



## International

### INTER-AMERICAN SPECIALIZED CONFERENCE ON CONSERVATION OF NATURAL RESOURCES

#### RESULTS OF MEETING ON CONTINENTAL SHELF AND MARINE WATERS:

The Inter-American Specialized Conference on "Conservation of Natural Resources: The Continental Shelf and Marine Waters" was adjourned March 28 after it had approved a resolution. The Conference opened in Ciudad Trujillo, Dominican Republic, on March 15.

"I - The Inter-American Specialized Conference on Conservation of Natural Resources: Continental Shelf and Marine Waters considering: That the council of the organization of American States in fulfillment of resolution LXXXIV of the Tenth Inter-American Conference held in Caracas in March 1954, convoked this Inter-American specialized conference 'for the purpose of studying as a whole the different aspects of the juridical and economic system governing the submarine shelf, oceanic waters, and their natural resources in the light of present-day scientific knowledge;' and that the conference has carried out the comprehensive study that was assigned to it; resolves: To submit to the consideration of the American states the following conclusions:

"1. The seabed and subsoil of the continental shelf, continental and insular terrace or other submarine areas adjacent to the coastal state outside the area of the territorial sea and to a depth of 200 meters, or beyond that limit to where the depth of the superjacent waters admits of the exploitation of the natural resources of the seabed and subsoil, appertain exclusively to that state and are subject to its jurisdiction and control.

"2. Agreement does not exist among the states here represented with respect to the juridical regime of the waters which cover said submarine areas nor with respect to the problem of whether certain living resources belong to the seabed or to the superjacent waters.

"3. Cooperation among states is of the utmost desirability to achieve the maximum sus-

tainable yield of the living resources of the high seas bearing in mind the continued productivity of all species.

"4. Cooperation in the conservation of the living resources of the high seas may be achieved most effectively through agreements among the states directly interested in such resources.

"5. In any event, the coastal state has a special interest in the continued productivity of the living resources of the high seas adjacent to its territorial sea.

"6. Agreement does not exist among the states represented at this Conference either with respect to the nature and scope of the special interest of the coastal state or as to how the economic and social factors which such state or other interested states may invoke should be taken into account in evaluating the purposes of conservation programs.

"7. There exists a diversity of positions among the states represented at this conference with respect to the breadth of the territorial sea.

"II - Therefore, this conference does not express an opinion concerning the positions of the various participating states on the matters on which agreement has not been reached and: Recommends: That the American States continue diligently with the consideration of the matters referred to in paragraphs 2, 6, and 7 of this Resolution with a few to reaching adequate solutions."

At the conclusion of the Conference and in view of certain statements made by the delegations of other countries at the final plenary session on March 27, the United States delegation issued the following statement:

"(A) The government of the United States does not recognize a right on the part of a coastal state as claimed by certain delegations to exclusive

control over the resources of the high seas. The United States maintains that in accordance with international law fishery regulations adopted by one state cannot be imposed on nationals of other states on the high seas except by agreement of the governments concerned. Moreover, the United States delegation also wishes to record the fact that it made a specific proposal for the conference which would, if adopted, effectively meet the conservation problem that would be posed in the event of failure of the interested states including the coastal state to reach agreement on the need for and application of conservation measures.

"(B) The government of the United States does not recognize that a state has competence to determine the breadth of its territorial sea apart from international law.

"(C) The delegation of the United States also wishes to call attention to the fact that broader consideration having been given at this conference than at any previous Inter-American meeting to the various aspects of the subject on its agenda, the present resolution of Ciudad Trujillo constitutes the latest and most authoritative expression of the Organization of American States on the subjects discussed therein.

Note: Also see Commercial Fisheries Review, May 1956, p. 37.

#### INTERNATIONAL LAW COMMISSION

CONVENES AT GENEVA FOR EIGHTH SESSION: The grouping together systematically in a single report of all the rules adopted by it in respect of the high seas, the territorial sea, the continental shelf, contiguous zones, fisheries, and the protection of the living resources of the sea, will be among the tasks before the United Nations International Law Commission (ILC) at its eighth session starting April 23 and ending about June 29 in Geneva.

The Commission, whose 15 members are recognized international law experts elected by the General Assembly, has as its objective the promotion of the progressive development of international law and its codification.

Questions pertaining to the "regime of the high seas" and the territorial sea--forming the first two items of an 11-point provisional agenda--have been before the Commission for several years and have been the subject of a number of reports prepared by J. P. A. Francois of the Netherlands, a member of the Commission and special rapporteur on this subject.

The Commission prepared, at its seventh session, a set of provisional articles concerning the regime of the high seas and a number of draft articles on the regime of the territorial sea which were subsequently circulated to governments for comment. The observations of the 18 governments which have so far replied and a further report by Professor Francois will form the basis for discussion by the Commission in the light of which a final report on the law of the sea is expected to be drawn up for submission to the eleventh session of the General Assembly.

