



Bahama Islands (British West Indies)

SPONGE INDUSTRY, 1948: Production: The gathering of sponges was prohibited by Governmental order from July 1947 until April 1, 1948, when fishing was resumed.

However, the sponge beds proved to be in such poor state that the closing order was put into effect again at the end of July 1948, and is still effective, according to a March 11 report from the American Consulate at Nassau. There are rumors that the order will be set aside again this year.

Table 1 - Sponge Production<sup>1/</sup> - April through July 1948

Grass .....	1200 lbs.
Hardhead .....	900 "
Reef and glove .....	6000 "
Sheeps-wool .....	1600 "
Yellow .....	100 "
Velvet .....	-
<sup>1/</sup> Approximate.	

It is doubtful if there are any stocks remaining on hand. The outlook for 1949 is very discouraging.

Exports:

Table 2 - Sponge Exports from the Bahamas, 1948

Country Type	United Kingdom		Canada		Bermuda		United States		Total	
	lbs.	value	lbs.	value	lbs.	value	lbs.	value	lbs.	value
Grass	1,100	\$6,000	100	\$524	-	-	100	\$220	1,300	\$6,744
Hardhead	900	5,868	-	-	-	-	-	-	900	5,868
Reef	1,600	7,164	50	180	-	-	700	4,080	2,300	11,424
Wool	300	2,500	600	4,504	50	\$636	100	1,532	1,050	9,172
Refuse and Clippings	6,700	544	-	-	-	-	600	24	7,300	568
Unclassified	1/	12	-	-	1/	48	1/	336	1/	396
Total	-	22,088	-	5,208	-	684	-	6,192	-	34,172

<sup>1/</sup>Not available.

Current Prices: There has been a decline of approximately 20 percent in the current prices.

Demand: Demand is small, owing to the Mediterranean sponges being offered in all markets. The outlook for 1949 is very poor.

Table 3 - Approximate Current Prices for Sponges Gathered and Exported

Type	Grass	Hardhead	Reef and Glove	Sheeps-wool
Grade	\$	\$	\$	\$
No. 1	6.40	Forms - 6.40 Cuts - 4.80	6.40-7.20	9.60
No. 2	5.60	4.00	4.16	8.00
No. 3	4.80	-	3.20	7.20
No. 4	2.40	-	.80	4.80
No. 5	1.60	-	-	.80
Slates	2.80	-	2.40	-

COLONY NOT TO REOPEN SPONGE BEDS: The Colonial Government's Agricultural and Marine Products Board decided that it was not in the interests of the Colony to reopen the sponge beds at this time, according to a May 11 report from the American Consulate at Nassau.

Several persons interested in the sponge business recently made a tour of the beds at Andros and Abaco Islands, and reported that it would be folly for the Government to acquiesce in the demands for the reopening of the beds.



## Bizone Germany

NEW CONSTRUCTION FOR BREMERHAVEN'S FISHERIES: Since the end of World War II, several new buildings have been completed in the Bremerhaven Fischereihafen, more buildings begun, and many damaged buildings repaired, according to a March 9 report from the American Vice Consulate at Bremerhaven. Bremerhaven fisheries are important to the German economy.

Two companies operating fishing vessels out of this port are erecting buildings, and it is hoped that other ship-owning firms will be settled here later. A fish importing and processing firm is building the largest single plant in this area. Another firm is constructing a factory to produce packing boxes for sending fish inland. In addition, a new ice plant also is now under construction. An attempt is being made to attract fishery concerns formerly established in the Polish- and Russian-occupied regions of Germany to Bremerhaven. Since suitable land in the presently improved section of the port no longer is available for settling new firms or for the expansion of old firms, it is planned to develop a further area of land. The entire project will cost about \$1,900,000.

A 656-foot extension is planned for the main auction building. In the future, auction halls will be built on piers or quays jutting out into the water with berths on each side for ships. Construction along this line will enable more discharging berths to be accommodated in the limited expanse of water available.

Provided the fisheries are not caught between rising costs and fixed fish prices, and provided the German meat ration remains low, the next decade will see an expansion in Bremerhaven as a fishing port.



## Canada

BRITISH COLUMBIA WHALING SEASON OPENS: The Canadian Department of Fisheries has issued licenses to three boats operated by one company for the hunting of whales in Northern British Columbia waters, according to the May 1949 Trade News of the Canadian Fisheries Department.

Last year, the Company's three whalers accounted for the catching of 184 whales, and this year with an improvement in vessels it is expected that the catch will be greater. A fully equipped processing plant at Coal Harbour, Vancouver Island, will handle the expected increased production. Hunting for the whales got under way early in May.

"LONG-LINING" PROVES OF VALUE ON EAST COAST: Canadian East Coast inshore fishermen are improving their catching efficiency by adopting mechanical gear to haul in their lines, a method used on West Coast halibut boats. Interest in "long-lining" was stimulated by Fisheries Research Board scientists at the Atlantic Biological Station, St. Andrews, N. B., who carried out demonstrations with the power gear on the fisheries research vessel, the J. J. Cowie, according to the June 1949 Canadian Fisheries Department Trade News.

"Long-lining" involves the use of a powered hauler or gurdy which is operated directly from the main engine or from an auxiliary engine and hauls back the gear. The method is best adapted to the Atlantic coast cod fishery on boats of from 30 to 50 feet in length. Advantages of using "long-lining", according to the Fisheries Research Board of Canada, are that the tiring job of hauling by hand is lessened; gear hauling in rough weather and strong tides is easier; rapid, even hauling saves time and reduces gear parting, and more fish can be handled with the same effort.

Four small gurdies for test purposes were distributed by the Department of Fisheries to fishermen in four Atlantic ports. This, together with demonstrations by the J. J. Cowie, led to increasing interest in the greater efficiency of power hauling. Fishermen using gurdies at Shelburne, Liverpool, Lockeport and Clark's Harbour now vouch for its efficiency.

At Caraquet a gurdy was installed in one of eight similar boats. As a result, this boat increased its season's catch from 183,000 to 243,000 pounds, and increased its rating in the fleet from seventh to third place. Complete gurdy, ready for installation, costs approximately \$125. This can be reduced considerably by fitting an old motor car differential and axle with a gurdy head.

Emphasizing the advantages of "long-lining", the Atlantic Biological Station scientists say that offshore and inshore fishing each produces about one-half the Canadian groundfish catch. The efficiency of offshore fishing is advancing through use of otter trawls. To compete, the inshore fishery must strive continuously for better efficiency and one method of improving this efficiency is through conversion to "long-lining."

RENEWS TUNA PATROL OFF BRITISH COLUMBIA COAST: Active assistance to the tuna fishery off the British Columbia coast by the Canadian Department of Fisheries is again underway this year. The Laurier, one of the larger vessels of the Department, left Victoria early in June to begin the first leg of its patrol.

The plan called for early scouting for tuna in the area southeast of the Queen Charlotte Islands. Following pre-determined courses, the Laurier proceeded up-coast and after refueling at Prince Rupert, retraced the up-coast pattern generally and arrived at Victoria again on June 26.

Daily broadcasts to the fleet will be made from the Laurier, following the character and timing used in 1948. When tuna are located, the vessel will follow a pattern of patrol which will take care of the considerations of the scientific investigators, and at the same time permit adequate tests and experiments with fishing gear to be carried out.

