International

FOOD AND AGRICULTURE ORGANIZATION

INDO-PACIFIC FISHERIES COUNCIL ANNUAL MEETING:

The Eighth Annual Meeting of the FAO-sponsored Indo-Pacific Fisheries Council opened in Colombo, Ceylon, on December 8, 1958. Forty delegates from 12 countries attended the meeting. The Council discussed, among other things, the mechanization of the fishing industry, credit facilities for fishermen, marketing, and transportation. (United States consular report from Colombo, December 12, 1958.)

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WORLD FISH CATCH IN 1957 CONTINUED TO INCREASE: The world's total commercial fish catch is still increasing and is now about 30 million metric tons a year, the Food and Agriculture Organization reports in its Yearbook of Fishery Statistics recently published.

The latest world catch figure is 29,960,000 tons (1957), which shows an increase of almost 50 percent over the catch in 1938, the last full fishing year before the Second World War, when 20,500,000 tons were landed. Since 1947, when the catch (17,940,000 tons) still showed the effects of the war, there has been a steady increase in the total each year. The annual increase during the past five years has been about 5 percent.

World Fish Catch, 1948-57									
1957	1956	1955	1954	1953	1952	1951	1950	1949	1948
(Metric Tons)									
29.96	29.60	28.12	26.80	24.91	24.52	22.75	20.23	19.41	19.09

The most significant of the increases by continents since 1938 were: Africa (from 520,000 to 1,860,000 tons), Asia (9,360,000 to 12,880,000 tons), Europe (5,590,000 to 7,640,000 tons), and the Union of Soviet Socialist Republicas (from 1,550,000 to 2,540,000 tons).

Japan not only continued to be the world's foremost fishing country, but was actually widening the gap between itself and the second country, the United States (including Alaska). In 1957 Japan caught 5,399,000 metric tons of fish, or just over 18 percent of the world's total catch. The United States caught 2,741,100 tons, a little more than one-half the amount caught by Japan. Before the war (1938) Japan caught 3,562,000 tons. After 1947 Japan's catch started to increase again and reached 2,205,700 tons in that year. Since then there has been a substantial increase each year, passing three million tons in 1950, four million in 1952, and five million in 1957.

The following seven countries caught more than one million tons of fish in 1957: Japan 5,399,000 tons; United States (including Alaska) 2,741,100; Communist China (mainland) 2,640,000 (1956): U.S.S.R. 2,535,000; Norway 1,738,900; India 1,233,000, and the United Kingdom, 1,014,700. Canada (including Newfoundland), which caught 1,091,900 tons in 1956, caught only 991,700 tons in 1957. India, which just topped the one-million mark for the first time in 1956, moved two places up in 1957. However, later figures from Russia and Communist China may place these two countries in second and third place, and put the United States in fourth place.

Of the 1953-57 average annual world catch of 27,900,000 tons, six countries (Japan, United States, Communist China, U.S.S.R., Norway, and the United Kingdom) caught 55 percent. The next seven countries caught 19 percent, and the following 27 countries caught 21 percent. Thus, the 40 leading fishing countries catch 95 percent of the world's total fishery landings, while some 150 other countries only catch about 5 percent of the total among them.

The world catch by groups of species shows that there was little change in the relative percentages. Herrings, sardines, anchovies, etc., which represent 24 percent of the total catch, make up the biggest group.

There has been a great increase in canning fish products in the U.S.S.R. In 1946 the Soviet Union canned 46,000 tons, but in 1957 the figure was 229,000 tons.

INTERNATIONAL FISH MEAL MANUFACTURERS CONVENTION

WORLD-WIDE CONTROL OF FISH MEAL MARKETING RECOMMENDED:

Representatives of the fish meal industries of Britain, Norway, Belgium, France, Denmark, Holland, Spain, and Iceland met in Cape Town, South Africa, in November 1958 for the International Fish Meal Manufacturers Convention.

A British fish-meal producer and president of the British Fish Meal Manufacturers' Association recommended world-wide control of the marketing of fish meal. He was also joint chairman of the International Fish Meal Manufacturers Convention. 1958

International (Contd.):

After he returned from the Convention, the British producer stated in Aberdeen early in December 1958, "We have not yet reached the stage of controlling the industry, but we feel we took a step in the right direction."

It was important, he said, to protect manufacturers from too much meal reaching the market at any one time, depressing prices and harming not only themselves but other sections of the fishing industry.

The United Kingdom delegation, led by the British producer quoted, suggested a monthly exchange of market information. The idea received an enthusiastic welcome and the British producer was given the go-ahead to work out a practical scheme. He said: "It is not going to be an attempt to form a monopoly or anything like that, just an advisory body."

Britain's annual output of fish meal varies from 75,000 to 80,000 metric tons. (The Fishing News, British fishery periodical, December 12, 1958.)

LATIN AMERICA PACIFIC COAST ALGAE BEING STUDIED

The Beaudette Foundation for Biological Research located in Solvang, Calif., is studying the taxonomy of marine algae of the Pacific coast of Latin America with the eventual goal of adding to the food and economic resources of the countries of the area. The work is also supported by a grant from National Science Foundation.

Publication of an illustrated manual for the identification of the principal kinds of marine algae is planned, and the analysis of pure samples of the larger species of algae for caloric value, vitamin and mineral content, and the presence of highly concentrated chemical elements of extractable value and antibiotic properties. Studies will also be made of methods of harvesting and means of simple processing of seaweeds.

NORTH PACIFIC FUR-SEAL RESEARCH

There was limited open-sea catching of fur seals in the North Pacific in 1958 by fisheries scientists in order to gather data on the fur-seal herds.

Designed to meet the requirements of the Interim Convention on North Pacific Fur Seals, the investigations were to study the distribution, migration, and feeding habits of fur seals by the four parties to the Convention (Japan, U.S.S.R., the United States, and Canada).

Canada's part of the program required that 500 to 750 fur seals be taken each year at sea for a period of 5 years for study purposes. During the past year 502 were actually caught for research. Similar investigations were conducted by the three other participating countries; in addition, United States scientists conducted research on the Pribilof Islands in the Eastern Bering Sea, and Soviet scientists do similar work on the Commander Island in the Western Bering Sea and on Robben Island in the Okhotsk Sea. Although the coordinated research program has only been in operation one year, interesting and valuable results have already been obtained.

The planned harvest of seals by the United States and U.S.S.R. for 1958 was

International (Contd.):

85,000 with a value of several million dollars. The seals are taken commercially only on the summer breeding grounds on the Pribilof, Commander, and Robben Islands, and the proceeds are shared according to an agreed formula among the four governments. Actually 15 percent of the commercial crop is given to Canada and Japan each as compensation for relinquishing the privilege of taking fur seals at sea.

The North Pacific fur seal herds have been under some form of international management since 1911. The present convention was signed in Washington, D. C., February 9, 1957, by representatives of Canada, Japan, the U.S.S.R., and the United States. The convention continues the prohibition on pelagic (sea) catching of the seals and permits only controlled killing on their island breeding grounds in order to conserve and develop the herds. (Fisheries Council of Canada Bulletin, January 19, 1959.)

TRADE AGREEMENTS

NORWAY-CZECHOSLOVAKIA TRADE AGREEMENT FOR 1959 INCLUDES FISHERY PRODUCTS:

Norway and Czechoslovakia agreed to continue into force until December 31, 1959, the basic trade agreement of March 20, 1947. New commodity lists were agreed to during the negotiations in Oslo in December 1958.

Norwegian exports to Czechoslovakia will include, among other products, the followiing fishery products: (1) fish oils, refined and technical, 6,000 metric tons; (2) medicinal cod-liver oil, 800 tons; (3) fresh, frozen, and salted herring, 14,000 tons; (4) fish fillets, 2,500 tons; (5) other fish, including mackerel and tuna, 1,000 tons; (6) canned fish, value 3,000,000 kroner (US$420,000); (7) fish meal, 2,000 tons; and (8) pearl essence, value 1,000,000 kroner (US$140,000).

WHALING

NORWAY AND NETHERLANDS ANNOUNCE CONDITIONAL WITHDRAWAL FROM WHALING CONVENTION:

The Norwegian Government took action on December 29, 1958, to notify the International Whaling Commission of its intention to withdraw from the Convention as of June 30, 1959. The public notice of withdrawal added that it would be retracted in the event that by June 30, 1959, the nations engaged in pelagic whaling in the Antarctic had reached agreement on a proportionate distribution of the maximum whale quota allowed by the Commission. This means that Norway, Japan, Britain, and the Netherlands have to agree on the allocation of the 80 percent of the total Antarctic pelagic whale catch remaining after Russia has taken 20 percent. The press reports that the whaling industry has expressed its gratification with the Government's decision to take this action. The decision will not affect whaling operations this season.

Press reports indicate that the decision to withdraw from the Convention was made as a counter measure for what Norway considers as unreasonable claims on the part of the Netherlands. The Norwegians would like to see a system of international inspection to insure compliance with the regulations made by the Commission.

The Netherlands Ministry of Agriculture, Fisheries and Food has also announced that Holland has conditionally withdrawn from the International Whaling Convention. The withdrawal will become definite on June 30 unless agreement is reached on the "so-called allocation of the maximum quota of whales caught every season."

The Dutch have long chafed at the present catch limit which Dutch biologists feel has been set unnecessarily low, thus preventing the Netherlands whaling industry from showing the desired profit.

The five nations with Antarctic whaling fleets are Russia, Norway, Holland, Japan, and Britain. During discussions in London the latter part of 1958 it was agreed that the Soviet Union should be allocated 20 percent of the catch of 15,000 units set for the season. Agreement has not yet been reached, however, on how the remaining 12,000 units should be

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distributed among the four other Powers.

A Norwegian spokesman stressed that withdrawals would not mean a "free-for-all" in the whaling grounds but were tactical moves to strengthen the position of the nations. The Norwegian Minister for Industry said: "Norway is still interested in reaching an agreement between the four non-Communist whaling Powers on the basis of the London agreement made last November."

Talks in November and December 1958 did produce agreement among the five members of the convention to limit their fleets during the next seven years and to divide the total number of "units" permitted among the countries rather than continuing the race to see who could catch the biggest share before the total was reached. Unfortunately no agreement has been reached about the quotas for Britain, Norway, Japan, and Holland.

Australia

REACTION TO RUSSIAN WHALING FLEET EXPANSION:

Plans made by the Soviet Union to build 4 or 5 large factoryships to participate in whaling could seriously endanger Australia's whale stocks, according to the Commonwealth Director of Fisheries and Australian representative on the International Whaling Commission. He stated that any breach of the International Whaling Agreement could lead to unrestricted taking of whales in the Indian and Pacific Ocean.

"If Russia began to catch whales faster than anyone else, other countries would find it uneconomic to compete. The whole tendency will be to break the international agreement. This will mean that whaling in Australian waters will be finished in a few seasons," he concluded.

Australia is a signatory of the International Whaling Agreement and has not indicated any intention of withdrawing from it. However, the whaling industry is well-established both on the west and east coasts of Australia and the Australian government may have to consider taking steps to protect it.

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WHALE STEAKS FOR ANIMAL FOOD PROFITABLE:

A Sydney, Australia, firm is offering one-pound packaged whale steaks for animal food at about 14 U. S. cents a package delivered to retail stores in refrigerated trucks for display in the retailers' cabinets. The whale steaks are resold at a retail price of about 18.7 U. S. cents a pound to yield a profit of about 33 percent. (Australian Fish Trades Review, November 1958.)

Brazil

FISHING OPERATIONS BY JAPANESE EXPAND:

The large Japanese fishing company, which began fishing and fish-marketing operations in Brazil late in 1957, now has 14 retail outlets in the city of Sao Paulo and is producing fish at the rate of 400 metric tons a month. The firm as yet has not started to process fish and has no refrigeration facilities.

In November 1958 the Japanese firm was granted permission by the Brazilian Government to bring four more fishing vessels to Brazil. This will give them a fleet of 10 vessels operating from Brazil. The four vessels are expected to arrive in March-April 1959.

Another Japanese fishing company has been granted permission by the Brazilian Hunting and Fishing Division of the Ministry of Agriculture to bring in fishing vessels for fishing off the Brazilian coast for two years. This new Japanese venture is reported to be tied in with a Sao Paulo organization and plans to process fish. (United States Sao Paulo Consulate report, December 22, 1958.)

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JAPANESE FISHING OPERATIONS CONTINUE TO EXPAND:

The Japanese-Brazilian fishing company operating out of Recife, Brazil, is associated with a large firm of Japan. It has taken over most of the facilities of the Government

Brazil (Contd.):

fish receiving and storage plant in Recife. The facilities consist of a large building with 500 tons of frozen storage space, a 20-ton flake-ice machine, 5 compressors and, recently introduced, 1 small closing machine for canning tuna, 1 sausage grinding machine, 1 mixing machine, 2 sausage extruders, and 2 sausage cookers.

In mid-December the storage space was completely full of frozen fish, mostly yellowfin tuna (Neothunnus), black marlin (Makaira), and sailfish (Istiophorus). Five of the reported eight vessels fishing for the Japanese-Brazilian company were tied to the dock waiting to dispose of their cargos. It was evident that the vessels (all long-liners) were catching more fish than they could readily sell.

The company, which has been selling only frozen tuna and billfish throughout Brazil at a retail price of 30 cruzeiros a kilogram (about 10 U. S. cents a pound), was attempting to diversify its markets. A Japanese technologist was on hand. He has started the production of tuna sausages which retail at 10 cruzeiros (about 7 U. S. cents) for a 125-gram (about one fourth of a pound) sausage. In addition, equipment was on hand for canning tuna, but difficulty with Brazilian-made cans was holding up the initiation of this project. The canned tuna is intended for the local market. Experiments were also being made with salting and drying tuna in a manner similar to cod; however, the local salt was causing the fish to turn red. If the salt problem can be overcome and a suitable substitute found for cod there should be a considerable market for the product in Brazil, which imports 20,000 to 25,000 metric tons of salted cod each year.

One source said that the Japanese-Brazilian company was contemplating shipping frozen tuna loins to the United States and also that it was considering entering the lobster and shrimp fisheries for export to the United States.

The present sausage capacity is stated to be about 20,000 sausages a day. The fish, a mixture of both tuna and billfish, are defrosted, skinned, and cut into strips about two inches thick. These strips of meats are placed in the grinding machine and the pulp is weighed and transferred to the mixing machine where salt, condiments, a stabilizer, and coloring are added. When thoroughly mixed the product is placed in a sausage-extruding machine which forces the mixture into plastic casings which contain 125 grams. After weighing, the casings are stapled and trimmed and heated for 15 minutes in a water bath held at between 190 to 195° F. The product, which has much the flavor of a hot dog, is then ready for consumption. It must be kept under refrigeration.

The eight fishing vessels reported in use by the company vary in carrying capacity from 90 to 300 tons. All have long-line haulers and are equipped for freezing the catch. Several of the larger boats have radar. Both glass and plastic floats are used on the long lines. Frozen sardines (Sardinella) caught near Rio de Janeiro are reported to be the preferred bait. Trips are from 20 to 60 days. There are three general fishing grounds for yellowfin. All are well offshore beyond the continental shelf. The northern area extends from French Guiana to the mouth of the Amazon, the central is from about Parnaiba to Fortaleza, and the southern area is about from Cabo Sao Roque to Recife.

Albacore (Germo alalunga), which are not fished by these vessels, are reported to occur in abundance offshore between about Cabo Frio (which lies about 60 miles east of Rio de Janeiro) and Santos.

It was reported that the company was planning on constructing more frozen-storage plants. The proposal was to increase the capacity of the Recife plant by an additional 250 to 500 tons and to erect a 250-ton plant in Natal and a 500-ton plant in Rio de Janeiro.

The Japanese-Brazilian company is also in the whaling business, having purchased the shore plant located near Joao Pessoa. This whaling station is one of two located in Brazil. The other is near Florianopolis in southern Brazil and is reported to be very small, with a catch of only about 10 whales in 1957. The whales are said to be harpooned from row boats. The whaling station near Joao Pessoa is said to have two catcher vessels which take between 200 and 300 sperm and sei whales a year. The proposal of the new owners is to bring in four additional catcher vessels.

Another Japanese fishing company (controlled by another large Japanese fishing company) operates out of Santos, Brazil, and also sells all its products in Brazil, mostly in Sao Paulo. This company has four trawlers and two tuna long-liners. One of the officials said they were applying for four more trawlers to catch bottom fish and shrimp. They also have established 11 retail outlets in various parts of Sao Paulo. Freezing and storage space is rented in Santos, but not in Sao Paulo. The fish and shellfish, as required, are trucked to the markets in Sao Paulo. They have plans for constructing a 15-ton ice plant and a 500-ton storage plant in Santos. The Santos company now supplies about 20 percent of the 70 to 80 tons of seafood consumed daily in Sao Paulo.

None of the Santos boats have freezing equipment. They all carry ice. The long-liners catch yellowfin tuna off Recife and their trips are about 25 days each. Yellowfin retails in Sao Paulo for 28 to 30 cruzeiros a kilogram (about 9-10 U.S. cents a pound) while other fish are from 40-90 cruzeiros (about 13-30 U. S. cents a pound).

The trawlers generally fish to the South of Santos where they catch various bottom fishes and shrimp. An official of the company said that the boats had not encountered sufficient concentrations of shrimp to justify an exclusive operation for export. They can sell all they catch on the local market at good prices. Shrimp, with heads on, were retailing at 100 to 160 cruzeiros a kilogram, depending upon freshness (about 32-52 U. S. cents a pound).

The eleven retail outlets established by the Santos company are placed at strategic spots in Sao Paulo. Each consists of a small building containing refrigerating equipment and one or two enclosed display cabinets. They are reported to cost about 200,000 cruzeiros each (slightly over US$1,400). Apparently the Santos company has been effective in its operations.

Canada

BRITISH COLUMBIA 1958 HERRING CATCH SETS RECORD:

British Columbia's 1958 fall herring catch was of record proportions. By December 17, 1958, when the herring fleet tied up for the balance of the year, close to 150,000 tons had been taken, an all-time record. Herring catches from 1954-57 averaged about 52,000 tons.

The Fisheries Association of British Columbia attributed this record herring catch to good spawning and ocean conditions, as well as to wise management and conservation policies.

Most of the herring catch is taken in inlets on the West Coast of Vancouver Island and then sent to reduction plants, where it is converted into fish meal and oil, the United States Consul in Vancouver Island stated in a December 16, 1958, dispatch.

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Canada (Contd.):

BRITISH COLUMBIA SHUCKED OYSTER PACK LOWER IN 1958:

The pack of shucked oysters in British Columbia for 1958 of 62,628 Imperial gallons (75,154 U. S. gallons) was lower by about 7 percent from the 1957 pack of 67,366 gallons.

Retail prices in Vancouver on January 15, 1959, were between C$0.52-0.55 for a ½ pint container.