There are a number of other items on the provisional agenda of the Commission not related to the subjects indicated above.

The members of the Commission are: Gilberto Amado (Brazil), Douglas L. Edmonds (United States), Sir Gerald Fitzmaurice (United Kingdom), J. P. A. Francois (Netherlands), F. V. Garcia-Amador (Cuba), Shuhsi Hsu (China), Faris Bey el-Kouri (Syria), S. B. Krylov (U.S.S.R.), L. Padilla Nervo (Mexico), Radhabinod Pal (India), Carlos Salamanca (Bolivia), A. E. F. Sandstrom (Sweden), Georges Scelle (France), Jean Spiropoulos (Greece), Jaroslav Zourek (Czechoslovakia).

## GENERAL AGREEMENT ON TARIFFS AND TRADE

AUSTRIAN CANNED FISH IMPORT DUTIES RENEGOTIATED: Changes in Austrian import duties on canned salmon, pilchards, and tuna in brine will result from the negotiations under Article XXVIII of the General Agreement on Tariffs and Trade. Duties on canned tuna in oil will be bound at the old rate. These negotiations were based on the draft of a new Austrian tariff which utilizes the standardized Brussels nomenclature and ad valorem rates on most tariff items. The new tariff is expected to be put into effect upon approval of the Austrian Parliament early in 1956.

The new and old tariff rates are as follows:

<u>Old Tariff No.</u>	<u>New Tariff Item</u>
	16.04 B. Other prepared on preserved fish;
	1. In airtight containers:
ex 107	ex a Tuna-fish, salmon and pilchards, solely in oil; 15 percent ad valorem (old rate 15 percent); Non-GATT rate, 15 percent.
ex 107	ex b Tuna-fish, salmon and pilchards, cooked or smoked in own juice; 180 schillings per 100 kilograms--equivalent to US\$3.15 per 100 pounds (old rate 15 percent); Non-GATT rate 595 schillings per 100 kilograms--equivalent to US\$10.40 per 100 pounds.

Imports from the United States under the latter item in 1954 were valued about US\$1,000. These items were freed from quantitative restrictions on dollar imports as of July 15, 1955.

In the negotiations, the United States agreed to a modification of tariff concessions previously granted by Austria. Austria was permitted to alter 13 concessions directly granted to the United States in prior negotiations. Three of these were withdrawn and 10 were raised and then bound at the higher level. To compensate for these withdrawals and modifications, Austria reduced rates on 8 items below the levels at which they were previously bound and granted new concessions on 23 items. Sixteen items on which Austria agreed to grant compensatory concessions were freed from quantitative restrictions on dollar imports.

Negotiations to this end followed decisions by Austria to invoke Article XXVIII of the General Agreement on Tariffs and Trade which permits GATT countries, at specified but infrequent periods, to withdraw or modify concessions previously granted. No changes in United States duties were involved in this renegotiation.

Note: Also see Commercial Fisheries Review, May 1956, p. 37

## FOOD AND AGRICULTURE ORGANIZATION

MEDITERRANEAN FISHERIES COUNCIL TO MEET IN TURKEY: The General Fisheries Council for the Mediterranean Sea will hold its fourth meeting in Istanbul from September 17 to 22, 1956. Invitations have been sent to 14 countries and six international organizations to send representatives.

Eleven member countries on the Council--Egypt, France, Greece, Israel, Italy, Monaco, Spain, Tunisia, Turkey, United Kingdom, and Yugoslavia--are expected to send delegates. Some other non-member countries interested in the Mediterranean fisheries have been invited to send observers, reports the March 9 issue of The Fishing News.



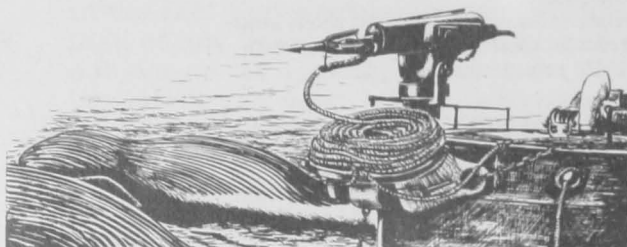
The meeting is expected to lead to more effective cooperation in matters concerning the Mediterranean fisheries, chief aim of the Council.

At the third meeting experts submitted 54 papers, a valuable contribution to the study of Mediterranean fishery problems, and the Council has issued an invitation to send special papers to the Istanbul meeting.

### WHALING

1956 ANTARCTIC PELAGIC WHALING RESULTS BELOW 1955 SEASON: Sharp competition between a larger number of expeditions for a smaller quota of whales (15,000 blue-whale units this season as against 15,500 in 1955) made this year's season 15 days shorter than the previous season. This season's Antarctic pelagic (open sea) baleen whaling season, which ended March 5, resulted in a provisional catch of 14,860 blue-whale units, or somewhat less than the 15,300 blue-whale units in 1955. Seven countries participated in this season's pelagic whaling, which opened on January 7, 1956.