The United States Fish and Wildlife Service also is conducting an exploratory tuna survey to be carried on principally in southeastern Alaska waters by the USFWS Oregon, equipped with bait tanks and trolling gear. In order to avoid duplication of effort, this program is to be coordinated with the albacore

tuna survey by the Canadian Department of Fisheries. Through the current exchange of information between the two agencies, daily broadcasts are to be made to the fishery fleet from the vessel Oregon in order to keep the fishermen advised of the albacore movements.

SPONSORS CONFERENCE ON EAST COAST SALMON: The Canadian authorities have offered to cooperate with the East Coast provinces in a program to rehabilitate the Atlantic salmon fishery. At a meeting in Ottawa on April 28, representatives of Quebec, New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland discussed with Department of Fisheries officials the need for such a program and agreed that the best way of carrying it out would be through regular meetings of a Dominion-Provincial conference.

There was general agreement among the representatives of the five provinces that there was need for a body with representation of Provincial Governments and of the Federal Government to consider from time to time salmon policy on regulation, development work and research, and to recommend to the various Governments lines of attack.

The Federal Government has already accumulated a large amount of information and has started to do some additional work. The Fisheries Research Board is gathering all information on salmon and is contemplating expanding salmon work where information is needed. This also applies to Newfoundland. The Fish Culture Development Branch is stressing the problem of rehabilitation by removal of obstructions in streams and the building of fishways. In Newfoundland, the Department of Natural Resources is carrying on its work of expanding spawning areas for salmon this year.

The Fisheries Department is also attempting to improve the statistics on salmon catches. To this end an officer has been assigned to act as a liaison with the provinces to obtain better statistics.

\* \* \* \* \*

ESTIMATED 1949 BRITISH COLUMBIA SALMON PACK: The British Columbia salmon canning industry anticipates a pack of approximately 1,800,000 cases of salmon this season, according to a June 30 report from the American Consulate General at Vancouver. However, they may have difficulty selling at satisfactory prices notwithstanding an announcement early in June that Great Britain would purchase 410,000 cases of salmon, consisting of sockeye, coho, and pinks, at a price of \$7,000,000.

To further the sale of canned salmon in the domestic market, salmon canners have agreed to spend \$500,000 in the next eight months in an advertising effort to sell their product throughout Canada.



Ceylon

DANISH FISHERIES EXPERT RECOMMENDS EXPANSION OF FISHERIES: A Danish fisheries biologist, who has been in Ceylon since February investigating that country's fisheries, returned to Denmark the early part of May, according to a May 24 report from the American Embassy at Copenhagen. He recommended a modernization of the entire

island's fishery industry. Two Danish fishery cutters are being sent to Ceylon to assist in the training of the local fishermen.

A large Danish industrial firm of Copenhagen located in Ceylon has prepared for the Government a report concerning the establishment and construction of canneries, refrigerated plants, etc. (See Commercial Fisheries Review, March 1949, page 51).



## Chile

FISHERIES UNDEVELOPED: Chile's rich sea resources continue to be relatively untapped, according to Economic Review of Chile, 1948, of the Office of International Trade.

Production of fish in 1947 amounted to 46,000 metric tons and of shellfish, 14,300 metric tons. The output in 1948 probably was somewhat larger. In the North there are canneries and freezers, mainly for the preparation of swordfish and tuna for export, but the potential demand for fish in the population centers of Chile remains undeveloped. Inadequate cold storage and transportation facilities limit the distribution of fresh fish. Even in Santiago and coastal towns the chronic low supply and resulting high prices have made fish something of a luxury food. The meat crisis has directed attention to fish as a logical and readily available substitute for meat, and plans have been announced for improving refrigerated storage and transportation facilities.



## France

TRADE AGREEMENTS INCLUDE FISHERY PRODUCTS: A commercial agreement signed August 1, 1948, provides for France to import from the Netherlands 2,100 metric tons of salt herring and 6 million francs (\$24,000) of fresh fish, according to a February 28 report from the American Embassy at Paris.

Under the Franco-Danish commercial agreement of November 1, 1948, France has allotted 100,000 Danish crowns (\$20,840) for the import of trout from Denmark.

The Franco-Norwegian commercial agreement of June 4, 1948, provides an allotment of 3,900 metric tons and a credit of 350,000 Norwegian crowns (\$70,420) for the import of various sea fish, frozen and fresh, from Norway.



## Indonesia

FISHERIES REVIEW, 1948: Both sea and inland fisheries showed favorable progress in 1948, with a total movement of dried and salted fish of 19,000 metric tons during the first nine months, valued at \$7,980,000. The Indonesian Fishery Service supplied about \$1,520,000 worth of sail cloth, nets, line, and other supplies during 1948 as compared with \$646,000 in 1947. The fishing industry is now about 65 percent of prewar, according to a January 31 report from the American Con-

sulate General at Batavia, Java. Fish is a very important item in the native diet and strenuous efforts are being made to increase domestic production in order to cut down import requirements.

In the Federal Territory (area under Dutch control), 764,000 metric tons of canned fish were distributed officially during the Third Quarter, 1948, compared to 1,279,000 tons in the Second Quarter, 529,000 tons in the First Quarter, and 280,000 tons in the Fourth Quarter of 1947.

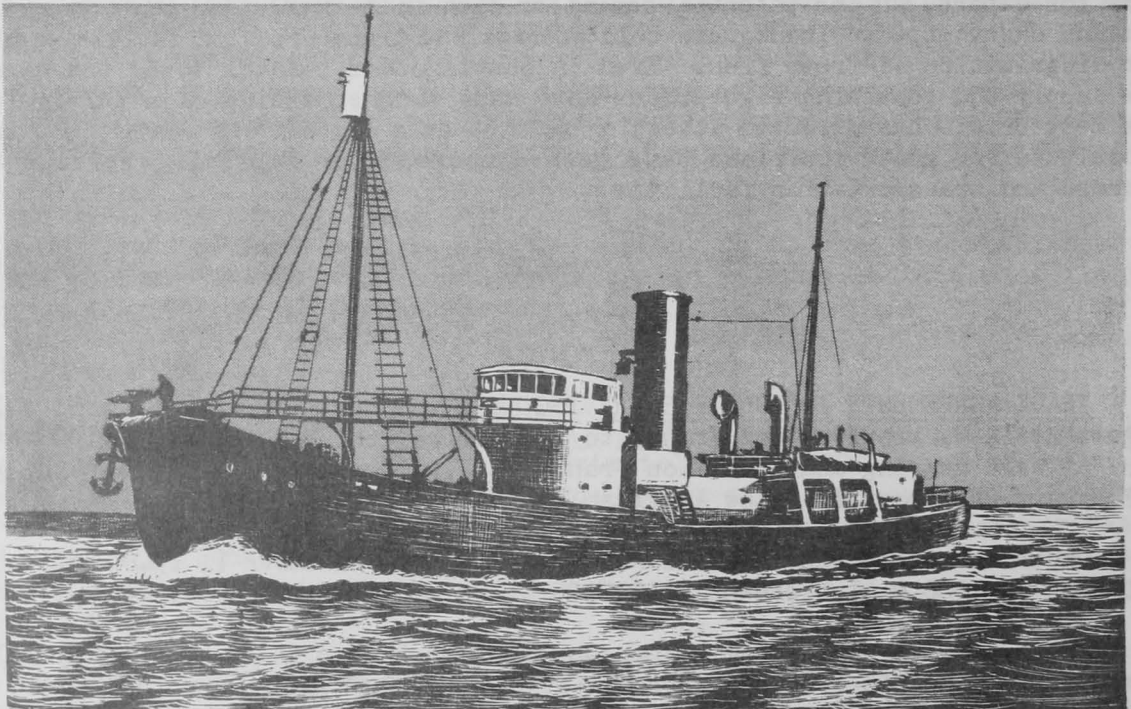
Note: Values converted on basis of official exchange rate of 1 guilder equals \$0.38 U. S.



