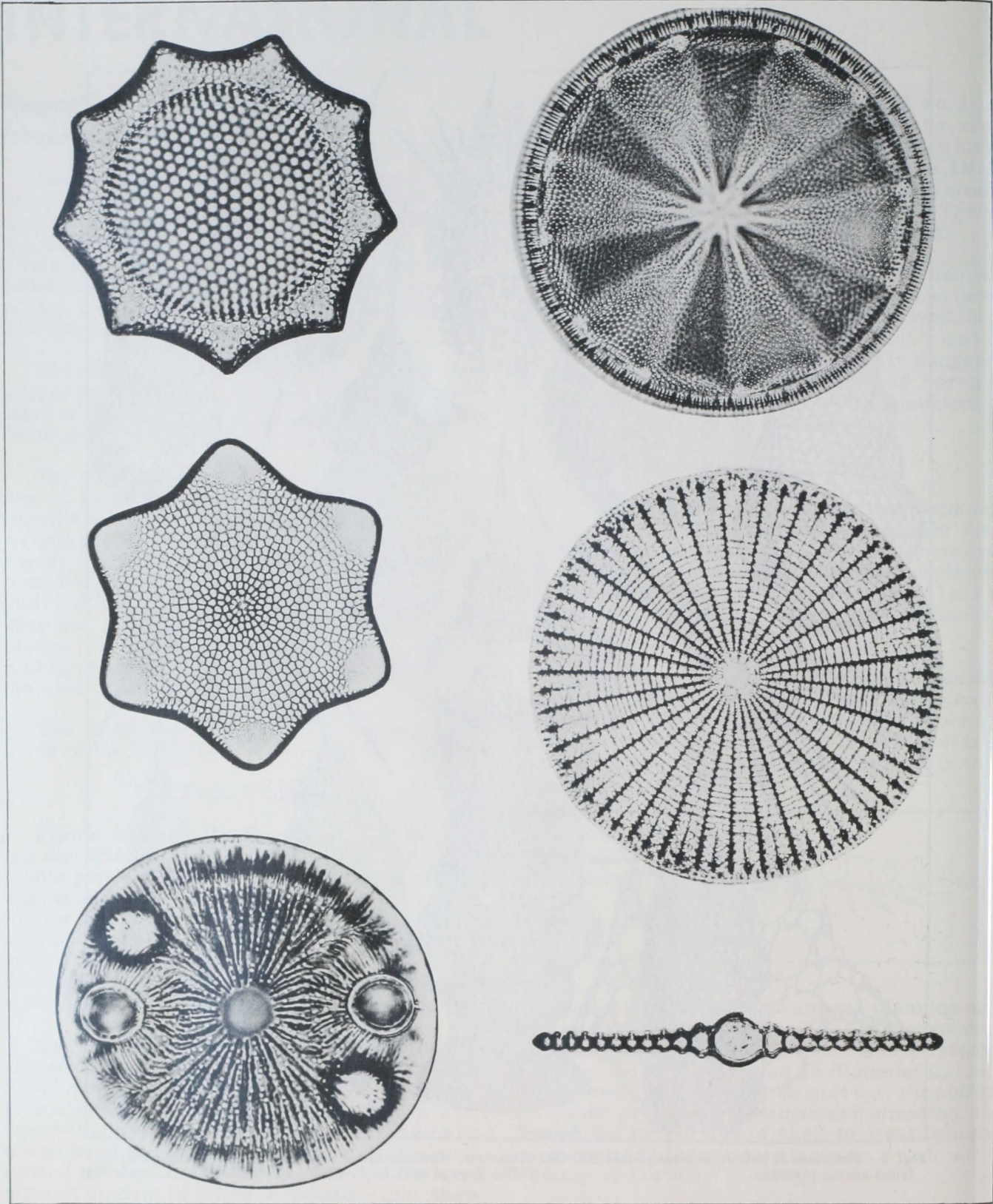


Fig. 3 - Diatoms, drifting plants.

(Photo: Dr. Albert Mann)

Plankton's Palatability

Regardless of its nutritional value, the UN report continues, "plankton must be palatable to humans if it is to have any significance as a source of food." Limited experience shows that some people will not eat it, while others consider it a fine food.

In 1952, Alain B. Bombard, a French physician, sought to prove that a man could survive a long time on a raft or small boat from nutrients in the sea. Bombard drifted from the Canary Islands to the West Indies and survived 65 days. (A 10-day period is regarded as the limit man can survive such circumstances.) Part of the explanation of his survival was that he ate plankton. It did not rain for 23 days and plankton supplied part of the water he needed. He said it tasted "... like lobster, at times like shrimp and at others like some vegetable."

A group that studied plankton's palatability reported it "had a mildly pleasant taste, being somewhat reminiscent of shrimp or oysters." At first, some panel members refused to eat plankton but, after tasting it, "pronounced it either good or not objectionable." The tasters could manage a little less than $\frac{1}{4}$ pound; above that, it became "unacceptable and distasteful." Even a third of $\frac{1}{4}$ pound "gave the impression of remaining undigested in the stomach after several hours."

During the drifting voyage of the "Kon Tiki" from Peru to the Polynesian archipelago in the Pacific, Thor Heyerdahl caught plankton. He later reported: "If it consisted of many dwarf shrimps, it tasted like shrimp paste, lobster, or crab. If it was mostly deepsea fish ova, it tasted like caviar and now and then like oysters. Jellylike coelenterates like glass balloons and jellyfish were bitter and had to be thrown away. Otherwise everything could be eaten, either as it was or cooked in fresh water as gruel or soup. Tastes differ. Two men on board thought plankton tasted delicious, two thought it was quite good, and for two, the sight of them was more than enough. Spiced and properly prepared, plankton can certainly be a first-class dish for all who like marine food."

In Asia, plankton is used more as a food than it is in the western world. In southeastern Asia, fermented fish pastes are made from many kinds of sea animals, including

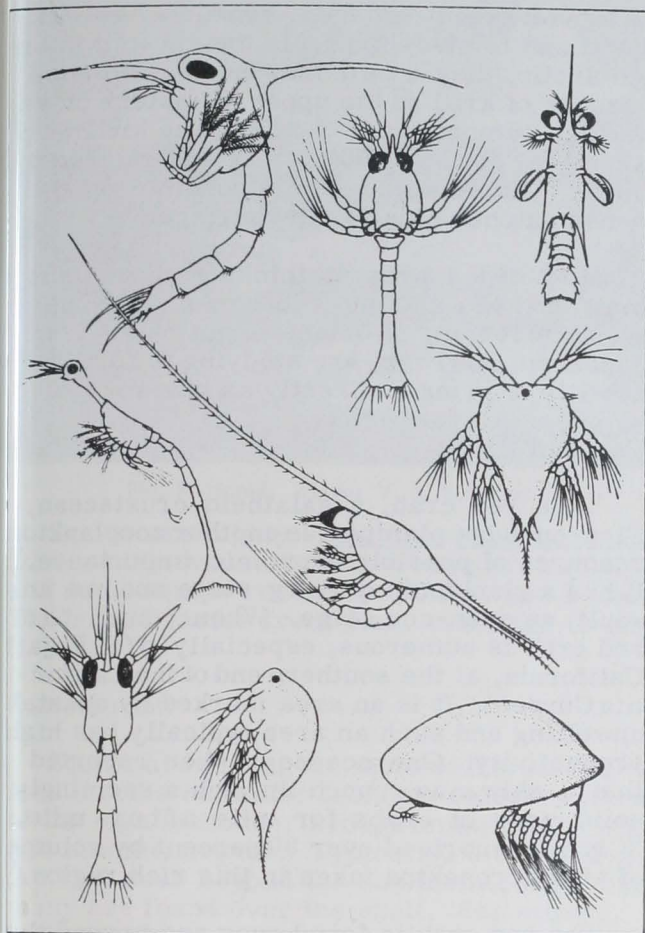


Fig. 4 - Species of crustacean larvae, magnified about 50 diameters, found among planktonic organisms.
(From Johnstone, Scott, Chadwick: Marine Plankton)

Plankton's Nutritive Value

Plankton seems rich in nutrient materials essential for man. Its values are similar to hay's: proteins, 11.5%; carbohydrates, 79.3%; ash, 7%. "Thus, there are no substantial differences between the content of the nutrient substances in marine plankton and in this staple forage food plant from the land."

The high protein content of animal plankton is especially significant because world hunger involves the shortage of calories and, even more critically, the shortage of protein--especially animal protein.

Planktonic creatures have important amounts of other nutrients: crustaceans have Vitamins A and D. Krill have large amounts of Vitamin A, especially in the eyes.

planktonic crustaceans. Mainland Chinese eat a shrimp paste "as a main accessory food"; the pastes also are eaten by people in India, Japan, and the Philippines. Plankton is established as a food in a large part of the world.

The UN report concludes this section: "Thus, many problems have still to be solved before plankton can be promoted as human food. But while we should not ignore the possible dangers discussed here, and while problems of nutrition are unsettled, especially in relation to the proportion of potential energy absorbed, the animals of the plankton seem to offer great potential as human food in terms of nutritive value and palatability."

Harvesting Plankton

"The story is not so promising from the viewpoints of economic harvesting. . . . There are immense quantities of plankton in the sea, but in most cases are spread too thinly throughout the vastness of the ocean to allow them to be collected at a reasonable cost at present. But our technology will improve, and new techniques and clever new machines may be developed that will suddenly make an unpromising situation a practical one."

Also needed to establish a plankton fishery is widespread public acceptance. Techniques have to be developed to preserve and package a good-quality product. Today large food companies spend millions of dollars to create markets for new products, which may differ only slightly from old ones. It will take a lot of money to promote a strange food like plankton.

"The best chance of making use of zooplankton is in the manufacture of fodder for domestic animals in the form of dried meal. There may be numerous populations of zooplankton organisms large enough to support properly designed fisheries, once we learn the techniques of harvest and processing." Soviet scientists are actively studying Antarctic krill, and Japanese scientists have done some preliminary work.

The group of zooplanktons believed "most likely to support a commercial fishery" by most experts are the euphausiids, the krill Euphausia superba. It is a relatively large animal--50-60 cm. as an adult. "Of greater importance, it occurs in enormous abundance, and it forms schools at the surface of the sea, where it could be captured by suitable gear."

Soviet scientists have conducted two expeditions to study krill. In the second, in the Antarctic, they used trawls and collected patches of krill in the upper 5 meters of water and pumped them aboard. The krill were scattered down to 100 meters and migrated daily. "Exploitation seems possible on the dense patches close to the surface."

Most of the present thinking about using krill involves making it into meal for supplementary feeding of domestic animals. The Japanese, however, are studying the practicability of using it directly as human food.

The Red Crab

"The red crab, a galatheid crustacean, Pleuroncodes planipes, is another zooplankton resource of possible economic importance." It has a planktonic young stage and, as an adult, an open-sea stage. When young, the red crab is numerous, especially off Baja California, at the southern end of the California Current. It is an area marked by coastal upwelling and such an area typically has high productivity. One oceanographer reported that a ship may crunch through a seemingly solid mass of crabs for mile after mile. "Crabs comprised over 80 percent by volume of all micronekton taken in this rich region."

The red crab is found over and beyond the continental shelf. It has been seen at least 1,000 miles southwest of Baja California, in the California Current's extension. The seabottom phase takes place on the continental slope. Studies suggest "that an enormous potential exists for the exploitation of Pleuroncodes. Perhaps the easiest and most productive fisheries would be over the continental shelf, but concentrations offshore may also support catches."

The Squids

"Over 80 percent of the weight of animals of the sea consists of invertebrates. By far the greatest bulk of this material is not used as human food and in all probability never will be. Yet a great deal more than is now being consumed is probably edible."

Squids seem to have the greatest potential for exploitation as a food resource beyond the continental shelves--even greater than open-ocean fishes--because they are "widely distributed, very abundant, palatable and nutritious." Squids are cephalopods, which include octopuses, cuttlefish, argonauts, and others.

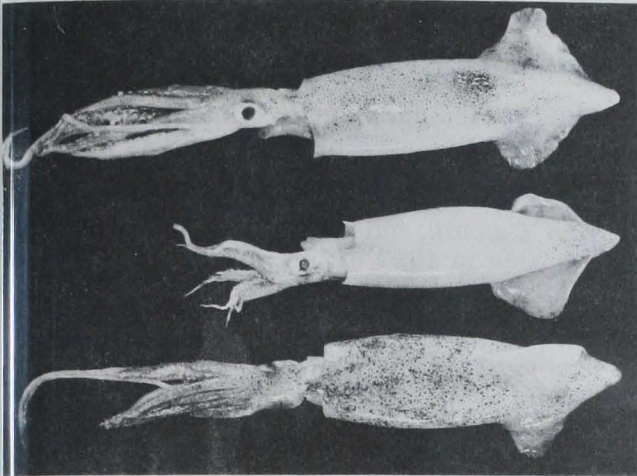


Fig. 5 - Squid. (Photo: V. B. Scheffer)

Squids are highly specialized and have an advanced nervous system. They grow rapidly and some squids reach 55 to 60 feet and 2 tons. Their food varies from plant material to big fishes.

Distribution

Squids are among the most widely distributed marine animals: from the coldest waters of the high latitudes, through temperate zones, and into the tropics. Typically, they occur in the high seas beyond the continental shelf, but many are found over the shelf. Sometimes, high-seas species come into more shallow water.

World Catch

FAO lists 26 nations that land enough squids to be recorded; 11 countries land measurable amounts of cuttlefishes. Only Japan lands large amounts of squids. In the 1960s, Japanese landings ranged from over 306,000 metric tons to 652,000 metric tons. The No. 2 nation, Spain, was far behind. In the early 1960s, Spanish landings ranged from 12,900 to 19,100 metric tons. After Spain come the U. S., Canada, Taiwan, Norway, Italy, and France. The largest production was in 1963: 820,000 metric tons were reported. Today's world production is estimated at 1 million tons.