Pack of British Columbia Oyster Meats by Size of Container and Prices Paid to Producers, 1957-58

Unit [1]	January-December		Prices to Producers, December 1958
	1958	1957	
	(No. of Containers)		C$
½ pints	313,109	374,273	0.30-0.60
Pints	21,199	11,315	0.57-0.75
Quarts	18,438	14,860	1.00-1.65
Gallons	32,343	34,556	3.25-7.00
	(Imperial Gallons)		
Total	62,628	67,366	-

1/ Imperial gallon = 1.2003 U. S. gallon.

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BRITISH COLUMBIA SALMON PACK IN 1958 NEAR RECORD:

The 1958 pack of canned salmon by British Columbia canneries totaled 1,908,056 cases (48-1 lb. cans), one of the largest packs in the history of the fishery. The sockeye salmon pack of 1,079,155 cases was only 1,000 cases less than the all-time record of 1,080,000 cases in 1905. The pack of pink salmon was much higher than anticipated for an off-cycle year, 455,518 cases as compared with 363,633 cases in the off-cycle year of 1956. The catch and pack of chum salmon was disappointing (229,292 cases) due to the light escapement during the 1954 cycle year, when 580,575 cases were packed.

Table 1 - Pack of British Columbia Salmon, 1953-1958

Species	1958	1957	1956	1955	1954	1953
	(Standard Cases--48 1-Lb. Cans)					
Sockeye (red)	1,079,155	228,452	320,096	244,821	680,718	510,147
Spring (king)	10,475	10,481	11,671	17,853	14,080	13,049
Steelhead	1,213	1,126	1,254	1,590	3,733	3,030
Blueback	11,083	12,147	10,549	10,544	4,302	2,055
Coho (silver)	121,320	180,911	207,366	175,179	123,778	108,109
Pink	455,518	751,608	363,633	831,253	335,550	794,764
Chums (keta)	229,292	239,539	203,710	124,860	580,575	394,113
Total	1,908,056	1,424,264	1,118,279	1,406,100	1,742,736	1,825,267

Note: Also see Commercial Fisheries Review, February 1958 p. 59.

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DATED FRESH FISH FILLETS BEING MARKETED:

Something new in fish marketing has appeared in Halifax, N. S., Canada, where housewives can now get their fresh fish fillets dated for quality. Fish processing plants in that area are now packing chlortetracycline-treated fillets which bear a seal indicating that the product has a shelf life of ten days.

This innovation in fish marketing results from studies conducted at the Research Board of Canada's Technological Station in Halifax which have shown that the shelf life of fish that are of good quality initially ranges from 12 to 21 days at 32° F. Thus producers have an authoritative guide in prescribing the quality life of their fish products.

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EAST COAST SCALLOP FISHERY TRENDS, 1957:

Canada's east coast landings of scallops (meats) were 3,410,000 pounds in 1957 as compared with 2,420,000 pounds in the preceding year. The average annual catch 1941-1951 was about 700,000 pounds.

The Bay of Fundy catch in 1957 was 1,340,000 pounds, the highest since the 1,850,000 pounds landed in 1937. The high catch was a result of good supplies of scallops on the grounds. The good fishery was forecast in 1952 on the basis of highly successful sets of young. These were the

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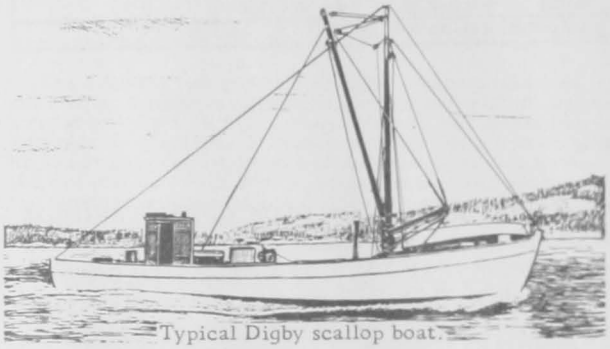
result of warm-water years in 1947, 1949, and 1951. Cooler years since then have probably produced fewer young scallops and it is likely that landings will soon drop to near the old average of half a million pounds annually.

Scallop fishing in the Gulf of St. Lawrence is erratic and depends upon the discovery of new beds as old ones are fished down or die out from natural causes. Since late 1956 the fishery in the southern Gulf is limited by regulation to



Typical Digby scallop boat.

vessels under 65 feet in length. The catch in 1957 was 230,000 pounds as compared with 430,000 pounds in 1956 when both large and small vessels made good landings from the well-stocked Toney River bed.

The spectacular increase in Canadian production resulted largely from the landings from Georges Bank by the offshore fleet. Landings were 1,690,000 pounds in 1957 as compared with 700,000 pounds in 1956. This increase far more than compensates for the decline in offshore landings from the St. Pierre Bank from 230,000 pounds to 150,000 pounds.

The great increase in scallop fishing on Georges Bank may so increase competition for the scallops that they may become harder to catch. In addition, there is some reason to think that the scallop population on Georges Bank may actually become less productive. Dr. Dickie notes that abundance on Georges Bank followed abundance in the Bay of Fundy and a decline in availability of scallops in the Bay of Fundy has already been forecast. ("Recent Trends in the Scallop Fishery of Eastern Canada," Progress Report No. 70.)

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PROSPECTS FOR NORTH ATLANTIC HADDOCK CATCH:

The east coast deep-sea fishermen of Canada can expect moderately good haddock fishing in 1959 and 1960 on the Grand Banks. The prediction, based on the good survival of the 1955 haddock brood, was made by the Director of the Fisheries Research Board of Canada Biological Station in St. John's Newfoundland, as the result of investigations in 1958 which confirmed findings from previous studies.

For many years scientists at the St. John's Station have been following closely the spawning and growth of haddock and other fish stocks on the fishing banks south and east of Newfoundland and have predicted with remarkable precision the fishing results likely to be obtained in future years. During the past year, it was stated, the numerous 1949 year-class fish, which had dominated the commercial landings since 1954, appeared less significant in the catches. However, the moderate brood of 1952 and the smaller one of 1953 were fairly plentiful.

As opposed to this good news for the Grand Banks, the outlook for haddock fishing on St. Pierre Bank was bleak. The Station's investigations showed that in 1958, as in 1957, few haddock were available in that area. Moreover, there was no evidence of significant survival of young haddock on this bank since the very large spawning of 1949, of which no large quantities remain. The result has been that little commercial fishing has been carried on there since the winter of 1955/56.

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REFRIGERATED SEA WATER FOR FISH PRESERVATION ADAPTABLE TO SMALL FISHING VESSELS:

The use of refrigerated sea water for the preservation of fish can now be adapted to small fishing vessels. A Fisheries Research Bureau of Canada report describes installations in two steel vessels built in British Columbia during 1958. In their construction the engineering staff of the Board's technological station at Vancouver worked in collaboration with a naval architect and the shipbuilders to develop over-all plans and equipment layouts which give the vessels considerable versatility. As a result it was proved that refrigerated sea water can be applied to a vessel with little hindrance to its main function of catching fish.

Most important of the new and interesting features of one of these vessels was the installation of double-walled steel tanks for preserving fish in refrigerated sea water without reducing its normal holding capacity. This vessel is primarily a salmon troller, but it has also operated successfully as a seiner and as a fish packer. In addition, it can be used for crabs, which can be brought to port alive in the tanks. Furthermore, it can easily be employed for long-line halibut

Canada (Contd.):

fishing or for use as a trawler. The report also stated that a refrigerated seawater installation for a salmon cannery, completed in 1958, had given a successful practical demonstration of the suitability of this medium for refrigerating large quantities of salmon for short-term holding. The chilling of whale meat by this method is being investigated on the Pacific coast. The suitability of refrigerated sea water in Atlantic coast fisheries is being assessed on that coast also. (Fisheries Council of Canada Bulletin, January 19, 1959.)

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TRANSPLANTED BRITISH OYSTERS GROW IN ATLANTIC WATERS:

Shellfish scientists of the Fisheries Research Board of Canada, at the Biological Station at St. Andrews, N. B., have satisfied themselves that European oysters transplanted from beds in North Wales in the United Kingdom will grow successfully in Canadian Atlantic waters.

The oyster project is designed to determine if this hardy species (Ostrea edulis) from across the Atlantic can be reared in the colder waters of the Maritimes, such as those along the eastern shore of Nova Scotia, where the native oyster (Crossostrea virginica) cannot thrive because of low-water temperatures. Oyster beds in the three oceanside provinces are restricted to the warmer waters of the Bay Chaleur, the Northumberland Strait, and the Bras d'Or Lakes.

If this and other experiments with the European oyster are successful, it would mean that this species could be established in areas where conditions preclude the raising of the native species. This possibility of developing a new oyster industry in the Maritimes is important in light of a recent epidemic which killed off about 99 percent of the oyster population in New Brunswick and Nova Scotia. Prince Edward Island--where oysters are resistant to the disease which devastated the beds in the sister provinces--is now the main Canadian producer of oysters.

In 1952 nearly 8 million pounds of oysters were fished in the Maritimes. In five years the epidemic had reduced that volume by more than half. Production in 1957 was less than 3.7 million pounds. Practically all the oysters marketed now in Canada come from Prince Edward Island beds.

The Department of Fisheries with the cooperation of its scientific arm, the Fisheries Research Board, is carrying out a three-year project to transplant 10,000 barrels of the island's disease-resistant oysters in the affected beds of New Brunswick and Nova Scotia. Already 6,000 barrels have been transferred, and the final phase of the project will be completed next spring. Even if these oysters establish themselves successfully, it will be 5 to 10 years before their progeny will have built up stocks sufficiently to warrant fishing. If we had had two species of oysters instead of one, we would probably have been much better off. It seems unlikely that the disease would have affected both.

In the initial report on the transplanting experiment, it was shown that researchers were encouraged to test overseas oysters because the State of Maine Department of Sea and Shore Fisheries has had some success in rearing them in the Boothbay Harbor area.

European oysters are somewhat different in appearance from Maritime oysters. They are nearly circular in outline instead of elongated, but they are not so deeply cupped and sometimes are referred to as "flat" oysters.

Unlike the native species, European oysters cannot be held for months in cold storage. It is best to use them within a few days after removal from the sea.

The current experiment was inaugurated last year when the Minister of Fisheries approved a trial introduction of 5,000 small European oysters. After making sure they were pest-free, they were placed in trays in Sam Orr Pond and Oak Bay in the St. Andrews area.

During the first months 95 percent of the stock died. Scientists believe the high mortality rate was due to the effects of their long air exposure during the 11-day ocean voyage from England.

However, the growth of the surviving five percent of the original stock was good. The diameter increased from 1.5 inches to 3 inches. It was also found that the oysters did not harbor pests or disease of any kind.

When the ice cleared from the ponds last spring, it was found that 99 percent survived the winter in Sam Orr Pond, but that all of the Oak Bay stock died. The mortality is blamed on a heavy freshet in January 1958 which reduced the salt content of the water to very low levels. While the number of survivors was small, the researcher said, "we can confidently say that North Wales oysters can be reared in our waters." He rightly points out, however, that this is not enough to give hope for a new industry. It must be found out if they will reproduce vigorously and if they are resistant to the Malpeque disease that affected so many of the Canadian native species.

Last April (1958) another lot of 5,000 oysters was shipped from North Wales to be used in breeding experiments and in experiments to test disease resistance. They were shipped by air to shorten their time out of water and to prevent heavy losses immediately after they survived the trip. They were planted in Sam Orr Pond for studies on reproduction. Mortalities were high, but not nearly as high as in 1957. (Trade News, November 1958, of the Canadian Department of Fisheries.)

Chile

FOREIGN FISHING VESSELS REQUIRED TO BUY PERMITS:

In December 1958 the Chilean Government released a statement reminding owners of foreign fishing vessels that permits must first be obtained from the Government to fish in Chilean waters. Permits, when issued, will be good for three years. No information on permit fees was made available in the statement.

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NORTHERN AREA HAS GOOD PROSPECTS FOR FISHERIES DEVELOPMENT:

One of Chile's richest fishery zones is in the northern part, which abounds in anchovy, bonito, and tuna. However, in the ports of Arica and Iquique there are only 7 fish-processing firms, including a whaling station. Of these firms, three manufacture fish meal exclusively and the others divide their facilities between

Chile (Contd.):

canning and fish-meal manufacture. This northern fishery zone (off Tarapaca) is not only rich in marine life, but is also favored by a very advantageous customs and tariff situation. Arica is a free port and Iquique is a special duty-free industrial zone--all of which would benefit new fishing enterprises.

The Food and Agriculture Organization fishery mission to Chile, at the request of the Chilean Government, completed a survey of Chile's fisheries in 1957. The results of this survey provide some basis on which to establish means to develop the fishing industry. (Boletin Informativo No. 59, of the Ministry of Agriculture, Valparaiso, Chile, July 15, 1958.)

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REGULATIONS ON USE OF ANTIBIOTICS IN ICE FOR REFRIGERATING FISH ISSUED:

The Chilean Ministry of Health in Decree No. 1207 (Diario Oficial of December 9, 1958) approved a regulation dealing with the addition of antibiotics to ice used for refrigerating fish. Each antibiotic as well as the procedure of incorporating it in ice will be authorized by the National Health Service.

Distributors of antibiotics so used, ice-making plants, fishery plants, fish transport vehicles, and types and materials of containers used in marketing must be authorized by the same Service.

Containers of the fish product so treated must comply with the September 26, 1939, food regulations (Decree 770) and must have indicated the name of antibiotic, date of application to ice, and length of duration of activity, with the statement "treated with ice containing antibiotics to retard alteration."

The decree states infractions of the regulation will be sanctioned according to Sanitary Code.

Costa Rica

AMENDMENTS TO MARITIME FISH AND GAME LAW:

The Costa Rican Legislature in Law No. 2304, effective December 4, 1958, amended articles 7 and 16 of the basic Decree Law of September 28, 1948, which is known as the Maritime Fish and Game Law.

The principal change effected by Law No. 2304 in the basic Maritime Fish and Game Law is contained in the amended Article 7 which now requires that fishing for shrimp and fish with scales in national waters be carried on "only by vessels constructed within the country with national woods and labor." The amendment to the Maritime Fish and Game Law is the most recent of a series of new regulations pertaining to the country's fisheries resources.

These recent regulations all are protective in nature and reflect Costa Rica's growing concern over its fisheries resources. Last October, the Minister of Agriculture and Industries publicly assured local fishermen in Puntarenas that the Government had no intention of granting permits for shrimp fishing in Costa Rican waters, especially in the Puntarenas area, to foreign fishermen.

The present legislation also will serve to protect and promote the three very small local shipyards in the Puntarenas area. These three yards are capable of building small craft with a maximum size of from 80 to 150 gross tons. Even when operating at full capacity, these yards employ a total of less than 100 workers. While utilizing local labor and lumber, all three yards have to import the fittings and machinery which are installed in the vessels constructed. At present these yards are operating on a part-time basis.

The amended articles 7 and 16 follow:

"Article 7: In waters under the protection and control of the State the Maritime Fish and Game Law shall be pursued only by vessels or floating canneries under national registry and and by vessels of foreign registry provided that they have a permit duly issued by the Ministry of Agriculture and Industries, assuming

Costa Rica (Contd.):

compliance with the foregoing provisions, fishing for shrimp and fish with scales will be carried out only by vessels constructed in the country with national woods and labor.

"Article 16: Except as provided in Article 7 of the present law referring to fishing for shrimp and for fish with scales, fishing for export effected by means of vessels under foreign registry possessing the proper authorization of the Ministry of Agriculture and Industries, and whose product in a fresh condition is destined exclusively for foreign markets, will be subject to the provisions of the present law and its regulation as well as to the pertinent regulations which henceforth may be set forth.

"(a) Motherships and floating plants must always be situated in the bay and in sight of the national docks.

"(b) Fish caught within territorial limits which are not processed by plants established in the national territory will be considered as exports subject to customs duties and other surcharges in conformity with the respective tariff; and

"(c) Motherships, ship plants, and other vessels will pay the transshipment duty on merchandise which is transshipped to other vessels. They must also obtain the municipal license tax corresponding to the jurisdiction in which they may be located and pay the required import duties if they transfer to the shore any type of merchandise coming from themselves."

The provisions of Articles 7 and 16 will not apply to foreign vessels engaged in the fishing for shrimp and for fish with scales if they have been registered in Costa Rica before the date of publication of the present law. Such vessels may continue operating in national waters.

Cuba

DEVELOPMENT OF BONITO FISHERY:

Cuba's bonito fishery began in 1932 as an experiment. A group of about 20 Japanese fishermen who were engaged in long-line fishing south of Cuba (between Cienfuegos and Batabano) encouraged a Cuban firm to build a vessel especially for bonito fishing and gave instructions on fishing bonito by Japanese methods.

The first vessel built for bonito fishing in Cuba had a cold-storage capacity of about 8,000 pounds and a crew of 8--mostly Japanese fishermen. Until 1942, there was almost no progress made and no other vessels were built for bonito fishing. In 1942, two vessels were constructed in Batabano, both somewhat larger and better equipped than the first vessel. In the following years, more vessels were built and the bonito fishery increased. Now, Cuba has 45 vessels especially equipped for bonito fishing and their combined crews total 450 men.

The method of bonito fishing used in Cuba is the same as used by United States tuna fishermen--live bait and pole-and-line. Cuban fishermen receive between 10-12 U. S. cents a pound for fresh bonito delivered to the canneries. The fishermen fish under seasonal contracts and are given a guarantee on their total catch.

Larger vessels are presently being built with refrigeration facilities adequate for fishing in more distant waters. The vessels that are now being used have cold-storage capacities of 8,000-15,000 pounds. The new vessels will have a capacity of 40,000 pounds.

It is estimated that final tabulations of Cuba's 1958 bonito catch will amount to about 6 million pounds, indicating that this fishery has progressed considerably since its start. (Industria Conservera, Vigo, Spain, September 1958.)

Denmark

FISHERY PRODUCTS EXPORTS UP IN 1958:

Exports of fishery products by Denmark increased sharply from 308 million kroner (US$44.6 million) in 1957

Denmark (Contd.):

to about 360 million kroner (US$52.5 million) in 1958, according to estimates based on the first 11 months of 1958. Substantially higher exports were made in 1958 to all of Denmark's customers except the United Kingdom and Brazil. Exports to the United States during the first 11 months of 1958 of 35.6 million kroner (US$5.2 million) were the highest on record. In 1957 they amounted to 18.4 million kroner (US$2.7 million).