## Japan

### EQUIPMENT AND PROCESSING METHODS USED BY JAPANESE ANTARCTIC WHALING EXPEDITIONS:

Factory equipment and processing methods being used on the 1948-49 Japanese Antarctic whaling expedition are as follows, according to the January 22 Weekly Summary of the Natural Resources Section of SCAP.



A TYPICAL JAPANESE WHALE CATCHER OR KILLER BOAT (385 GROSS METRIC TONS) USED IN ANTARCTIC WHALING.

The floating factory ships Nisshin Maru No. 1 and Hashidate Maru, 11,781 and 10,798 gross tons, respectively, are equipped almost identically. Each contains seven oil extraction boilers and eight separators for the extraction of whale oil from blubber, bone, and internal organs. All the units were manufactured in Japan from prewar European designs. Both ships are equipped with plants of Japanese design and manufacture for the extraction of vitamin oil from whale livers and for the recovery of bone meal from the residue. Both plants employ standard machinery, such as cutting and chopping machines, cooking kettles, cyclones, washing drums, dehydrators, and screw driers. In addition, the ships contain centrifugal separators, fabricated in Japan, for the purification of whale and liver oil.

All bone, the greater part of the blubber, and the stomachs, kidneys, and intestines are processed for whale oil on the factory ships. The raw material is digested in the boilers and is passed to separators, where the oil is drawn off. The oil is then run through centrifugal separators for final purification and stored in the ship's tanks. A limited quantity of the residue from the bone processing apparatus, consisting of bone meal, glue, and a quantity of oil and sea water, is piped to the bone meal plant where it is washed and the liquids removed in a centrifugal dehydrator. The remaining bone meal is then passed through a steam jacket screw drier and bagged. Livers are chopped and ground into small pieces, mixed with fresh water, and cooked with caustic soda. After cooking, the vitamin oil is extracted by centrifugal separators.

All meat, a small amount of blubber, and the ventral grooves (the striated blubber from the ventral side of the carcass and the accompanying layer of meat extending from the tip of the lower jaw to the flippers) are transported from the factory ships to salting and refrigerator ships in small launches, for preservation and transportation to Japan for human consumption. Products to be frozen are precooled with sea water on the decks of the refrigerator ships, then placed in wood or metal trays, and frozen between metal plates which are in direct contact with refrigerated brine. The frozen products are stored in refrigerated holds at temperatures of  $-15^{\circ}$ – $-20^{\circ}$  C. Products to be salted are washed with sea water on the decks of the salting ships and then wet-salted in open holds.

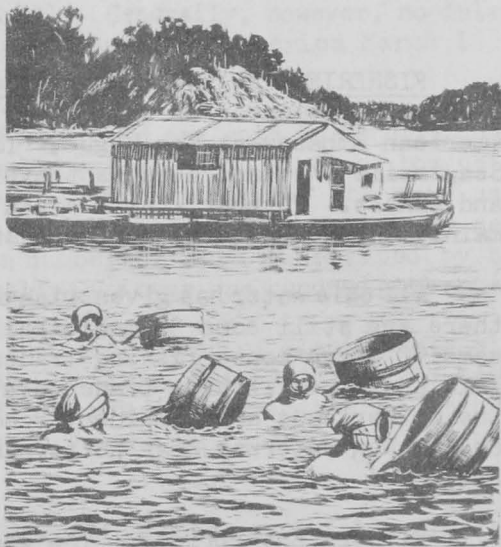
Certain internal organs, such as testes, ovaries, pancreases, and livers, are frozen and returned to Japan for extraction of hormones, insulin, and vitamin oil.



## Mandated Islands

PREWAR PEARL OYSTER CULTURE IN THE SOUTH SEAS: Little information is available on Japanese prewar experiments with pearl oyster culture in the South Seas, because records, which were kept locally on the islands, were lost during World War II, according to the March 5 Weekly Summary of Natural Resources Section of SCAP. The following information on pearl culture in the South Sea islands has been obtained in Japan.

Boetoeng (Celebes): A series of experiments was made on the artificial production of pearls at Boetoeng, the southeastern extremity of Celebes, in 1920. The golden-lipped pearl oyster, *Pinctada maxima* Jameson, locally called "shirocho-gai," was used. These experiments resulted in the production of some fine culture pearls in 1928. The stock used in this station was collected by pearling luggers from the great pearl oyster grounds of the Arafura Sea, lying between New Guinea and Australia, especially near Aroe Island.



DIVING FOR PEARL OYSTERS

Palau (Caroline Islands): The success in the culture of pearls in Japan prompted experimental work at a station estab-

lished at Palau in 1920. Starting with the more readily available black-lipped pearl oyster, Pinctada margaritifera, the "kurocho-gai", the work was later extended to include the yellow-lipped pearl oyster, Pinctada maxima or "shirocho-gai". Quantities of the former were readily available at Palau, and arrangements were made to import live "shirocho-gai" from the Arafura Sea. In 1935 and 1936, Pinctada martensii, the Japanese pearl oyster, was successfully introduced and planted at Palau.

The experiments were successful in a measure, and some good pearls were produced. Two other companies began operations at Palau, in 1936 and 1937, and activities continued until the outbreak of World War II in 1941.

Apparently as a result of unfavorable environmental conditions, the Palau pearl enterprises were not highly successful from a commercial standpoint and the projects are now regarded as failures.



## Morocco

EXPORTABLE SURPLUS OF OLIVE OIL: At least 5,000 short tons of high-quality Moroccan olive oil appear to be available for export this year, according to an early 1949 report from the American Consulate at Rabat. The Moroccan target for commercialization of olive oil is 6,600 tons, of which the canners are entitled to 1,100 tons for use in canning sardines for export to the United States.

All production of the refineries has been blocked for export to the dollar zone, either in the form of pure olive oil or as packing for sardines. Moroccan authorities currently are considering a price of 43-46 cents per pound f.o.b. Casablanca, approximately the same price as last year.



## Netherlands

FISHERIES REVIEW: Importance of the Fishery Industry: Fishing is a very old means of livelihood in the Netherlands, according to a March 17 report from the American Embassy at The Hague. The country has west and north coasts on the North Sea, while the land area is traversed by many large and small rivers, estuaries, and canals. Further, there are a number of lakes scattered all over the country, mainly in the western, northern and central eastern parts.

All this water has given rise to a flourishing, widespread industry. At present, there are still some 30 municipalities where sea fishing firms are established, some 90 where coast fishing trades are situated, and several dozens of places where lake and river fishing trades are located. The most important fishery ports in the Netherlands are IJmuiden, Scheveningen, Katwijk, on the sea coast, Vlaardingen on the New Waterway near Rotterdam, and Urk on the IJssel Lake (the former Zuider Zee).

Fishery Enterprises: The great majority of the fishery enterprises are very small. The limited number of large fishing enterprises are concentrated in the most important fishery ports.



Fishing Fleet: In the ten years preceding the war, the Netherlands fishery trade declined by roughly one-third in the number of vessels and approximately 28 percent in the total tonnage. During the war, the Germans looted the greater part of the Netherlands fishery fleet, an important percentage of which was not returned to the former owners. Although energetic efforts were made to restore the fleet after the liberation, official figures give the total sea and lake fishery fleet on January 1, 1948, as only 2,838 ships with a total tonnage of 88,774 metric tons, compared with 3,201 ships and 247,728 tons in 1939.