WHALE HARPOON GUN



Norway: In spite of the increased efficiency of Norwegian catchers, only 2 of the 9 Norwegian Antarctic expedi-

tions exceeded last year's baleen whaling catch.

Total Norwegian production of 783,568 barrels (133,200 metric tons) of whale and sperm oil for this season was slightly lower than the 1955 production of 806,244 barrels (137,060 tons), states a March dispatch from the United States Embassy in Oslo.

The Norwegian Thorshammer made out better than any of the other Norwegian floating factories, despite the fact that it is one of the oldest and that its boiling plant is relatively inefficient. On top of that, it operated with only 8 catching vessels, while some of the more modern ones had up to 16. According to several old-timers, this proves that Antarctic whaling nowadays is a sheer gamble, and something should be done about it.

For the Norwegian expeditions as a whole, the 1956 Antarctic whaling season marked a new low, yielding only Kr. 137 million (US\$19.2 million) worth of whale oil, as against Kr. 186 million (US\$26.1 million) in 1955 and Kr. 227 million (US\$31.8 million) in 1954. The whale oil production in three seasons was, respectively, 654,848 barrels (111,311 metric tons), 668,352 barrels (113,620 metric tons), and 929,077 barrels (157,943 metric tons). The average for each Norwegian catcher vessel was only 5,953 barrels, as compared with 9,540 barrels for each of the Japanese catcher vessels. Soviet and British catcher vessels were also ahead. To most of the Norwegian whaling specialists, the trend is disturbing, whatever the cause. Altogether about 7,000 Norwegians earn their living as whalers. Of these, some 5,000 are engaged by Norwegian expeditions, and 2,000 work for British companies. In addition, whale and sperm oil provide the raw materials for a growing processing industry, which employs quite a few workers. Above all, whaling is an important source of foreign exchange.

The Norwegian Whaling Association marketing pool states that all of Norway's 1956 season whale and sperm oil has been sold for about 230 million kroner (US\$32.2 million), compared with the value of 212 million kroner (US\$29.7 million) for the 1955 production. Early in the season 19,000 long tons of whale oil were sold for about US\$245 a long ton, and the remainder of the catch was sold for about US\$238 a ton. The average price for the 21,000 tons of this season's sperm oil was between US\$189 and US\$196.

A statement published in the Sandefjords Blad and reproduced in the March 29, 1956, News of Norway, describes the 1956 season as disappointing. "The widely varying results achieved by the individual expedition," the newspaper writes, "clearly indicates that the whale stock is declining." The Sandefjord Blad also states that leaders of the Norwegian whaling industry are hoping for an international agreement to limit the number of catcher vessels employed by the expeditions. This, many believe, would cut costs without reducing the whale catch.

There is general agreement in Norwegian whaling circles that the total quota for the 1957 Antarctic season should be reduced from 15,000 to 14,500 blue-whale units, as a means of preserving the whale stock. At last year's International Whaling Convention, held in Moscow, the Norwegian delegates raised the question of placing neutral observers aboard all factory vessels.

In a recent move, the Norwegian Whaling Association has made strong efforts to restore the international agreement on voluntary limitation of the number of catcher vessels that may be used by each expedition, which was in effect during the 1953/54 and the 1954/55 whaling seasons. Norwegian whaling operators are of the opinion that too many catcher vessels are attached to each expedition, particularly in view of the relatively short season, which this year lasted only 58 days. Sending more catcher vessels than strictly necessary is a losing proposition, they feel.

Whaling requires heavy investments and the cost of operation runs high. Construction of a modern factory vessel costs well over Kr. 40 million (US\$5.6 million), and annual operating expenditures average Kr. 20-25 million (US\$2.8-3.5 million). A new catcher vessel comes to Kr. 6-7 million (US\$840,000), and at least Kr. 1 million (US\$140,000) is needed to pay for each year's operations. It costs an average of Kr. 400,000 (US\$56,000) per day to keep an expedition on the Antarctic hunting grounds.

Union of South Africa: The South African whaling expedition this season produced 13,431 short tons of whale oil, 4,776 tons of sperm oil, 3,253 tons of whale-meat meal, and 29 tons of whale livers, according to press reports received by the United States Foreign Agricultural Attache at Pretoria (March 14). The total value of these whale products is estimated at US\$4.8 million dollars at the primary level.

The total production of oil was 110,000 barrels for the 1956 season, as compared with 99,000 barrels in 1955, and 147,000 barrels for 1954.

Japan: The catch of the three Japanese Antarctic expeditions which participated in the 1956 season was 5,154 baleen whales, or 2,742 blue-whale units, as compared with 4,989 whales, or 2,772 units, in 1955. The 1956 Japanese baleen catch yielded 102,141 metric tons of whale products as compared with 93,126 tons the previous season.