Principal Danish Fishery Products Exports to United States, 1957-58

Product	January-November				Percentage Increase
	1958		1957		
	Million Kroner	US$ 1,000	Million Kroner	US$ 1,000	%
Fish solubles	5.7	825	1.3	188	338
Salt herring	1.3	188	0.3	43	337
Fish and fish fillets	15.0	2,172	5.6	811	168
Northern lobster	4.5	652	2.6	376	73
Rainbow or brook trout	8.5	1,231	7.7	1,115	10

Denmark's exports of fish and fish fillets were primarily cod and flounder fillets. The cooperative fish meal factory at Esbjerg was able to distribute its regular Christmas bonus in 1958, mainly because it had found a good market in the United States for its byproducts.

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FISH INSPECTION SERVICE:

A law designed to maintain and foster the quality of Danish fishery products was passed in 1950. Known as the Quality Law, it was later revised in 1954. This law pertains to all aspects of trade in fishery products as well as methods of catching, storing, transporting, freezing, preserving, and the handling of fish and fish products. Fish for export and domestic use as well as imported fish come under the jurisdiction of the law.

Poor quality fish are defined as those products which because of pathological spoilage, contamination, faulty preparation, or any other reason, must be considered unfit for human consumption. The consumer is further protected by the next clause of the law which states that products must not be sold which, although fit for human consumption, are not absolutely fresh. Furthermore, if the products are to be transported and cannot be guaranteed to reach their destination in good condition, they will not be passed by the inspector.

Fish which are found to be unfit for human consumption are destroyed or used for fish and animal fodder. Fish of good quality but which are judged to be unable to reach their destination in satisfactory condition are withheld from export but may be used for domestic sale.

Denmark, which has an area of only 17,000 square miles, is divided into 39 fisheries inspection districts. The decentralized control body which is known as the Fisheries Inspection Service places at least one fish inspector in each district. The division of the inspection district and the number of inspectors in each is in accordance with the position and the importance of the fishing ports. At the present time there are 112 people in the Fisheries Inspection Service and the 39 fisheries inspection districts are supervised by three superintendents.

The fish inspector is present when the fish is landed, when it reaches the processing plants, the freezing houses, and until it is ready for the wholesale and export trade. He is also called upon to inspect the processing plants, the sanitation control, quality of the raw materials, production in general, quality of the products, and the labeling or marking of the products.

However, the supervision of the inspection of fish-processing plants is the responsibility of the Danish Inspection Service for Fish Products. The more highly technically-skilled personnel of the centralized body who comprise this Inspection Service tour the different plants to check that they are meeting the requirements of the Ministry of Fisheries. On these occasions they meet with the local fish inspectors and discuss new regulations which affect both bodies. This service also takes care of the more technical and scientific problems and are consultative to the Ministry of Fisheries in questions regarding fish-processing plants and quality control.

Furthermore, a Quality Committee has been established to assist the Minister of Fisheries in all matters pertaining to the quality control of fish and fish products. The committee consists of five trade representatives, one representative of the health authorities, and one representative of the Ministry of Fisheries.

The quality law contains rules which must be adhered to virtually as soon as the fish is caught right up until the moment the housewife is serving it to her family. In general these provisions state that clean and sanitary conditions must be maintained wherever fish and fish products are stored or handled. For example, aboard fishing vessels, the fish must be stored in such a way that the bottom ones are not destroyed by those on top.

Another important provision of the law states that fish which are not caught alive must be iced and cleaned immediately. If the fish is caught alive, it must be kept in water of good quality until it reaches the consumer. When transporting fish, steps must be taken to provide proper protection against wind and weather.

Those merchants involved in the wholesaling or exporting of fresh or frozen fish must first obtain a permit from the Ministry of Fisheries. A similar provision is in force for the retail trade.

Quality assessment of fish is usually made by organoleptic (judging the quality of fish by texture, appearance, odor, and taste) testing, although several objective methods have been suggested and are used to some degree.

The quality laws also provide the Ministry of Fisheries with the power to determine what establishments shall engage in the manufacturing, freezing, or processing of fish and fish products. Authorization is granted to those establishments which meet the requirements of the Ministry of Fisheries, the Public Health Authorities, and the Directorate of Labour Inspection. (Trade News, November 1958.)

German Democratic Republic

FISHING FLEET EXPANSION INCLUDES PLANS FOR 20 LARGE STERN TRAWLERS:

In order to achieve the goal of meeting the demand for fish and to conserve foreign exchange, the East German fishing industry plans to build 20 large (1,400 metric ton capacity) stern trawlers by 1975. Ten of these stern-trawlers are scheduled to be ready by 1965.

German Democratic Republic (Contd.):

In the fishery combines, processing plants, and shipyards on the Baltic Coast intensive work is going on. In addition to the vessel building program, new technical plants are being erected and new fishing grounds and methods are being explored.

The deep-sea fishing fleet is developing fast. In 1950 the East German fishing fleet consisted only of 9 luggers and 58 cutters. In 1958 the fishery combines of Rostock and Sassnitz and coastal fisheries operated a fleet of 20 trawlers, 34 luggers, 20 steel-hull cutters (86.9 feet in length), 200 cutters (78.7, 55.8, and 39.4 feet in length), and 100 cutters (32.8-55.8 feet in length). About 89,000 metric tons of fish were landed in 1958. Plans call for increasing this total many times. In 1959, the 100,000-ton level is expected to be surpassed for the first time.

New methods are planned to catch larger quantities of herring from the North Sea, halibut from the fishing grounds between Iceland and Greenland, ocean perch on the "Rosengarten," and mackerel on the "Vikingbank," off the Shetland Islands.

There are still many obstacles to be overcome to achieve the planned goals. The trips, which trawlers and luggers must make to reach the catching grounds, are often very long and, especially in the case of luggers, render fishing operations unprofitable, because of the unbalanced ratio of travel and catching time. Also, the quality of the landed fish has been poor on account of the long return trips.

In order to correct the deficiency in payloads, it is planned to place into service by 1960 five trawlers of Type III, which carry refrigeration and fish-meal plants. Compared with Trawler Type II, this type has larger measurements and larger carrying capacity. The fishholds can carry 452 tons of fish compared with 250 tons in Type II trawlers. The vessels which will be built will have a length of 215.0 feet, a width of 33.9 feet and a draft of 17.1 feet. They will have a crew of 36, develop a speed of 13.5 knots an hour, and be equipped with a "father-and-son" power plant.

The main emphasis of the development program of the fishery fleet is placed on the factory trawlers, which were designed by a Wismar shipyard, and will also be built by that yard. In the future, factory-type vessels will be used predominantly in East German deep-sea fishing operations. The construction of the prototype of a factory trawler was completed in 1958. A total of 10 factory trawlers will be turned over to the fishery combine in Rostock by 1965. Preliminary planning provides for a fleet of 20 vessels of this type to be built and operated by 1975. The last 11 vessels to be built under this program will have Diesel-electric propulsion. It is planned to operate the factory trawlers in Arctic waters, off the coasts of Greenland and Iceland. They will be able to stay at sea for 60 days, of which about 40 days will be spent actually in catching fish. Their operating range of 5,280 nautical miles is about equal to 20 days' travel time.

An 8-cylinder four-stroke engine with a power output of 1,900 horsepower will drive the propeller at 220 revolutions per minute, permitting a full speed of 12 knots. During fishing operations the speed will be 4.5 knots, with a pull on the cod ends of 9 tons. Measurements of the factory trawler will be as follows: over-all length, 284.5 feet; molded breadth, 44.3 feet; molded depth up to the wheelhouse top, 47.9 feet; molded depth up to the main deck, 23.0 feet; designed draft, 16.4 feet; and carrying capacity, 1,421 metric tons.

The fish caught by the stern-type trawlers will be dumped through two hatches into the processing room located in the after part of the ship. There the following fish-processing machinery will be installed: one filleting machine for ocean-perch, one filleting machine for round fish; one machine for processing small round fish; and a skinning machine. The fillets will be placed on trays, conveyed to a freezing tunnel, where they will be frozen at a temperature of -18° C. (0° F.). Thereafter the final processing and packing takes place. Subsequently,

German Democratic Republic (Contd.):

a 72-foot chain conveyor belt takes the fillet packages, of 55 pounds each, to the lifts forwarding them to the deep-freeze storage rooms. The storage rooms are designed to hold about 800 tons (580 tons of fillets, 200 tons of fish-meal cake, and 60 tons of fish oil).

In order to fully utilize the processing capacity, about 1,500 tons of ocean perch or 1,250 tons of round fish will have to be caught per trip. Annual landings per ship are set at 5,100 tons. Later, when sufficient experience has been gained, annual landings shall amount to 5,800 tons. (For comparison: a lugger catches an average of 531.3 tons and a conventional trawler 1,539.7 tons of fresh fish a year.)

The ship, which is equipped with fore-mast and main-mast, will have a crew of 98, of whom 19 are nautical personnel, 15 engineers, 55 operators of fish-processing machines, and 7 stewards. In addition, a physician and a male nurse will be stationed aboard ship.

Single cabins will be available for the ship's officers, the crew will be accommodated in modern and practically furnished two- and four-bed cabins. Apart from the usual ship installations, there will be a laundry with drying and ironing facilities, a bakery, a medical station for the physician, and a hospital with six beds, several washrooms, shower-baths, bathrooms, and a club room. Movies may be shown in the crew mess.

The hull of the factory-type vessel, subdivided by 7 waterproof bulkheads, will be built according to a system of transverse framing and, with few exceptions, will be fully welded. For the first time, an electric power plant will be installed, producing three-phase current. It is planned to install two additional electric winches of 1.5 tons capacity each in order to be able to discharge the ship within 16 hours.

The factory trawlers offer every possibility of improving fishing operations. Together with trawlers, luggers, and cutters of the deep-sea fishing fleet, these ships will serve to meet the fish demand of the population of the German Democratic Republic by their own landings in the foreseeable future. (Translation from the East German periodical Die Schiffahrt, October 1958 and transmitted by the United States Consul in Bremen).

Ghana

PLANS FOR DEVELOPMENT OF FISHERIES:

Projects adopted for meeting fisheries production problems were outlined by the Ghana Minister of Agriculture in a speech given at the opening of an agricultural show.

The fishing industry will be aided by the construction of a large fishing port at Tema and a smaller port at Elmina for small trawlers and other powered craft. Plans call for the completion of the small port of Elmina by about July 1, 1959, and the completion of the larger harbor at Tema by about January 1, 1960.

It is also proposed to establish properly organized marketing facilities at the fishing ports. The markets will be managed by the Agricultural Development Corporation under the guidance of an expert attached to the Ministry of Agriculture, the United States Embassy at Accra reported on January 8, 1959.

Guatemala

UNITED STATES FIRM PLANS TO FISH FOR SHRIMP IN GUATEMALAN WATERS:

All the legal requirements have been fulfilled to grant permission to a San Francisco, Calif., fishing company to operate in Guatemala's Pacific maritime zone. The San Francisco Guatemalan consul cabled Guatemala January 3, 1959, saying: "Twenty boats will arrive before January 31 to sound and identify shrimp banks and to assign large fleet for permanent operations there under Guatemalan flag. A week before, representatives will arrive to arrange taxes, licenses. I am

Guatemala (Contd.):

writing giving details, Consul, Guatemala," according to a January 5 press release from the Information Secretariat of the Presidency.

The Guatemalan press release continues ". . .our ambassador in Mexico has informed about applications of various Mexican fishing companies which wish to work on our Pacific coast . . . ." This information has not been checked out in the United States.

Hong Kong

SHRIMP FISHING INDUSTRY:

Foreign Trade: The processing of shellfish (about 75 percent shrimp) has expanded rapidly in the British Crown Colony of Hong Kong since 1955. In the first nine months of 1958, exports of fresh, chilled, and frozen shellfish (table 1) totaled about 4.2 million pounds (value US$2.6 million) as compared with about 2.5 million pounds (valued at US$1.3 million) for the entire year of 1957. Only 0.4 million pounds were exported in 1955. It is estimated that more than 75 percent of the shellfish exports consist of frozen shrimp (heads off).

Table 1 - Hong Kong's Exports of Fresh, Chilled, or Frozen Shellfish, 1955-1957 and Jan.-Sept. 1958

Country	Jan.-Sept. 1958		1957		1956		1955	
	1,000 Lbs.	US$ 1,000	1,000 Lbs.	US$ 1,000	1,000 Lbs.	US$ 1,000	1,000 Lbs.	US$ 1,000
United States. . .	3,343	2,241	1,300	790	578	317	67	33
Canada.	425	180	971	396	758	117	159	47
All others	436	202	258	109	320	79	169	51
Total	4,204	2,623	2,529	1,295	1,656	513	395	131

Note: Value is f.o.b. Hong Kong.

The United States is Hong Kong's principal customer for shellfish (about 90 percent frozen shrimp). For the first nine months of 1958, exports of shellfish to the United States accounted for 79.5 percent of the total quantity and 85.4 percent of the total value.

No statistics are collected in Hong Kong on the landings of shrimp, but estimates from officials of the Department of Commerce and Industry place the annual average catch at about 10 million pounds (heads on).

In addition to the exports of fresh, chilled, and frozen shrimp, Hong Kong exports fair quantities of salted, dried, and pickled shellfish. During the first nine months of 1958, Hong Kong exported 68,000 pounds of cured shellfish (90 percent shrimp) to the United States or about 10 percent of total exports of 668,000 pounds to all countries.

Another source of statistical data on Hong Kong's foreign trade are figures on value compiled from the Comprehensive Certificates of Origin. Data derived from this source show that exports of frozen shrimp for January-October 1958 amounted to US$2.6 million (c.i.f.). During the same period exports of sliced shrimp noodles amounted to US$55,000 and shrimp paste US$35,000.

Fishing Seasons and Grounds: There are two main fishing seasons for the Hong King shrimp fishing fleet. During the early season from April through the end of the typhoon season in September, the shrimp trawlers operate in the waters around the Colony. The primary area for shrimp at this season lies south and east of the Lema chain of islands, held by the Chinese Communists. Here the sea bottom falls off very gradually, beginning at about 20 fathoms. A secondary shrimp area is in the Urmston Roads off Castle Peak, within Colony waters. During the rest of the year, from October-March, shrimp trawlers must proceed northeast from Hong Kong, along the China mainland coast. Some trawlers are away for a month at a time during this season, going as far as 600 miles up the coast to grounds off Fukien Province.

Hong Kong (Contd.):

Fishing Fleet: for the most part, Hong Kong's shrimp trawlers are sail-powered. The 1955-57 reports of the Director of Agriculture, Fisheries, and Forestry states that only 280 out of the 769 shrimp trawlers based in the Colony are motorized. Both types of trawlers use beam trawls with about a 10-foot spread, dragging either 7 or 9 such trawls from booms on either side of the boat and from the mast. There have been no significant changes in the total strength of the shrimp-catching fleet from 1956-1958, although a large number have been mechanized in this period.

Table 2 - Hong Kong's Export of Salted, Dried, or Pickled Shellfish, 1955-1957 and Jan.-Sept. 1958

Country	Jan.-Sept. 1958		1957		1956		1955	
	1,000 Lbs.	US$ 1,000	1,000 Lbs.	US$ 1,000	1,000 Lbs.	US$ 1,000	1,000 Lbs.	US$ 1,000
United States. . . .	68	63	83	103	96	124	87	166
Malaya	285	124	168	89	466	144	376	151
Philippines	1	1/	1	1/	5	1	301	85
Taiwan.	10	2	901	89	583	51	239	19
All Others	304	136	265	148	459	174	158	68
Total	668	325	1,418	429	1,609	494	1,161	489

Note: Values f.o.b. Hong Kong. 1/ Less than US$500.

Species Landed: The principal species of shrimp landed at Hong Kong is Metapenaeus monoceros. Varieties of lesser importance are Penaeus monodon, Penaeus japonicus, and Penaeus orientalis. The latter species flourishes in waters colder than those surrounding the Colony and are landed by the trawlers that fish off the China coast in the winter months. Most of the Penaeus orientalis that is marketed in Hong Kong, however, is imported from Communist China.

Facilities and Processing: Shrimp are not canned in Hong Kong. There are 12 cold-storage plants which have freezing facilities for packing of shrimp for export. The bulk of this business is handled by the five plants which are approved by Government agencies under the Comprehensive Certificate of Origin procedure. Fair quantities of shrimp are sun-dried and used for food, while substantial quantities of shrimp paste are also made in the Colony.

In the Hong Kong market, shrimp (headless) are graded in size as follows: large shrimp, less than 30 to the pound; medium shrimp, 31 to 60 to the pound; and shrimp more than 61 to the pound. Large shrimp account for about 10 percent of the total catch, medium shrimp about 65 percent, and the remaining 25 percent small sizes.

Government Assistance: Some government assistance is afforded owners of shrimp vessels in the form of low-interest loans. These loans are made only for the purchase and repair of craft and gear. They are made to the individual vessels either through cooperatives or direct by the Department of Cooperatives and Marketing or the Department of Agriculture. No financial assistance in any form is given to commercial processors or exporters by the government. There is no foreign participation in the Hong Kong shrimp fishery or processing industry.

Table 3 - Value1/ of Shrimp and Shrimp Products Certified Under "Comprehensive Certificate of Origin" for Export from Hong Kong to United States, Jan.-Oct. 1958

Months	Frozen Shrimp	Sliced Shrimp Noodles	Shrimp Paste
		(US$1,000)	
January.	211	5	1
February	185	2	3
March	293	5	2
April.	320	6	3
May	445	8	2
June	231	5	2
July	255	4	2
August.	173	7	2
September.	211	4	15
October	280	9	3
10 Mos. Total . . .	2,604	55	35

1/ c.i.f. value.

Territorial Waters: The Chinese Communist regime has announced that its territorial jurisdiction extends to the 12-mile limit. While the British government does not recognize the legality of this unilateral extension, the Communists have successfully excluded the

Hong Kong (Contd.):

Hong Kong fishing fleet from its waters. This has been done by imposing fines on Hong Kong-registered vessels found fishing within the 12-mile limit and in some cases by confiscation of the vessels. These restrictions severely hamper the growth and stability of the local fishing industry. Particularly is this true of Hong Kong-based shrimp fishing vessels which will have difficulty finding alternate fishing grounds to those in which they have traditionally fished. In view of these disturbing developments, the local shrimp fishing industry is likely to suffer rather than expand.

Iceland

FISHERIES TRENDS, DECEMBER 1958:

The Iceland autumn herring season is usually finished by mid-December; but in December 1958 the boats were making record catches. The herring, which disappeared in October, returned in quantity to the Southwest Coast. Over 100,000 barrels of autumn herring have been salted, permitting fulfillment of all advance sale contracts and assuring some reduction in the clearing deficits with the Eastern European countries, Iceland's chief customers for herring.