The present fleet is composed of 69 percent motor vessels, 3 percent steam trawlers, and 28 percent mostly sailships.

Production: Official statistics give the total catch brought to markets in the Netherlands in 1948 as 239,000 metric tons, valued at almost \$31,920,000, of which 163,000 metric tons were sea fish, valued at \$23,180,000; 66,000 tons of coast fish, valued at \$3,420,000; and some 10,000 tons of IJssel Lake fish (the biggest inland lake), valued at \$5,320,000.

Fishing Methods: The coast and lake fishermen usually make trips of no longer than one or two days duration. Their ships are small and they have generally no facilities on board to keep the fish fresh. The sea fishermen, however, leave ports for much longer periods; they keep the fish fresh in ice. In the case of herring, ships sometimes remain on the high seas as long as two or three months, in which case the fish are salted on board and delivered ashore ready for further shipment. The North Sea is the most frequented fishing ground for Netherlands fishermen.

The herring fishing season in the Netherlands starts in May and lasts through November. There is no period of the year when the ships do not go out for other fish, except occasionally on account of bad weather. For most species of fish in domestic waters there are "closed seasons", during which it is prohibited to store and transport as well as catch fish. This season depends on the kind of fish, the territory, the kind of nets used, and international agreements (for rivers entering the Netherlands from Germany and Belgium). For instance, pike and perch may not be caught from March 16 to June 1, brook trout from October 1 to April 1, while for eel there is no prohibited season at all. Generally, however, no inland fishing (either professional or sport) is allowed during the period March 16 to June 1 to protect stocks during the breeding period.

For sea fishing, the two biggest types of nets used are said to be drift nets and drag nets; cast nets are also used occasionally. For inland fishing, bow nets, cotton fish traps, and bag nets are mostly used. The majority of the nets used are made of cotton, but manila and sisal are also used, especially for coarse nets. Each sea-going ship may only take with it the number of nets prescribed by the Fishery Trade Control Board. Larger ships usually take over one hundred gill nets.

FISH NETS: Production: It is estimated that production of fishing nets will amount to 1,000 metric tons valued at about \$3,040,000. This estimate is based on the fact that the 1948 export figures of fishing nets aggregated 603 metric tons valued at \$1,941,420, and that the domestic demand is estimated to be only a little less important than exports.

The Netherlands industry produces primarily cotton nets, especially prepared and unprepared cotton nets for herring fishing. The twine for making these nets, ranging from 30/6 to 30/16, is usually made by the net manufacturers themselves.

Some factories even have occasional twine surpluses available for sale to other net manufacturers, although small quantities of twine have been imported, some from the United States. Local manufacturers have difficulties, however, in obtaining an adequate supply of the specific type of yarns required (30 count) due to the limited foreign exchange available for imports. As netting mills have a backlog of orders and exports are given preference, domestic customers often have to wait six months or more for delivery.

Imports: The imports of fishing nets in the postwar period were negligible until in 1948 when quantities of cotton herring and trawler nets (142 metric tons) were again imported from Germany. These imports were a resumption of prewar business, when the Netherlands also used to buy certain kinds of nets from Germany. The Netherlands authorities further considered (in spite of the prevailing foreign exchange shortage) that imports of these nets would be justified to help supply the fishermen who are unable to get deliveries from local manufacturers who have a backlog of orders. Fishermen still remember the prewar Japanese cotton nets, which although not of the best quality, were exceptionally low in price, and some of them hope that with the revival of Japanese trade, these imports will be resumed some time in the near future.

Exports: Exports of Netherlands fishing nets increased considerably in 1948 and even exceeded prewar exports in quantity and greatly exceeded prewar exports in value. The destination was practically limited to six countries, one of which was the United States which imported some quantities of herring nets made of raw materials other than cotton, and some netting for other fishing made of cotton. The importance of fishing net production for export (565 metric tons) is indicated by the fact that this product has been included in bilateral trade agreement negotiations between Netherlands and a number of other countries. For instance, the Netherlands is to supply \$400,000 worth of inland fishing nets to Germany in 1949, which country at the same time, as noted above, is the Netherlands largest supplier of cotton herring and trawler nets.

Prospects for United States Nylon Fishing Nets: The Netherlands fishing industry has recently expressed an interest in reports about the application of nylon in the fishing industry of the United States.

It appears that the maintenance of the fishing nets now used is a costly and cumbersome affair, and raises the price of the net some 50 percent. Drying and repairing of nets is usually done by women, many of whom are engaged in this work throughout the summer. Recent heavy catches and underwater obstacles, such as ships sunk during the war, have resulted in especially important losses when presently used cotton nets have broken.

Some Scheveningen fishermen now desire to give nylon netting a serious trial. They have investigated some samples of nylon netting twine and would like to try out a complete net in the full fishing season which started in May. Two leading fishing firms in Scheveningen are prepared to extend full cooperation for making serious experiments with nylon netting and to make expert personnel available for such experiments.

If nylon netting should prove to have the advantages with which it is credited, a good market should be available in the Netherlands. Although the initial outlay would be higher than for the cotton nets, and the use of nylon nets will require larger amounts of foreign exchange than the domestic cotton nets, fishermen believe

Note: Values converted on basis of 1 Dutch guilder equals approximately U. S. \$0.38.

that they will succeed in convincing the Government that import would be in the national interest as the fishing industry is an important source of foreign exchange. Due to foreign exchange limitations, it is likely that imports will be restricted to nylon twine from which the nets may be made.

It is likely that consideration will be given to the establishment of a new factory for nylon nets or the adapting of existing net factories to the new manufacture. This would be a project worthwhile considering due to the relatively large demands of the Benelux area and the traditional position of the Netherlands as an exporter of nets. The potential demand for nylon ropes might also be very important. According to reports received from the trade, a London firm engaged in the manufacture of nylon netting and ropes may soon make a determined effort to get a foothold in the Netherlands market.

\* \* \* \* \*

REQUESTS CLAMS FROM UNITED STATES FOR PROPAGATION: The Fish and Wildlife Service Laboratory at Milford, Connecticut, has prepared and shipped to the Netherlands, at the request of that Government, a quantity of marine hard clams (Venus mercenaria). The Netherlands used these clams to attempt to establish a fishery for the species in local waters.



## New Zealand

FISH LIVER OILS: Production of fish liver oils from sharks, grouper, and ling in 1946 was estimated at 31,224 gallons, of which 22,608 gallons were exported. In 1945, two companies produced for export 27,162 gallons, but no data are available on total output. Processing of fish liver oils for vitamin content was inaugurated in 1943, according to the report, "New Zealand as a Source of Crude Drugs and Essential Oils," issued January 1949 by the Office of International Trade, Department of Commerce.

Oils of excellent quality and high vitamin content can be produced on a large scale in New Zealand from the livers of locally-caught fish. The content of vitamin A in the different batches of shark oil varies from 2,000 to 55,000 international units per gram—the livers supplied to the processors by fishermen are entirely unsorted and the different species have very different characteristics. The vitamin D content is found to be low, usually less than 25 international units per gram.

The oil from the ling liver varies between 8,000 and 15,000 international units of vitamin A, while vitamin D content remains fairly constant at about 500 international units per gram. Vitamin A content of grouper oil ranges from a minimum of 35,000 to as high as 88,600 international units per gram, based on potency tests in a 12-month period. Some estimates of its vitamin D content range from 2,400 to 4,000 international units per gram. The extent to which grouper and ling liver oils have been used for human nutrition is not known.