The total catch for the season, including sperm whales, which began at the end of 1955 on an unlimited basis, amounted to 6,462 whales, which yielded 115,321

Table 1 - Japanese Antarctic Whale Catch, 1954/55 and 1955/56 Seasons

Season	Baleen					Total Blue-Whale Units	Sperm	Grand Total	No. of Mother-ships	No. of Catcher Boats
	Blue	Fin	Hump-back	Sei	Total					
	(Number)									
1955/56	383	4,524	240	7	5,154	2,742	1,308	6,462	1/3	40
1954/55	590	4,220	179	-	4,989	2,772	967	5,956	3	36

1/ In the 1955/56 season, one of the fleets operated from 11/24/55 to 3/5/56; one from 11/22/55 to 3/5/56; and one from 12/3/55 to 3/4/56.

metric tons of whale products. The previous season's catch amounted to 5,956 whales and a yield of 102,873 tons. Thus there was an increase of 10.8 percent in the baleen and sperm catch and 11.2 percent in yield as compared to the previous season's totals.

Japan produced 57,611 metric tons of baleen oil from this season's catch, of which 51,500 tons, according to present plans, will be exported. So far 35,500 tons

Table 2 - Japanese Production of Whale Products from Antarctic Catch, 1954/55-1955/56 Seasons

Product	1955/56 Season			1954/55 Season		
	Baleen	Sperm	Total	Baleen	Sperm	Total
	(Metric Tons)					
Oil.....	57,611	11,894	69,505	53,555	8,822	62,377
Frozen meat....	35,564	180	35,744	29,489	5	29,494
Salted meat....	8,895	1,073	9,968	9,952	791	10,743
Liver oil.....	71	24	95	53	17	70
Others.....	-	9	9	77	112	189
Total.....	102,141	13,180	115,321	93,126	9,747	102,873

have been sold to West Germany at a reported price of £86 per metric ton, compared to a price of £74 for the previous season's production. It is also reported by a reliable source that

3,600 tons of sperm oil have been sold to the United States at a price equivalent to £71 per ton. Japanese exports of fish oils, including whale oil, are expected to reach a high level during the coming year owing not only to larger production of whale oil, but also heavy production of herring oil coupled with a favorable price trend in the European market.

Note: 1 blue-whale unit equals 1 blue whale, or 2 fin whales, or 2.5 humpback whales, or 6 sei whales. Thus, the actual number of whales taken during the season is far greater than the indicated number of units.

Also see Commercial Fisheries Review, March 1956, p. 28.

#### POLISH AND SOVIET FLEETS FISH IN NORTH ATLANTIC

The Soviet Union and Poland are conducting extensive fishing operations in the North Atlantic Ocean and the North Sea, according to an interview published in Ex-trabladet, a Copenhagen newspaper, and reproduced in the February 8 Fiskaren, a Norwegian fishery trade periodical.

The Soviet Union has a fleet of 350 craft (mostly from Murmansk) with four large motherships. According to the Danish citizen interviewed (who was a Soviet herring inspector in the Faroe Islands in 1953), the fleet in 1953 carried 5,000 crewmen and fished practically the whole year by following the migrating shoals of herring. The Soviet herring catch has been large and is estimated to be close to 1.5 million barrels (200 pounds a barrel), valued at about US\$21.72 a barrel ex-vessel.

During the summer months the herring fleet fished off Jan Mayan, an island between Norway and Greenland; later in the season it moved to the east coast of Iceland; a few months later it was off the Faroe and Shetland Islands; and it operated off the Coast of Norway near Aalesund for the winter herring fishery.

The report states that the fishermen appear to be very competent and satisfied with their work. The crews on the mothership include women as cleaners and packers of the herring. Most of the vessels are new vessels built in Danish shipyards.

Poland was reported to have 525 vessels and a mothership of 800 tons in the fishing areas of the Atlantic Ocean and the North Sea. The Polish fleet has set a goal of 1,286,000 barrels in 1956.

### ICELAND EXHIBITS AT INTERNATIONAL FISHERY TRADE FAIR

For the first time Iceland will exhibit its fishery products at the International Fishery Trade Fair, Copenhagen, Denmark, May 18-27. A special Fair Committee was formed by the Icelandic Government to organize prospective exhibitors at the Fair. Products exhibited consisted of cured and frozen fish, fish meal, cod-liver oil, shrimp, caviar, and canned fishery products, according to the Press Service of the International Fishery Trade Fair in Copenhagen.