The Union of Icelandic Fishing Vessel Owners has held its annual meeting; made its annual complaints over the inadequacy of prices and export supports; and issued its annual threat to stay in port, instead of commencing the main winter cod season in January 1959, unless fish prices are raised. A committee of Government economists has been meeting to prepare for the annual negotiation, normally conducted by the Minister of Fisheries, which has been delayed this month by reason of the Government crisis. The vessel owners themselves have calculated that a typical 60-ton boat with a catch equivalent to the average in Faxa Bay during the last 5-years and paying wages based on the wage index of 185 (which prevailed from August to December 1, 1958) would show a deficit of about US$5,000, at current fish prices. With the 9.2-percent escalation wage increase of December 1, 1958, the deficit would be larger.

Iceland joined with others of the 11 members of the Organization for European Economic Cooperation (OEEC) outside the Common Market in protesting to the Common Market Nations over the prospect of discrimination at the first stage of the Common Market which came into effect on January 1, 1959. The Icelandic note, addressed to the Federal German Republic, followed the model used by most of the other members of the Free Trade Area.

Just prior to the dissolution of the Cabinet the Minister of Industries reported to the Althing on the progress of negotiations, stressing their importance in view of the fact that almost half of Iceland's exports now go to OEEC member countries. A Leading Conservative, a director of the National Bank and former representative of Iceland to the OEEC, has publicly supported the Government's position in all respects except for its insistence on preserving Iceland's bilateral clearing agreements. The high prices paid by the Eastern European countries for Icelandic fish are illusory, he stated, because of the corresponding high prices and the poor quality of the imports from Eastern Europe.

Although the trawlers had adequate Icelandic labor during the autumn fishing for ocean perch off Newfoundland, they faced an acute shortage during the cod season which commenced in January 1959. During the main winter season, the trawlers must compete for labor with the entire motor boat fleet and they usually cannot offer as good terms as the motor boats. The Trawler Owners Association sent representatives to the Faroe Islands in an effort to recruit seamen (some 900 Faroese seamen were employed in winter of 1958 and more than 1,300 the year before). But the Faroese have demanded exemption, or partial exemption, from the 55-percent exchange surcharge imposed by the Export Fund Law of May 1958, and this is a concession which the trawler owners are powerless to grant.

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FISHERIES TRENDS, JANUARY 1959:

Early returns from the winter motor trawl-line fishery off the southwest coast of Iceland indicate exceptionally good catches, particularly for haddock.

During January, two Icelandic trawlers landed trips in England. These were the first landings of Icelandic fish since the start of the fisheries limit dispute. Three more Iceland vessels were reported to be en route to England with trips of fish. The British Union of Masters and Mates has threatened to strike unless landings by Icelandic vessels are banned.

India

DEVELOPMENT OF MARINE FISHERIES CONFERENCE: A two-day conference of Ministers and officials connected with fishery development in the maritime states of India was held in Bombay on November 8-9, 1958. Presided over by the Deputy Minister of Agriculture, the conference was attended by about 75 officials representing the states of Bombay, Mysore, Kerala, Madras, Andhra, Orissa,

India (Contd.):

and West Bengal. The conference was called with the object of exchanging notes among the officials of the different states and to discuss matters connected with the development of fisheries during the Second Five Year Plan period.

The conference was indicative of official interest in fishery development which has assumed greater importance in view of the tight food grain situation.

Under the Second Five Year Plan, an allotment of Rs.117,758,000 (US$24.7 million) has been made for the development of fisheries. The development programs envisaged in the Plan include the expansion of current activities relating to mechanization of fishing boats, provision of increased harbor facilities, introduction of improved curing and marketing methods, and technological research. These programs may have to be curtailed due to rephasing the Plan.

Inaugurating the conference, the Deputy Minister emphasized the urgent necessity of enlarging the fish supply in the country in view of the "alarmingly increasing pressure on land" caused by the rapidly growing population. Even at present, he said, the availability of fish was very low. Against an estimated annual requirement of 4,050,000 long tons of fish on the basis of minimum nutritional standards, current production is only of the order of 1,100,000 tons.

An important factor which had been hampering rapid development of the fishing industry, according to the Minister, was the continued low socio-economic condition of fishermen. Until very recently, private capital had not been attracted to the fishing industry. Recognizing that increased fish output was closely linked with the improvement in the fishermen's economic status, official efforts had been directed, from the very beginning, toward this end by means of setting up fishermen cooperatives. Nevertheless, he admitted that the actual achievement in organizing cooperatives had not been appreciable. He advocated, therefore, that more attention should be devoted to this aspect of the problem by stimulating the establishment of a large number of cooperative fishing and marketing societies. In this connection, he suggested that one of the purposes of the conference should be to devise ways and means of achieving this objective.

Referring to the introduction of mechanized fishing boats in recent years as a means of enlarging fish catch in offshore waters, the Deputy Minister expressed gratification at the considerable progress made in Bombay State in this direction. He said that he was aware that the demand for marine engines and modern fishing gear from fishermen in Bombay and other states was growing, but pointed out that foreign exchange posed a serious problem even to meet a part of the requirements.

In view of the Government's interest in expanding fishery resources, the Deputy Minister indicated that private and cooperative enterprises desirous of undertaking deep-sea fishing operations in collaboration with foreign interests and technical "know-how" would be assisted with long-term credits. In his view, the foreign collaborators should contribute technicians and capital equipment for fishing, storage, and processing on reasonable terms. In this connection, he drew attention to the successful operations of a commercial fishing company in Bombay which had aroused interest among local industrialists. He also disclosed that the Government had under consideration a proposal to establish deep-sea fishing stations in Cochin (Kerala), Tuticorin (Madras), and Vishakapatnam (Andhra) on the lines of the exploratory station operating in Bombay since 1948.

On the question of marketing, the Deputy Minister observed that facilities for quick transport of fish from landing sites to consumer markets needed to be augmented. Regarding exports, he noted that large quantities of dried fish were being shipped out of India. A small export trade has also been built in frozen shrimp and spiny lobsters, chiefly with the United States. He also pointed out that freezing of fish required to be developed on a large scale if exports were to be expanded and said that the Government would offer appropriate assistance to encourage the processing of fish and fish products for export.

The conference resolved itself into four subcommittees to facilitate detailed consideration of the various aspects of fishery development. These included training, research, exports, quality standards, transport, marketing, organization of cooperatives, and utilization of facilities available in the community development projects. The conference reconvened on November 9 to discuss the reports of the subcommittees.

The conference adopted a set of 37 recommendations covering practically all aspects of marine fishing, marketing, and transport. The conference proposed that the Central and State Government's encourage the formation of private fishing companies for catching, processing, and distribution of fish, both for domestic consumption and exports. The need for observing high-quality standards for export purposes was emphasized, and it was recommended that only high-quality products should be exported. It was also recommended that harbor and docking facilities for fishing vessels be improved. With respect to mechanization of fishing craft and gear, the conference recommended that priority be given to the import of engines and other ancillary equipment. It was further recommended that local firms be given appropriate assistance in the manufacture of engines and other fishing gear.

The conference also proposed that credit facilities be extended to cooperatives engaged in the production, marketing, and transport of fish on the same lines as agricultural cooperatives. Other suggestions included the provision of insulated and refrigerated railroad cars and trucks for fish transport, establishment of separate fish markets in urban areas, construction of cold storages, and the inclusion of fishermen villages in community development blocks.

India (Contd.):

Unconfirmed press reports stated that the conference also called upon the Government to make a public pronouncement outlining its policy toward foreign investment in fishery products.

Iran

PROPOSES 12-MILE TERRITORIAL SEA OFF COAST:

A bill amending the 1934 Six-Mile Law was introduced in the Iranian Senate on December 20, 1958, to establish a 12-mile territorial sea off the Iranian coast and around all islands under Iranian sovereignty. The bill was cleared for urgent action (without second committee consideration and for floor debate within one week) despite objection on principal by the Chief Iranian Delegate to the 1958 Law of the Sea Conference. He stated that Iran should not rush into possible contradictions of Protocols previously signed and reminded the Senate that the question would probably be settled by the second Law of the Sea Conference to be held in 1960, the United States Embassy in Tehran reported on December 20, 1958.

Ireland

FIVE-YEAR PLAN PROVIDES US$8.4 MILLION FOR FISHERIES DEVELOPMENT:

A total of £3 million (US$8.4 million) for the development of fisheries, including harbors, is included in the Irish Republic Government's Five-Year Economic Expansion program. Expenditure on fisheries is fixed at the rate of £400,000 (US$1.1 million) in the first year increasing to £500,000 (US$1.4 million), £500,000 (US$1.4 million), £550,000 (US$1.5 million), and £600,000 (US$1.6 million) in the succeeding years. In addition £500,000 is likely to be spent on harbor development in the five-year development.

The White Paper giving the program says "Hitherto, sea fisheries policy has been aimed at supplying the home market with fresh fish from landings by inshore fishermen. The market is restricted; our consumption of fish is one of the lowest in the world. The home market could be expanded considerably if prices were reduced by an increase in supplies, and if the means of distribution were improved.

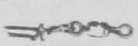
"Our exports are small, but it is clear that markets are available if we can supply high-quality fish at a competitive price. With good prospects of markets at home and abroad, policy is now aimed at a substantial increase in landings of fish.

"A Food and Agriculture Organization consultant is being engaged to review the industry to suggest the lines upon which it should be developed as an export industry, to advise on measures to increase catching power and processing, to facilitate marketing and to attract the necessary capital. . . .An Icelandic master fisherman has been engaged to advise fishermen in modern methods and techniques. Two groups of young fishermen are undergoing training as skippers--the first ashore at Galway and the second at sea. It is hoped the course started at Galway will develop into an established nautical school." (The Fishing News, November 20, 1958.)

Israel

TRAWLERS TO FISH OFF CANARY ISLANDS:

Israel is to have two trawlers for deep-sea fishing off the Canary Islands. Each trawler will carry an all-Israel crew of 30 and will be capable of processing 1,750 metric tons of frozen fish, 250 tons of salt fish, and 175 tons of fish meal annually. These trawlers will carry Canary Islanders as pilots to guide them to the grounds. The extension of Israel's fishing activities into the Atlantic is the result of the geo-political situation which hampers the further development of offshore fishing in the Mediterranean. (December 1958 World Fishing, fishery periodical.)



Japan

FISHING INDUSTRY RECOMMENDATIONS FOR CONFERENCE WITH RUSSIA:

The Japanese fishing industry has considered since early November 1958 the position it would like Japan to take in the annual fisheries conference with the Russians, which opened in Tokyo on January 12, 1959. The industry recommendations were completed at a meeting of a special committee on December 19, and were presented to the Chief of the Japanese Fishery Agency's Production Division on December 20, 1958.

The recommendations aim toward a general relaxation of controls on the Japanese high-seas salmon and crab fisheries, and the setting of a salmon catch quota (the main point at issue in the annual meetings) 50-percent higher than for 1958. Among the reasons cited by the industry for its very optimistic demands are the facts that next year is the peak in the two-year cycle of pink salmon abundance, the claim of Japanese that high-seas fishing does not put a heavy strain on salmon stocks (because many of the fish taken offshore would be lost to natural mortality before reaching the spawning streams), and a belief on the part of the Japanese that poor Soviet salmon catches in the past season are due, at least in part, to the ineptness of Russian fishermen. A dark background to these optimistic claims, however, is provided by the apparently undeniable fact that the Soviet catch was very meager in 1958, perhaps only about half of the Japanese catch, and also by reports of Japanese fisheries observers who visited the Soviet Far East in August and saw how few spawners were ascending some of the major rivers.

Specifically, the Japanese industry asks its Commissioners to bargain for a 165,000-metric-ton salmon catch quota as compared with the 110,000 tons which the Japanese settled for in 1958 (when the industry asked for 165,000 tons and the Commissioners opened negotiations with 145,000 tons). During the past season, Japanese fleets limited their catch of red salmon, but because of the nonselective fishing method used, such quotas for particular species are held to be impracticable and the industry wants none of them next season. Since the over-all catch is subject to a quota, the industry considers a time limit on the fishing season unnecessary and wants it dropped or at least an extension made beyond the August 10 closing date enforced in 1958. The quantity of net set and the spacing of the arrays of nets, the industry feels, should be governed by natural conditions on the fishing grounds, and it wants the present regulations on these points dropped. Closed areas extending as much as 40 miles from shore, as they did in 1958, should be abolished, and any special conservation areas that are established should extend only to a radius of 20 miles from the river mouths. Furthermore, it is held that the permanent closing of the Sea of Okhotsk, agreed to by the Japanese last year, is unreasonable and should be reconsidered. The industry statement makes several recommendations concerning the need for improving conditions in the spawning streams, protecting the fry, and studying the depredations of seals and other predators. Finally, stress is placed on the importance of the fishery in Japan's economy with the claim that it provides a livelihood for almost 600,000 persons and brings in ¥20 billion (US$55.6 million) in foreign exchange.

For the king crab part of the negotiations, the industry is asking that the quota of four fleets producing 320,000 cases, as during the 1958 season, be considered the absolute minimum. In addition, it is requesting the abolishment of present closed areas, as well as the dropping of restrictions on size and spacing of nets, and the allowable percentages of female and immature crabs in the catches. (United States Embassy in Tokyo, December 24, 1958.)

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REACTION TO NORTH PACIFIC SALMON CONFERENCES:

The annual meeting of the International North Pacific Fisheries Commission, held at Tokyo from October 20 to November 10, 1958, received extensive and detailed coverage from the general press, as well as the trade papers, while it was in progress, and a number of interesting summaries and evaluations of its work have appeared since its conclusion.

Japan-Soviet fishery negotiations began at Tokyo on January 12. The press is predicting difficult negotiations. Press reports show that Japan's negotiators enter the conference with a set of well-justified demands for relaxation of restrictions on every aspect of the fisheries covered by the Japan-Soviet treaty.

The opening of the tripartite conference with the United States and Canada in October was preceded by a number of articles and editorials predicting that the United States would renew its demands for a westward shift of the provisional abstention line, on the grounds that its present position at 170° W. longitude allows the Japanese high-seas fishery to take large numbers of "American" salmon.

At the end of the conference some editorial writers (Japan Times of November 13, Asahi of November 12) took approving note of the Commission's American-sponsored recommendation of conservation measures to the contracting parties, stating that Japan was, of course, prepared to do her part, as long as it involved no undue restrictions on her fishing rights. Numerous writers praised the part played by Japanese scientists. It was pointed out that if these scientists are to be as successful next year, when the problems left unresolved by this meeting must be taken up again, they will need more financial support for their research than they have had in the past; and the hope was expressed that the Commission meetings would continue in the future on as "scientific" a basis as this year.

Tokyo Shimbun was still dissatisfied, and its editorial of November 14 expressed the view that the conference should have ended in a complete retreat of the United States from its demand for a westward movement of the abstention line. Any additional restriction on Japan's salmon fishing, the editorial concluded, would be intolerable, in view of the fact that the tripartite pact is "fundamentally . . . an unequal treaty concluded as part of the Allied occupation policy and under conditions disadvantageous to Japan."

Even before the North Pacific Fisheries Commission meeting ended, committees of the salmon and king crab sections of the Japanese industry had begun meeting on November 7 to formulate the demands which they wish their government's representatives to present to the Russians in January. On that date the Nihon Keizai Shimbun predicted that the industry would seek a narrowing of the closed areas along Soviet shores (20 to 40 miles wide this year), abolishment of the special red salmon conservation area off northeastern Kamchatka, and relaxation of restrictions on length and spacing of gill nets. The paper pointed out, however, that the Russians were likely to come out strongly for an enlargement of the treaty area and additional restrictions, in view of the poor Soviet catch in 1958, the fact that Japan takes over 100,000 metric tons of salmon on the high seas outside of the present treaty area, and the Russian belief that Japanese vessels do a great deal of illicit fishing north of the treaty line.

Tokyo Shimbun, on November 12, also thought it certain that the Russians would ask for a southward extension of the treaty area to take in more of the land-based gill-net and long-line fisheries. This would, in the newspaper's opinion, make for drawn-out negotiations as the Japanese would stand on "the freedom of the seas" and their belief that most of the salmon south of the present treaty line do not originate in Soviet territory. The abundance of pink salmon in the western North Pacific, it was pointed out, fluctuates in a two-year cycle, and 1959 is supposed to be a year of high abundance. In the last such year, 1957, Japan got a 120,000-ton catch quota, and she should get at least as much this year, plus something to compensate for giving up the Sea of Okhotsk, for a total, say, of 130,000-140,000 tons as a minimum. According to Tokyo Shimbun, the Japanese Fisheries Agency feels that the 1958 season's experience shows that regulations by separate species does not work, this year's separate red salmon quota having resulted in a serious cut in the chum salmon catch. The paper predicted that the Japanese delegation in January would include the Chief of the Fisheries Agency's Production Division and the Vice-President of the Japan Fisheries Association, both of whom were active in the North Pacific Fishery Commission meetings; and the counselor of the Foreign Office's European Affairs Bureau.

The Japan Times, on November 13, stated that the three main questions to be brought before the conference would be

Japan (Contd.):

the extent of increase in the catch quota over 1958's 110,000 tons, the dropping of separate species catch limits, and the cutting down of closed areas.

On November 27 the Nihon Keizai Shimbun reported the Northern Mothership Council as being strongly in favor of asking for a 170,000- to 175,000-ton catch quota, and relaxation of other restrictions. In justification it was stated that it is premature to conclude that the resource is declining, that the difficulties in filling the 1958 catch quota were due to bad weather and abnormal ocean conditions, that high-seas fishing has less effect on salmon resources than does inshore fishing, and that about 600,000 Japanese depend on the salmon and king crab fisheries. The special red salmon catch quota should be dropped, or at least increased to 27,000 tons, and the closed red salmon conservation area off northeastern Kamchatka should be abolished or the time of closure postponed 10 days to August 1.

On November 29 the Nihon Keizai reported that government officials had begun deliberations on the industry recommendations. The tone of the article was pessimistic, in that the Russians were expected to take a severe attitude and ask for enlarged closed areas and a smaller quota. It was reported that the Japanese government would like to speed up the negotiations, which in 1958 dragged on for 2-1/2 months, perhaps by having the deliberations of the biology committee proceed simultaneously with those of the commissioners, as is done in the case of the Tripartite Treaty. It was held desirable that a quota request greater than that for 1958 (145,000 tons) be made, on the grounds that 1959 is a year of abundance for pink salmon, but it was predicted that the Soviets might come out with a starting figure as low as 60,000 tons.

The Asahi and the Suisan Keizai Shimbun of December 4 reported a meeting the previous day of the industry committee concerned with the king crab part of the negotiations. Here the line agreed upon was that four crab cannery ships and a production quota of 320,000 cases, the same scale of operations as in 1958, is the minimum acceptable to the Japanese industry. Furthermore, the industry was reported to want abolishment of the existing seven closed areas on "migration routes" as meaningless, a change of the present required interval between nets from 100 meters to 30 meters, and elimination of differences in the amounts of gear that may be set and the permissible catches of female and immature crabs at different times of the season. The area south of 53° N. latitude, which at present is completely closed, is thought by the Japanese to be potentially a rich king crab fishing ground. They want a thorough survey of this area made, looking forward to opening it in 1960.