The processing of livers is generally done by mixing and digestion with steam; in the case of grouper livers, it is necessary to use an acid pepsin digestion followed by neutralization. The digested materials are centrifuged to give clear oils.

Under a 2-year agreement (ending December 1948) between the Government of New Zealand and the United Kingdom, surpluses of fish liver oils were automatically purchased by the British Ministry of Food (see table).

AGAR SEAWEED: Agar seaweed gathered in the 1946 season in New Zealand yielded a record total of 246,400 pounds, nearly twice that obtained during 1942, the

Country of Destination	1946		1945		1944	
	Gals.	Value	Gals.	Value	Gals.	Value
United Kingdom ...	17,145	\$121,335	11,895	\$62,548	6,578	\$69,049
Australia .....	2,217	45,336	14,740	176,942	226	3,893
Canada .....	1,652	41,539	526	11,890	276	3,731
United States ....	1,594	16,938	-	-	-	-
Total .....	22,608	225,148	27,161	251,380	7,080	76,673

Note: The value has been converted from New Zealand pounds to U. S. currency on the basis of one New Zealand pound equals \$3,2263 for 1946; \$3.2346 for 1945; \$3.2442 for 1944.

first year of commercial collection. This was initiated to compensate for the loss of sources of supply during the war years. The two species collected, Pterocladia (P. ludica and P. copillacea) come from the North Island. Total production for the years 1943-45 was 547,951 pounds. Of this

total, 123,648 pounds were marketed the first year, 199,584 pounds the second year, and 224,719 pounds the third year.

Additional good beds of seaweed exist in various areas off the New Zealand coast. Whether or not these beds will be exploited depends chiefly upon the world price of agar and the availability of labor for collecting.

The present supply of seaweed and the existing plant installations provide an exportable surplus of from 35,000 to 50,000 pounds of refined granulated agar, which is reported to be of quality equal to the Japanese agar, and conforms to British and United States Pharmacopoeia standards. Agar is packed for export in 20-pound cannisters.

Carrageen moss grows prolifically on the coasts of Southland and Stewart Island. Supplies are reported sufficient for local consumption and are being sold to Dominion druggists and manufacturers of various products. Before the war, domestic demand was supplied by foreign producers, chiefly Irish.



## Republic of the Philippines

NORTHERN PHILIPPINE AREAS BEING EXPLORED FOR FISHING: The exploratory work of the Philippine Fishery Program in the waters of Luzon Strait and northern Luzon generally indicate that this area is an important resource that is awaiting exploitation by Filipinos, according to the Administrator of the U. S. Fish and Wildlife Service and the Director of the Bureau of Fisheries.

The Spencer F. Baird, research vessel, is planning additional work in that locality. Work in this region is timely because of the great demand on foreign markets for tuna canning purposes. These waters have long been known as a source of black tuna, a particularly valuable species, and they have previously been taken in large quantities by the neighboring foreigners. Development of these resources by the Filipinos will demand larger vessels than are now being operated in the islands and will probably call for special techniques that are only partially understood at the present time.

## Spain

REVIEW OF FISHING INDUSTRY: Introduction: The year 1948 was unfavorable for the Spanish fishing industry and was the fourth consecutive year of unsatisfactory returns, according to a January 18 report from Vigo.

During the Spanish Civil War from 1936 to 1939, fish became an increasingly important item in the food supply of this country. Throughout World War II, the domestic consumption of fish rose and the per capita consumption increased from an average of 19.8 to 46.2 pounds. The increased demand for fish, both fresh and preserved, created unreal prosperity for the commercial fishing industry and attracted investments of large sums of money for additions to and renovations of the existing fleet on the part of promoters who were impressed by the abundant catches and the excellent financial returns. During this boom period with inflation in full swing, new vessels were built and old ones were converted to fuel burners and modernized without any appraisal having been made of the future prospects of the industry. In its desire to expand the fishing fleet in order to secure a greater food supply, the government indiscriminately granted long-term loans at low interest rates. The government also had in mind the possibility of exports of fresh fish as a source of foreign currency.

The industry, however, did not continue to prosper as was anticipated, and about four years ago financial difficulties began to arise. It now is facing one of its most serious crises.

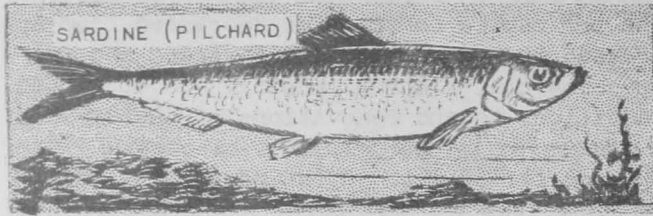
Fishing Fleet: The authorities have realized that Spain's fishing fleet is greater than it requires and, consequently, certain restrictions on its further expansion have been imposed. The latest available statistics (December 1947) show that the fleet totals 37,832 units having a net tonnage of 233,885 metric tons. However, a good portion of the fleet is now outmoded and is in constant need of repair. The long periods of forced inactivity while the ships are in dry dock represent a heavy financial loss.

Factors Retarding Growth of Industry: The shortage of supplies and equipment (under government control and seldom obtainable through regular channels), the requirement that a certain percentage of the catch be turned over to the authorities, the fixing of ceiling prices for fish, and the labor legislation which requires that fishermen be paid monthly wages, instead of a percentage of the value received for the catch at first auction, have retarded the normal development of the industry. The fishing industry is the principal source of income of a large mass of Spaniards along the country's extensive littoral. If transportation were better and if adequate refrigeration were available, more fish could be shipped to the interior but it is unlikely that these necessary improvements will be made in the future. The fishing interests, therefore, are directly dependent to a large extent on the export of fresh fish and, indirectly, on the export of preserved fish by the canning industry.

Fishing Activities, 1948: The past fishing season was one of the worst on record. Catches of deep-sea fish off the coast of Ireland were smaller than in 1947, which was also an abnormal year. The small catch in 1947 was attributed to an increased number of other foreign fishing craft then operating in those waters, but now it is realized that fish have disappeared from those grounds.

Decreased catches were much more noticeable in the second half of 1948. From July to the end of the year, vessels were forced to remain for longer periods in the fishing grounds and the catch was only about half of normal. Fishing boats

operating off the coast of Ireland grounds usually work in pairs. Their stay at sea in the first half of the year averaged from 18 to 20 days and their catches averaged between 30 to 60 metric tons of fish, the value of which permitted the profitable operation of the fleet even with the ceiling prices fixed by the government. In the second half of the year, the fleet found it necessary to prolong its stay in the fishing grounds from periods of from 50 to 60 days and their catches averaged about 30 tons which barely paid operational costs.



National fish landings, according to preliminary trade estimates, will be slightly less than 50 percent of the previous year. The 1948 catch at Vigo, the most important fishing port of Spain, was far below 1947.

Small boats operating near their home ports were also reported to have experienced unfavorable conditions during the year. The profitable operation of this branch depends largely on its catches of preservable varieties of fish, principally sardines and bonito (albacore), which are always in great demand by the important canning industry. However, seasonal sardine runs did not occur and the catch was the lowest for the past six years.

The bonito (albacore) catch was also reported to have been a failure, due principally to inclement weather which drove the fish out of range of seiners which are unable to remain away from their base for more than 30 or 40 hours. In spite of high prices, the bonito catch barely paid for operating expenses.