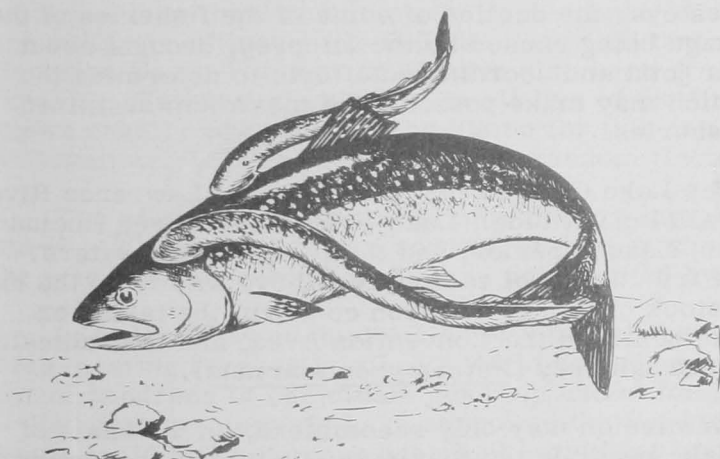
Part of the exhibit was an information booth which provided the numerous visitors with details about the Icelandic fishery products available for export.

### GREAT LAKES FISHERIES COMMISSION

**FIRST MEETING:** The first meeting of the six-member International Great Lakes Fishery Commission, created by Canada and the United States to coordinate efforts to protect the Great Lakes fisheries, opened in Ottawa on April 23, 1956. Canadian Fisheries Minister James Sinclair welcomed the Commissioners of the two countries at the opening session of the three-day meetings.

A nonregulatory body, the Commission was provided for in the Convention on Great Lakes Fisheries which was brought into force last October in Ottawa when an

exchange of instruments of ratification took place between Canada and the United States. The Commission may make recommendations, based on research findings, to make possible the maximum sustained productivity of the Great Lakes fishery.



Sea lamprey feeding on a trout.

of the fisheries and which is a continuing threat to others.

One of the most important jobs facing the Commission is the coordination of the scientific research of various agencies engaged in the study of the Great Lakes fisheries, especially that dealing with the control of the parasitic sea lamprey which has caused serious damage to some

Members of the Great Lakes Fisheries Commission for Canada are Dr. A. L. Pritchard, Director, Conservation and Development Service, Department of Fisheries, Ottawa; Dr. W. J. K. Harkness, Chief, Division of Fish and Wildlife, Ontario Department of Lands and Forests, Toronto; and Dr. A. O. Blackhurst, Manager, Ontario Council of Commercial Fisheries, Port Dover, Ont.

United States Commissioners are Claude Ver Duin, Mayor of Grand Haven, Mich., Lester P. Voigt, Wisconsin State Conservation Director, Madison, Wis., and John L. Farley, Director, Fish and Wildlife Service, U. S. Department of the Interior.

Mr. Farley was elected Chairman of the Commission for a two-year term, and Dr. Pritchard Vice-Chairman.

The Commission will establish headquarters in either Ann Arbor, Mich.; or Toronto, Ont. The decision on the site will be made after quarters in both cities

have been investigated by a committee made up of Claude Ver Duin, Chairman of the United States section of the Commission, and Dr. A. L. Pritchard, Vice-Chairman of the Commission and chairman of the Canadian section. Pritchard and Ver Duin will report at the next meeting of the Commission, which will take place in Sault Ste. Marie, Ont., on July 30.

An executive secretary will be employed to supervise the work of the Commission. The post of executive secretary is open to residents of Canada and the United States, and will call for scientific and administrative qualifications of a high order. Until a permanent appointment is made, the work of the Commission will be directed by Dr. James Moffatt, Chief, Great Lakes Fishery Investigations, U. S. Fish and Wildlife Service, who will act in a temporary capacity.

The Great Lakes Fisheries Convention, ratified by Canada and the United States, is the fourth treaty in which both countries have come to bilateral agreement on fisheries conservation matters. The other conventions deal with salmon, halibut, and Pribilof seals.

This Convention provides for joint action in Great Lakes fishery research as well as in a program for the elimination of the predator sea lamprey in these waters. The Convention, which will have an initial duration of 10 years, provides for the establishment of a Great Lakes Fishery Commission made up of three appointees from each country.

Deep concern by both countries over the decline of some of the fisheries of the Great Lakes, and the serious damage being caused by the lamprey, brought about the recognition of the necessity for joint and coordinated efforts to determine the needs for the type of measures which may make possible the maximum sustained productivity of the Great Lakes fisheries.

This Convention area embraces Lake Ontario (including the St. Lawrence River from Lake Ontario to the 45th parallel of latitude), Lake Erie, Lake Huron (including Lake St. Clair), Lake Michigan, Lake Superior, and their connecting waters. The Convention also applies to the tributaries of each of the above waters to the extent necessary to investigate any stock of fish of common concern, the taking or habitat of which is confined predominantly to the Convention Area, and to eradicate or minimize the population of the sea lamprey (Petromyzon marinus).