Squid Fisheries

Squids often travel in schools near the surface and are caught with purse seines and other gear. Jigging, using hooks and lines, is the prevalent method of catching them.

Squids appear in large numbers at night near the surface. Today's commercial fisheries are carried out in shallow waters and almost entirely on spawning populations.

Most squids caught by the Japanese are used for food; this is true too for squid fisheries in other parts of Asia and southern Europe. In the second largest fishery, that of Newfoundland, most squids are used as bait for cod.

Although abundant in nearly every ocean, squids are a major fishery only in Japan. Most production comes from Hokkaido, the northernmost island, where it makes up 60 percent of seafood production. The Japanese use hook and line. They shine bright lights overboard, which attract the squids to the boat. They are caught with hooks baited with imitation feathers. The mechanical reel has replaced the hand in pulling lines in rapidly. One fisherman can catch tons of squid in a night.

The main squid fishing season runs from July to December and peaks in October. The principal area is the Tsugaru Straits between Hokkaido and Honshu. During the first 6 months of the year, the squids move south and are not exploited much; most are caught during their breeding migration in northern waters.

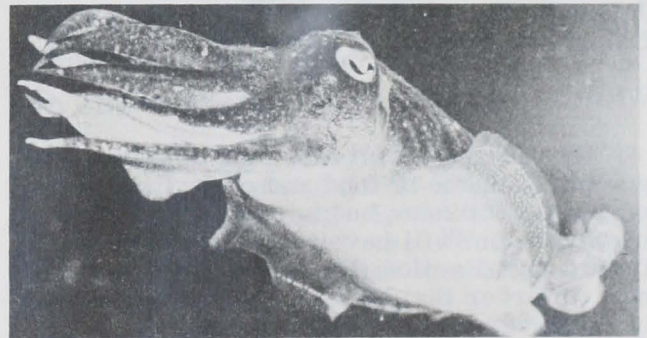


Fig. 6 - Cuttlefish. (Photo: Rex Gary Schmidt)

Most of the catch is eaten in Japan or in Mainland China. About 45% is processed to a dried product; 45% is eaten raw; about 10% is frozen, salted or smoked, or made into paste.

Obstacles to Larger Squid Fisheries

"There are four principal factors which hamper the expansion of squid fisheries: a

strong prejudice against them as human food in most parts of the world; some doubt about their nutritional value; the difficulty of capturing them; the lack of knowledge of their biology, distribution and ecology.¹¹

Squid's Virtues

Squid meat is highly nutritious and compares favorably in most respects with fish. In some important respects, it exceeds fish flesh. "It is perfectly suitable for preparation as meal to be fed to domestic animals."

The quality of squid protein is like that of other flesh products, including red meat like beef. Compared to other animals eaten by man, squid has a larger proportion of edible parts to the whole body. With fish, this proportion ranges from 40 to 70 percent; in squid it is 80 percent. Squid meat has as many calories per unit as white fish meat. The digestibility of squid meat is about the same as that of many fishes.

The Future

Because squids occur in very large numbers, "they will undoubtedly support large commercial fishery in the next few years." This fishery could even be larger than the present Japanese fishery. Experiments are now underway in Chile to devise methods of catching squids in purse seines. U. S. and Japanese companies are interested in a squid fishery off Peru.

Whales

"Whales represent a large and valuable potential source of food and other useful materials for man, but to realize the potential, more wisdom will have to be displayed in international action than has been evident until now, in order that the depleted stocks can recover under reduced exploitation."

Seals, Sea Lions, Walruses

"The amount of food available from the seals and other marine mammals is not likely to be large. . . . The seals, sea lions and walruses represent a resource of small size, but one that could be increased moderately by rational management of herds now depleted by over-exploitation."



Annual Meeting of Inter-American Tropical Tuna Commission

The 1968 annual meeting of the Inter-American Tropical Tuna Commission was held in Panama City, Panama, April 2-4. Representatives were present from Costa Rica, Panama, Mexico, Canada, and the U. S. Ecuador, which gave notice in 1967 of intent to terminate its membership, was not represented. There were observers from Japan, Chile, Nicaragua, UNESCO, and FAO.

For 1969, a yellowfin tuna quota of 93,000 short tons was adopted. The 15-percent incidental catch limit for yellowfin taken incidental to other species during the closed season was continued--but with a new method of application. Before, the laws of each country were applied so that no vessel fishing during the closed season could land more than 15 percent of yellowfin tuna by weight of the total catch during a single trip. At the April meeting, it was agreed that the yellowfin catch during the closed season would not exceed 15 percent of each country's combined total catch of yellowfin and incidental species; also, that each country could allocate the overall limit among its own fishermen as she chose. It was agreed also that a country taking less than 1,000 tons annually would not be bound by the yellowfin quota.

March 1 Opening Proposed

The Commission proposed March 1, 1969, as the date for opening the 1969 season. It requested member nations to vote by correspondence before Sept. 1, 1968. If the vote does not favor unanimously March 1, 1969, then the 1969 season will begin January 1.

U. S. Changes Necessary

It will be necessary for the U. S. to change her present yellowfin tuna regulations to comply with Commission recommendations. A notice of proposed rule making was published in the "Federal Register," April 16, 1968. A public hearing on the proposed rules was scheduled for April 29 in San Diego, Calif.



Poland and Ireland Sign Fishery Trade Agreement

A trade arrangement between the Irish Sea Fisheries Board and 2 Polish State companies, Centromor and Rybex, was concluded in Warsaw in late March 1968. Centromor is the central import and export board for ships and marine equipment. Under the agreement with Centromor, credit facilities will be provided to finance the purchase of Polish-built, steel-hulled trawlers by Irish skippers and fishing companies. Provision also was made for educational and technical assistance to the Irish fishing industry, if required.

Benefits for Both

In consideration of orders placed in Poland for fishing vessels, Centromor will take into account the capacity of Irish shipyards to construct vessels to Centromor's requirements when it is negotiating orders. Further, Irish shipyards will be given a chance to quote prices for enquiries received by Centromor from foreign countries, whenever Poland cannot build such ships.

Concurrent with the financial agreement with Centromor, negotiations also took place with Rybex regarding markets for Irish fishery products in Poland. Rybex is the Polish fish import/export State company. These discussions resulted in a substantial order for Irish herring to be completed during the 1968/69 herring season.

Irish Fleet Strengthened

Irish fishermen were investing in powerful modern trawlers. This year they will see a record number of new vessels being commissioned for their fishing fleet. Poland is one of the most advanced fishing nations in Europe. Its shipbuilding yards rank among the Continent's most modern. The quality of their vessels, plus the attractive loan facilities offered, should provide a great stimulus for the expansion of the Irish fishing industry. (Irish Sea Fisheries Board, March 30, 1968.)



Norway and Indonesia Agree on Joint Venture

A/S Nor Kar of Norway and C. V. Bonito of Indonesia have agreed on a joint fishing venture in Indonesia. The agreement calls for a one-year survey and extends for 15 years.

The fishing grounds covered by the agreement are off the north coast of Sulawesi (Celebes). The operation will be conducted on a pooled-catch basis and will require an investment of US\$1 million. The catch will be marketed in Indonesia and abroad.

Local Fishermen Protested

Fishing would be at least 15 miles offshore--and thus would have no adverse effect on local fishermen. Presumably, this is an attempt by the Indonesian Government to dispel such fears in advance.

A survey by a South Korean fishing fleet off Java's south coast, in accordance with a contract signed Sept. 18, 1967, was met by strong complaints from the local netters. They claimed the Korean operation reduced their shrimp catch 70 percent. (U. S. Embassy, Djakarta, Mar. 25, 1968.)



Chile and Peru Differ on Japanese Survey

The Japanese Fisheries Agency plans to explore off the west coast of South America in fall 1968. It will use the 3,200-gross-ton Government research vessel "Kaiyo Maru" to assess the effect of the Humbolt Current on fishery resources.

In late January 1968, a Japanese mission was sent to the South American countries bordering the Pacific to sound out their feelings. The mission found Chile very enthusiastic. Chile promised to make her research data available and requested the Japanese to conduct cookery courses aboard the vessel to promote fish in Chile.

Peru Cold To Survey

In contrast, Peru was cold both toward the survey and the earlier Japanese industry offer to explore Peru's commercial fishery potential.

The mission noted Peru becoming increasingly cautious over these and similar proposals reportedly advanced by the U. S. However, Peru was inclined to go along with the "Kaiyo Maru" survey--provided it was purely scientific. ("Nihon Suisan Shimbun," Feb. 26, 1968.)



North Pacific Fur Seal Commission Meets in Moscow

On April 12, 1968, representatives from Canada, Japan, the USSR, and the U. S. concluded the Eleventh Meeting of the North Pacific Fur Seal Commission. The Commission was established by the Interim Convention on Conservation of North Pacific Fur Seals ratified in 1957.

At the opening meeting on April 8, M. H. Sukhoruchenko, Deputy Minister, Ministry of Fisheries of the USSR, said:

"The work of the Commission in preserving the fur seal resources and in carrying out the rational killing of fur seals is of great importance. The fruitful cooperation of scientists and specialists of Canada, Japan, the United States and the Soviet Union, who assist the Fur Seal Commission, contributes greatly to scientifically based recommendations which lead to practical steps for the rational use of living marine resources. During the whole period of the Convention, the Commission's work to preserve fur seals has set a good example for the successful resolution of complicated problems of international hunting regulations."

Seeks Maximum Sustainable Yield

The Commission's research is directed toward achieving the maximum sustainable yield from the fur seal resource. Due regard is shown to the effect on other living marine resources--and toward studies of sealskin quality and the effectiveness of sealing methods.

During 1967, 17,505 skins of fur seals were taken by the Soviet Union on the breeding islands, and 65,816 skins were similarly taken by the U. S. Canada and Japan each received 15 percent from both, as provided by the Convention.

Scientific Committee Meets

The Commission meeting was preceded by a meeting of the Commission's Standing Scientific Committee, which began March 25.

The Committee completed work on a comprehensive summary of 1964-66 investigations. This will be published in the Commission's 3 official languages. The information in this and earlier reports will be considered by the Governments when the Convention's future is considered after October 1968.

An interesting development in recent years has been the reestablishment and growth of rookeries in the Kuril Islands, where seals had been exterminated during the 19th century.

The Commission reviewed evidence on whether pelagic sealing could be permitted along with land sealing under certain circumstances, without adversely affecting Convention objectives. The Commission decided that the information was not yet sufficient for a final decision. It will recommend that appropriate research be continued.

Exchange of Scientists

Under the Commission's scientist exchange program, Dr. Tadayoshi Ichihara, Japanese Far Seas Fishery Research Laboratory, visited the Pribilof Islands in 1967 to observe sealing activities and the preliminary processing of sealskins. Hiroshi Kajimura, U.S. Marine Mammal Biological Laboratory, visited Japan in 1967 to observe pelagic sealing for research purposes off the coast.

In 1968, a Japanese scientist will be aboard a U. S. research vessel in the eastern Pacific Ocean. Also, the U. S. plans to send 2 fur seal biologists, an ornithologist, and an interpreter to the Commander Islands.

New Officers Elected

The Governments rotate Commission offices. Commissioner Miyoshi of Japan was elected next Chairman, and Commissioner Fedorov of the USSR Vice-Chairman.

The next meeting will be held in Tokyo, starting Feb. 24, 1969. It will be preceded by a meeting of the Standing Scientific Committee beginning Feb. 17. (Joint Press Release, Moscow, April 12, 1968.)



Tuna Fleets of Taiwan, Japan, and South Korea

A Japanese survey shows 935 Taiwanese, Japanese, and South Korean tuna vessels fishing in the Pacific, Indian, and Atlantic Oceans. Japan has 555, Formosa (Taiwan) 226, and South Korea 154.

Taiwan plans to add 69 tuna vessels to her fleet in 1968. South Korea is building 38 new tuna vessels for operation this year.

Area of Operation	Japan ^{1/}	Taiwan ^{1/}	South Korea ^{2/}
	(No. of Vessels)		
East. Pacific Ocean	200	0	0
<u>So. Pacific Ocean:</u>			
American Samoa	30	86	67
Espiritu Santo & Fiji Is.	0	15	13
Homeland-based operations	50	0	0
Tasman Sea (off Australia)	100	0	0
Indian Ocean	130	100	17
Atlantic Ocean	45	25	19
Vessels in home ports	0	0	38
Total	555	226	154
^{1/} As of Feb. 10, 1968.			
^{2/} As of March 8, 1968.			

Japanese To Transfer Vessels

The Japanese fleet is not likely to increase beyond the present level. Japanese fishing firms are planning to transfer vessels from American Samoa and other areas to the Tasman Sea off southeast Australia, and to the Indian Ocean. From latter, catches are being shipped back to Japan because of good prices. ("Suisancho Nippo," Mar. 11, 1968.)



France and USSR Cooperate in Fishery Matters

The Joint Franco-Soviet Commission on Economic Cooperation, which meets permanently in Moscow, has established a "Working Group on Problems in Cooperation in Food Industries and Equipment." The Soviets are interested in: techniques of overhauling and repairing fishing vessels; canning of fishery products (especially in small cans); processing of algae, mollusks, and shrimp; and plastic packaging of fishery products.

The French are proposing to deliver fishing vessels, completed canneries, fish-meal plants, packaging materials--and to sell salted cod and canned tuna.

It appears that the two countries are preparing to exchange fishery delegations. Several French industry representatives will travel for two weeks to Kaliningrad and Murmansk to study Soviet pelagic (midwater) trawling. They will visit processing "kombines" in two fishing centers. ("France Peche," Jan. 1968.)

Both Seek More Trade Contacts

It appears that the Soviets and French are mostly interested in increasing fishery trade contacts and less in fisheries cooperation as such. They do not compete in any significant world fishery. A 1965 Soviet order for 3 fishing and canning stern trawlers--world's largest, each over 6,000 gross tons--made it evident to French industry and Government that there is a huge potential market for French products in the Soviet fishing industry.