Suisan Keizai Shimbun of December 6 and Nihon Suisan Shimbun of December 12, two fisheries trade papers, pointed to an article in the Soviet fisheries journal Rybnoe Khoziaistvo's September 1958 number, in which it was reported that most of the fishery combines in the Soviet Far East had exceeded their production targets for salmon in the first half of 1958, and that those which did not had failed to get their gear in operation in time for the season.

On December 16 the Asahi and several of the English-language papers reported that the Japan Fishery Association's special salmon subcommittee had, on the 15th, decided tentatively to ask the government to negotiate for a 165,000-ton salmon catch quota, leaving the other issues for further discussion at a meeting on December 19. The Nihon Keizai Shimbun, reporting the same story, pointed out that the industry had asked for the same tonnage in 1958, supposedly a poor year for pink salmon. The explanation advanced was that failure to ask for a greater quota for 1959 was due to the report of the Japanese observation team which toured Kamchatka in August and found the fisheries there in poor condition, and to the anticipated attitude of the Russian negotiators. It was stated clearly that the Japanese industry does not expect to be able to get 165,000 tons. On the basis of the ratio of industry demands to the government's demands to what was actually wrung out of the Soviets in past years, it would appear likely that a quota of 110,000 tons may come out of January's bargaining. However, the paper stated that what the industry really wants to get is 120,000 tons, the same as last year ("because 1959 is a rich year"), plus 10,000 tons as compensation for giving up the Sea of Okhotsk, for a total of 130,000 tons.

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SALMON INDUSTRY EXECUTIVE'S VISIT TO RUSSIA:

The President of the Hokkaido Fisheries Public Corporation went to Moscow in November 1958 to discuss his plan for using Japanese fishermen in a joint Japanese-Soviet salmon fishing venture in Soviet waters. Though he got little encouragement for his project, he brought back reports of some significant Russian comments on Japanese-Soviet fishery relations.

Since Japan regained her independence the Japanese fishing industry has developed a number of schemes for getting back into the coastal salmon fishery in Soviet territory. Although none of the schemes was accepted, the pressure for such schemes still exists because Japan has more salmon fishermen and fishing boats than the present mothership fleet operations can use.

The latest plan for bringing this excess fishing potential to bear on the coastal salmon resources of the Soviet Far East is the "Takano scheme" of the President of the Hokkaido Gyogyo Kosha, a public corporation which operates a salmon mothership fleet. This plan calls for the utilization of "unexploited resources" and the relief of depressed Hokkaido fishermen by formation of a joint Japanese-Soviet enterprise to fish within the coastal areas, some of them extending 40 miles offshore, that are closed to Japanese fishermen under the present fishery treaty between the two countries. The salmon produced by this operation would all be sold to the Soviet Union.

In September 1957 the President of the company was informed by the Russians that they were considering his plan, and he received an invitation to come to Moscow to discuss it. It was not, however, until November 14, 1958, that he finally left for his trip. In press interviews he showed little confidence that the Russians would accept his plan. He stated that he had other reasons for making the trip, most importantly to lay before the Russian fishery authorities the plight of Hokkaido's fishermen and to voice their protest against the closing of the Sea of Okhotsk to Japanese salmon fishing.

When he returned to Japan on December 8, 1958, his report to the press indicated that he had been unable to see the Soviet fisheries chief who was attending a whaling conference in London. He presented his case to a Soviet Commissioner on the Japan-Soviet fisheries commission.

When the Japanese visitor asked for reconsideration of the Russian position that has tied the issue of "safe fishing" (that is, safe from arrest by Soviet patrol boats) around the Kurile Islands with the conclusion of a peace treaty, the Russian Commissioner stated that the Soviet Union was being as cooperative as it could, but that Japan showed no response. The Soviet Union is exerting itself to conclude a peace treaty as soon as possible, and wishes that the Japanese fisherfolk would also bend their efforts to the same end.

On the main point of the visit, the joint fishing scheme, the Russian stated that he would inform the Russian fisheries chief, and then remarked that conditions had changed since the scheme was first proposed. The Japanese visitor took this to mean that because of improved economic conditions in the Soviet Union, the Russians no longer feel any need for Japanese cooperation in the fishing industry. The Russian said he understood the Japanese visitor's desire to give employment to the depressed Hokkaido fishermen, but hinted that if the Japanese want a joint operation, they must change the form of their proposals.

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Japan (Contd.):

TUNA INDUSTRY AND CONTROL OF ATLANTIC TUNA FISHING AND EXPORTING:

The decision of the Japanese Government to permit landing of tuna in foreign countries for export to the United States has developed problems within the Japanese tuna industry between vessel operators who have been fishing the Atlantic and those who want to send their boats into that area for the first time. At the same time, freezers and exporters of tuna in Japan have been trying to retain their control of this trade against the growing practice of direct export of fish frozen aboard fishing vessels.

On September 2, 1958, the Japanese Fisheries Agency published an order permitting Japanese fishing boats, under special license for each trip, to land fish in foreign countries for export to the United States. This practice had been previously strictly restricted, partly out of fear of stimulating the opponents of Japanese tuna imports in the United States, and partly because of opposition from freezers and exporters of frozen tuna in Japan. The new order reflected the interest of Japanese fishermen in the rich new tuna grounds of the Atlantic; a growing demand from tuna canners in Puerto Rico and the eastern United States; the development of plans for transshipping tuna to the United States from various points in the Caribbean; and the fact that the Italian market was about saturated with Japanese tuna.

As originally written, the order limited the right to engage in such "direct export" to vessels which had already received permits to land Atlantic tuna for export to countries other than the United States, such as Italy or Brazil. This proviso was cancelled by a Fisheries Agency order on November 8, 1958, in effect throwing open the Atlantic to boats which had no previous record of operation there.

Since this change in the regulations was made, a struggle has been going on between the vessel operators who want to go into the Atlantic grounds for the first time, their cry being "equality of opportunity," and the pioneers who, as they say, explored and developed those grounds at great cost and risk, and who consequently want some special rights in their exploitation.

At the same time a more severe contest has developed between "land freezers" and "shipboard freezers" over the share that each is to have in the future of the Japanese frozen tuna export trade. In the past few years the number of large tuna boats equipped with freezing machinery has increased rapidly, and their operators have tended to send them to the far grounds of the Indian and Atlantic oceans, where tuna are abundant and catches good. Since it is not economically feasible to fish such distant grounds from bases in Japan, the owners of these freezerships have sought every opportunity for landing their catches in countries closer to the fishing areas--first in Italy, then in Brazil, Morocco, Cuba, Haiti, Panama, Israel, and elsewhere. The reresult is that firms (the "land freezers") which hitherto bought fish in Japanese ports and froze them for export by freighter are faced with a dwindling supply of raw material and see their markets abroad being supplied more cheaply and efficiently by the freezerships through direct export or transshipment. The present struggle is an effort of the land freezers to impose a yellowfin tuna export quota on the freezership operators, who in turn are trying to capture for themselves a larger share of the export trade.

At the most recent meeting, on December 13, of a special committee which the tuna freezers' association has set up to work out the regulation of yellowfin exports to the United States, the freezership and land-freezer factions continued to be completely deadlocked, according to the Suisan Tsushin of December 15. The freezerships reportedly advanced a plan under which clippers landing tuna aboard for transshipment to the United States would be limited to two such landings per ship each year within a total limit of 120 landings for the whole fleet. As the 64 freezerships now in operation average 350 tons capacity, this would put a ceiling on landings for transshipment of about 42,000 tons (with something like 35,000 tons thought more likely to be the figure actually attained). Assuming this is

Japan (Contd.):

accepted, the freezership operators estimate that landings of yellowfin in Japan next year would be 98,700 tons, of which 40,500 tons would be for export, thus splitting the yellowfin exports to the United States almost evenly between freezerships and land freezers.

To this the land-freezer faction replied that they had a right to demand as their annual export quota a total of 50,000 tons, based on the 1958 estimated shipments of 45,000 tons of yellowfin plus 5,000 tons of skipjack and big-eyed tuna to the United States. They pointed out that if the 42,000-ton quota claimed by the freezerships was added, the total would be nearly 50 percent higher than the 60,000 tons that the United States market could be expected to take next year.

According to Suisan Tsushin, despite this basic opposition between the views of the two groups, talk in the trade is that the attitude of some of the land freezers is beginning to show signs of softening under pressure from the trading firms, which have been active in development of the transshipment exports of freezership fish, and the possibility of a sudden settlement of the problem is not ruled out. The land freezers' initial demand for an over-all yellowfin export quota seems already to have become unrealistic, and the main question remaining is whether or not to set up a quota just for exports from the homeland. The Suisan Tsushin expects the establishment of such a quota to be difficult because of opposition from vessel operators.

The freezership owners' insistence on a system of regulation which more or less guarantees vessels going to the Atlantic two chances to land fish for export to the United States is apparently due to their belief that this is the minimum necessary to make such a cruise pay. A report of a panel discussion of the tuna fishery's problems by a group of vessel operators, held at Misaki on November 18 and printed in the Suisan Shuho of November 25, bears this out. In the article, which contains a wealth of gloomy data on the decline of tuna catches in all areas, the head of one fishing company's Misaki office states that his firm's 1,200-ton freezership must make four fishing trips on an Atlantic cruise to make money, the ideal plan of operation being one landing of 600 tons in Italy, two landings totaling 1,600 tons in Panama, and a landing of 900 tons on return to Japan. Such a cruise requires about one year and two months, and grosses about US$700,000. The same authority claims that for a financially-successful Atlantic cruise by a 700-ton freezership, two deliveries totaling 800 tons to Italy, one of 400 tons to Panama, and one of 400 tons on return to Japan are required.

Republic of Korea

FISHERIES TRENDS, DECEMBER 1958:

Shrimp: The program to produce frozen shrimp for export is progressing satisfactorily and some excellent packs were being accumulated for future export. Several companies are very much interested in the possibilities of frozen shrimp and are preparing to enter into this market. The fishing firm that had packed 4,500 pounds of frozen shrimp under United States Army Inspection Regulations completed a second contract for 4,000 pounds for the United States Army. Another firm has constructed a shrimp-processing plant adjacent to an ice plant in Pusan. The buildings and installations are patterned after a pilot plant developed by the Central Fisheries Experiment Station. Shrimp are now being packed for domestic and export sale. A third firm at Pusan Jin is constructing a frozen seafood packing plant adjacent to its ice plant. This plant was also being built to standards recommended by the Central Fisheries Experiment Station.

Standards Program: A series of meetings were held with the Director of the Korean Fisheries Service and United States fisheries advisors to finalize the draft for the proposed Ministerial order setting up standards for the inspection of frozen fish and shellfish for export. The proposed regulations set up standards for processing facilities, processing procedures, and conditions for inspection which will meet both United States military and United States Food and Drug Administration requirements. The standards are being examined by a legal staff prior to being submitted for promulgation.

A training course was held at the Central Fisheries Experiment Station in November to teach inspectors of the Central Fisheries Inspection Service how to conduct inspections under the new regulations. Inspectors from Pusan, Seoul, Pohang, Mokpo, and Yosu attended.

Fishing Fleets: Plans and drawings for an improved medium-size fishing vessel were developed by the Office of Marine Affairs and United States fisheries technicians. Lists of fishing boats in need of repairs and/or modernization have been prepared. Efforts on the part of a United States fisheries technician to assist the Korean fishing industry to obtain more modern fishing vessels has made it necessary to initiate action to have the Korean vessel inspection laws revised and brought up to date. Draft of the proposed revisions are being prepared.

Halibut: Following the successful program to develop shrimp processing, efforts are now being made to develop a species of halibut for processing and marketing. At present this species is not utilized to any extent in Korea. Sample packs are being prepared and, if acceptable, the exploitation of these species

Republic of Korea (Contd.):

could be the means of increasing substantially the Korean catch.

This fishery would provide a needed incentive to keep trawlers active during the summer season when they are normally inactive.

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FISH-LIVER OIL INDUSTRY:

Fish-liver oil plants located in the Republic of Korea produced about 150 metric tons of fish-liver oil in 1957. From April 1957 to April 1958, 1,142 drums of fish-liver oil valued at US$128,385 were exported mostly to Japan. In terms of vitamin A units, the annual fish-liver oil production is about 3 to 4 trillion units and the export value is just under 4 U. S. cents a million units.

Exports of fish-liver oil by Japan are estimated at about 100 trillion vitamin A units. As about all the Korean production is exported to Japan for further refining or resale, Korean production amounts to about 3-4 percent of the Japanese export supply.

In early 1958 the Japanese fish-liver oil industry was overstocked and upset by a declining market. But, by late August, following an either poor or curtailed spring and summer production, the supply and demand situation improved. The world market for fish-liver oils, due to declining demand, is apparently quite sensitive to any oversupply.

The principal Korean raw materials are livers from sharks, Alaska pollock, and cuttlefish (very low vitamin A content). All the raw materials used for fish-liver oils are byproducts from the food fish industry and processors are able to obtain the raw livers at low prices of 0.5-3 cents a pound. The cost of the raw material in terms of vitamin A units is not more than 2 U.S. cents a million units. This low unit cost gives the Korean producer a favorable competitive position, even in a declining market, according to an October 23, 1958, report from the International Cooperation Administration Fisheries Mission to Korea.

Mexico

BUREAU OF FISHERIES MAY BE TRANSFERRED TO MINISTRY OF INDUSTRY AND COMMERCE IN 1959:

The Mexican Bureau of Fisheries, now in the Ministry of Marine, may be transferred in 1959 to the newly-created Ministry of Industry and Commerce which will be a modified and strengthened version of the present Ministry of Economy. This proposal was before the Mexican Congress in December 1958.

The new legislation would transfer all fishery functions to the Ministry of Industry and Commerce which, among other duties, would be empowered to: supervise production, distribution and consumption; develop, jointly with the Ministry of Foreign Relations, foreign trade; study, project, and determine, in accordance with the Ministry of Treasury, duties; study and determine the restrictions for import and export items; fix maximum prices and define the preferential use that must be given to determined merchandise; give technical advice to private enterprise for the establishment of new industries; supervise sales when national products are sold directly to foreign buyers; supervise the organization and development of all types of cooperatives; supervise, within the terms of the law, mercantile societies, chambers, and industrial associations; protect and develop the marine, fluvial, and lacustral fauna and flora; authorize fishing contracts, concessions and permits, and those for the exploitation of other marine resources; establish closed seasons for the conservation and increment of the different species of fish and establish hatcheries and reserve areas; promote the industrialization of fishery products and the establishment of canneries and freezers; gives technical advice to associations of fishermen; supervise the formation and organization of the fishery fleet; carry out scientific explorations and collections of the aquatic flora and fauna, as well as the resources of the sea; and establish experimental stations and oceanographic laboratories.

The proposed legislation would combine in one Ministry practically all of

Mexico (Contd.):

the functions pertaining to fisheries which, in the past, have been dispersed between three. It would also increase the obligations and powers of the executive branch with respect to fisheries. From an overall point of view, if properly administered and financed, the Mexican Bureau of Fisheries, under this new legislation, would be in a position to do a great deal towards the development and conservation of Mexico's aquatic resources (United States Embassy in Mexico City, December 11, 1958.)

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MERIDA SHRIMP FISHERY TRENDS, DECEMBER 1958:

The shrimp fishing industry in the Campeche and Ciudad del Carmen areas of the Gulf of Mexico suffered from a year-long slump in 1958 due to lower catches, overexpansion, and bad weather. Sudden storms in mid-December resulted in the sinking of several vessels and damaged many others at the docks. The cost of repairs from one storm in the Campeche area totaled about 4 million pesos (US$320,000). Additional expenses for the repair and replacement of shrimp fishing gear caused further losses. (United States Consulate at Merida, January 2, 1959.)

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VERACRUZ FISHERY TRENDS, OCTOBER-DECEMBER 1958:

During the last quarter of 1958 landings of fish and shellfish from Veracruz's Gulf of Mexico fisheries were down due to bad weather and the scarcity of shrimp on the fishing grounds. However, higher prices paid to the fishermen helped to compensate for the lower catch.

The mackerel (probably king or Spanish) catch for the September-November 1958 season amounted to 663 metric tons as compared with a catch of 1,033 tons in the 1957 season. Catches continued low during December due to many days of northerly winds. Prices were higher and the total value for the 1958 season was about the same as for the previous year. Minimum ex-vessel prices September-November 1958 for mackerel were about 3.6 U.S. cents a pound, or substantially higher than the 1957 season price of 1.1 U.S. cents a pound.

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WEST COAST SHRIMP FISHERY TRENDS, DECEMBER 1958:

In October 1958, shrimp landings on the Mexican west coast in the Nogales area gave indications of exceeding the average for the past few years. Later in the season, for some unexplained reasons, landings dropped off, and it is predicted that the annual production will be about average.

Shrimp prices have been firm since the beginning of 1958, with slight fluctuations downward for the smaller sizes. This fluctuation is attributed to heavier landings of shrimp in those grades. (United States Nogales Consulate report, December 29, 1958.)

Morocco

AGAR-AGAR INDUSTRY:

As of the end of 1958 only one company was producing agar-agar in Morocco, but another company formed in July 1958 should begin production in 1959. The new company is capitalized at 10 million francs (US$24,000) and has a board of directors made up of Moroccan, Spanish, and French citizens.

The company in production in 1958 produced 200 metric tons during that year and expects to expand its exports to 300 tons in 1959 with the help of enlarged facilities.

Exports of agar-agar in 1957 amounted to about 296,000 pounds valued at US$351,000. The United States was the principal buyer of Moroccan agar-agar in 1957 with 111,000 pounds valued at US$136,100; followed by France, 40,700 pounds valued at US$52,500; Great Britain, 36,700 pounds valued at US$44,100; Argentine, 33,500 pounds valued at US$38,700; and West Germany, 27,000 pounds, valued at US$30,700. Eight other

Morocco (Contd.):

countries took the balance of the exports in 1957.

On August 24, 1957, the Moroccan Government informed exporters that gelidium algae could no longer be exported from Morocco. The Government's policy is believed to be to protect the agar-agar producer by assuring a three-months supply of gelidium algae before licensing any exports of the raw material (United States Embassy in Casablanca, dispatch dated December 29, 1958.)

Note: Values in US$ calculated at rate of 420 Francs = US$1.

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EXCLUSIVE UNITED STATES IMPORTING RIGHTS FOR SARDINES GRANTED TO NEW YORK CITY FIRM:

An official of the Moroccan Office Cherifien de Controle et d'Exportation, an office of the Ministry of National Economy (which, among other tasks, is charged with quality control of certain exports) reported on January 12, 1959, that a New York City importer recently obtained exclusive United States importing rights for Moroccan sardines. The New York importer has agreed to buy 70,000 cases. He also is to be responsible for an advertising campaign on behalf of Moroccan sardines with an annual budget of about US$47,620. The New York importer plans to market the sardines under his own brand.