A nonregulatory body, the Commission may only recommend, on the basis of research findings, measures to make possible the maximum sustained productivity in the Great Lakes fisheries.

The Commission has the following duties: (a) to formulate a research program or programs designed to determine the need for measures to make possible the maximum sustained productivity of any stock of fish in the Convention Area which, in the opinion of the Commission, is of common concern to the fisheries of Canada and the United States of America and to determine what measures are best adapted for such purpose; (b) to coordinate research made pursuant to such programs and, if necessary, to undertake such research itself; (c) to recommend appropriate measures to the Contracting Parties on the basis of the findings of such research programs; (d) to formulate and implement a comprehensive program for the purpose of eradicating or minimizing the sea lamprey populations in the Convention Area; and (e) to publish or authorize the publication of scientific and other information obtained by the Commission in the performance of its duties.

In order to carry out these duties, the Commission may: (a) conduct investigations; (b) take measures and install devices in the Convention Area and the tributaries thereof for lamprey control; and (c) hold public hearings in Canada and the United States of America.



Electricity, poisonous chemicals, and ultrasonics are all being tested by Canadian and United States scientists as weapons in their war on the predatory sea lamprey, which is playing havoc with the stocks of lake trout and whitefish in the Great Lakes.

A temporary scientific committee appointed by the international Great Lakes Fishery Commission reported at the meeting that the most effective device developed for controlling the sea lamprey is an electrical barrier, placed across streams tributary to the Great Lakes, up which the lampreys go to spawn.

On the Canadian side 29 such barriers are in operation on Lake Superior and on Lake Huron. On the United States side there are 48 barriers on Lake Superior, 19 on Lake Michigan, and 1 on Lake Huron.

The committee reported that the lamprey-control network should be completed on Lake Superior this year. This would call for an additional 10 to 20 barriers on the Canadian side and 6 on the United States side. In addition, the Commission will this year build 55 barriers on Lake Michigan, and similar installations will be completed on Lakes Michigan and Huron in the following two years.

It is estimated that construction of electrical barriers on all lamprey-spawning streams flowing into all the Great Lakes should be completed by the end of 1960.

The first work is being done on Lake Superior because there are still sizable stocks of lake trout surviving there. In Lake Michigan the lake trout populations are virtually extinct while in Lake Huron all that are left are small numbers in Georgian Bay. The lake trout have also been greatly reduced in numbers in Lake Ontario. Catches of whitefish in all five of the Great Lakes are low, but it is not known exactly how much of the blame for this can be placed on the lamprey, as whitefish are particularly subject to random fluctuations.

The electrical device kills only mature lampreys as they ascend the stream to spawn. The scientists are now working on methods which it is hoped will destroy the younger generations which are not affected by the barriers.

In order to avoid duplication of effort, fishery biologists of both countries have been meeting frequently since 1946 to coordinate research and control measures. Out of hundreds of chemicals possibly useful for poisoning the young lampreys, the United States scientists have narrowed the field to the eight most probable poisons which could kill lampreys but which would not be toxic to other forms of wildlife or to human beings. In Canada, experiments are being made with ultrasonic devices, as well as the improvement of present control by means of the electrical barrier.

At the meeting the Commission appointed a permanent scientific committee, made up of biologists from both countries, to continue joint efforts to control the lamprey and also to develop and recommend a research program as the basis for management of all fisheries in the Great Lakes.



## Canada

ATLANTIC SALMON REGULATIONS FOR 1956: No major changes in regulations or program for the coming year were proposed at the annual meeting of the Federal-Provincial Coordinating Committee on Atlantic Salmon held in Ottawa on February 17. However, the meeting was in favor of the formation of an advisory committee to be made up of representatives of the commercial salmon fisheries and angling organizations in the Atlantic provinces. Letters are to be sent to those

provinces suggesting that the commercial and angling groups in Quebec, Nova Scotia, New Brunswick, Prince Edward Island, and Newfoundland each appoint one member, making ten members in all. This advisory committee would meet with the coordinating Committee at the time of its annual meeting.

At the meeting the scientific subcommittee reported on the research carried out in 1955 and on the work done on the salmon streams. The subcommittee was instructed to continue its present program. The largest single project for the coming year is the construction of a fishway at a falls on the LaHave River in Nova Scotia, which is expected to double the productive area of the LaHave basin, adding about 280 square miles to the spawning area.

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COMPLIANCE WITH CANNED FISH AND SHELLFISH IMPORT REGULATIONS REQUIRED: At a recent meeting of the Inspection Officers of the Canadian Department of Fisheries, it was brought out that a great number of exporters in shipping canned fish and shellfish to Canada are not complying with subsection 3 of section 28 of the Meat and Canned Foods Act--Canned Fish and Shellfish and Cannery Inspection Regulations. The Canadian Consular General in a personal communication points out that the section in question reads:

"(3) No person shall import or attempt to import any canned fish or shellfish unless all marks on the cans which identify the canner, the date of packing, and the coding of the lot, are clearly stamped or stenciled on both ends of the cases or containers in which such cases are shipped; such marks shall also be listed on the affidavit prescribed by subsection (1)."