This Soviet need was filled by other West European countries (Sweden, Denmark, West Germany) until the USSR placed the US\$1 million order for the 3 vessels with the Nantes Shipyards.



Soviet Research Vessel Visits India and Burma

In late January 1968, the modern, well-equipped Soviet research vessel "Nauka" departed for the Indian Ocean. She was scheduled to stop in Indian and Burmese ports, where Soviet scientists were to meet with their local counterparts.

The cruise's primary mission is to explore new fishing grounds; the secondary one is to test new oceanographic instruments. Also, the vessel will attempt to fish at 1,500 fathoms; if successful, it will be the first time the Soviets have fished that deep with commercial gear.

1963 Expedition

During the 1963 International Indian Ocean Expedition, the U. S. research vessel "Anton Bruun" trawled for shrimp deeper than 1,000 fathoms. (Vessels of BCF's Seattle Exploratory Gear Base also trawled as deep as 1,050 fathoms recently.)

The Soviet fishery administrators first visited Burma in 1964. N. S. Goriunov, head of the Directorate for the Exploitation of Fishing Fleets and Port Administration of the Soviet Ministry of Fisheries, led the 1964 delegation, which visited processing plants and the port of Mergui (on Andaman Sea) "to study deep-sea fisheries."

1966 Burma Visit

In Feb. 1966, the Soviet research vessel "Adademik Knipovich" stopped at Rangoon. Four Burmese fishery scientists were invited to participate in a 10-day cruise and joint study of fishery resources off Burma's coast. The Soviet scientific party was headed by Dr. A. S. Bogdanov, Director of the Soviet Federal Institute for Fisheries and Oceanography in Moscow.



World Fishery Trade Rose Again in 1966

In 1966, world trade (excluding Mainland China) in fish and fish products reached a record US\$2,400 million. This was \$220 million above 1965 and \$420 million above 1964.

The figures were published February 1968 in the FAO "Yearbook on Fishery Statistics." They were based on trade statistics furnished by 151 countries accounting for almost 90 percent of the 1966 world fish catch of 57 million metric tons. Mainland China, for which no figures were available, would make up most of the remainder.

Japan No. 1 Earner

Peru exported the greatest quantity of fish products--1,419,200 metric tons, almost all fish meal--but was third in export earnings. Japan was the biggest export earner, followed by Norway. The biggest importer was the U. S., followed by the United Kingdom. (FAO "News Roundup," Jan.-Feb. 1968.)



Fish Oil Prices Decline

The European price for herring oil has dropped. In March 1968, the price of Danish

herring oil was down to US\$93 a metric ton. Last spring, it was \$115 a ton; during 1967, it reached a high of \$182.

Unrefined Peruvian anchovy oil was on its way to Europe. The oil was sold at about \$79 a ton; half-refined Peruvian oil sells for \$91 a ton.

Half Icelandic Oil Unsold

Iceland had about one-half last year's herring oil unsold. Some of it was owned by the State herring plants. The mean price State plants received was about \$115 a ton. It is believed privately owned plants sold at a slightly lower price. At present, therefore, price prospects for herring oil are poor.



FAO Conference on Fishing Ports & Port Markets: Bremen, September

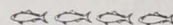
An FAO-sponsored International Conference on Fishing Ports and Port Markets will be held at Bremen, W. Germany, Sept. 23-28, 1968. It is open to all member nations and associated members. It will be conducted in English, French, Spanish, and German.

During the past few years, FAO's Department of Fisheries has received many requests for information, advice, and technical assistance in developing fishing harbors and port markets. Most important in building a healthy fishing industry are suitable harbors or landing facilities and the development of efficient primary marketing channels. Many questions on the financial and administrative aspects of harbor development also were asked.

FAO Report Has Many Answers

To disseminate the available information, FAO's Department of Fisheries has published "Landing and Marketing Facilities at Selected Sea Fishing Ports." This report will be used as a basic working document at the conference.

A provisional agenda for the conference lists for discussion: the role of harbors in development; feasibility studies and planning; civil engineering in fishery harbors; fishing port installations and services; and the administration and financing of fishery harbors.



FAO-UNESCO Symposium on Caribbean Sea

An FAO-UNESCO Symposium on Investigations and Resources of the Caribbean Sea and Adjacent Regions will be held in Willemstad, Curacao, Netherlands Antilles, Nov. 18-26, 1968. It will review knowledge and identify gaps in scientific investigations and resources research. Its purpose is to improve scientific cooperation and rational use of marine resources in the Caribbean Sea, the Gulf of Mexico, and adjacent Atlantic Ocean.

Another purpose is to facilitate planning of the Cooperative Investigations of the Caribbean and Adjacent Regions (CICAR) to be initiated in 1970 under the Intergovernmental Oceanographic Commission (IOC).

Agenda

The Symposium will be divided into these sections: (1) physics and chemistry of the area, and ocean-atmosphere interaction, including hurricanes; (2) geology, geophysics, and mineral resources; (3) marine biology; and (4) fishery resources.

Additional information and application forms can be obtained from Dr. N. K. Federov, Director, Office of Oceanography, UNESCO, Place de Fontenoy, Paris 7, France.

Abstracts of papers should be submitted by July 1. Abstracts under sections (1) and (2) should be submitted to Dr. Federov. For (3) and (4), send to Dr. M. Ruivo, Chief, Marine Biology and Environment Branch, Department of Fisheries, FAO, Via delle Terme di Caracalla, Rome, Italy. Languages are English and Spanish. (UNESCO, Jan. 30, 1968.)



Symposium Held on Suppressing Odors in Fishery Byproducts

The subject of odor suppression in the processing of animal byproducts was discussed at a symposium in England on March 14, 1968. It is believed the first ever devoted entirely to this subject. Speakers described experiments demonstrating that a substantial reduction in the odor-producing material escaping from a plant does not give a cor-

responding reduction in odor intensity. The most effective method of odor reduction is thought to be confinement and recirculation of the odor-carrying vapors--rather than treatment to remove smells or attempts to mask unpleasant odors.

Drying Plant

A drying plant was described in which the drying air was continuously recirculated and retained within the plant. Both the output and quality of fish meal produced were equal to those achieved with conventional equipment. Moreover, no vapors were discharged into the atmosphere. Also achieved were a reduction in the amount of water needed for cooling and in the quantity of polluted water produced.

Other Symposium Subjects

Other discussions concerned the importance of good housekeeping in processing plants, the difficulty of applying a recirculation system to batch production, and the ability of malodorous vapors to carry over long distances with little reduction in intensity. (Ministry of Technology, United Kingdom, Mar. 15, 1968.)



1967/68 Antarctic Whale Catch Reported

The Whaling Commission reports the total baleen whale catch during the 1967/68 Antarctic season, by fleet, as:

	Blue-Whale Units
Norway:	
"Kosmos IV"	292
Japan:	
"Tonan Maru No. 2"	425
"Nisshin Maru"	413
"Nisshin Maru No. 3"	230
"Kyokuyo Maru No. 3"	425
Total	1,493
USSR:	
"Juri Dolgorukij"	288
"Sovietskaya Rossia"	368
"Sovietskaya Ukraina"	360
Total	1,016
Grand Total	2,509



International Whaling Commission Calls 2 Meetings

A working session of the International Whaling Commission (IWC) Scientific Committee will meet in Tokyo, June 13-15, prior to 20th Annual Meeting of the Commission. Stock assessments for the Antarctic--and possibly new assessments for North Pacific baleen stocks and sperm stocks in general--will be reviewed.

Commission Agenda

The Commission will meet June 24-28. It has a lengthy agenda, including the International Observer Scheme, Special Scientific Investigation of the Whale Stocks, and Economic Studies of Whaling Regulations. (International Whaling Commission, Apr. 10, 1968.)



Southeast Asia Fisheries Center Council Meets

The Southeast Asia Fisheries Development Center held its first council meeting in Bangkok, Thailand, March 19-21, 1968. Represented were Japan, Singapore, Malaysia, Thailand, and South Vietnam. Also present were a U. S. Embassy official and the FAO fishery specialist in Thailand. The programs for fishermen's training at Bangkok and research at Singapore were adopted; administrators were appointed.

Thai Training Center

For the Thailand Training Center, scheduled to open April 1969, the Director of the Thailand Fisheries Bureau was appointed director, and the Director of the Nansei (Southwest Japan) Regional Fisheries Laboratory deputy director. The Singapore Research Center, scheduled to open in early 1969, will be headed by the Director of the Singapore Fisheries Bureau; the Director of the Nagasaki Fisheries Experimental Station will serve as deputy director.

Japan's Contributions

To operate the Development Center, Japan will contribute one 350-gross-ton fishing vessel, equipment for land and sea facilities, and fishery specialists. She will provide scholarships for trainees sent to Japan from the Center. Other member nations will be assessed

US\$2,000 a year to finance the projects. ("Suisancho Nippo," Mar. 27, 1968.)



Dutch Hydrographer Warns of Polluted Seas

Oceanic research and exploration require urgent international cooperation to better use and conserve marine resources, a noted hydrographer told FAO in Rome on April 24.

Rear-Adm. W. Langeraar, hydrographer of the Royal Netherlands Navy and Chairman of the Intergovernmental Oceanographic Commission (IOC), spoke at the opening of the Third Session of the FAO Committee on Fisheries. The 34-nation Committee met until April 30 to discuss urgent world fishery problems and relevant FAO action.

Oceans Belong to Mankind

Admiral Langeraar emphasized that the oceans and their resources are "the common interest of all mankind" and so require coordinated action--so that future generations "will not stand at the shores of empty seas, polluted beyond recovery." He called for new concepts of law, peaceful cooperation, and mutual assistance to promote the seas' uses for the benefit of all mankind.

Admiral Langeraar stated that "the great drive towards the oceans" began only 11 years ago with the International Geophysical Year. As a result, international cooperation was scattered. He urged "unrestricted cooperation" between governments and international agencies in oceanic exploration and management.

Greater FAO Effort

Addeke H. Boerma, Director-General of FAO, said that "international collaboration must be perfected to ensure proper exploitation" of the sea's resources. Also, there is need for funds and efforts on an entirely new scale if maximum benefits are to be derived from the world's oceans and inland waters. He cited FAO's own role in promoting fisheries action. He noted the plans to expand FAO's Department of Fisheries to enable it to participate more fully in international efforts.



Atlantic Tuna May Come Under International Protection

The tuna of the north and south Atlantic may soon come under international protection, reports FAO. A pact safeguarding tuna stocks in the 2 oceans "seems assured of early enactment."

In April, France, Spain, and Canada told an FAO meeting in Rome that they were moving toward adherence to the International Convention for the Conservation of Atlantic Tunas. The Convention was drafted in May 1966 in Rio de Janeiro under FAO auspices. It will establish a commission to protect Atlantic tunas from overfishing.

4 Signatories Already

Four nations -- the U.S., Japan, South Africa, and Ghana -- already have ratified it. Three more are needed for the required minimum of 7.

The new ratifications were pledged before FAO's Committee on Fisheries, a 34-nation group that met in Rome through April 30.

The group was told that yellowfin tuna stocks in the tropical Atlantic and bluefins in the north Atlantic "are being severely affected by fishing." Also, yellowfins in the Indian Ocean and possibly in the western Pacific need management.

An FAO document said that Japan, the world's No. 2 fishing nation, was taking fewer tunas than before. But there is increased fishing by other nations, including France, Korea, and the U. S. The document cited greater mobility of fishing vessels as a factor, especially off northwest Africa.



Yellowfin, bluefin tuna, and swordfish on deck of BCF's "Delaware" were part of 2-ton exploratory longline catch in the Atlantic.



Canadian lobster fisherman throws overboard 25-lb. plastic trap called "igloo."

FOREIGN

CANADA

LANDINGS AND VALUE FELL IN 1967

In 1967, Canadian sea fisheries landings (including those of Newfoundland) were about 2.4 billion pounds with an exvessel value of C\$144.4 million; in 1966, they were 2.5 billion pounds valued at \$159 million. These figures exclude seaweeds. ("Monthly Review of Canadian Fisheries Statistics," Dec. 1967.)

Landings and exvessel values of the principal species were:

	Landings		Value	
	1967	1966	1967	1966
	.. (1,000 Lbs.) (C\$1,000) ..	
Atlantic Coast:				
Cod	521,369	563,078	23,081	25,092
Haddock	102,928	112,819	6,814	8,037
Pollock	32,737	34,577	1,290	1,380
Flounder & sole	227,326	232,954	7,560	7,764
Herring	763,725	569,891	8,222	6,220
Ocean perch	173,940	183,079	4,498	5,082
Swordfish	8,076	7,403	3,322	3,214
Lobsters	35,065	37,338	23,304	22,036
Scallops	13,340	18,250	7,770	7,448
Pacific Coast:				
Halibut	25,125	32,000	6,353	11,471
Herring	110,816	307,653	1,847	5,107
Salmon	129,979	162,863	34,988	38,654
Cod	10,612	20,706	737	1,436

* * *

BRITISH COLUMBIA HERRING LANDINGS AND PRODUCTS FALL SHARPLY

On March 20, the Canadian Department of Fisheries, Vancouver, reported the following data on British Columbia herring landings and products produced:

	Unit Tons	Season Ending			3/27/65	3/28/64	3/10/63
		3/16/68	3/4/67	3/26/66			
Landings:							
Queen Charlotte Islands	"	-	597	6,628	46,985	32,582	19,856
Northern	"	5,307	13,671	25,415	46,632	35,016	42,792
Central	"	4,339	33,813	57,856	22,107	56,123	62,626
Upper East Coast	"	5,556	15,769	18,807	18,672	15,513	10,697
Middle East Coast	"	736	11,750	20,668	23,845	20,347	24,707
Lower East Coast	"	1,178	25,459	18,144	37,849	66,216	55,665
West Coast Van. Island	"	1,699	32,764	32,847	44,490	36,248	49,304
B. C. total landings	"	18,815	133,823	180,365	240,580	262,045	265,647
Products Produced:							
Meal	"	3,077	23,356	32,163	43,062	46,778	48,035
Oil (Imp. Gals.)	"	427,768	2,776,610	3,855,322	5,436,358	4,877,688	4,771,087

* * *

QUEBEC FISHERMEN BROKE ALL CATCH RECORDS IN 1967

Quebec fishermen broke all catch records in 1967 by landing 190 million pounds of fish worth C\$7.3 million. This was reported by the Quebec Ministry of Industry and Commerce in the Dec. 1967 issue of "Maritime Fisheries." In 1966, the catch was 144.5 million pounds worth \$6.7 million.