Quantity of Sardines & Bonito Auctioned at Vigo, 1947-48		
Species	1948	1947
	Lbs.	Lbs.
Sardines . . . .	2,183,000	20,828,000
Bonito . . . . .	1,819,000	5,097,000

The total landings at the port of Vigo totaled 109,204,000 pounds having a sales value of \$15,505,000<sup>1</sup> and represent a reduction of 20 to 29 percent, respectively, as compared with 1947. The unusually large catches of jurel (mackerel) helped to keep the weight figure at a rather high level, but this was not profitable since jurel realizes

a very low price and must be disposed of in a fresh condition.

Fish Packing Industry: Production of the industry increased three-fold during the past 20 years and it was expected that the termination of World War II would offer an excellent opportunity to expand by exporting its products to all countries. However, a series of complex financial factors severed its normal international markets and reduced the activities of the industry to a minimum. Consequently, under present circumstances, it is now almost entirely dependent upon the limited possibilities of the domestic market which has never been able to absorb but a small percentage of the total output.

It is evident from reports received from canners that the year 1948 showed no improvement for the industry, which has been deteriorating progressively since the end of the Spanish Civil War in 1939, and that the situation at the end of 1948 was worse than at the close of 1947.

Shortages of tin-plate and other essential materials, as well as government restrictions, continued to hamper the industry. Scarcity of preservable varieties

Note: Conversion based on rate of exchange of 10.95 Spanish pesetas equal \$1.00 U. S.

of fish also had an important bearing on the small output during the year, but the major problem which still confronts the canners is the loss of foreign markets due to the unreal fixed value of the Spanish peseta.

An important canner who has a plant capable of producing 100,000 cases (100 cans 30mm) annually produced 6,000 cases of all kinds of preserved fish in 1948. A considerable portion consisted of "chicharro" (a young tunny fish) of inferior quality and not suitable for export.

Exports: Exports in 1948 were slightly higher than in the preceding year despite the fact that Argentina, Spain's principal market, has restricted Spanish canned fish importations in order to protect its own recently established industry.

The necessity of export markets is, of course, of vital importance to the canners. The prosperity of the industry is also contingent upon the availability of supplies of suitable varieties of fish. Had the 1948 catches been of normal size, the canners would not have been able to have handled all of it because stocks of imported tin-plate were exhausted (domestic tin-plate has not always met with foreign food and drug requirements, therefore, canners have not found its use profitable).

In the absence of sufficient supplies of sardines, canners kept their factories working at part time for some periods of the year by preserving jurel for the home market. However, it was not a success and considerable financial loss was suffered since a large portion of the output spoiled in the cans. New packing processes are being studied to avoid a repetition should there be another shortage of sardines and bonito in the present year.

Outlook: The outlook of the industry for 1949 is discouraging. It is the consensus of those engaged in it, that if the industry does not receive governmental assistance, it can carry on for only another year or so. If the government authorizes an export peseta between 23 and 25 pesetas to the dollar and better supplies of tin-plate can be obtained (the normal national requirements are placed at 1,000 metric tons), the industry believes it will be able to recuperate its losses and embark on an export program which will materially benefit this area and the country as a whole.



## Union of South Africa

PRODUCTION OF FISH OILS, 1948: The South African fish oil industry produced an estimated \$3,400,000 of vitamin A concentrate and crude oil (three months production of concentrate and nine months production of crude oil), \$360,000 of processed (refined bleached and winterized) oils, and \$480,000 of crude oils, or a total of \$4,240,000, according to an April 5 consular report from Capetown.

Vitamin A Concentrates and Crude Oil: Because of the peculiar financial and cartelized structure of the South African fishing industry, one plant possesses a virtually complete monopoly over the entire production of vitamin-bearing oils in the Union. These oils come largely from three types of fish:

- (a) The soupfin shark (Vaalhaai), which yields from 20,000 to 40,000 international units per gram; other varieties of shark, primarily the "dogfish," yield from 5,000 to 25,000 international units per gram.

- (b) Hake (stockfish): livers yield from 10,000 to 20,000 international units per gram.
- (c) Snoek: livers have a low oil content, but when other extractive oils are added the yield becomes between 20,000 and 40,000 international units per gram.

Production of vitamin A in the 1948 calendar year was  $12 \times 10^{12}$  (12 trillion) international units ( $14,205 \times 10^{12}$  U.S.P. units). The entire output of vitamin A oils in 1948 was sold to the British Ministry of Food except for small amounts channelled to Europe.

Fish Body Oils: Fish body oils processed in the Union of South Africa are taken primarily from two classes of fish:

- (a) Horse mackerel (maasbanker): The season is short--November to March--and production in 1948 was only 1,000 short tons; there were only two plants producing oil from this fish during last year.
- (b) Pilchards: Production of pilchard oil in 1948 was 1,000 short tons. Expansion in the catching of pilchards both for canning and for the production of oil has been so dramatic in the past year that the Fisheries Development Corporation is making strenuous efforts to bring about legislation to limit the number and sizes of factories and to regulate the quantities of fish that may be produced.

Industrial Oils: Industrial oils are processed in the Union of South Africa from the maasbanker and the pilchard. Total production in calendar 1948 was:

- (a) Semi-crude oil 400 short tons (used for general industrial purposes)
- (b) Refined (bleached and winterized) oil 400 short tons (used for paint, varnish, linoleum, etc.)

Outlook for 1949: VITAMIN A OILS: The expected production of vitamin A for calendar 1949 is  $13 \times 10^{12}$  (13 trillion) international units which at present prices would bring a gross of \$5,000,000. While sales will continue to be made to the British Ministry of Food with small quantities going to Western Europe and South Africa, one company is making a strong drive to expand their United States market. They expect to export to the United States "a large percentage" of their vitamin A concentrates in potencies of 200,000 to 1,000,000 U.S.P. They have a sales goal of \$4,000,000.

Fish Body Oils: The expected production of fish body oils in 1949 is 4,000 short tons from maasbanker and 6,000 short tons from pilchard or a total of 10,000 short tons. Of this production 5,000 tons are expected to be sold as crude oil and to bring an estimated gross return of \$1,700,000 at current prices.

Industrial Oils (Bleached and Winterized): The expected production of bleached and winterized oils in 1949 is 5,000 short tons; the expected return at present prices would be \$2,000,000.

Markets: Less emphasis is being placed upon industrial oils for 1949, not only because of the marked recent drop in prices but also because ECA deliveries of vegetable oils to Europe has reduced that market for industrial oils.





## United Kingdom

SEA FISH INDUSTRY BILL: A Sea Fish Industry Bill was introduced in the British House of Commons on May 12, 1949, according to a June 7 report from the American Embassy at London. The purpose of the Bill is stated as being:

"To provide for giving financial assistance to persons engaged in or desiring to engage in the sea-fishing industry, for regulating the crew accommodation provided in fishing boats, for safeguarding the quality of sea fish intended for human consumption and otherwise securing the best use of supplies of sea fish, for the licensing of fishing boats and of persons engaged in processing or wholesale dealing in sea fish, for appointing sea-fishery officers, for amending the Merchant Shipping Act, 1894, with respect to fishing boats engaged in the Newfoundland cod fisheries, for repealing certain provisions of the Sea Fish Industry Act, 1938, and for purposes connected with the matters aforesaid."

On May 20, at the close of the debate, the Bill was read a second time and sent to Committee.