The Canadian authorities point out that if exporters continue to disregard this regulation, the Canadian Department of Fisheries has no other recourse than to refuse entry to shipments until they are properly marked.

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LABELING REGULATIONS FOR FRESH, FROZEN, OR PROCESSED FISH AMENDED: The Fish Inspection Regulations (Section 59) of Canada have been amended, according to the Fisheries Council of Canada. The amended regulations are as follows:

59. (1) All containers in which fresh or frozen or processed fish is packed shall be correctly and legibly marked or labeled to indicate

- (a) the vernacular name of the fish,
- (b) the net weight of the contents, and
- (c) the name and address of the person, firm or corporation by whom or for whom they are produced and packed or by whom they are distributed;

(2) All wrappers for fresh or frozen or processed fish shall be correctly and legibly marked or labeled to indicate

- (a) the vernacular name of the fish,
- (b) the net weight of the contents unless such contents are to be weighed at time of retail sale,
- (c) the name and address of the person, firm or corporation by whom or for whom they are produced and packed or by whom they are distributed, and,
- (d) the words "Product of Canada."

(3) Marking or labeling prescribed by subsection 1(a), 1(b), 2(a), and 2(b) shall, in respect of other than wooden containers, be not less than three-sixteenths of an inch in height and shall appear on the main body or face of the container or wrapper.

(4) Marking or labeling prescribed by subsection (1) shall appear on one end of a wooden container.

(5) No person shall mark, label or package any fresh, frozen or processed fish in a manner that is false, misleading or deceptive.

(6) Except as herein otherwise provided, containers and wrappers in which fresh or frozen or processed fish is packed for sale in markets outside of Canada may be exempted from any or all of the provisions of this section at the discretion of the Minister.

It is believed that "fish" in the Canadian regulations refers to both fish and shellfish.

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MESH REGULATIONS FOR NORTHWEST ATLANTIC TRAWLERS: Regulations governing mesh sizes in nets used by Canadian fishing trawlers and draggers in certain areas of the Northwest Atlantic will go into effect on January 1, 1957. The new mesh sizes are designed to conserve stocks of cod and haddock, reports the February 1956 Trade News, a Canadian Department of Fisheries publication.

Canada's Department of Fisheries has announced that the new regulations, recommended by the International Commission for the Northwest Atlantic Fisheries, will be similar to those in effect since June 1953 for the Georges Bank area off the New England coast, known as Subarea 5. The subareas to be affected next year are number 3 (Newfoundland fishing banks and waters adjacent to that province) and number 4 (Nova Scotia waters, the Gulf of St. Lawrence and the Bay of Fundy).

Because scientific investigation has shown that the stocks of fish in each of the subareas are distinct and separate, and that there is a slower growth rate in Subarea 3, different minimum mesh sizes are specified for Subareas 3 and 4. The mesh size in Subarea 4 is to be a minimum of  $4\frac{1}{2}$  inches, similar to that already in effect in Subarea 5, but in Subarea 3 a 4-inch mesh size will be permitted. The nets affected are those used by all types and sizes of trawlers and draggers fishing for cod and haddock. The mesh sizes are based on the use of 102 millimeter manila twine, measured wet after use. Tables of equivalent mesh sizes when measured dry for other types of net material have been compiled and will be available from the Biological Station of the Fisheries Research Board of Canada at St. Andrews, N. B., or from the federal Department of Fisheries.

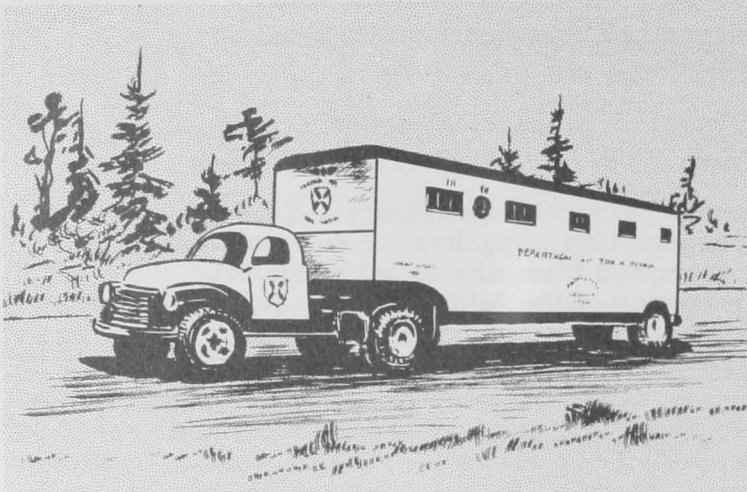
To prevent the impairment of fishery operations conducted primarily for species other than cod and haddock, the new regulations will permit the use of smaller mesh nets by vessels fishing for these other species. However, such vessels may have in possession on board only specified amounts of cod and haddock caught incidentally in the smaller-meshed nets.