Catch, Not Fishermen, Increased

The 1967 catch was especially outstanding because there was no increase in number of fishermen. The Quebec Government contributed to the increased production by helping to buy larger fishing vessels. During the six months of 1967 when fishing traditionally is slowest, 41 million pounds were landed, double the 1966 period's.

The Government looks forward to even greater catches as fishermen become more experienced with the new equipment. (U. S. Consul, Quebec, Feb. 26, 1968.)

* * *

CONFERENCE ON FISHING VESSEL CONSTRUCTION MATERIALS SCHEDULED

A conference to include fishing interests, manufacturers and suppliers of construction materials for vessels is slated for the Queen Elizabeth Hotel in Montreal, Canada, Oct. 1-3, 1968. It will be sponsored by the Canadian Federal-Provincial Atlantic Fisheries Committee (CF-PAFC).

Canada (Contd.):

The participants will consider traditional and newer materials used, or may be used, in hulls, decks, and superstructures of fishing vessels. These include wood, steel, plastic, aluminum, and concrete. Boatbuilders, vessel owners and operators, naval architects, manufacturers, fabricators, government specialists, and others will examine the advantages of the various products. They will discuss raw materials and their application to design, construction, quality control, vessel operation and maintenance, and their comparative costs.

International Conference

Like previous CF-PAFC conferences, this one will have an international flavor. Interest already has been shown by foreign fishing, shipbuilding, and manufacturing interests and across Canada. World experts will be among the 30 specialists to present papers. About 400 people are expected to attend. (Canadian Department of Fisheries, Jan. 15, 1968.)

* * *

REVIEW OF FISHERY SUBSIDIES

Canada's fishing industry is subsidized. A significant part of subsidies is the responsibility of the Provincial Governments. Under a recently amended law, Canada's Fisheries Department provides: 30 percent of cost for wooden fishing vessels over 45 feet and under 100 GRT; 40 percent of cost for wooden vessels over 100 GRT.

This subsidy has been in operation since 1947. Its cost in FY 1966/67 was C\$2.1 million. It also is paid on construction costs for vessels over 75 feet on non-wood hulls. The amount was reduced from 50 percent to 35 percent of costs in December 1967. Total expenditures since 1961 equal C\$72.3 million. Estimated costs in 1967/68 are C\$20 million. The Fisheries Department has no other fishery subsidy program--except those for normal research and development.

Nova Scotia

There is no construction subsidy for fishing boats. However, Province does provide low-interest loans for boat construction purposes; rate is one-half percent above cost to Nova Scotian Government

British Columbia: No fishing subsidy programs.

Quebec

Makes grants to fishermen; pays subsidies on construction of small fishing boats and replacement of motors; pays complete federal insurance premium on small fishing boats; and partially subsidizes premiums for large fishing boats. Provincial Government presently is paying catch subsidies on ocean perch (max. $\frac{3}{4}$ ¢ a lb.), plaice (max. $\frac{1}{2}$ ¢ a lb.), and cod (max. $1\frac{1}{4}$ ¢ a lb.). Subsidies diminish as market improves.

Newfoundland

Under Inshore Fisheries Assistance Program, pays grants or "bounty" of various amounts to fishermen on newly constructed fishing vessels from 24 feet to 35 feet. Approved fishing boats over 36 feet (10 tons) are covered by a Provincial subsidy of C\$160 a ton (Fishing Ships [Bounties] Act, 1955). A grant also is given to fishermen on certain types of nylon and other synthetic fiber gill nets, on nylon lines and long lines. Additional grants are paid under The Coasting Vessels [Bounties] Act, 1959, but these most often apply to freight vessels.

Other Aid

Low-interest loans are also available to fishermen through the Fisheries Loan Board, primarily to develop and improve inshore fishery. Also available is the Fishing and Coasting Vessels Rebuilding and Repairs [Bounties] Act, 1958. The Inshore Fisheries Assistance program is the largest in terms of dollars. It amounted to close to C\$390,000 in fiscal 1967-68 (April 1-March 31). The Fishing Ships [Bounties] Act is the next largest: about C\$240,000. Subsidy amounts under the other programs are much smaller.

New Brunswick

Pays a subsidy for vessel construction. The Federal Government pays its share (now 35 percent) directly to the shipyard; fishermen pay 10 to 15 percent, depending on size of vessel; the Province pays the rest. Fishermen repay the Province with interest at 4 percent on the balance outstanding. The effect of the reduction in Federal share of the subsidy from 50 to 35 percent is causing Provincial Government to study costs of construction of steel-hulled trawlers in Europe, especially in United Kingdom and France. New Brunswick has budgeted C\$3.6 million for its boat-building program in 1968.

* * *

Canada (Contd.):

NEW BRUNSWICK BEGINS FISH INSPECTION

The new Fish Inspection Act of New Brunswick is being carried out, announced Provincial Fisheries Minister Ernest Richard on March 26, 1968. The work is being done by a fish inspection and marketing branch within his department. The new branch has 2 purposes: to protect consumers and to promote fish products. From now on all fish plants, fish buyers, and fish peddlers in New Brunswick will have to be licensed. Although retailers will not require a license, their products offered for sale would be inspected on the premises to insure freshness.

Assesses European Market

The Provincial Government has assessed European market possibilities for New Brunswick fish products. Reportedly, it found great interest in queen crab, shrimp, salmon, lobster, canned cod livers, cod roe, skate wings and dogfish, and frozen eel. In Germany and Holland, there is demand for frozen herring.

Successful crab and shrimp exploratory projects were carried out by New Brunswick last year; 366,000 pounds of crab were caught and yielded 70,000 pounds of meat. A second processing plant was opened at Shippegan for this purpose; a third is planned in 1968. The market for New Brunswick shrimp was good, especially in Scandinavia and Great Britain. Demand actually exceeded present supply. Shrimp boats will test new gear and be equipped with refrigerated systems.

Fisheries Department Programs

West Coast fishermen joined the herring fleet in New Brunswick--spurring worldwide interest in the fishery. The Fisheries Department expanded a training program with local fishermen at the Caraquet school, supplemented by time on board Pacific coast vessels. It expanded technical and financial assistance. And it experimented with the Scottish drift-netting system.

The New Brunswick Fisheries Department had arranged to build 3 steel trawler-seiners

at the Saint John Shipbuilding and Dry Dock Co., Ltd., before the recent reduction in federal subsidy from 50 to 35 percent. The Provincial Government has made strong representations to the Federal Government for retention of the 50-percent subsidy on large fishing vessels. Each trawler-seiner will cost C\$1,200,000.

Costs of vessels in foreign shipyards have been investigated. This despite policies of the department and the Fishermen's Loan Board to have boats built in New Brunswick--and even to allow a 10-percent favorable differential in cost to local yards. (U. S. Consul, St. John, N. B., Apr. 8, 1968.)

* * *

CANADIAN PRODUCTION OF FISHERY PRODUCTS IN 1967 AND 1966

	1967	1966
	. . . (1,000 Lbs.) . . .	
Atlantic Coast:		
Frozen whole & dressed fish	11, 124	12, 634
Frozen fillets	124, 720	137, 071
Blocks & slabs	93, 805	106, 213
Fish sticks	1/	4, 807
Portions	2, 941	3, 059
Shellfish, frozen	11, 839	1/
Shellfish, fresh	1/	446
Frozen-smoked, dressed or fillets	6, 033	6, 202
Salted and smoked	538, 604	584, 335
Wet salted	131, 911	109, 994
	. . . (Barrels)	
Pickled & cured	120, 687	115, 556
	. . . (1,000 Cases)	
Canned fish & shellfish	1, 146	1, 471
	. . . (Short Tons)	
Fish Meal	88, 549	68, 978
	. . (Imperial Gals.)	
Oil	6, 089	3, 230
Pacific Coast:		
	. . . (1,000 Lbs.)	
Frozen whole & dressed fish ^{2/}	2, 333	2, 391
Frozen salmon (whole & dressed)	19, 822	20, 318
Other frozen whole & dressed fish	15, 764	15, 768
Frozen fillets	4, 777	6, 450
Frozen smoked	808	905
	. . . (1,000 Cases)	
Canned salmon	1, 466	1, 817
	. . . (Short Tons)	
Herring meal	9, 678	27, 181
	. . (Imperial Gals.)	
Herring oil	837, 900	3, 081, 022
^{1/} Confidential--included with "other."		
^{2/} Cod and herring only.		
(Source: "Monthly Review of Canadian Fisheries Statistics.")		



EUROPE

USSR

ENTERS WORLD FISH MEAL MARKETS

The Fishmeal Exporters Organization reports that during 1967 the Soviet Union exported to West Germany 15,541 metric tons of fishmeal. In 1966, such exports amounted to only 2,062 tons.

In January 1968, the Soviet Union exported 3,500 metric tons of fish meal to West Germany, compared with Jan. 1967 exports of 700 tons. This development is surprising because the Soviets have repeatedly stated that their supply is far below present and especially future domestic fishmeal demand. By 1970, the demand should approach 1 million metric tons. In 1966, the total Soviet domestic production of fish and whale meals was barely 30 percent of that figure.

* * *

FAO SEMINAR ON FISH CULTURE

A seminar and study tour devoted to fish culture was scheduled to be held in the Soviet Union from April 12 to May 25, 1968. The seminar was intended for fishery scientists from developing nations that already have a program for genetic selection or hybridization of fish--or have facilities and personnel to undertake such work (FAO News Roundup).

This was the 11th FAO-sponsored seminar in the Soviet Union. Most lectures and tours were to be held in Kiev and Leningrad. Costs were covered by Soviet rubles available to FAO, except for travel arrangements.

* * *

TO STUDY NORTH ATLANTIC CURRENTS

Admiral B. Filippov, Director of the Leningrad Institute of Oceanography, has disclosed that his oceanographers will make extensive investigations of ocean currents in the North Atlantic this summer. It will be the fifth in a series of similar cruises.

Among other things, the oceanographers will explore the characteristics of currents south of Iceland. It is expected that the data collected will make it possible to explain the

instability of the North Atlantic currents, thought to have some connection with atmospheric conditions. It is hoped the research will aid fishery forecasting. ("Politiken," Copenhagen, Mar. 26, 1968.)



Netherlands

ASSISTS FISHING INDUSTRY

Again this year, the Danish Ministry of Agriculture and Fisheries is providing for the modernization of trawlers and cutters and for the breaking up and replacement of shrimp vessels. These objectives are part of a program to structurally improve the fishing industry.

Purposes of Loans

Contributions can be granted to trawlers and cutters for these purposes: to instal and improve refrigeration equipment (25 percent of costs to maximum of US\$2,500; to rear-range fish holds (30 percent to maximum of \$2,900 per trawler and \$1,400 per cutter); instal hydraulically or electrically driven fishing winches, adjustable propellers, and sonar equipment (20 percent of costs). For trawlers: to install or improve deep-freeze equipment (20 percent of total cost to a maximum of US\$36,200); for cutters: to instal washing-grading machines (30 percent to maximum of \$725).

Other Aid

Another arrangement permits a \$5,400 contribution to owners of shrimp vessels definitely withdrawn in 1968 from fishing operations from a Dutch port. If the owner simultaneously replaces the craft, the contribution is US\$3,600 per vessel. If the vessel is also provided with a refrigeration installation, the contribution amounts to \$6,200. ("Het Financieele Dagblad," Mar. 6, 1968; U. S. Embassy, The Hague, Mar. 12, 1968.)



United Kingdom

1966-67 CATCH IN ENGLAND AND WALES

The British Ministry of Agriculture, Fisheries, and Food has reported these 1966-67 catch data for England and Wales:

	1967	1966
	. . . (1,000 Lbs.) . . .	
Cod	656,863	614,203
Haddock	102,807	122,465
Saithe	72,985	79,609
Plaice	83,610	74,967
Other	160,804	164,651
Total Demersal Fish	1,077,069	1,055,895
Herring	27,700	28,697
Other	46,720	26,567
Total pelagic fish	74,420	55,264
Total fish	1,151,489	1,111,159
Total shellfish	61,919	46,844
Grand total, England & Wales	1,213,408	1,158,003
Grand total, Scotland	733,035	896,682
Grand total, Great Britain	1,946,443	2,054,686

Note: Original data in English hundredweights (cwt. = 112 lbs.)

* * *

EXTRA SUBSIDIES GIVEN TO FISHING TRAWLERS

The United Kingdom provides extra subsidies for distant-water, wet-fish trawlers operating out of certain ports in England and Wales. Distant-water trawlers are to receive \$19.20 more each day, middle-water trawlers an additional \$16.80 a day, near-water trawlers \$12.00.

This small additional subsidy is not expected to help this segment of the fishing industry; its difficulties are so deep and persistent that such aid is hopelessly inadequate.

Ports included in the subsidy are Hull, Grimsby, Fleetwood, North Shields, Milford Haven, and Hartlepool. ("Fishing News," Mar. 1, 1968).