The number of cases of sardines exported from Morocco to the Unites States was 30,438 cases in 1955, 36,914 in 1956, 19,367 in 1957, and 14,491 through October of 1958. The 70,000 cases to be imported by the New York City importer therefore represents a significant increase.

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STATUS OF FISHERIES:

Since the Moroccan fishery industry exports most of its production, its principal role in the economy is a source of foreign exchange and employment. Of the 1957 catch, only 14 percent was sold fresh, and the rest processed in some way, almost entirely for export. The severity of the greatest problem of the industry, that of finding markets, is shown by the fact that the sardine-canning industry, the most important of the processing industries, was able to export in 1957 only half of the 2.6 million cases produced. The rest, except for the small amount sold in Morocco, remains unsold.

The value of the fishery products exported in 1957 was 10,364 million francs (about US$24.7 million) which was about 9 percent of the value of all exports from Morocco. Although most of the fishery products were exported to France and the franc zone, some 38 percent went elsewhere and the United States alone bought one-fourth of the fish meal produced in 1957 for 136 million francs (US$324,000). This is important to Morocco's policy objective of increasing trade outside the franc zone.

The fish-processing industries (canning, fish meal, fish oil, freezing, and salted fish) employ 17,000 workers in an average year. About 10,000 more are employed as crewmen on the fishing vessels and to man the large stationary tuna nets (madragues).

The work is seasonal for the commercial fleet and the number of persons employed depends upon the size of the catch and the availability of markets. At present, many fishermen are unemployed, not for lack of fish but of markets. The labor force for the processing plants is recruited each year for 4 or 5 months and is neither stable nor skilled.

The only species of fish caught in volume by Morocco are sardine and tuna. The other species are for the most part caught by trawlers and smaller craft for sale fresh.

Sardine Fishery: Sardines can be caught off the Moroccan Atlantic coast at any time of the year. The fishing season is, however, limited by Government regulations to a variable period during the spring and summer. The sardines migrate north during the summer so that the season is later in the northern ports. The fish also become fatter as they follow the coast northward and the fish oil producers of Agadir, the southernmost port pay two francs (about 0.2 U.S. cent a pound) less per kilogram (2.2 pounds) than do those of Safi, some 200 miles up

Morocco (Contd.):

the coast, to compensate for the lower oil yield.

By far the largest amount of sardines are caught by vessels operating from Safi and Agadir and covering the southern third of the Moroccan Atlantic coast. Averaging 23 tons, the sardine vessels work within 6 or 7 miles of land in water up to 200 meters deep. Although trawling nets are sometimes used, the usual equipment is a type of purse seine ("cerco"). A weight is dropped to sink one corner of the triangular net. Another corner is secured to a small boat and the third corner dragged around the school of sardines in a circle.

The boats are seldom out more than a day at a time with the exception of a very few larger ships which work the Mauritanian coast. Most captains navigate through visual contact with the land. Heavy fogs cause much distress. The sardine fleet is equipped with sonic fish-detecting devices, and nylon nets are coming into use. Some of the boats date back to the 1920's, however, and are small and slow.

In September, the Al Morchid, an experimental vessel of the Scientific Fishing Institute (Institut Scientifique des Peches Maritimes) arrived at Casablanca from Hamburg, equipped for electrical fishing. It had been tested in the North Sea, reportedly with some success. The equipment consists of an electrical apparatus and a pump. A projectile given a positive charge through a connecting cable is fired into the middle of a bank of sardines from a compressed air cannon. Alternating current is used and an electric field established between the positive pole of the projectile and a negative pole at the ship. The fish's nervous system is affected, paralyzing it and then it is drawn toward the positive pole along the electric field. The projectile is drawn to the ship and the electric charge shifted to the mouth of a tube ($5\frac{1}{2}$-inch diameter). The fish are then pumped into the ship alive. One advantage of this technique is that no lactic acid is formed in the system of the sardine, affecting the flavor, which results ordinarily from the struggles of the netted fish. Other advantages are the saving of the cost of nets, and the ability to fish at night and at considerable depths.

Tuna Fishery: The tuna season is during June and July when the fish arrive at the Moroccan coast between Fedala and Larache from the southeast. They then go up the coast to the Straits, and back out to sea around to the south. The tuna caught in the Mediterranean are a different species (skipjack) from the tuna caught off the Atlantic coast.

Tuna are caught in two ways, from ships and with stationary tuna nets (madragues). The latter method is the more important, accounting for about two thirds of the catch. The largest operation is near Kenitra (Port-Lyautey) where there is also a processing factory which prepares the fish for shipment either to canning factories in Morocco or abroad frozen. There are three other nets in the Northern Zone and one on the Mediterranean coast. A sixth net is to be placed near the Fedala port.

Fishing from boats, the tuna are caught by trolling with multiple hooks, or similar to the American method, with poles and very short lines. The Al Morchid was built as a tuna boat adapted from the Pacific Coast American tuna boats. Also, the same boat was equipped last year with a large nylon tuna net made in Japan. The net measures 570 meters in length by 75 meters wide. There is some speculation as to the use of electrical fishing for tuna although without the pump.

The haul-net and line fleets are less modern than the commercial sardine fleet. The efforts of the Scientific Fishing Institute have been directed, principally toward the industrial sardine fleet, and the trawlers and line vessels use the old methods. A few small boats provide fresh fish to other Moroccan ports. The Government is engaged in improving this fleet (along with its campaign to increase consumption) and has made loans to several owners.

Processing, Marketing, and Distribution: The fishery industries in Morocco can be divided into two parts. Less important is the catch for sale fresh locally or for export frozen or refrigerated. Nearly

Morocco (Contd.):

all of the exported products go to France. Most of the trawler fleet operates from Casablanca and is for the most part owned by the captains who sell their catch every morning to the export packers and distributors. The only other port having a sizable fleet in this industry is Agadir, from which most of the catch is shipped to Casablanca for export. The largest packing and distributing company is presently operating its boats from Dakar rather than Casablanca, partly because the company was having serious difficulty with the labor union representing the boats' crew. One of its two largest trawlers recently sank in the Mediterranean under somewhat mysterious circumstances.

The sardine and tuna industries are by far the more important segment of the fishery industries. The boats in the fleet are owned either by the canning companies or by contractors with the companies. The factories are grouped into several combines and the trend is toward further concentration. This is opposed by the government because the result seems to be a movement away from the port of Agadir, and toward Safi, causing distress among Agadir fishermen and canning employees, championed by their labor unions. The concentration of the sardine industry in Safi would seem to make good economic sense; the fish themselves are of better quality, the transportation is cheaper from Safi to Casablanca (the exporting port), and the working force is reputedly more stable and better skilled.

According to the Director of the Marine Marchande et Peches Maritimes, the 1958 fish-canning factories in Morocco are divided by port as follows: Safi, 70; Agadir, 49; Casablanca, 18; Essaouira (ex-Mogador), 8; Fedala, 7; Kenitra (ex-Port-Lyautey), 2; Rabat, 2; and El Jadida (ex-Mazagan), 2.

For several years, since the boom years of 1949-1952, when the number of canning factories more than doubled and sardines could be sold easily on the world market, Morocco has had a larger industrial plant than could be fully employed for the existing market. In 1957, for example, 17 of 63 factories located in Agadir were operating. A high percentage of fishermen have been unemployed, sometimes as many as 80 percent of the number active in 1949-1952. These conditions existed in spite of the fact that the Moroccan Government assigns quotas to factories and boats to keep as many operating as possible as well as to limit overproduction. In one week during April 1957, 200 metric tons of sardines were thrown back into the ocean. And yet, 1.3 million cases, half the sardine pack, was not sold when the 1958 season began.

In an attempt to enlarge the United States market, for example, several American importers of sardines were invited to see the Moroccan industry at first hand. Also a comprehensive survey of the American market was published in Morocco in 1958, aimed at increasing Morocco's share of the market by some 500,000 cases a year.

In another direction talks will soon begin with a Cuban economic mission, the aim of which will be to increase Morocco's export of canned sardines to help pay for her import of sugar.

Morocco is favored in the French market with a customs-free import quota of 12,000 metric tons of canned fish, which is about two-fifths of the total export of canned fish from Morocco in 1957. Some people in the fishery industries believe that it is because of this quota that the canneries are able to make an acceptable profit. The cost of a case (100 cans of $3\frac{3}{4}$ oz. net) of sardines is about 4,000 francs (US$9.52). These cases are sold for 6,000-6,500 francs (US$14.29-15.48) in France, at 4,000 francs or less elsewhere.

The prices at which fish are sold to the canneries and byproducts industries are set by a Central Fishing Committee (Comite Central des Peches Maritimes), which meets yearly before the beginning of the fishing season. The Committee is made up of representatives from the Government, the canning and byproducts factories, the exporters, and labor.

Government Policies and Programs and the Potentialities of the Industry:

Morocco (Contd.):

The crucial problem in developing the fishery industries is and will continue to be that of finding markets. Why is it that Morocco cannot seem to compete effectively on the world sardine market? In most years fish are plentiful and of good quality. Labor is fairly cheap and the Government wants to increase the export of fish products. Building up export markets for a product is often difficult, but considerable efforts have been made to do so for sardines, which are the principal fishing export. Part of the blame must go to the canners, who have in the past had a sellers' market and did nothing to maintain their markets.

It is also possible that the producers have not been sensitive enough to the specific preferences of the market: i.e., packaging and packing, in which may be included the number of sardines in the can, the kind of oil in which the fish are packed, whether the fish are whole or skinned and boned, etc.

Publicity would presumably be necessary to gain wider acceptance of Moroccan sardines. For the United States, a market study has been made as a basis on which to mount a campaign. It is doubtful, however, that the producers in Morocco are either able or willing to invest much money in building markets. Most of the capital involved is French, and the factory owners are not certain enough of their position in Morocco to know whether long-term investments will pay off. The factories are not large or heavily-machined, and were paid for during the good years (1949-1952), so that the owners seem little interested in taking other than a short-run viewpoint.

Aside from publicity, the price and quality of the product are most important in marketing. In 1952, Morocco exported sardines of dubious quality and suffered a loss of markets a year later. This event is credited with partially closing United States and British markets.

The price of fish products is a more complex matter. The cost of factory labor, while cheap by the man-hour, is actually expensive because of the inexperience and lack of incentive of the labor force. Most of the workers are women from the country who may or may not have worked in the factories before. During the past season in Agadir, the most successful packer was a Portuguese who arrived on the scene only two years ago. He expressed the opinion that relative to Portuguese female canning employees, his local labor force was about one-third as efficient. In Portugal he noted that extensive training is required of them, not to mention the differences in level of culture, education (to some extent), health, sense of organization, etc.

The cost of the labor of the fishermen is also becoming expensive. They work on shares, and at present about 60 percent of the day's catch goes to the crew. The price is set by the Central Fishing Committee in which the labor union participates. For political reasons, the Government is sympathetic to the demands of the union, which increase each year. For example, a 35-percent increase in the price of fish was asked in 1958 although a lesser increase was obtained. The fishermen already have accident insurance partly paid for by the shipowners and are now asking for health insurance as well.

In 1957, the byproducts price was 5.5 francs a kilogram (about 0.6 U.S. cents a pound) for fish, which made it difficult for the factories to operate. At the time the price was set, the byproducts industry notified the Committee that the price was prohibitive. When a large catch was made and the canning factories were unable to accept the whole catch for fear of overproduction, the surplus was thrown back into the sea. It is reported that the fishermen would have been willing to accept a lower price rather than lose the fish. All the same, the labor union in 1958 demanded 9.5 francs per kilo (1 U.S. cent a pound). It is clear that if the byproducts industry could buy fish at a lower price, it could serve as an economic adjuster and absorb surplus fish in years of plenty.

Another factor affecting the price is the degree of concentration of the factories into combines in order to make the most economic use of existing facilities. However, the Government supports the labor union in resisting concentration because of the hardship it would work on the

Morocco (Contd.):

Agadir fishermen. The control by the Government (Sous-Secretariat du Commerce et de la Marine Marchande) over the amount of concentration is its power to allocate production quotas between producing facilities in Agadir and Safi.

Most of the Government's plans and policies are directed toward a larger fish catch. It sponsors the Scientific Fishing Institute, grants loans for the modernization of the fleet, and rebates taxes on fuel used by the fleet. But the problem is not a shortage of fish, and a larger catch will only further glut the market. The only Government-sponsored programs aiming to better the marketing situation are: (1) a campaign to increase Moroccan consumption by better distribution and lower prices: (2) research by the Scientific Fishing Institute on fish meal for human consumption; (3) the possibility that electric fishing would be more efficient and thus lower the cost of fish to the factories; and (4) various trade agreements with other countries to accept fish products in return for imports to Morocco. The trade agreements, however, do not create markets, and still depend on actual market conditions for their fulfillment. The other programs have not made much progress so far. (United States Consulate report from Casablanca, September 22, 1958.)

Netherlands

PLANS NEW FACTORY-TYPE FISHING VESSEL:

Fishing circles in the Netherlands are considering the possibility of constructing and operating a combined fishing-factory vessel with a capacity of 2.6 million pounds of frozen fish per annum for domestic consumption. Expansion of capacity for export is not presently considered advisable, although it is hoped that such possibilities might be increased as the Euromarket develops. A vessel of the present British Fairtry-type of 2,605 gross registered tons was rejected and a smaller one appears to present better possibilities for economical operation. Construction and operation of the vessel would require Government support. (United States Consulate report from Rotterdam, December 19, 1958.)

Norway

FISHERY LANDINGS DOWN IN 1958:

The 1958 Norwegian fishery landings of 1,215,000 metric tons (about 2.7 billion pounds) were the lowest since 1949 and down about 770,000 tons from the record catch of 1956, according to preliminary figures released by the Norwegian Directorate of Fisheries. The value of the landings in 1958 was estimated at about 565,700,000 kroner (US$79.2 million).

The drop in the landings for 1958 was due almost entirely to the failure of the winter herring fisheries which yielded only 345,000 tons as compared with about 800,000 tons in 1957 and over 1,100,000 tons in 1956.

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KELP MEAL USED AS ADDITIVE TO ANIMAL FEEDS AND SOIL CONDITIONERS:

A meal ("algit") made from mineral and vitamin-rich Norwegian seaweed is finding ever wider acceptance among American ranchers and farmers. Distributed by a Chicago, Ill., firm, this product is used as a feed supplement for all kinds of animals and as a conditioner for all types of soil.

As made by a Kristiansand, Norway, manufacturer, kelp is ground and sun-dried to less than 20 percent moisture, to retain a maximum of the inherent minerals and vitamins. The finished product contains at least 60 minerals or elements, over 12 vitamins, and 21 amino acids, all in balance. Added to animal feed, the product protects against deficiency diseases, thus helps to keep hogs, horses, cattle, poultry, and mink in top condition.

Several United States agricultural colleges and private research institutes are presently testing "algit" as a supplement to animal feeds. Meanwhile, it has been

Norway (Contd.):

approved for distribution through the State Farm Bureaus in Ohio and Pennsylvania (News of Norway, January 8, 1959.)

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PURSE SEINERS USING MORE NYLON NETS IN WINTER HERRING FISHERY:

During the 1959 winter herring fishery it is expected that 40 nylon purse seines will be employed. The first nylon purse seine to be used in Norwegian fisheries was in 1955. Last year 10-12 nylon seines were used, but the failing winter herring fishery hampered this development. Fishermen using nylon purse seines consider advantages to outweigh larger costs. The nylon purse seine is rot-proof, it doesn't have to be preserved, and since it is lighter the use of larger purse seines is possible.

In certain ways 1955 was an important year for the Norwegian fishing-gear industry. Nylon nets won through in the cod fishery and in other fisheries as well. And that year a new Norwegian fishing gear factory started production. This factory is the sole Norwegian specialized factory for nets with double knots. Nylon and synthetic fibres are now totally dominating the market. Practical and scientific tests have shown that double knots are also very strong and reliable. To fill the demand for purse seines with double knots requires an important part of the factory's capacity.

The one factory's yearly production totals some 40,000 nets of different types and sizes; 6 machines are employed, all of them designed for double knots. (Norwegian Fishing News, No. 3, 1958.)

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SEINE FISHING IN THE LOFOTEN AREA PROHIBITED:

The Norwegian Storting on December 11, 1958, passed a resolution requesting the prohibition of seine fishing in the Lofoten area (off the northwest coast of Norway) during 1959 and 1960. The Storting has been confronted with a Government proposal, which was not voted on, that seine fishing be permitted after mid-March as in the past several years. The Lofoten fisheries are active in the late winter and early spring when migratory cod come into the fjords to spawn. The Government proposal was based on recommendations from experts in the Ministry of Fisheries. The vast majority of Lofoten fishermen, however, who customarily fish with lines and small nets, vigorously opposed seine fishing with the complaint that the seiners drove away the fish and were responsible for the poor catches. The Minister of fisheries, who was in disagreement with the views of his ministerial experts, spoke in favor of the two-year prohibition.

The prohibition against the use of seines is not expected to have any significant effect on the total Lofoten catch as such gear has in the past accounted for only a small proportion of the total. Also the ban will encourage additional fishermen to take part in the fishery. If good catches are brought in during the next two years, the prohibition may be extended. It is doubtful that the ban on seines will make it possible to determine definitively whether their use is harmful to the fish stocks. (United States Embassy in Oslo, report of December 19, 1958.)

Panama

BAIT FISHING PERMITTED IN 1958/59 CLOSED SEASON:

The Government of Panama, by Decree No. 116 of December 9, 1958, modified for the second consecutive year terms of Article 3, Decree No. 30 of December 22, 1952, and Article 1, Decree No. 148 of June 12, 1953, to permit bait fishing in territorial waters during the three months closed season. Decree No. 116 provided that deep-sea tuna vessels could fish for the anchoveta (Centengraulis mysticetus) in Panamanian territorial waters of the Pacific coast during the months of November and December 1958 and January 1959. Special fishing permits were required and were obtainable from the Ministry of Agriculture, Commerce and Industry at US$4 a ton of the registered net tonnage of the tuna vessel.

Panama (Contd.):

This modification in existing bait fishing regulations was made on the basis of the determination of the Inter-American Tropical Tuna Commission that year-round fishing of anchoveta at the present level would not place the species in the Gulf of Panama in danger of depletion. Moreover, the Commission is to continue its studies of the Panamanian anchoveta and will be in a position to observe the effect of year-round fishing (United States Embassy dispatch from Panama, January 8, 1959.)

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DECREE EXTENDS TERRITORIAL WATERS TO 12 MILES:

The President of Panama signed on December 17, 1958, a law extending Panama's territorial sea to 12 miles.