## Uruguay

STATUS OF FISHERIES: Despite huge potential fishing resources and a general liking for fish by Uruguayans, fish products constitute only a small part of the national diet of the inhabitants, according to the January 22 Foreign Trade, a Canadian periodical. Nevertheless, Uruguay is far from self-sufficient in fishery products. Only recently has there been any concerted interest displayed by both the people and the Government in the development of their fishery resources. The shrinkage in imports of fish during the Second World War was a determining factor in focussing attention on the development of the domestic fishing industry.

The coastline of Uruguay extends for about 250 miles, and the main fishing area is located between Montevideo, the capital, and Punta del Este, some 150 miles to the east. The next major fishing area is the Uruguay River, the ports of Paysandú and Neuva Palmira being the principal centers for western Uruguay. In addition, a number of small rivers traverse the country in various directions, among them the Rio Negro, Rio Queguay, Rio Cebollati, and the Rio Santa Lucia. Fish is also abundant in the estuary of the Rio de la Plata, due to the many sand banks.

Fresh-water Fish Not Exploited Commercially: Fresh-water fishing has been investigated extensively in the shallow lakes near the coast and in other lagoons of southeastern Uruguay, which are reported to be good areas for developing smelt (pejerrey) fisheries, the preferred fresh fish in the area. However, fresh-water fish is not yet exploited commercially to any great extent.

There are no trout or salmon in Uruguay, due to the waters of the streams being muddy. The most common lake and river fish is the corvina negra, which weigh from 20 to 50 pounds and even more. The flesh is poor in quality but it is substantial and, when dried and cured, will pass for cod. Dorados and tarariras abound in the large streams and up rivers, but they are a game fish rather than a commercial variety.

The chief fresh-water fish are the corvina negra (Pogonias chromis), the dorado (Salaminus platensis), the mandubi (Ageneiosus valenciennesis), the pacu (Myletes orbignyanus), the sabalo (Prochilodus platensis), and the tararira (Hoplias malabaricus).

Many Varieties of Salt-water Fish Available: Nearly all the salt-water fish are caught close to shore, and the most common types are the following: the anchoa (Pomatomus saltatrix), the bonito (Sarda sarda), the brotula (Urophycis brasiliensis), the burriqueta (Ophioscion adustus), the congrio (Leptocephalus conger), the criolla (Pogonias chromis), the corvina blanca (Micropogon opercularis), the lenguado (Xystreuris notatus), the lisa (Mugil brasiliensis), the merluza (Merluccius gayi), the mero (Acantristius patagonicus), the palometa (Parona signata), the pargo colorado (Pargus pargus), the pejerrey (Menidia bonariensis), the pescadilla (Macrondon ancylodon), and the sargo (Diplodus argenteus).

Among the better-known species are the corvina (croaker), which accounts for 78 percent of the total catch, the pescadilla (sea trout) with 12 percent of the catch, and the bagre (catfish) and the merluza (hake) with 1 percent each. Other species are: the congrio (conger eel), the pejerrey, the menhaden, the mullet, the flounder, the bluefish, the shad, and the shark. During the past season, 14,000 sharks were caught and the liver oil, amounting to some 1,100 pounds, was sold locally for vitamins. In 1943, the total annual fish catch of Uruguay was reported to be 7,334,000 pounds.

The only official statistics available on the fish catch in Uruguay are for the period 1937-41 and make no distinction between salt- and fresh-water fish (Table 1).

	Lbs.
1941 .....	6,520,254
1940 .....	6,419,717
1939 .....	7,185,924
1938 .....	7,614,759
1937 .....	7,560,142

It is estimated that the total catch is, at present, between 7.7 million and 8.8 million pounds a year.

Government Participates in Fishing Industry: The fishing industry of Uruguay is divided between private enterprise and a competitive government-operated fishing service known as Servicio Oceanografico y de Pesca. The S.O.Y.P. operates offshore from Montevideo and Punta del Este and accounts for approximately 40 percent of the catch. This government organization owns a large steam trawler and several small craft. It has a warehouse for cleaning and storing fish, one ice factory, another factory for the preparation of fish meal and fish oil, and a canning plant. Production of canned fish was 148,000 pounds in 1942 and, with present equipment, maximum production might reach half a million pounds. The S.O.Y.P. is now being reorganized, and it is proposed to spend several million dollars on new equipment, such as cold-storage plants and more and better trawlers. The service is already experimenting in the production of dried and smoked fish and hopes in time to can fish for export.

Private fishermen, operating from Montevideo and Piriapolis, confine their activities to inshore fishing and specialize in taking the common types such as the corvina and pescadilla. Fishing on the Uruguay River, from Paysandú and Nueva Palmira is also a private enterprise. In 1947, the total number of fishermen in Uruguay was estimated at 400.

Establishment of Cannery Proposed: A company has recently been incorporated with an authorized capital of 2.5 million pesos (approximately \$1,645,750). It

is now being organized and proposes setting up a large fish, meat, and vegetable cannery. Fifty percent of the capital is reported to be owned by French interests with whom the company has a 20-year contract for the output of canned foodstuffs. It is reported that the French interests are sending out their own technicians.

Factors hindering production in Uruguay are:

1. Most of the fish is caught by individual fishermen operating on a small scale.
2. The number of large-scale producing units is insufficient.
3. There is a general shortage of all types of fishing gear, particularly boats and tackle needed for deep-sea fishing.

However, it is expected these last two factors will be largely eliminated by the new government subsidy to S.O.Y.P. and by the establishment of the new large-scale producing unit mentioned above.

Seal Rookery: The Government owns a seal rookery at Isla de Lobos, near Punta del Este. There are over 300,000 seals on the island, and the annual slaughter is approximately 7,000. These produce some 88,000 pounds of oil plus, of course, the skins. The business is under the control of S.O.Y.P. (Servicio Oceanografico y de Pesca), a Government organization.

Imports: The greater part of the population is of Spanish and Italian descent and, prices and quality being equal, the preference will always be for canned fish produced in the mother countries.

Salt cod is the most important variety of fish imported into Uruguay, and Norway is the leading supplier. Only the highest grade is imported.

The present trade for canned sardines, anchovies, and her-

ring is about the same as 1937 through 1939 as regards volume and countries of origin.

A fair demand exists for sardines in oil, the principal suppliers being Spain, France, and Norway. Pressed sardines are also imported from Portugal and, to a lesser extent, from Spain. Anchovies are supplied mainly by Spain, Portugal, and Argentina.

During the 1937-39 period, imports of dried herring totaled 11,246 pounds and came from Norway. During the same period, imports of oysters and lobsters amounted to 21,360 pounds, the United Kingdom being the principal supplier.

Table 2 - Leading Imports of Fishery Products

Year	Cod and	Sardines	Pressed	Anchovies, in Oil,
	Similar Fish	in Oil	Sardines	Barrels & Brine
	Lbs.	Lbs.	Lbs.	Lbs.
1948 <sup>1/</sup> ..	343,207	-	-	-
1947 ....	575,689	-	-	-
1946 ....	561,682	-	-	-
1939 ....	1,128,816	441,126	10,569	260,821
1938 ....	1,068,085	460,728	43,912	206,149
1937 ....	875,384	447,938	58,797	140,815
<sup>1/</sup> Only first six months of the year.				



## International

ANTARCTIC WHALING PRODUCTION, 1948-49 SEASON: The 1948-49 pelagic whaling season, the fourth since the war, opened December 15, and since the season's quota of 16,000 blue whale units<sup>1/</sup> (about 30,000 whales) set by the International Whaling Convention was reached on March 26, the season closed 12 days before the scheduled closing date of April 7. The whales affected by the limit are baleens (which include the world's largest mammal, the blue whale), the fin whales (which yield some of the best whale meat), and the smaller sei whales of which only a few have been caught this season. (Sperm whales are not included with baleens).