* * *

"FISHING NEWS" DIRECTORY AND EQUIPMENT GUIDE AVAILABLE

Many questions about the British fishing industry are answered in the 1968 "Fishing News" Directory and Equipment Guide. The book lists every government authority, organization, boat builder, supplier of equip-

ment, manufacturer, and agent. Also, the book contains information on: vessels; owners and builders; propulsion; transmission; steering; electronics and radio; chandlery and lifesaving; catching and hauling; and marketing and processing.

The Guide is available from Fishing News Books Ltd., 110 Fleet St., London, E.C. 4, for US\$5.



Norway

FISHING INDUSTRY GETS EXTRA SUBSIDY

Following a sharp exchange between non-socialists and socialists, the Norwegian Parliament approved a Government bill proposing a 6 million kroner (US\$850,000) subsidy to the fishing industry. Center Party Rep. Einar Moxnes, manager of the bill, said the proposal sought to offset the most damaging effects of the devaluation of the pound and other foreign currencies. Moxnes said that together with other measures being readied, this extraordinary support should help to create calmer conditions in the fishing industry.

First to Receive Aid

Fisheries Minister Oddmund Myklebust stated that the fishing industry is the first to receive aid to ease the devaluation impact. In his opinion, the subsidy amount should enable the fishing industry to continue operations and help to hold valuable markets. He expressed concern over the heavy reliance on subsidies and said other measures are also required to solve the problems of the fishing industry, notably better marketing methods.

Opposition Viewpoint

Speaking for the Labor Party, Rep. Ragnar Christiansen asserted that the Fisheries Minister's statements were a direct breach of promises made to fishermen. He said they also broke the preconditions for the government's decision not to devalue the krone—namely, to give compensation to industries that suffered losses. ("News of Norway," Feb. 26, 1968.)

* * *

EUROPE

USSR

ENTERS WORLD FISH MEAL MARKETS

The Fishmeal Exporters Organization reports that during 1967 the Soviet Union exported to West Germany 15,541 metric tons of fishmeal. In 1966, such exports amounted to only 2,062 tons.

In January 1968, the Soviet Union exported 3,500 metric tons of fish meal to West Germany, compared with Jan. 1967 exports of 700 tons. This development is surprising because the Soviets have repeatedly stated that their supply is far below present and especially future domestic fishmeal demand. By 1970, the demand should approach 1 million metric tons. In 1966, the total Soviet domestic production of fish and whale meals was barely 30 percent of that figure.

* * *

FAO SEMINAR ON FISH CULTURE

A seminar and study tour devoted to fish culture was scheduled to be held in the Soviet Union from April 12 to May 25, 1968. The seminar was intended for fishery scientists from developing nations that already have a program for genetic selection or hybridization of fish--or have facilities and personnel to undertake such work (FAO News Roundup).

This was the 11th FAO-sponsored seminar in the Soviet Union. Most lectures and tours were to be held in Kiev and Leningrad. Costs were covered by Soviet rubles available to FAO, except for travel arrangements.

* * *

TO STUDY NORTH ATLANTIC CURRENTS

Admiral B. Filippov, Director of the Leningrad Institute of Oceanography, has disclosed that his oceanographers will make extensive investigations of ocean currents in the North Atlantic this summer. It will be the fifth in a series of similar cruises.

Among other things, the oceanographers will explore the characteristics of currents south of Iceland. It is expected that the data collected will make it possible to explain the

instability of the North Atlantic currents, thought to have some connection with atmospheric conditions. It is hoped the research will aid fishery forecasting. ("Politiken," Copenhagen, Mar. 26, 1968.)



Netherlands

ASSISTS FISHING INDUSTRY

Again this year, the Danish Ministry of Agriculture and Fisheries is providing for the modernization of trawlers and cutters and for the breaking up and replacement of shrimp vessels. These objectives are part of a program to structurally improve the fishing industry.

Purposes of Loans

Contributions can be granted to trawlers and cutters for these purposes: to instal and improve refrigeration equipment (25 percent of costs to maximum of US\$2,500; to rear-range fish holds (30 percent to maximum of \$2,900 per trawler and \$1,400 per cutter); instal hydraulically or electrically driven fishing winches, adjustable propellers, and sonar equipment (20 percent of costs). For trawlers: to install or improve deep-freeze equipment (20 percent of total cost to a maximum of US\$36,200); for cutters: to instal washing-grading machines (30 percent to maximum of \$725).

Other Aid

Another arrangement permits a \$5,400 contribution to owners of shrimp vessels definitely withdrawn in 1968 from fishing operations from a Dutch port. If the owner simultaneously replaces the craft, the contribution is US\$3,600 per vessel. If the vessel is also provided with a refrigeration installation, the contribution amounts to \$6,200. ("Het Financieele Dagblad," Mar. 6, 1968; U. S. Embassy, The Hague, Mar. 12, 1968.)



United Kingdom

1966-67 CATCH IN ENGLAND AND WALES

The British Ministry of Agriculture, Fisheries, and Food has reported these 1966-67 catch data for England and Wales:

	1967	1966
	. . . (1,000 Lbs.) . . .	
Cod	656,863	614,203
Haddock	102,807	122,465
Saithe	72,985	79,609
Plaice	83,610	74,967
Other	160,804	164,651
Total Demersal Fish	1,077,069	1,055,895
Herring	27,700	28,697
Other	46,720	26,567
Total pelagic fish	74,420	55,264
Total fish	1,151,489	1,111,159
Total shellfish	61,919	46,844
Grand total, England & Wales	1,213,408	1,158,003
Grand total, Scotland	733,035	896,682
Grand total, Great Britain	1,946,443	2,054,686

Note: Original data in English hundredweights (cwt. = 112 lbs.)

* * *

EXTRA SUBSIDIES GIVEN TO FISHING TRAWLERS

The United Kingdom provides extra subsidies for distant-water, wet-fish trawlers operating out of certain ports in England and Wales. Distant-water trawlers are to receive \$19.20 more each day, middle-water trawlers an additional \$16.80 a day, near-water trawlers \$12.00.

This small additional subsidy is not expected to help this segment of the fishing industry; its difficulties are so deep and persistent that such aid is hopelessly inadequate.

Ports included in the subsidy are Hull, Grimsby, Fleetwood, North Shields, Milford Haven, and Hartlepool. ("Fishing News," Mar. 1, 1968).

* * *

FISHING NEWS" DIRECTORY AND EQUIPMENT GUIDE AVAILABLE

Many questions about the British fishing industry are answered in the 1968 "Fishing News" Directory and Equipment Guide. The book lists every government authority, organization, boat builder, supplier of equip-

ment, manufacturer, and agent. Also, the book contains information on: vessels; owners and builders; propulsion; transmission; steering; electronics and radio; chandlery and lifesaving; catching and hauling; and marketing and processing.

The Guide is available from Fishing News Books Ltd., 110 Fleet St., London, E.C. 4, for US\$5.



Norway

FISHING INDUSTRY GETS EXTRA SUBSIDY

Following a sharp exchange between non-socialists and socialists, the Norwegian Parliament approved a Government bill proposing a 6 million kroner (US\$850,000) subsidy to the fishing industry. Center Party Rep. Einar Moxnes, manager of the bill, said the proposal sought to offset the most damaging effects of the devaluation of the pound and other foreign currencies. Moxnes said that together with other measures being readied, this extraordinary support should help to create calmer conditions in the fishing industry.

First to Receive Aid

Fisheries Minister Oddmund Myklebust stated that the fishing industry is the first to receive aid to ease the devaluation impact. In his opinion, the subsidy amount should enable the fishing industry to continue operations and help to hold valuable markets. He expressed concern over the heavy reliance on subsidies and said other measures are also required to solve the problems of the fishing industry, notably better marketing methods.

Opposition Viewpoint

Speaking for the Labor Party, Rep. Ragnar Christiansen asserted that the Fisheries Minister's statements were a direct breach of promises made to fishermen. He said they also broke the preconditions for the government's decision not to devalue the krone—namely, to give compensation to industries that suffered losses. ("News of Norway," Feb. 26, 1968.)

* * *

Norway (Contd.):

WEST NORWAY HERRING FISHERY FAILS

According to mid-March 1968 information from West Norway, fishermen had landed 15,000 metric tons of fat herring-- compared to about 390,000 by mid-March 1967. Unless the catch improves substantially, the situation must be termed catastrophic. So said Director Petter Haraldsvik of the Herring Sales Cooperative Association to a press conference at Kristiansund. More than half the 450 purse-seiners that operated out of Kristiansund in mid-February left to try their luck in North Norway.

Fishermen Remain Optimistic

Despite the very poor catch, Director Haraldsvik said, the mood of the fishermen still in Kristiansund is surprisingly optimistic. They trust chief fishery researcher Finn Devold's prognosis that a 500,000-ton herring catch is yet possible. ("News of Norway," Mar. 18, 1968.)

* * *

COASTAL FISHERIES ARE IN TROUBLE

Norway's coastal fisheries are in deep trouble. In West Norway, the worst snow storm in a generation kept the large herring fleet in port for several weeks. Now it is feared the herring will not reach their offshore spawning grounds due to a cold-water front.

In the Lofoten archipelago of North Norway, the sea is teeming with spawn-ready cod, and the catch is twice as large as last season's. But fish curers are asserting that prices have been fixed too high and refuse to buy, so fishermen are stuck with most of their catch.

In the northernmost province of Finnmark, nearly 80 percent dependent on its fishing industry, fish curers are saddled with large inventories of stockfish. The situation is really desperate, Fisheries Minister Oddmund Myklebust told the Norwegian "Journal of Commerce and Shipping."

Lofoten Cod Fishery

As of Feb. 17, 1,639 craft manned by 4,718 fishermen were engaged in the Lofoten

cod fishery. Landings so far this season were 7,672 metric tons. This was 3,845 tons more than at the same time last year. But, due to the halt in buying, landings were getting markedly smaller.

More Herring

When the bad weather ended on the Møre coast, 9,000 fishermen who had been forced to remain idle in ports waited anxiously for word that the herring was running. Instead, they were told by fish researchers that due to a deep cold-water curtain the fat herring would probably not come all the way to the North Møre coast this year.

However, the fleet of 800 vessels, including 400 purse-seiners, was still waiting for a possible change. As of Feb. 22, fishermen had landed less than 1,000 tons of fat herring, as against 310,000 tons on that date last year. ("News of Norway," Mar. 4, 1968.)



Bulgaria

BUILDS FISHING VESSELS FOR USSR

When Bulgaria entered the Agreement on Cooperation in High Seas Fisheries (signatories: USSR, Poland, East Germany), she was approached by the Soviet Government about building small fishing vessels for the USSR. In 1965, technical designs for a new class of vessels were prepared. But it was not until 1967 that a contract was signed between Moscow's SUDOIMPORT and Sofia's KORABOIMPEKS, both vessel-importing and exporting state-owned firms.

Vessels are built in Burgas Shipyards on Bulgaria's Black Sea coast. The first one was launched in February 1968. By 1970, about 120 of those new 311-displacement-ton vessels will be shipped to the USSR, which will use them mostly in her North Sea and Baltic (and possibly Barents Sea) fisheries.

The Vessels

The vessels are 30 meters (98.4 feet) long, 7 meters (23 feet) wide. They have refrigerated hold capacity of about 100 metric tons. The 300-hp. motor can develop about 9.5 knots. With a crew of 19, the vessels will have sea endurance of 19 days. Most of the

Bulgaria (Contd.):

catch will be lightly salted and refrigerated. In 1968, Bulgaria plans to construct 46 such vessels for the USSR. ("Transporten Glas," Feb. 1968.)



Portugal

PRODUCTION AND EXPORTS OF FISH MEAL AND OIL

The Portuguese National Institute of Statistics reports these statistics on the production and exports of fish meal and oil:

	Production			Exports		
	1967 (Jan.-Sept.)	1966	1965 (Rev.)	1967 (Jan.-Nov.)	1966	1965 (Rev.)
	(Metric Tons)					
Oils	1/	10,343	11,300	7,150.3	11,608.6	11,322.1
Cod-liver oil & others	1/	3,776	3,801	3,602.5	3,410.6	3,463.8
Sperm & whale oil	1/	1,986	2,098	656.9	2,764.9	1,674.1
Sardine oil & other fish oil	2,052	4,581	5,401	2,890.9	5,433.1	6,134.1
Fish meal	1/	2,072	1,594	3,167.2	3,632.3	2,182.1
Fish waste	1/	27,532	33,282	1/	4,905.7	7,708.9

1/Not available.



Greece

1967 CATCH WAS DOWN

Greece's total landings (unofficial) in 1967 were 102,317 metric tons, compared with 108,082 tons in 1966. The decline was caused by lower catches in the inshore fishery; the high-seas fishery increased.

In the Atlantic fishing area (and including Indian Ocean and South African waters), declining production in northwest African grounds is causing alarm. More trawlers operating in Libyan waters accounted for increased catches in the Mediterranean fishing area. Midwater fishing was successful only

	1967	1966
	(Metric Tons)	
Atlantic	31,817	29,582
Mediterranean and other-than-Greek waters	4,000	3,500
Midwater	42,000	47,000
Coastal	14,000	16,000
Inland waters	10,500	12,000
Total	102,317	108,082

for mackerel. A reduction in available stocks, believed caused by natural causes, is responsible for the smaller production in coastal and inland waters. ("Alieia," Feb. 1968.)



Denmark

GREENLAND SEAL SKINS AUCTIONED

On March 15, 1968, an auction of Greenland seal skins was held at the Danish Fur Sales, Copenhagen, for the Royal Greenland Trade Department. Virtually all skins offered--25,896--were sold. The upward price trend evident at the Sept. 5, 1967, sale con-

tinued. The next auction of seal skins is scheduled for Sept. 5, 1968. (U. S. Embassy, Copenhagen, Mar. 22, 1968.)