It is the view of the United States Government that no basis exists in international law for claims to a territorial sea in excess of three nautical miles from the baseline, which is normally the low-water mark on the coast. Furthermore, in the United States view there is no obligation on the part of states adhering to the three-mile rule to recognize claims on the part of other states to a greater breadth of territorial sea.

Insofar as the Panama Canal is concerned, it is clear from the 1903 Treaty that rights of the United States thereunder cannot be affected by changes in the laws of the Republic of Panama.

Panama's action would appear to be at variance with the understanding reached in the United Nations on December 10, 1958, when the General Assembly adopted a resolution calling for a second Law of the Sea Conference to be held in Geneva in March-April 1960. At that Conference the breadth of the territorial sea under international law will be considered. Panama was one of the 71 nations supporting the measure, according to a United States Department of State press release of December 18, 1958.

Peru

HUNTING FOR SEA LIONS PROHIBITED:

All hunting of sea lions in Peruvian waters, was suspended until January 1, 1962, by the Peruvian Government in Supreme Decree No. 11 of November 11, 1958.

The Government announced that the species is in danger of extinction. Violators of closed season will be subject to fines ranging between US$8 and US$2,000 and imprisonment of 30 to 50 days. Skins and items manufactured from sea lions taken in violation of this law will be confiscated. (United States Embassy, Lima, report of December 2, 1958.)

Philippines

FISHERIES DEVELOPMENT AIDED BY INTENSE RESEARCH PROGRAM:

An intense research program, based on 1 research station, 9 laboratories, and some 60 research workers, is helping to speed up and direct the development of the rich fisheries of the Philippines. This is the report of a well-known German fishery biologist who has just completed a two-year assignment in the Philippines on behalf of the Food and Agriculture Organization (FAO) Rome, Italy.

"I went to the Philippines to help the Government plan a program of research in marine fishery biology and to train Philippine workers to carry out this research," explained the biologist at an interview at FAO Headquarters early this year. We have made considerable progress during the past two years," he continued. "We were able to set up a research station and nine laboratories, which are being equipped with the help of such organizations as the Colombo Plan, as well as by Project Development Funds from the Philippine Government. The Colombo Plan organization is supplying $20,000 worth of equipment, and the Philippine Government is providing $75,000 for financing the laboratories.

"I have also been able to train some sixty research workers and counterpart

Philippines (Contd.):

assistants who are already engaged on numerous research assignments in marine biology. All these workers are young men and women graduates from the University or from the Philippine Fisheries Technology Institute, and they are showing a great enthusiasm for the work. Eight of the more outstanding workers are being given training abroad, three by Colombo Plan fellowships, one by the International Cooperation Administration, one by a FAO fellowship, two by the German Government, and one by the Japanese Government."

The research program seeks to provide information on the biology of commercial species of fish in the Philippine waters. Studies are being made of the life history, habits, distribution, reproduction, rate of growth, and other biological factors of the fish. One of the difficulties faced in this program is the great variety of species of commercial fish found in the Philippine waters.

"The Philippines have rich resources," the biologist pointed out, "but there is no predominant species such as we know in the North Atlantic where a fishery can be based mainly on, say, herring, or some other predominant species. It is also a fact that not enough is known of the Philippine resources so that a great deal of research must be done."

A particularly important part of the work is to establish the productivity of a fishing area, especially in relation to gear and intensity of fishing effort.

This point has come to the fore recently because of the introduction of modern types of gear and equipment. Such new gear has led to considerable increases in catch and has given rise to fears by some of the fishermen, who still use the old methods, that the resources will be destroyed by overfishing. These fears are unfounded but with the changing and developing situation, there is no doubt that such problems will often recur.

There is a need now for a fleet of research ships, probably three, and there are hopes that such vessels will be provided in the next 2 or 3 years.

The biologist will probably be called upon to return to the Philippines in about two years' time to check on the progress being made with the research program.

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MARKET FOR CALIFORNIA-TYPE SARDINES:

Canned fish, and especially sardines or pilchards, are a staple item in the Filipino diet, and, since they are consumed largely by the lower income groups, price is the significant determining factor in their sale. Since California sardines are generally priced above competing brands from other nations, this has seriously affected the sale of California sardines in the Philippines.

While of considerably less importance than price, other factors have contributed to the decline in California sardine sales to the Philippines. These include the recent shortage of California sardines, which has led local importers to turn to Japanese and South African brands, and the poor dollar position of the Philippines, which has encouraged private importers and the largest single importer to purchase inexpensive non-United States off-brands to conserve foreign exchange. A recently completed fish canning factory, which will can locally-caught sardines as well as other fish, will undoubtedly affect the Philippine market in the future.

The largest single importer of sardines into the Philippines sells its imports not only through its licensed retailers, but also imports for other distributors and wholesalers. The firm's prices generally are the lowest offered in Manila as it tries to give its retailers a preferred competitive position.

An informal survey of local retail outlets not serviced by the largest single importer gave comparative prices for both United States and Japanese packs of sardines. Table 1 shows the average retail price of several different brands within one pack-type.

Philippine Retail Prices Early in 1959

Type	United States		Japanese	
	Peso	U. S.¢	Peso	U. S.¢
	(per can)			
1-lb. ovals, tomato sauce	0.65	32.5	0.45	22.5
1-lb. tall, tomato sauce	0.45	22.5	0.40	20.0
1-lb. tall, natural	0.50	25.0	-	-
8-oz. oblong, tomato sauce	0.45	22.5	0.35	17.5
8-oz. buffet tomato sauce	0.45	22.5	0.35	17.5
5-oz. tomato sauce	0.25	12.5	0.20	10.0

A comparison of the prices of United States and Japanese sardines will largely explain why the Filipino housewife, who cannot purchase native fresh fish because it is too expensive, purchases the lower-priced Japanese and South African brands.

There is no question that if California sardines were competitive in price with those of Japan and South Africa they would continue to hold the largest share of the Philippine market. Filipinos prefer California sardines to those of other countries because they have a milder aroma and taste. However, only Filipinos of the relatively small middle class appear willing to pay the higher price for California sardines, and they also can afford fresh local fish, poultry, and meat.

Unless the price of California sardines is made competitive or Philippine living standards rise to the point where the difference of five centavos on a can of sardines is of no importance to the mass of consumers, the American share of the local canned sardine market will continue to decline. The doubling of tariffs on United States imports beginning January 1, 1959, is likely to accelerate this trend.

Prices of sardines taken from the Master Price List of August 14, 1958, and an Additional Price List of December 2,

Philippines (Contd.):

1958, issued by the largest single importer in the Philippines show these prices:

1. 15-oz. talls in tomato sauce (48 cans per case): retail price per can ₱0.40 (20 U. S. cents); wholesale prices, Japan (4 brands) ₱16.40-16.90 (US$8.20-8.45) a case, South Africa (4 brands), ₱16.30-17.60 ($8.15-8.80) a case.

2. 15-oz. talls, natural (48 cans per case): retail price per can ₱0.35 (17.5 cents); wholesale price, South Africa (3 brands) ₱15.15-15.30 ($7.58-7.65) a case.

3. 5-oz. talls in tomato sauce (100 cans per case): Japan (5 brands), wholesale price ₱16.50-16.90 ($8.25-8.45) a case, retail price 10 cents a can; South Africa (3 brands), wholesale price ₱15.36-15.40 ($7.68-7.70) a case, retail price 2 cans for 17.5 cents.

4. 15-oz. ovals in tomato sauce (48 cans per case): Japan (13 brands), wholesale price ₱16.00-18.70 ($8.00-8.35) a case, retail price 19-22.5 cents a can; United States, one brand's wholesale price at ₱16.00 ($8.00) a case and retail price 2 cans for 37.5 cents, and another brand's wholesale price ₱19.00 ($9.50) a case, retail price 22.5 cents a can.

5. 15-oz. buffet in tomato sauce (48 cans per case): retail price per can ₱0.25 (12.5 cents), South Africa (2 brands) wholesale price ₱10.30-10.50 (US$5.15-5.25) a case.

6. 8-oz. buffet in tomato sauce (48 cans per case): retail price per can ₱0.25 (12.5 cents), Japan (1 brand) wholesale price ₱10.15 ($5.08) a case.

7. 4-1/2-oz. in tomato sauce and olive oil (100 cans per case): Portuguese (8 brands), wholesale price ₱23.30-25.10 ($11.65-12.55) a case, retail price 12.5-15 cents a can.

Spain

CALIFORNIA-TYPE TUNA CLIPPER STARTS WINTER SEASON WITH GOOD TRIP:

The new Spanish California-type tuna clipper Marinero during the first trip of the 1958/59 winter season in the waters off Dakar is reported to have caught 274 metric tons of tuna.

The Spanish Basque fleet working Dakar waters hopes that the Marinero's success also promises them a good winter fishing season.

The good catch is helping reverse the low esteem held for those vessels by Spanish commercial interests and government officials, arising from the unsuccessful operations of the Marinero during the 1957 season and by the sinking of its sistership the Marchoso. Both ships were built in Spanish shipyards. (United States Consulate, Vigo, report of December 24, 1958.)

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COD FISHERY TRENDS:

A large Spanish cod company, which operates 16 large vessels with a combined tonnage of 27,000 tons, reports that the scarcity of cod in the Northeast Atlantic continued during 1958. In the opinion of the local representative of the Union of Iceland Fish Producers, who recently returned from a visit to Iceland, the reason why the cod are disappearing off Iceland and Newfoundland is the changes in climatic conditions and in the prevailing currents. In the near future Spanish cod fishermen may have to go to the Bear Islands, off Northwest Norway, to fish for cod.

Although imports of cod by Spain are not yet available for 1958, it is believed that somewhat below the normal 20,000 metric tons were imported for the year. The Spanish catches, which are brought in by 15 companies operating 36 ships, account for additional receipts of 50,000 tons a year. It appears, however, that within the next 3 years or so Spain will be able to supply all of its own needs, because of the many trawlers which are being built and added to the cod-fishing industry. At that time, as reported by the Icelandic representative, Iceland will no longer purchase any fruits, wines, liquors, and cognac from Spain, which pays for its imported cod from that country with these products (United States Consul in Bilbao, January 5, 1959).

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CANNED FISHERY PRODUCTS EXPORTS, 1957:

Exports of canned fishery products comprise a large part of Spain's foreign

Spanish Canned Fishery Products Exports, 1925-1957

Year	Quantity	Total Value	
	Metric Tons	1,000 Pesetas	US$ 1,000
1957	12,720	28,747	9,392
1956	12,511	29,080	9,500
1955	9,685	21,280	6,952
1954	5,583	18,750	6,126
1953	8,871	16,275	5,317
1952	9,093	18,762	6,130
1951	9,935	22,331	7,296
1941-50 avg.	2,908	4,935	1,612
1925-34 "	5,542	18,530	6,054

Note: Values converted at rate of 1 gold peseta equals US$0.3267

Spain (Contd.):

trade. In 1957, the quantity of exports increased over 1956 but the value decreased. Table 1 shows the trends in canned fishery products exports since 1925.

Spain's recent trade agreements with various countries--among them Poland, Hungary, and Czechoslovakia--have opened new horizons for exports of canned fishery products, Spain's traditional markets have been Cuba, Germany, Egypt, and others.

In a recent annual report issued by one of Spain's principal canneries, there are some interesting comments on exports, especially in regard to canned anchovies, which explain the drop in value of 1957 exports.

In order to compete with Portugal and Yugoslavia in the marketing of canned anchovies, Spain has had to cut prices to keep exports at a high level so that imports of tin plate--essential in the manufacture of cans--could be continued. This situation resulted when anchovy-salting firms of Cantabrico found that they could not sell their product to Italian canneries. Finding themselves with large stocks of anchovies, which have a short storage life, they had to sell their product quickly at sacrifice prices.

Canned anchovies continue to be the principal fishery product exported by Spain. Exports are made principally to Cuba, followed by Germany, Egypt, the United States, Finland, Switzerland, France, Poland, and to a lesser extent, Belgium and a few South American countries.

The situation which has occurred with canned anchovy prices has also occurred to a smaller extent with prices of canned bonito and sardines. The competition from Portugal and Morocco has been intense. Spanish firms have had to sell at profit-sacrificing prices in order to prevent the loss of foreign markets. The foreign markets are essential not only as a means of selling the canned goods but also as a means of obtaining the necessary import quotas for tin plate. (Industria Conservera, Vigo, Spain, September 1958.)

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FISH SHIPPED BY AIR BETWEEN CANARY ISLANDS:

During the latter part of 1958 air shipments of fresh fish were made from the Canary Island coast of Lanzarote to the neighboring island of Tenerife. Thus, fish caught in the morning off one island were sold that afternoon on the other island.

The shipments were in lots of 20 kilos (44 pounds) in ice-covered baskets. By this method, 1,200 kilos (2,645 pounds) of fish (mostly parrotfish, grouper, and sea bass) were shipped. Shipments were limited by the space available for air transport.

As gifts, a sea bass weighing 8 kilos (about 18 pounds) was sent to Madrid, and another weighing 10 kilos (22 pounds) was sent to Bata, Guinea. These fish arrived at their destination in perfect condition. (Industrias Pesqueras, Vigo, Spain, October 1958.)

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NEW FISHERIES LABORATORY IN BARCELONA UNDER CONSTRUCTION:

Scheduled for completion in the summer of 1959 is the combined fisheries laboratory and aquarium being built by the Superior Council of Scientific Investigations in Barcelona. The new building will serve as the main office for Spanish fisheries studies. Branch offices will be located in Cadiz and Vigo. The three-story and basement building will have machinery, two water pumps, an air filter, and a refrigerator for fish food in the basement. The ground floor will have four large rooms with glass aquarium tanks for displaying live fish. The largest tank will have a capacity of 90 cubic meters for larger specimens. In addition, a small museum of plastic reproductions and drawings will be on that floor. The second floor will contain the research laboratories, a freezer to maintain a temperature of -10° centigrade (14° F.), a vacuum chamber, room for photographic work, and a one-ton floating cement block to support weighing scales. The rest of the new building may be used for quarters for personnel and will have space for a 200-ton water tank.

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Spain (Contd.):

REHABILITATION OF SHELLFISH RESOURCES PLANNED:

The shellfish division of the Spanish National Fisheries Syndicate is developing a long needed plan for the conservation, artificial breeding, and exploitation of shellfish species along the Spanish coast. Spurring development of the plan are declining harvests, the subeconomic position of coastal fishermen, increased competition from the French, and particularly, the very successful results in the past 20 years with artificial breeding of mussels.

The study committee which met in the latter part of November 1958, pinpointed the problems which must be met to make the "Plan Galicia" (so-called because efforts will first be concentrated in northeastern waters) a reality. These problems are: a licensing plan to limit the number of harvesters and their area of work; the overhauling of antiquated systems of harvesting which are exhausting most species (particularly grooved carpet shells and common cockles); the development of new oyster beds (present beds being too concentrated and overworked); the artificial cultivation of other species now wholly limited to mussels; and the strict enforcement of offseason prohibitions on the harvesting of shellfish.

Mussel production rose from 400 tons (weight in the shell) in the early 1940's to an estimated 5,500 metric tons in 1958. Shellfish production in 1957 was 52,242 metric tons, valued at US$14 million. (United States Consulate, Vigo, report of December 24, 1958.)

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TUNA FISHING VESSELS OPERATING OFF DAKAR AGAIN IN 1958/59:

A fleet of eight tuna fishing vessels left the Spanish fishing port of Bermeo at the end of October 1958 to fish off Dakar, West Africa, until about March 15, 1959.

The tuna vessels are under contract to a group of fish canners in the Canary Islands, the contract calling for a minimum quota of tuna to be paid for at about 8.6 U. S. cents a pound, or US$173 a short ton, for the eviscerated fish. The canners make available to the fleet several small transport vessels which pick up the tuna from the fleet while on the high seas and return to the Canary Islands where the catch is weighed and turned over to the canners. A round trip from the Canary Islands to the fishing zone requires 9 to 10 days. On these trips the small transports haul all the food, water, and other needs of the fishermen. While fuel-oil and ice are obtainable closer at hand both in Dakar and Port Etienne in French West Africa, they are priced so high that it is cheaper to ship them from the Canary Islands.

Each fishing vessel (average about 75 tons) has a crew of 17 men, making a total of 119 for the fleet. The crew includes a Franciscan priest and a lay brother of the same order serving as simple seaman and mechanic respectively. The crew members undergo privations in the tropical waters, since there is a shortage of space, inadequate food and water, and little comfort for them. Space priority is given to the fuel tanks, refrigerated storage holds for tuna, and the live bait tanks.

Because of the difficulties which the fishermen and the fishing fleet as a commercial enterprise have to undergo, only one ship, of all those which have gone since the fishery began in 1956, has returned to fish again off Dakar. The answer as to why the Bermean fishermen set forth toward West Africa annually is to be found in the extraordinary abundance of tuna there, as compared to the scarcity of fish of any kind in the winter season in the Bay of Biscay. Although the Bermeans have sought other fishing areas, especially in the Mediterranean, they have found the tuna fishery off Dakar to be the most productive. The tuna in this area is the Neothunnus albacora, known as the rabil in Spanish, the yellowfin in English, and the thon aux nageoires jaunes in French.

In 1956 eight ships set out for French West Africa and fished for tuna about 100 miles south of Dakar. They departed from Bermeo early in November 1956 with a crew of 125 men and returned home

Spain (Contd.):

at the end of January 1957. In a period of 50 fishing days, they caught about 600 tons of tuna valued at 4 million pesetas (US$95,238 at official rate of exchange), averaging about US$11,900 per vessel. The rest of the Bermean fishing fleet of 170 vessels that remained in its home waters caught during the same period about 2,400 tons of fish valued at 12 million pesetas (US$285,714), or about US$1,680 per vessel.

According to the Secretary of the Brotherhood of Fishermen in Bermeo, the catches in the African waters could easily be doubled under more favorable conditions. One of the most important of these conditions would be the use of one or more refrigerated ships which would remain in the fishing zone and then proceed when loaded either to the Canary Islands or, better still, to the canneries at Cadiz, Huelva, Vigo or Bermeo where much higher prices could be obtained for the fish. So far, the several attemps to purchase refrigeration ships from French and Italian sources have not proven successful, the United States Consul at Bilbao reported on January 5, 1959.

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VIGO FISHERIES TRENDS, NOVEMBER 1958

Fish Exchange: Landings of fish and shellfish in November 1958 at the Vigo Fish Exchange amounted to 9,015 metric tons, a drop of 144 tons from the preceding month, but exceeded November 1957 landings by 2,423 tons. The November 1958 landings set a new record for that month. Major species sold over the exchange in November 1958 were: sardines, 2,690 tons; anchovies, 2,215 tons; horse mackerel, 933 tons; small hake, 637 tons; and needlefish, 393 tons.

The November 1958 landings were valued at US$1,565,800 (US$1.00=42 pesatas), an increase in value over October of US$153,000 and close to US$440,000 above the value for November 1957.