Table 1 - Whale Oil: Southern Hemisphere Production<sup>1/</sup>, 1948-49 and 1947-48 Seasons Compared with Average Season 1933-34 to 1936-37

Country	S E A S O N						Average 1933-34 to 1936-37 Total
	1948-49 <sup>2/</sup>			1947-48			
	Whale	Sperm	Total	Whale	Sperm	Total	
	(1,000 short tons)						
Argentina .....	12.0	.4	12.4	7.9	.5	8.4	11.3
Chile <sup>3/</sup> .....	2.0	2.9	4.9	1.9	2.4	4.3	1.5
Japan .....	21.9	-	21.9	19.6	-	19.6	15.3
Netherlands .....	19.6	.8	20.4	14.6	1.3	15.9	-
Norway .....	4/184.0	21.4	4/205.4	185.7	10.5	196.2	226.2
Union of South Africa .....	24.9	4.1	30.0	29.0	4.8	33.8	5/
U.S.S.R. ....	4/12.0	1.0	4/13.0	10.4	.5	10.9	3.1
United Kingdom .....	115.9	14.1	130.0	129.2	12.7	141.9	233.5
Total .....	392.3	45.7	438.0	398.3	32.7	431.0	6/529.5

1/Approximately 90 percent produced is Antarctic catch and balance mainly shore station catch from herds en route or departing from Antarctic; comprises 95 percent of total world production of whale oil.

2/Preliminary.

3/Calendar years 1947 and 1948.

4/Unofficial estimate.

5/Included in United Kingdom production.

6/Including others - 38,600 tons.

Production: The Southern Hemisphere production accounts for over 95 percent of the world output of whale oil, and about 90 percent of this is from whales caught in the Antarctic with the balance from the catch of shore stations that hunt herds moving to and from the Antarctic (Table 1). The shore stations operate for six months and their season ended April 16. They operate independently of the quota of 16,000 blue whale units which applies to pelagic expeditions only. Whale oil production makes up over two-thirds of the world production of all marine oils. Seven countries participated in Antarctic pelagic whaling this season. (Table 2, also see Commercial Fisheries Review, February 1949, page 66.)

Table 2 - Antarctic Whaling: Countries Participating and Equipment in Use, 1947-48 and 1948-49 Seasons

Country	Floating Factories		Shore Stations		Catches	
	1948-49	1947-48	1948-49	1947-48	1948-49	1947-48
Argentina .....	-	-	1	1	7	7
Japan .....	2	2	-	-	14	12
Netherlands .....	1	1	-	-	10	8
Norway .....	10	9	1	1	108	91
Union of South Africa .....	1	1	-	-	14	14
United Kingdom .....	3	3	1	1	46	44
U.S.S.R. ....	1	1	-	-	12	8
Total .....	18	17	3	3	211	184

1/Two fin whales or six sei whales are counted as one blue whale unit.

Outlook: The whaling industry is expected to maintain its present capacity and production of oil for some years to come. The quantities of oil produced probably will vary between the participating countries from year to year but the total output will remain about the same. Demand probably will continue strong for whale oil, as production will remain limited, whereas the markets for it will remain steady in those countries which traditionally use whale oil. Demand may increase in Germany, formerly one of the largest consuming countries.

Norway, in the 1948-49 season, regained her prewar strength in whaling equipment. This country in the last two seasons has produced almost half of the total output of whale oil in the Southern Hemisphere. During the 1948-49 Antarctic season, Norway produced an estimated 205,400 short tons or about 45 percent of the total production, compared with 196,200 tons in the 1947-48 season, also about 45 percent of the total world production.

The United Kingdom is the second largest producer of Antarctic whale oil with an estimated 130,000 short tons in 1948-49, and 141,900 tons in 1947-48. This season's production was about 40 percent below the prewar average.

\* \* \* \* \*

INTER-NORDIC FISHERIES COOPERATION: The Ministers of Fisheries of Denmark, Norway, and Sweden met in Copenhagen on May 15 and 16, 1949, to discuss problems of mutual Nordic interest in the fisheries industry, according to a May 19 consular report from Copenhagen.

It was agreed at the meeting to establish a joint Nordic Committee composed of representatives and biologists of the respective Governments whose primary task would be to investigate herring fisheries in Nordic waters. A five-year plan was approved.

It was further agreed to take joint action in the matter of affording professional education facilities for fishermen, but more detailed information regarding the attitude of the individual Governments will be presented at a future meeting.

The representatives favored greater Nordic collaboration at future international conferences in the field of fisheries.

Finally, it was decided that the next Nordic fisheries conference should be held in Sweden some time during the summer of 1950, and that biologists, government representatives and representatives of the industry of the several countries should be invited to participate.

At the Nordic Fisheries Conference at Hinds Gaul, which preceded the Copenhagen meeting, the following matters were discussed: development of fresh water fishing, Greenland fisheries, utilization of Marshall aid for the benefit of the industry, and export policies and problems. Present at the Hinds Gaul meeting were representatives of the fishing industry, government officials and biologists from all the above-mentioned countries.

\* \* \* \* \*

TUNA RESEARCH IN EUROPE: A meeting of the Atlantic Committee for the Study of Tunas was held May 23-27 at Malaga, Spain. This Committee was organized under the International Council for the Study of the Sea at its meeting in Copenhagen in October 1948. Its purpose is to assemble all knowledge about tunas and to plan

and coordinate tuna research. The Chief of the Service's Branch of Fishery Biology attended the meeting.

In the discussions, attention was focused on what Americans call yellowfin, big-eyed, bluefin, and albacore, and to some extent, also the skipjack, the frigate mackerel, and the black skipjack.

The yellowfin occurs in the Gulf of Gascony, off Spain and Portugal, off Morocco, Mauritania, the Canary Islands, Senegal and Angola. It does not occur in the Mediterranean.

The big-eyed occurs off Morocco, in the open sea off Mauritania during July; it is occasionally taken in Senegal and Angola, and is abundant at Madeira and the Azores.

The seasonal occurrence of the albacore, the most valuable commercial tuna of France, varies according to locality. It appears variously from April to December from the coast of Brittany southward off Spain, Portugal and Madeira. About December it vanishes. Most specimens of albacore caught in Europe are immature; their spawning place is unknown.

The bluefin, most important in the southern European countries and in the Mediterranean, characteristically has two seasons. One as it moves toward the spawning grounds; the other after it has spawned. The prespawning migration, observed from airplanes, seems to come in waves, each composed of different sized fish. The largest fish generally come in first; these are followed by smaller ones, and those in turn by larger ones.

The problem of what oceanographic conditions are associated with the occurrence of albacore and bluefin are being studied by the French. For albacore, the optimum salinity is believed to be 35.5, and temperature 14° C. at 50 meters, 18°-20° C. at the surface. The fish are most likely to occur where Atlantic water mixes with continental water.

Fishing methods used on the Mediterranean coast of Spain were observed by those who attended the meeting, and in one net of the special type net used, around 500 tons of bluefin tuna (mostly of fish weighing 300 pounds each) were taken.

A luncheon was given those attending the meeting at which tuna was served in many different ways. Nearly all parts of the fish seem to be used. The baked tuna tongue looked and tasted somewhat like meat. The meat from the belly was the best. Salted tuna meat and roe were also served.