Type of Seal	No. of Skins Sold	Grade		Avg. Price	Top Price
Ringed	310	1A ^{1/}	washed	15.64	19.55
	1,204	1B	washed	10.83	14.29
	5,010	2A	washed	8.80	13.16
	2,294	2B	washed	6.54	10.22
	502	2C		2.70	6.61
	1,388	2C	washed	5.56	8.87
	7,581	3A	washed	9.77	15.04
	1,140	3B		4.06	4.96
	2,508	3B	washed	6.69	11.13
	2,098	3C		1.58	2.86
Total ringed	24,035				
Harp	788	3A	washed	10.15	18.80
	40	3B	washed	5.71	5.71
	34	3C		2.63	3.46
Total harp	862				
Saddle	240	3	washed	9.10	15.04
Bladdermosed	31	1	washed (Bluebacks)	17.44	18.80
	96	2	washed (Bluebacks)	10.75	16.16
	592	3	washed	9.02	26.69
Total bladdermosed	719				
Grand total	25,856				

1/Forty 1A washed skins were not sold; these were the only skins offered but not sold at this auction.



Spain

VIGO IS EUROPE'S NO. 1 FISHING PORT

The Spanish port of Vigo is now Europe's largest fishing port. Its sudden emergence as the leading port is attributed to the large increase in landings of frozen fish caught by Spanish trawlers off South Africa. Landings in 1967 at Vigo were about 152,000 metric tons, more than 10 percent above 1966.

* * *

A PROMISING TUNA MARKET

Market research conducted by the Japan External Trade Organization (JETRO) reveals that Spain has entered the tuna fishery. Spain is a much more promising frozen-tuna market than any other European country.

Spain is expected to increase the number of fishing vessels and catches. She now has 13 tuna fishing vessels equipped with freezing facilities; there were only 2 pelagic tuna fishing vessels in 1963. She is steadily building new tuna vessels with modern freezing facilities.

Largest European Production

Spain's tuna catch in 1965 was 42,000 tons--the largest by a European country, including Italy and France. Spaniards and Japanese have much in common as far as diet goes. Consumption of canned tuna in Spain is increasing yearly as national income increases. Spain has not exported frozen tuna since 1964. Therefore, it is unlikely that Spain will turn to a frozen-tuna export country unless many more tuna fishing vessels are built.

Promising Market for Japan

Unlike the Italian market, canned albacore is most favored by Spaniards; so Spain is a good customer of Japan. Spanish statistics show room for a promising market for Japan's exports of tuna: Spanish imports of frozen tuna for canning were 836 tons (514 tons from Japan) in 1963, 687 (388) in 1964, 8,181 (6,343) in 1965, and 2,216 (1,584) in 1966.

Albacore Market

Spain is developing into a supplier of marine products to the European Economic Community (EEC). She is a promising market for frozen tuna (especially albacore) because of her canning capabilities. This will be true as long as import restrictions are not imposed. ("Suisan Keizai Shimbun," Mar. 5, 1968.)



France

OCEAN STUDY WILL HELP FISHING

A comprehensive scheme of oceanography to be announced by the Centre National pour l'Exploration des Océans (CNEXO) is likely to play a big part in the future of the French fishing industry.

The program will include intensive research into fish populations and migration, mineral content of the oceans, water pollution, and the effect of interactions between sea and atmosphere.

Sub and Bathysphere

The 2,200-ton research vessel "Jean-Charcot" will be joined by a submarine now being built and equipped specially to observe life down to 2,000 ft. The bathysphere "Archimede" will work greater depths.

The possibility of creating new fishing grounds by "sowing" fresh banks of plankton will be studied. Some scientists are convinced this can be done--and that the fish will quickly learn the locations of this food supply and breed there.

CNEXO, in existence only a few months, already has made a start on the work for which it was created. M. La Prairie is its director-general. ("Fishing News International," March 1968.)



Ireland

FISHING INDUSTRY GROWTH CONTINUES, REPORTS BOARD

Landings increased in 1966, exports compared with those in 1965, and home consumption of fishery products continued upward. This is reported by the Irish Sea Fisheries Board (ISFB) in its fifteen annual report 1966/67.

The yearly increase in landings are resulting in an accelerated rate of investment in the industry and this should produce further expansion of industrial activity. "However," ISFB states, "the achievement of targets for the industry demand a much higher input of capital." ISFB is studying ways of getting more financing; it also is giving attention to a promotion program that would encourage greater investment in the processing sector of industry.

Exports a Key to Growth

Increased investment in boats depends on satisfactory growth in market outlets. Irish domestic needs for edible fish "are easily satisfied" during periods of heavy landings. "The industry must export more fresh and processed fishery products. ISFB states that the closeness to Britain "should encourage us to develop a regular export trade in fresh fish to this market"--of high enough quality to make it easy to promote at premium prices. "The establishment of quality standards for fishery products is an urgent requirement."

ISFB reported "considerable progress in improving gear operating efficiency on boats. The educational and training programmes introduced in the ports were very well sup-

ported by fishermen," but much remains to be done in educational field.

Production

The value of fish landed in 1966 was 20% above 1965. A major factor was the rise in quantity and value of pelagic fish landed (particularly herring): 40% in quantity and 56% in value over 1965.

Table 1 - Quantity and Value of Sea Fish (Excluding Salmon) Returned as Landed in 1965 and 1966

Kinds of Fish	1966		1965	
	Quantity	Value	Quantity	Value
	CWT.	£	CWT.	£
Demersal				
Soles	3,057	71,060	3,741	84,565
Brill	1,264	13,733	2,120	22,665
Turbot	1,491	15,936	2,042	21,164
Plaice	28,117	222,668	23,828	181,609
Dabs	3,827	10,053	4,443	12,056
Mergrims	4,295	16,316	4,698	15,979
Other flat fish	2,635	11,245	2,491	9,139
Ray/Skate	22,418	90,164	23,879	98,678
Cod	38,839	153,238	32,306	131,917
Haddock	29,087	106,222	34,397	106,451
Hake	1,551	15,827	1,765	11,653
Whiting	99,248	215,634	108,164	211,308
Pollack	11,423	30,532	13,187	34,176
Other round fish	25,239	23,075	25,131	18,002
Total demersal	272,491	995,703	282,192	959,362
Pelagic				
Herrings	293,300	399,312	210,555	251,521
Pilchards	360	198	39	157
Mackerel	29,645	46,389	40,213	45,853
Sprats	30,520	12,573	29,678	12,218
Total pelagic	353,825	458,472	280,485	309,749
Total wet fish	626,316	1,454,175	562,677	1,269,111
Shellfish				
	Nos.		Nos.	
Lobsters	491,668	231,482	362,851	150,415
Crawfish	160,693	117,553	163,899	108,147
Crabs	49,582	1,336	118,593	2,207
Escallops	309,454	9,584	197,668	5,342
Oysters	1,387,201	29,871	1,465,179	31,084
	CWT.		CWT.	
Dublin Bay prawns	24,735	83,275	15,769	62,287
Mussels	15,134	7,617	18,597	7,627
Periwinkles	45,179	84,584	33,356	58,052
Other shellfish	3,666	13,859	2,408	6,101
Total value shellfish	-	579,161	-	431,262
Grand total value	-	2,033,336	-	1,700,373

Source: Department of Agriculture and Fisheries.

The total value of shellfish landed rose one-third. Although the value of demersal fish landed increased, quantity declined from 1965. Responsible for the decline were the greater concentration by many larger craft

Ireland (Contd.):

in pelagic fishing--and increased fishing of crustaceans.

Fish Resources

The demersal resources around Ireland's coasts continued to produce fair catches for more boats. There was increased fishing and landings of existing herring stocks--particularly off the North Mayo Coast and in South Eastern fishery.

The greater use of the mid-water trawl greatly helped this expansion. A Norwegian boat introduced local fishermen to purse seining in Irish waters.

Concerning shellfish, there were resource investigations on shrimps, escallops, and lobsters. New gear and equipment were introduced into lobstering. Many lobster and crawfish boats now use the new American parlour lobster pot. They are also installing hydraulic hauling equipment.

Market Development

In 1966, per-capita fish consumption rose 5% over 1965. The figure is 10.1 lbs. per person per year. Exports of fresh and processed sea fish increased 47%--to £1,522,000, up £660,000 over the previous years.

Exports of processed fish products showed "very satisfactory growth." This was particularly true of salted herring exports to France. Processed fish exports were worth £609,000; the 1965 figure was £297,000.

"The significant increase in fish consumption on the home market was reflected in im-

proved fish distribution throughout the country." Regional wholesalers were helped to develop regular, extensive, distribution services to retailers.

Table 2 - Imports and Exports of Fish and Fishery Products in 1966 as Compared with 1965

	1966		1965	
	Quantity	Value	Quantity	Value
	CWT.	£	CWT.	£
Imports				
Fish, fresh, chilled or frozen	20,307	85,212	21,604	78,325
Fish, cured--not in airtight containers	28,395	205,275	30,983	229,797
Fish and fish preparations in airtight containers	32,757	688,808	28,733	661,673
Other fish and fish preparations	11,867	266,707	9,741	233,689
Totals	93,326	1,246,002	91,061	1,226,026
Exports				
Fish, fresh, chilled or frozen:				
Salmon	17,159	782,334	19,420	723,779
Herrings	100,434	217,755	68,760	138,654
Freshwater eels	6,075	106,218	8,433	120,944
Other fish	15,338	217,710	19,301	236,389
Fish, dried, salted or smoked not in airtight containers	97,089	351,948	17,695	108,677
Shellfish, fresh, chilled, frozen, salted, dried	68,489	703,012	61,917	566,192
Other fish and fish preparations	2,441	113,554	2,534	77,248
Totals	307,025	2,492,531	198,060	1,971,883

Source: Department of Agriculture and Fisheries.

Fish Processing Standards

During 1966, the first standard for processing fish products was developed. It was the work of ISFB, the Irish Institute for Industrial Research and Standards, and the Department of Agriculture and Fisheries. This standard will be followed by others covering all seafood products processed in Ireland for home use and for export. Companies that meet these standards will be licensed to carry the Institute's symbol of quality.



LATIN AMERICA

Mexico

SETS CLOSINGS AND SIZES FOR SPINY LOBSTERS, SHRIMP, TURTLES

Mexico has announced the following closed seasons and minimum size limits for spiny lobsters, shrimp, and turtles:

	Closed Season	Minimum Size
Spiny lobster	Mar. 16-July 15 (Gulf & Caribbean)	145 mm. tail length, measured from tip of tail to base of carapace
Red spiny lobster	Mar. 16-Sept. 30 (Baja Calif., from U. S. border to Punta Entrada)	82 mm. carapace length
Blue & green spiny lobsters	July 1-Sept. 15 (Baja Calif., south of Isla Margarita, all of Gulf, and rest of Pacific Coast)	82 mm. carapace length
Shrimp ^{1/} : (a) Bays, estuaries, lagoons (b) Ocean	Apr. 16-Sept. 1 (Sonora, Sinaloa, Nayarit) July 15-Sept. 15 (Sonora, Sinaloa, Nayarit)	125 mm. overall length
Marine turtles	June 1-Sept. 30 (all of Pacific Ocean and Gulf of Calif., except northern Gulf and Pacific coast between Todos Santos and U. S. border)	Varies with species

^{1/}Caribbean fisheries not affected.

* * *

FRENCH EXPLORATORY FISHING VESSEL GOES ON REEF

The French vessel "Adrian Pla" conducted exploratory fishing and on-board processing under a recent French-Mexican technical assistance agreement. Three trips were completed, each with Mexican biologists and fishermen aboard.

The first trip was along the north shore of Yucatan; the second in the Bay of Campeche; and the last along Yucatan's east coast. Shrimp and incidental species were sorted, packed, and frozen on board. The French captain reported that the Mexicans were interested primarily in snapper and shrimp, which were not taken in sufficient quantities to pay for the vessel's operation.

Runs Onto Reef

On March 6, during the last trip, the vessel ran onto a reef 14 miles south of Isla Mujeres and was first reported in danger of sinking. Later towed off, it continued to explore on the way to a shipyard.

There was much comment in the Mexican press on entrusting a million-dollar vessel to a skipper without sufficient knowledge of local waters. Reportedly, the French captain was relieved of his command. (U. S. Consulate, Merida, March 8; various sources.)



Honduras

ORDERS SHRIMP VESSELS FROM SPANISH FIRM

Several shrimp vessels are being built for Honduras at the Celaya (Spain) shipyards for about US\$1,000,000. The vessels are 87 feet long, 21 feet wide, with a deadweight of 104 tons.

They will have refrigerator holds with a storage capacity of 3,500 cubic feet. The cruising speed will be 10.5 knots. ("Mexico City News," March 2, 1968.)



Argentina

CATCH AND OUTPUT OF FISHERY PRODUCTS CONTINUE UPWARD

The 1967 Argentine fishery catch continued the upward trend of recent years: It was 8 percent above 1966. The catches of hake, anchovy, bonito, pargo, shrimp, centolla, squid, and octopus increased; catches of tuna, langostino, and mussels declined. Algae and inland fish production also increased.

For the first time, exports of fishery products outpaced imports: US\$3,612,300 of products were exported; imports were \$1,260,400.

Argentina (Contd.):



Unloading and packing fish at Mar del Plata, Argentina.

Catch and Production 1965-67			
	1/1967	1966	1965
 (Metric Tons)		
CATCH:			
Total	271,748	250,826	205,044
Marine	226,897	211,066	172,107
SELECTED SPECIES:			
Hake	75,605	68,498	76,617
Anchovy	13,416	10,978	16,561
Tuna	948	1,195	1,674
Bonito	1,230	490	138
Bream	9,544	7,516	4,074
Total fish	183,258	201,519	163,198
Shrimp	411	207	390
Centolla	226	106	52
Langostino	204	406	275
Squid	2,266	1,031	417
Mussels	5,750	5,865	6,587
Octopus	1,406	867	-
Algae	32,006	29,668	19,907
Inland	12,845	10,091	13,030
PRODUCTS:			
Fish meal	24,517	22,067	15,787
Canned fish	9,670	15,489	17,883
Frozen fish	4,250	4,997	8,136
Exports (Qty.)	15,043	13,210	9,260
" (Value)	US\$3,612,300	(\$2,791,162)	(\$1,418,270)
Imports (Qty.)	2,716	10,608	20,012
" (Value)	(\$1,260,400)	(\$3,513,703)	(\$4,110,195)
1/Preliminary data.			