Fish Canning and Processing: Cannery activity was above normal for November 1958 with 2,635 tons of fresh fish processed as compared with 934 tons in the the same month of 1957. The good November 1958 landings also helped the smoking, drying, and pickling processors, who purchased 2,077 tons, about 1,095 tons above the October purchases. Shipments to interior fresh fish markets dropped about 10 percent from the 5,000 tons shipped in October due to the good demand from the Vigo processors.

Sardine Fishing Season: The closed season for sardine fishing, initiated as a conservation measure, has been extended 15 days and now extends from February 15 to April 30. Some disagreement exists on the dates for the closed season on the part of industry members. Some claim that the closed season would be more beneficial from a conservation standpoint if it were established earlier in the year when the sardines spawn. (United States Consulate, Vigo, dispatch, December 24, 1958.)

Sweden

HERRING CATCH FOR 1958 OFF ICELAND FAIR:

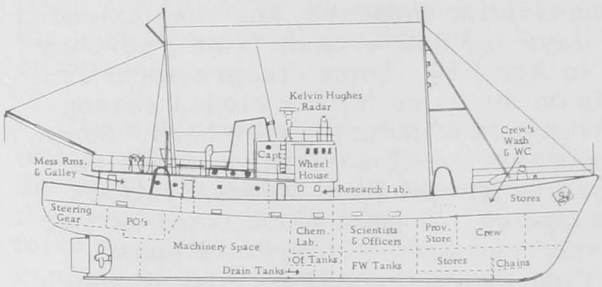
The Swedish 1958 drift-net herring fishery in Iceland waters yielded 22,930 barrels or about 2,200 metric tons of salted herring with a sales value of US$521,000, according to a report made by the Bohuslans Icelandic Fishermen's Association in Lysekil. The catch was taken by 29 vessels. The Association had contracted for 27,545 barrels and they were able to fulfill about 83 percent of that amount. In 1957, 20 vessels caught about 1,500 metric tons of herring.

A purse-seining expedition consisting of a mothership and one fishing vessel participated in the Icelandic herring fishery and caught only 580 barrels. This expedition had contracted for 2,000 barrels, the United States Consul at Goteborg reported on November 21, 1958.

Union of South Africa

NEW SARDINE RESEARCH VESSEL: A new 120-foot steel research vessel, the Sardinops, has been built by the South African Government to take part in an expanded research program on the sardine and maasbanker (jack mackerel) fisheries. The vessel's principal dimensions are: length over-all 120 feet; breadth, moulded 25 feet; draught, loaded 10 feet; tonnage 342 gross. Both hull and upper works are of all-welded steel construction.

The main propulsion engine is a 600/660 b.h.p. 5-cylinder two-stroke marine Diesel, type 495 V.O., operating at 130 r.p.m., and giving a speed



of 10 knots. It is hydraulically coupled to the propeller, which can be operated by finger-tip control from the bridge. Auxiliaries include two 55 k.w. Diesel generator sets, and a Diesel engine driving compressor service pump, and stand-by generator.

The trawl winch is mounted fore-and-aft, and like the hydrograph winch, windlass, and line hauler, is hydraulically operated. The vessel is fitted for starboard side trawling, the port side being fitted with towing booms for plankton nets, etc. Fish holds are fitted on the well deck.

Steering machinery consists of hand and powered hydraulic gear, and no active rudder is fitted. Navigational equipment includes gyro compass, log, deep-water and shallow-water echo sounders, radar, and other equipment.

Accommodation comprises the captain's cabin on the bridge deck, 4 roomy double-berth cabins for officers and scientists, and cabins and berths for 4 petty officers and 6 seamen.

The biological laboratory, 13 feet 6 in. by 9 ft. 6 in., is housed on the main deck, and contains 3 stainless steel sinks, a gimballed table, and has acid resisting flooring. Fresh and salt water, compressed air, and electric power are also included. A similarly-equipped, though smaller chemical laboratory is provided on the deck below.

A feature of the vessel is the absence of a fish-room, due no doubt, to the nature of the fishery on which work is to be carried out. There is cold storage, however, which could conceivably be utilized for the storage of fish samples.

Another feature is the use of 16-ft. glass fibre lifeboats, two of which are slung in davits.

Two 70-ft. wooden research ships, the Trachurus and the Kunene have also been launched, and will be engaged on the same research program. (World Fishing, January 1959.)

United Kingdom

EXPERIMENTS TO EXTEND THE LIFE OF SALMON:

The normal life cycle of salmon is to be born, go to sea, return after two or more years to the upper parts of streams and rivers, spawn, and die. A few salmon have been known to return to the sea after spawning, and return and spawn two, three, or four times.

Scientists of the Lancashire River Board wondered if this mass death of salmon returning to sea was needless, if in fact deaths resulted only from sheer exhaustion and starvation. They pointed out that once the salmon enters fresh water it stops eating. While fighting upstream, spawning and fighting back to the sea, the fish lives off its own body. This period usually lasts several months.

As an experiment, the Board sent men with nets through the upper reaches of England's spawning rivers as the salmon arrived in the fall of 1958. They caught 230 salmon, both male and female, put them in tank trucks and hauled them to a hatchery. There the eggs were stripped from the females, artificially fertilized by the males, and put into cool fresh-water tanks for 100 days to hatch.

The adult fish were then put back into the tank trucks and hauled to the seaside at Morecamb. There they were put into fresh-water tanks but seawater was admitted gradually in small doses until after five days the water matched that of the open sea.

Then the fish were transferred to the open air wading pool on the beach and offered their normal sea diet, crustacea, eels, and herring. Most started eating almost at once. New ovaries began to develop in some of the females.

The fish early in December 1958 were being tagged and given a few more days to recuperate. Then they were to be put into tanks and carried five miles or so

offshore and turned loose. Experts hope many will come back next year.

So far the experts are satisfied since few fish have died.

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FIRST TRANSOM STERN TRAWLER BUILT:

A new trawler has been built with a transom stern in Great Britain. The decision to adopt this hull form was taken after considerable research and tank tests carried out on models. These tests

A new trawler built in Great Britain with a transom stern

indicated that such a hull would be faster than one having the conventional cruiser stern, and would be a good sea-ship under adverse weather conditions.

Some of these claims have already been justified, for the new motor vessel Kelvin has run trials on the Humber. She is now in service with a large British fishery firm.

The Kelvin has the following dimensions: length between perpendiculars 137 ft. 6 in.; breadth, moulded 28 ft.; depth, moulded 14 ft. 3 in.; gross tonnage 448.

The vessel is powered by a triple-expansion steam engine, of 750 indicated horsepower and has an oil-fired boiler. Also steam-driven, is the main 15-kilowatt generator; the 10-kilowatt stand-by set is powered by a Diesel engine.

The new stern affords more spacious accommodation and washing facilities aft. The fish hold of 8,650 cubic feet is insulated, and employs aluminum alloy for the wing bulkheads and fixed shelf angles.

Life-saving appliances consist of three inflatable dinghies, of over 150 percent crew capacity, and an 18-foot wooden work lifeboat launched by a center line davit.

Steam provides the power for the hydraulic steering system, and also for the trawl winch, which has a capacity of 1,200 fathoms of $2\frac{5}{8}$-inch trawl warp.

Initial trials of the Kelvin, believed to be the first trawler with a transom stern, were highly satisfactory. A speed of 12 knots was recorded. (November 1958 World Fishing).

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GOVERNMENT PLANS AID TO PILCHARD INDUSTRY:

Larger multipurpose craft, capable of year-round fishing for other markets besides pilchards, are recommended in a plan drafted by the British White Fish Authority for consideration by the industry. At present about 6,000 metric tons of pilchards are landed in Great Britain per annum, and 12,000 tons of pilchards are imported. Yet there are resources of 800,000 tons in the English Channel.

The pilchard industry of Cornwall is marginally profitable and depends largely on the subsidy for survival. There are indications that it is beginning to recede. At an average annual production level of 6,000 tons, it is worth about £200,000 (US$560,000) per annum to the national income. As of August 1, 1958, the Authority had invested £86,800 (US$243,000) in the production phase of industry, of which £30,000 (US$84,000) was by way of grant and £56,800 (US$159,000) by way of loans. The industry pays £2,000 (US$5,600) a year levy and receives £32,000 (US$89,600) a year subsidy. Virtually all craft which land pilchards fish for other species as a side line.

An important factor in the industry now being in its present position is the competition of imported canned pilchards. The total production annually of wet pilchards by the major competing countries of South Africa, South-West Africa, Japan, Portugal, and the United States is about 500,000 tons and is rising. This background

United Kingdom (Contd.):

indicates the measure of competition faced by the English canning industry which only has 6,000 tons of raw material a year.

The industry reached its present position during the postwar decade. There has been a transition from the curing to the canning of pilchards which has progressed almost to completion. The change has not been planned. The canneries which developed during the time of the sellers' market of 1947-50 are dispersed and their plants are but partly employed. The small pack is marketed separately by each of them. There are a total of seven factories concerned, five of which have the major interest, the other two being general food packers in Plymouth who take pilchards as occasion permits or demands. Of the first five, three are in Cornwall and depend mainly on pilchards for their production.

The other two are at Chichester and Yarmouth and have a more varied production. The total product is about 2,700 tons annually from the seven factories. The total normal daily capacity of the five is 112 tons of wet fish and they could, therefore, in theory, handle the total annual landings in 53 days. The pilchard is, however, a markedly seasonal fish; only a side stream of the main resource is exploited and the factories are in consequence faced with irregular supplies.

The United Kingdom imports approximately 12,000 tons of canned pilchards a year representing approximately 19,000 tons of wet fish. Therefore the total market for canned pilchards in the United Kingdom represents an approximate total wet landing figure of 25,000 tons annually. The scientists advise that there are resources in the English Channel of about 800,000 tons; therefore, the raw material to satisfy the United Kingdom market in canned pilchards by local production exists near at hand.

The production phase of the industry is made up of fishing units with traditional-type craft, using traditional gear in the traditional seasons and areas. They are out of date and out of context in the present economy of the pilchard industry in competing countries in other parts of the world and find it extremely difficult to operate at the prices offered by the canners. In order to produce fish at a lower price, i.e.: to operate economic craft and gear, there are two alternatives:

(a) The employment of small craft of between 25 ft. and 30 ft. in length, which have low running costs and require only two men as the full crew, thus making a relatively low demand in wages or earnings.

(b) The employment of larger craft 70 ft. in length designed to operate gear, new to Cornwall, as the behavior of the fish demands according to seasons (i.e. midwater trawl; encircling nets--purse seine, lampara), as well as drift nets. The intention would be to land fish in such quantities and more regularly than hitherto so that not only may the costs of running the larger craft be met but that the price of fish at landing may be much reduced, and also to exploit alternative resources as a planned objective and not as side lines.

With regard to the first alternative, it has been shown that the presently-exploited resources which migrate along the Cornish coast are but a "side stream" of the main stock. Small craft could only continue to exploit this resource since they would not be sufficiently seaworthy to exploit the main stock offshore. While they would operate at low cost they would perpetuate the condition of erratic supplies, thus continuing the extant unsatisfactory supply position to the canners. Therefore all the indications are that a break with tradition is called for and that approach to the second alternative be examined. The seasonal nature of the supplies of pilchards may be relieved, but pilchards cannot be made available for canning throughout the year. Alternative marine resources are known to exist, and these should be sought and caught in order that the craft may operate profitably for the greater part of the year. The processing plant should be geared to receive these alternative products to keep plant and labor employed as fully as possible.

There would appear to be no short-term remedies available which would embrace all facets of the problem.

United Kingdom (Contd.):

There is a market in the United Kingdom, at the right price, for canned pilchards equivalent to 25,000 tons of wet pilchards a year. For instance, at half the present landed cost this would mean increasing the contribution of the pilchard industry to the national income from £200,000 to £400,000 (US$1.1 million) a year. With other marine products and byproducts this figure may well be douled.

The recommendations of the Authority are:

1. That a pilot project be started in the form of a development unit based on one multipurpose craft, with new nets and gear, for two years, to explore the resources and potential costs and earnings of the probable future type of craft required. In order to design this unit, a small management committee should be established, first to plan and subsequently to operate the experimental unit.

The operations of the unit should be under the direct supervision of a technical officer.

2. When the production potential and operational costs of a new type of craft and gear have been ascertained, it will then be possible to indicate to the processors the potential of raw materials for which they would have to plan. The White Fish Authority would take up this aspect as and when the data from the experimental unit becomes available. It is stressed that a decision as to whether to put these recommendations into effect will be taken only after the views of the industry have been ascertained. (World Fishing, January 1959.)

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MARKETS DOGFISH SUCCESSFULLY:
Large numbers of "flake" or dogfish were being caught in the West Cornish waters off Great Britain during early December 1958. This was usual at that time of the year. A small number of long-liners were making quite heavy landings of those fish at Newlyn. Over 14,000 pounds were sold in one day.

Since the London market for Fleetwood dogfish was developed in recent years, a renewed interest has turned to "flake." "Flake" are mostly the common lesser spotted dogfish that take the bait from winter lines set for cod and whiting. The British report that a lot is known about the anatomy, breeding, and mating, but very little about the travels of dogfish. (The Fishing News, a British fishery periodical, December 12, 1958.)

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RENEWAL OF NEGOTIATIONS ON ICELAND'S FISHING LIMITS EXTENSION TO 12 MILES PROPOSED:
An offer to renew negotiations with Iceland to end the fishing limits dispute was made by the British Government in a Memorandum submitted to the General Assembly of the United Nations late in 1958.

Entitled "The Problem of the Fisheries around Iceland," it examines the justifications for unilateral action advanced by the Icelandic Government in its own Memorandum.

Taking first the economic aspect, or Iceland's need for fish, the British Memorandum first deals with the argument that Iceland had no alternative but to impose a 12-mile limit. It gives figures to show that the total catches by Icelandic fleets around Iceland have increased from an average of 328 million pounds in the years just previous to the war to 864 million pounds in 1956, the last year for which figures are available.

Moreover, Icelandic catches in other waters, such as Greenland, have increased from almost nothing before the war to 11 million pounds in 1956.

The herring fishery is admitted to be erratic, fluctuating between 66 million and 220 million pounds in recent years, but the Icelanders have it largely to themselves. And, apart from the herring, the Icelandic catch is seen to have increased almost threefold over the past 20 years.

It is evident, the British Memorandum says, that there is no sort of critical situation in the fisheries, nor apparently, any check to their continuing growth.

On the scientific aspect--overfishing and conservation--it is pointed out that the over-all catch of demersal species has greatly increased over the past two decades. The argument that the catch per fishing unit is falling is not tenable unless it can be shown that the over-all catch is decreasing and maintains a significant downward trend, for when a vessel exploits a previously unfished stock its catch will naturally be higher than when it is joined later by other vessels.

Another factor is that the year-classes vary greatly in numbers, and when a good year-class enters a fishery, the catch may increase markedly for several years; and as that class passes out of the fishery the total catch may fall until another good year-class comes along.

Short-term movements in catch totals and catch per unit may well be due to this influence, the Memorandum points out. (The Fishing News, December 5, 1958.)

Venezuela

PEARL FISHING GROUNDS OPENED:
The opening of pearl-fishing grounds in the maritime zone (bounded by 63° 40'

Venezuela (Contd.):

and 64°30' west longitude and 11°15' north latitude on the north and south to the mainland) was announced by the Venezuelan Ministry of Agriculture and Husbandry on December 9, 1958 (Gaceta Oficial No. 25833). Pearl fishing in that area will be permitted from January 1-April 30, 1959.

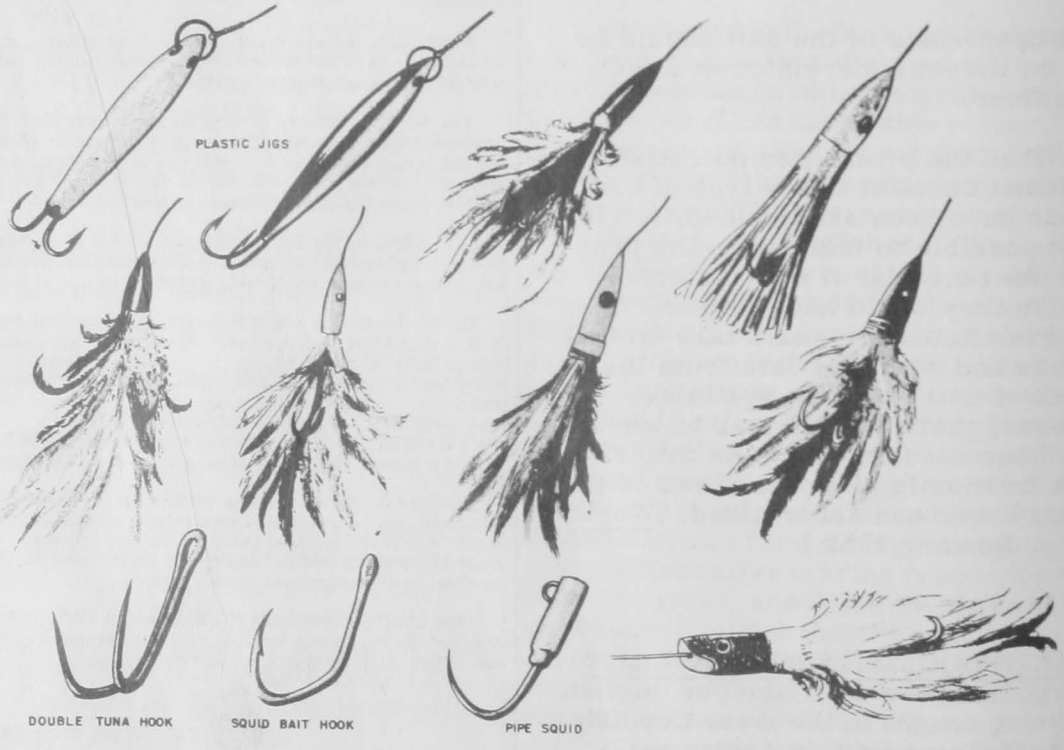
Another resolution of December 9, 1958, establish fees for several types of permits needed to engage in pearl fishing. These are: fully equipped diver, US$30; drag or team of two drags, US$3; and diver using aqualung or similar equipment, US$3. (United States Embassy in Caracas, December 12, 1958.)

WEST COAST ALBACORE TROLLERS

In the United States Pacific coast tuna fisheries, the albacore troller is third in importance. The clipper is first and the purse seiner is second.

In the albacore troller fishery lures on lines of varying length are trolled astern from two trolling poles. Three or four lines are attached to each pole and so rigged that they can be pulled in separately. These boats are usually about 60 feet in length.

TUNA JIGS



Halibut boats and salmon trollers frequently enter the albacore fishery, and during a good run almost anything that floats may be seen on the grounds. In some years well over 2,000 different boats have made albacore deliveries in Southern California.