Fishery Products

In the filleting industry, economic problems beset the 21 plants operating in 1967 and prevented expanded production over 1966. In the fish-meal industry, 23 plants operated (12 for marine fish and 11 for fresh-water species) but only 18 worked all year. Fish-meal production increased 9 per cent; production of canned and frozen fish declined.

At year's end, 67 vessels capable of high seas fishing were registered, as well as 31 inshore vessels and 42 smaller craft. (Direccion General de Pesca y Conservacion de la Fauna, Buenos Aires, March 19, 1968.)



ASIA

Japan

TRAWL FISHERY PRODUCTION
IN NORTHERN WATERS

The Japanese Fisheries Agency reports northern waters trawl fishery production by mothership fleets during 1967 as 771,157 metric tons in the Bering Sea, and 132,960 metric tons in the Gulf of Alaska.

The 1967 Bering Sea catch surpassed the 1966 landings of 441,374 tons by 329,783 tons-- by about 75 percent. This was due primarily to the sharp increase in Alaska pollock landings: in 1967, 566,437 tons; in 1966, 265,605 tons. Alaska pollock is the principal species used in making fish meal and minced meat.

The Gulf of Alaska catch in 1967 was nearly 40 percent above 1966's 95,045 tons. It was attributed to the entry of more trawlers into the fishery in fall 1967.

Fishing Areas Enlarged

On Sept. 1, 1967, the Fisheries Agency enlarged the Bering Sea and Gulf of Alaska fishing areas. It also redesignated the Gulf fishery as the Northern Area Distant-Water Trawl Fishery.

The Bering Sea area was enlarged to include waters bounded by 160° E. and 170° W. longitudes north of 50° N. latitude. Previously, the eastern boundary of that fishery south of the Aleutian Islands was 175° W. longitude, and the western limit was 170° E. longitude.

The Gulf of Alaska fishing grounds were expanded broadly; they encompass the North Pacific Ocean and the Bering Sea east of 170° E. longitude, north of 10° N. latitude. The 10th parallel falls close to Puntarenas, Costa Rica. ("Suisan Shuho," March 5, 1968, and other sources.)

Table 1 - Bering Sea Mothership-Type Bottomfish Production, 1957-67

Year	No. Motherships	Catcher Vessels	Flatfish	Turbot	Halibut	Cod	Alaska Pollock	Sablefish	Rockfish	Shrimp	Herring	Others	Total
..... (Metric Tons)													
1967 ^{1/}	14	1/170	75,689	22,566	1,188	31,905	566,437	7,392	30,540	3,286	31,449	705	771,157
1966	14	171	59,698	12,531	944	19,693	265,605	6,844	45,938	2,934	25,213	1,974	441,374
1965	14	214	23,978	10,321	1,622	19,515	231,658	3,758	46,505	9,761	33,426	737	381,281
1964	14	228	65,728	33,029	2,448	19,442	178,560	8,030	44,162	20,883	42,887	275	415,444
1963	19	255	35,346	29,305	9,668	15,483	113,695	19,997	25,428	31,612	31,619	233	312,386
1962	23	290	288,690	58,226	9,898	9,671	59,536	28,381	12,527	18,005	9,946	3,701	498,581
1961	33	380	398,956	57,335	11,141	6,834	24,398	26,182	13,705	10,225	73,901	796	623,473
1960	13	180	360,103	36,843	6,931	5,679	26,097	1,861	1,507	680	403	9,828	449,932
1959	7	68	120,704	-	2,240	3,632	32,793	393	9	-	-	379	160,150
1958	4	33	39,153	-	1,271	223	6,924	32	1	-	-	147	47,751
1957	4	13	24,145	-	-	-	-	-	-	-	-	-	24,145

^{1/}F from September 1, 1967, mothership fleet was reduced to 12 fleets and catcher vessels increased to 173.

Table 2 - Northern Area (Gulf of Alaska^{1/}) Distant-Water Bottomfish Production, 1960-67

Year	No. Motherships	Catcher Vessels	Flatfish	Turbot	Cod	Alaska Pollock	Sablefish	Rockfish	Shrimp	Herring	Others	Total
..... (Metric Tons)												
1967	11	33	1,826	5,004	3,047	7,585	8,483	97,930	1,191	-	7,894	132,960
1966	7	7	766	4,701	1,349	9,235	3,701	73,435	353	-	1,505	95,045
1965	-	6	616	1,363	700	2,709	2,858	43,631	81	1	483	52,442
1964	1	6	65	583	166	1,161	1,099	13,715	2,845	-	424	20,058
1963	-	6	177	465	130	729	1,840	6,165	657	4	98	10,265
1962	-	2	26	-	9	12	38	80	5	-	16	186
1961	-	-	-	-	-	-	-	-	-	-	-	-
1960	-	8	-	-	-	-	-	-	-	-	-	2/ 306

^{1/}Gulf of Alaska fishery was redesignated as Northern Area Distant-Water Bottomfish Fishery on September 1, 1967. The fishery was permitted to be conducted experimentally during the period 1960 to May 1965, and from June 1965 it was designated as a mothership-type fishery and licensed for full-scale commercial operations.

^{2/}Catch composition is not given in the original Japanese table.

* * *

Japan (Contd.):

CANNED OYSTER EXPORTS
HIT RECORD IN 1967

Japan's exports of canned oysters in 1967 were a record 869,000 cases--more than 200,000 cases above 1966. Exports of canned oysters boiled in water were 80 percent higher than 1966; exports of canned smoked oysters in oil only increased 23,000 cases over 1966. Total exports and major destinations:

Product	Country	Actual Cases	
		1967	1966
Canned smoked oysters in oil, 3 B-square ($\frac{1}{4}$ -lb. sardine-style), 50/case	U. S.	291,364	277,823
	Canada	82,438	55,158
	Australia	33,738	50,886
Total		447,476	424,147
Canned oysters boiled in water, No. 7 ($\frac{1}{2}$ -lb. flat), 48/case	U. S.	370,472	201,522
	Canada	24,009	14,736
	Australia	7,866	6,553
Total		412,298	230,779
Other canned oysters, No. 7 ($\frac{1}{2}$ -lb-flat), 48/case	U. S.	5,548	4,900
Total		9,090	8,233
All products	U. S.	667,384	484,245
	Canada	106,829	70,132
	Australia	42,326	59,856
Grand total		868,864	663,159

(Fishery Attaché, U. S. Embassy, Tokyo, from "Suisan Tsushin," March 1, 1968.)

* * *

1967 SALMON CATCH WAS GOOD

The Fisheries Agency reported Feb. 28, 1968, that the 1967 Japanese North Pacific salmon catch in the areas of the Japan-USSR Fisheries Treaty was 114,873 metric tons: 52,333 tons in Area A (north of 45° N. latitude) and 62,540 tons in Area B (south of 45° N. latitude).

Japan's 1967 catch quota was 108,000 tons; 52,500 tons allotted to Area A, and 55,500 tons (plus 10-percent allowance) for Area B.

Coastal Fishery

The Japanese coastal fishery harvested 13,581 tons to September 1967. This brought total salmon catch for 1967 to 128,454 tons. It was about 10,000 tons below the 142,001-ton catch in 1965 which, like 1967, was a good pink salmon year. The Fisheries Agency

states that the 1967 catch should approximate 1965's, when the coastal fishery catch for the entire year is tabulated.

Species Makeup of Catches

The species composition of the 1967 salmon catches in Areas A and B and the coastal fishery was (1965 figures in parentheses): reds 20,493 tons (25,016 tons), chums 38,896 tons (45,739 tons), pinks 64,223 tons (62,991 tons), silvers, kings, and others 4,842 tons (8,255 tons); total 128,454 tons (142,001 tons). ("Shin Suisan Shimbun," Feb. 27, 1968.)

* * *

FROZEN TUNA EXPORT QUOTAS REDUCED

On March 7, the Japan Export Frozen Tuna Producers Association adopted new export quotas for frozen tuna exports in Business Year 1968--April 1968-March 1969. ("Suisancho Nippo," Mar. 9, 1968, and other sources.)

	BY 1968	BY 1967
	. . (Short Tons) . .	
<u>Direct shipment to U. S. from Japan:</u>		
Albacore	30,000	35,000
Yellowfin	25,000	35,000
Loins	6,000	8,000
<u>Additional quota:</u>		
Albacore	10,000	-
Loins	2,000	-
<u>Indian Ocean transshipment to U. S.:</u>		
Albacore and yellowfin	4,000	4,000
<u>Atlantic Ocean transshipment to U. S.:</u>		
Albacore	20,000	25,000
Additional quota, all tuna species	3,000	5,000
Quota for new members	200	-
Overseas bases ^{1/} quota	4,000	4,000
	. . (Metric Tons) . .	
<u>Italian quota:</u>		
Transshipment & direct export	40,000	40,000
Additional quota	3,500	500
^{1/} Includes American Samoa, Espiritu Santo (New Hebrides), Fiji Island, Penang (Malaysia), and Saint Martin Island (West Indies).		

* * *

REPORT ON TUNA FLEET OPERATIONS

In the last year or two, the main body of the Japanese tuna fleet has been concentrating on fishing more for the domestic market than for exports. Many long-liners have been fishing in the Tasman Sea off southeastern Australia. However, with the seasonal slowdown

Japan (Contd.):

there, a large number of those vessels are shifting to the Indian and Atlantic Oceans.

Japanese fleet operations in various ocean areas are:

Indian Ocean: About 90 long-liners are there, mostly concentrated between equator and 10° S. latitude. Practically none is fishing in the high latitude grounds south of 15° S. latitude.

Yellowfin fishing in western Indian Ocean off Mombasa, Kenya, is reported very good; many vessels are landing 3-4 tons, and as much as 6 tons, per day. Most vessels are equipped with a low-temperature, quick-freezing system and are bringing catches back to Japan. Albacore landings in the Indian Ocean are very small.

Atlantic Ocean

The Atlantic tuna fleet, which dwindled in the past few years, has been building up slowly. There are now about 70 vessels in operation. Close to 30 vessels are off Africa's west coast, near Pointe Noire. They are making good catches of yellowfin and big-eyed tuna; daily landings average 4-5 tons per vessel.

In the central Atlantic, about 20 vessels are fishing primarily for yellowfin and big-eyed; daily catches average 2.5-3 tons.

Off Puerto Rico, about 15 long-liners fishing for albacore are landing between 2-2.5 tons per vessel a day.

Seven to 8 vessels are off Angola, catching predominantly albacore--between 2.5-4 tons of fish a vessel.

South Pacific Ocean

Vessels operating out of American Samoa and other South Pacific tuna bases find very poor fishing. Landings in February and March 1968 averaged about one ton a day.

Tasman Sea

Fishing is very slow. Full-scale fishing in this region starts around July. ("Suisan Sushin," March 28.)

3 MORE TUNA PURSE SEINERS LICENSED FOR W. AFRICA

On March 12, the Japanese Fisheries Agency licensed 3 more purse seiners for the West African "experimental" tuna purse-seine fishery. The 3 were selected from 38 license applications. Now there are 9 in that fishery. The previous 6 were 4 two-boat seiners now off West Africa and 2 one-boat seiners scheduled to begin this year.

Smaller Fleet In Wider Area

The Agency decided not to enlarge the fleet beyond 9. By having a smaller fleet operate over a wider area, it felt it could assess better the purse-seine method's effectiveness. If the performance of the 9 is satisfactory, the Agency intends to license their operation on a commercial scale.

Purse Seiners' Better Results

In the West African tuna fishery, other countries, including Spain, France, Yugoslavia, the U. S., and Canada, are also purse-seining for tuna.

Japanese purse seiners which began operating in 1964 are progressively achieving better results in skipjack and yellowfin fishing. It is conceivable that Japanese tuna fishing off West Africa may eventually shift from traditional long-lining to purse seining. ("Suisan Keizai Shimbun," Mar. 14, and other sources.)

FRESH AND FROZEN TUNA PRICES

Albacore tuna prices on the Japanese domestic market in the latter part of March 1968 were holding steady at around exvessel US\$454 a short ton. Yellowfin prices were softening somewhat, bringing around exvessel \$365 a short ton. Frozen round albacore for export to the U. S. have undergone very little price change in the past 6 months; these have been averaging \$515 a short ton, c. & f., delivery California. Gilled-and-gutted yellowfin were being sold to California packers in March at around \$435 a short ton, c. & f.

Atlantic Albacore

Prices for Atlantic-caught albacore (round) exported to Puerto Rico have been holding

Japan (Contd.):

steady. In early March 1968, prices were quoted at \$450 a short ton, f.o.b. Sao Vicente, Cape Verde Island. Early March 1968 prices for other tuna transshipments to Puerto Rico from that island were: yellowfin (g. & g.) f.o.b. \$395 per short ton; big-eyed (g. & g.)--\$260 per short ton. ("Suisan Tsushin," Mar. 30, and "Suisan Shuho," Mar. 25.)

* * *

DISTANT-WATER BOTTOMFISH ASSOCIATION FORMED

The Japan Distant-Water Bottomfish Fishery Association was formed March 26, 1968. It represents 41 Japanese trawling firms operating 12 motherships and 116 distant-water trawlers. It combines the Overseas Trawler Association and the Northern Water Bottomfish Association, both dissolved and enlarged into a single organization.

Masao Okai, Vice President, Kyokuyo Hoge Fishing Co., was named board chairman and executive director.

1968 Plans

Business plans for 1968 include: (1) promote settlement of international fishery problems; (2) improve communication with private organizations in coastal countries; (3) collect foreign information and assess international situation; (4) advise on ways of increasing effectiveness of fishing ground exploratory surveys undertaken by the government-operated research vessel "Kaiyo Maru." ("Suisancho Nippo," March 28, 1968.)



India

SHRIMP INDUSTRY CONTINUES TO EXPAND

For the first time, India's Madras State is actively exporting shrimp. This recent development follows the building of a fleet of 591 mechanized boats. Boats ranging from 25 to 42 ft. are being turned out by the 4 yards at Royapuram, Nagapattinam, Marina, and Mandapam.

Shrimp are about 4 percent of total landings in Madras State. Landings there have increased from 100,000 tons before the 5-year plan to 250,000 tons now. Though shrimp landings are small, the potential is considerable. With more systematic and organized trawling, the catch could be tripled within 2 years.

Four ocean-going trawlers, each capable of landing 100 tons of fish a year, are being built in Calcutta.

Three freezing plants are being erected at Ennore, Mandapam, and Tuticorin. They will have a total capacity of 16 tons a day.

Madras State provides the bulk of spiny lobster tails exported from India. The lobster ground along the Kanyakamuri coast is considered the richest in India.

Shrimp and sardines are being canned in the State. A factory at Tuticorin has a capacity of 5,000 eight-oz. cans a day. The products will be marketed in India and abroad.

Bombay

Full exploitation of the rich shrimp stocks off Bombay has been hampered by lack of shore facilities to handle the catch close to the fishing grounds. At times, shrimp have been taken only 50 miles from Bombay, but inadequate supplies of fresh water and space at Sasoon dock necessitated long journeys to Cochin for processing.

In its 1967 annual report, New India Fisheries, Ltd., says provision is being made to install a 10,000-gallon fresh-water underground tank at Sasoon dock. Also to be erected is a shed for peeling, deveining, and processing shrimp for home consumption and export.

Around a thousand vessels are fishing for shrimp in the Cochin area. A heavy toll is being taken of stocks, and catches have shown a downward trend.

Two more bases are planned by the company. These will allow it to fish all along India's west coast.

India (Contd.):

It is envisaged that gill-netting for large shoals of pomfret off the coast will be carried out in addition to fishing for shrimp. ("Fishing News International," March 1968.)



Taiwan

FISHERIES ARE EXPANDING

In 1967, the Republic of China (Taiwan) landed a record 458,000 metric tons of fishery products--7.7 percent above 1965. The growth rate in fisheries production during 1967 did not match the phenomenal rate of 11.4 percent in 1966, yet it was as high as the Soviet production growth rate for 1967. The largest increases were in the high-seas fisheries because large tuna long-liners were added to the fleets. At the end of 1967, Taiwan had 260 long-liners.

Exports Soared

As a result, exports of frozen tuna (mostly to the U. S.) reached amounts undreamed of only a few years ago: in 1967, Taiwan exported 39,000 metric tons of frozen tuna worth US\$13.8 million; total fishery exports exceeded US\$20 million. Planned fishery exports for 1968 are \$30 million. (Letter from T. P. Chen, Chief, Fisheries Division.)

In 1968, the first year of the 5-Year Plan, Taiwan plans to land 530,000 metric tons of aquatic animals and plants; by 1972, when the 5-Year Plan ends, a planned 800,000 tons of fishery products will be landed. During this 5-Year period, US\$146.2 million will be invested in the construction of fishery vessels having a capacity of 122,000 gross tons. ("Taiwan Industrial Panorama," Jan. 1968.)



Pakistan

USSR AIDS FISHERIES

In early March 1968, a team of Soviet experts arrived in Karachi to explore the pos-

sibilities of greater fisheries cooperation between the USSR and Pakistan. They visited fishing port and fish-processing plants, then went to Rawalpindi for talks with officials. Visits to various East Pakistan fishing centers were also scheduled. The mission is probably a followup to the Soviet Fisheries Minister's visit to Pakistan in late 1967 and commitments made then.

Suez Closing Hurts USSR

Soviet Indian Ocean fisheries have been severely hampered by the 1967 closure of the Suez Canal. It forces the Black Sea fishing fleet to go around the Cape of Good Hope, greatly prolonging trips and increasing production costs. The Soviets tried to partially offset this disadvantage: they began fishing for shrimp off West Africa in early 1968. Shrimp is important to the USSR as a dollar earner.

Other Indian Ocean fisheries are hurt, and it is conceivable that the Soviets are trying to secure a major fishing base in one of the nearby coastal states.



Malaysia

SHRIMP INDUSTRY OF SABAH

In 1967, trawlers of the State of Sabah, Malaysia, landed more than 3,100 metric tons of shrimp: 2,900 tons in Sandakan, the balance in Labuan and Tawau. There are 2 freezing plants in Sandakan and 1 in Labuan.

Sabah's exports of frozen shrimp were about 1,500 tons worth M\$6.6 million (US\$2.2 million). This was about 38 percent more than the production and value in 1966.

In 1966, Sabah exported 1,085 tons of frozen shrimp worth M\$4.8 million (US\$1.6 million).

Most of the exported shrimp goes to the U. S. as large frozen blocks for institutional (not consumer) use. (U. S. Consulate, Kuching, Feb. 26, 1968.)



CARIBBEAN

More Freezer Trawlers Active in Shrimp Fishery

Since 1966, over 70 shrimp trawlers in the Gulf of Mexico and the Caribbean Sea have been equipped with freezers. The primary advantages gained have been longer fishing time, increased range, and freedom from land-based processing stations. Government officials, processors, and fishermen's representatives from countries in Central America and northern South America have voiced concern over the increase of foreign (mainly U. S.) freezer vessels. They view them as a threat to their established shore-based operations; they fear the trend may harm their own industries.

A Beginning in 1961

Freezer vessels have operated in the Caribbean for several years. One vessel operated from Puerto Rico in 1961, but it returned to the U. S. in 1963 because the freezer unit did not work properly. According to industry sources, the big turn came after 1965, when Westinghouse developed a dependable freezer unit for small trawlers. The unit received wide acceptance in 1966. By summer 1967, over 50 vessels had freezers in the Gulf, and 20 in the Caribbean. Of the 20, 16 were based in Trinidad, and 2 each in Surinam and Puerto Rico. All 20 fished along the northern coast of South America.

Freezer Trawlers Well Suited

The freezer trawlers have proved well suited to the fishery along northern South America. Great distances must be covered to fish the Amazon grounds, and the vessels have proved their worth. For instance, four larger vessels built in 1967 have been able to operate from Trinidad to as far south as Recife, Brazil; they remain independent of a base station for 3 months. The vessels have proved so successful that reports from Trinidad indicate all ice vessels operating from there are to be retired or be converted to freezer vessels this year. Gulf-based vessels already have fished off Guianas and returned to Florida with their catch. No doubt others will follow this winter when fishing drops off in the Gulf of Mexico.

What Effects?

The result of greatly increased activity by freezer trawlers is not certain. If past experience is a guide, the following implications may be drawn: As the number of freezer vessels increases, the importance of land stations will diminish. Governments of countries maintaining land stations (particularly foreign-owned) can be expected to become more accommodating in order to retain the stations. But, also, there will be concern by governments that see the livelihood of their fishermen and their income from export taxes threatened by distant-water fishermen. (U.S. Embassies in Latin America, and other sources.)



AFRICA

Commercial Shrimping on West African Coast Grows

The shrimp fishery is developing in many parts of the world. Known fishing grounds are exploited more intensively each year; new ones are being discovered and their exploitation frequently is undertaken at a rapid rate.

Until recent years, the west coast of Africa, from Senegal to Angola, was not included in this development. But several species of shrimp were known to be there. Native fisheries were carried out in the lagoons or near the coast (pots, nets, traps); and trawl fisheries for finfish, until recent years, caught shrimp occasionally.

Began In 1963

It was not until 1963 that the first exploratory fishing dedicated wholly or in large part to shrimp began. Some was conducted by official research organizations, some by private vessels. Results were favorable. Since 1965, a commercial fishery for shrimp has been developing in tropical Africa.



Mozambique

SHRIMP FISHING FIRM REORGANIZES

The general manager of the newly nationalized Portuguese firm in Mozambique--INOS Industria de Peixe N. S. de Fatima)--says it will carry out an 8-boat expansion of its northern shrimp trawling fleet. Also, it is converting all its trawlers for packing and freezing at sea. The present supply base for trawling fleet at Antonio Enes will be eliminated. Operations in the north are to be concentrated at Porto Amelia. Trawling with 4 boats for deep-sea shrimp will continue out of Lourenco Marques.

To expand its shrimp trawling fleet, INOS is relying on U. S. technicians and boat designs.

INOS views the U. S. as its main market for frozen shrimp. It hopes that with an en-

larged fleet of 15 boats at Porto Amelia, and increased shrimp landings there, it can persuade U. S. shipping lines (Moore McCormack and Farrell) to stop at Porto Amelia for shrimp cargoes.

Basic Reorganization

INOS has had continuing financial difficulties and personnel changeover this year. Its main hopes for becoming profitable rest on a reorganization of its packing and freezing methods. Of its 11 shrimp trawlers, 7 operate out of Porto Amelia and 4 out of Lourenco Marques. All 11 have been or are being equipped for packing, blast-freezing, and storing shrimp on board. These vessels will be able to operate for 25 days at sea and then deliver their shrimp ready processed to the INOS cold-storage facilities at Porto Amelia or Lourenco Marques.

INOS hopes the new system will produce higher grade packed shrimp and fewer losses from breakage. Lower grade and greater breakage occur when shrimp are stored in ice at sea, unloaded into trucks at Porto Amelia, and finally packed in the cold-storage warehouse some distance away.

U. S. Designs and Techniques

INOS is relying considerably in its reorganization plans on the experience of the U. S. Gulf of Mexico shrimp trawling industry. A designer from Rockport, Tex., has been in Lourenco Marques to advise on the design of the 8 shrimp trawlers. The designs will be prepared by a Rockport firm and be the Gulf Coast type modified for local conditions.

To Build Vessels Locally

Nationalized INOS must have these vessels built on Portuguese territory. It probably would prefer it anyway for public relations purposes.

U. S. Senior Skipper

INOS has hired a U. S. trawler captain of Portuguese descent as senior skipper of its trawling fleet at Porto Amelia. He helped develop shrimp fishing in Kuwait waters.

Mozambique (Contd.):

Deep-Sea Shrimp Trawling in South

The 4 trawlers based in Lourenco Marques are now fishing for deep-sea shrimp out along the 280- to 300-fathom line. Still in experimental stage, the fishery appears promising. But INOS will restrict fleet to the 4 for the time being. When the 8 Rockport-type vessels are built, they will operate from Porto Amelia.



Libya

POLAND AIDS FISHERIES

Almost 2 years ago Poland announced that she would extend aid to Libyan fisheries. In late November 1967, the Libyan Undersecretary in the Ministry of Industries (Abdalaziz Kamaal) left for Poland to sign the contract to buy 33 fishing boats from the Polish firm CENTROMOR. The first of the 33 vessels departed Gdynia for Libya in mid-March 1968. Named "Al Muktashef," the vessel is 90.2 feet long, has a crew of 24, and will be used for scientific research, probably in the Mediterranean. Fishery experts from the Polish fishery firm DALMOR, in Gdynia, will be sent to Libya to train local fishermen in use of new vessels and fishing techniques.

Bulgarian Interest

This is not the first time Soviet Bloc countries have shown interest in Libyan fisheries. In 1963, a directive of the Bulgarian Communist Party mentioned the "expansion of Bulgaria into Mediterranean fishing." This never occurred, as far as is known.

The Libyan order for 33 fishing vessels consists of: 2 training and fishery research vessels (90 feet, steel); 2 trawlers (66.6 feet, wooden); 18 line and net fishing boats (40.3 feet, wooden); 10 line and net fishing boats (small, wooden); 1 patrol and fishery inspection vessel.



MID EAST

Kuwait

GULF FISHERIES CO. LEADS REGION IN SHRIMP FISHING

The Gulf Fisheries Co., Ltd., of Kuwait, the leading shrimp fishing firm in the Middle East, continues to diversify its interests. It has made several international investments in fishing, food processing, light manufacturing, and oil exploration in the Middle East, Africa, and the Far East. The firm's partners are Shaikh Sabah Al-Ahmad, Kuwait's foreign minister, Al-Rashed, a businessman, and Dr. Khalil Mahmoud, the general manager. Al-Rashed is not connected with the nonfishing activities.

Its Assets

Gulf Fisheries has assets (fleet and plant) of US\$13 million; capitalization of US\$2.9 million; an estimated US\$6 million in reserves; 1,600 employes in season, 900 out of season; 61 ships, including 3 motherships and 2 combination stern trawler-motherships. Fiscal 1967 sales were US\$14 million.

Delivery of 40-50 more vessels is expected during 1968-69. Many of these will be built in Poland.

Gulf Fisheries is represented in the U. S. by Crest Importing, San Diego, Calif., and International Fisheries, New York City.

Farflung Interests

The company owns fishing concessions in the waters of Iran, Somalia, Nigeria, and Indonesia. Forty-three of its vessels are in the Persian Gulf, but the high royalty paid the Iranian Government may cause the fleet to be shifted elsewhere.

Gulf has begun fishing for tuna off Somalia under the name of Somali-American Fishing Co. It has a cannery in Alula. Four vessels are operating off Nigeria; their catches have been poor. In Dahoman waters, 3 vessels are fishing with exclusive rights to shrimp, lobster, and all other crustaceans. Small catches and Dahomey's political instability are causing Gulf to lose interest there. Late in 1967, 21 vessels started fishing near Indonesia.

The company's interests will probably be incorporated under the name of Gulf International (estimated 1968 sales: US\$50 million). (U. S. Embassy, Kuwait, Mar. 7, 1968.)

△△△△△