Experiments in some years have demonstrated that the larger mesh sizes release as much as half the haddock now wasted at sea, with negligible loss of fish of marketable size. Wastage of small cod at sea is less serious than that of haddock, but as much as 25 percent by number have been discarded in some years in the Gulf of St. Lawrence area.

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### MOBILE SCHOOLS SUCCESSFUL IN TRAINING NOVA SCOTIA FISHERMEN:

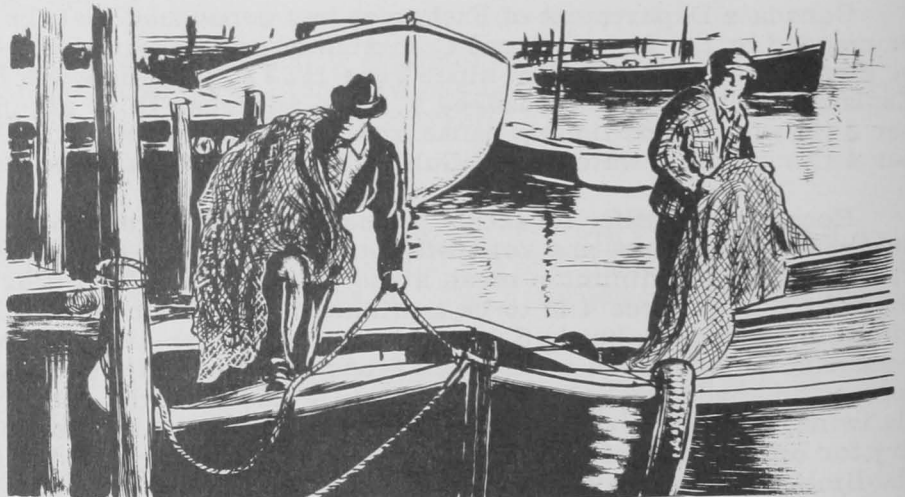
During and after the last war modernization of the Nova Scotia fishing fleet was rapid and the new equipment in the form of boats, nets, and engines required the establishment of training courses for the fishermen. The Nova Scotia fishermen have always been competent, but new inventions and techniques which have come with mechanization--coupled with a modern economic system--demanded that these changes be mastered by any man who would earn his living by fishing. Following a survey of the needs of the fishermen, the Nova Scotia Department of Trade and Industry in 1946 in conjunction with the Department of Labor established a fisheries training program.



Canadian traveling marine engine school.

At first the program (opened to all bona fide fishermen) embraced navigation and engine maintenance, and became an immediate success. Later courses in the repair, design, and dimensions of nets were added. Then fishermen were encouraged to switch to vessels especially built to serve their needs. For this purpose the Nova Scotia Fishermen's Loan Board was set up to help finance the new operations. Inspectors made sure that vessels so bought were constructed on sound lines.

For the fisherman himself the larger unfamiliar vessels posed more new problems. Longer fishing range made necessary a greater knowledge of navigation. Strange nets and good gear require adaptation to new fishing techniques. Engine performance became of great importance. The courses were tuned to the stepped-up demand for knowledge.



Graduates of the net and gear course prepare to test their skills.

Recently in Halifax the new Bluenose Princess--a 40-foot-long shopmobile trailer, big enough to accommodate 12 men for gasoline-engine instruction or eight men for Diesel-engine instruction--was added to the training program. It was the second such shopmobile equipped to offer 4-week courses to the fishermen of Nova Scotia.

Since 1946, training in engine repair and maintenance and in navigation has been given to more than 1,200 fishermen in 30 fishing areas of the province. The success of the program may be measured also by the demand for these courses, which made it necessary to add the second shopmobile.

The use of a large trailer equipped for engine instruction is said to be unique on the North American continent. Many inquiries have come to provincial authorities for more information about it. Certainly it has proved of great service to the fishing industry in Nova Scotia. Often the fishermen bring their own motors to the school, where they overhaul them while learning how to take down the engines and make minor repairs. When they encounter major problems they are encouraged to send the parts to plants properly equipped for the type of repair needed.

The two shopmobiles now in operation are well-fitted for their work. In addition to the Diesel and gasoline engines which the instructors use for demonstration, they are actually fully-equipped machine shops. Both shopmobiles also contain living quarters for the instructor-drivers. They are heated by propane gas and can be set up at any place where electrical power is readily available.

The mobile navigation schools also operate four-week courses. Schools are limited to 15-18 trainees at a time. Instruction is given in the fundamentals of navigation, rules of the road, compasses, chart work, lights, and foghorns. The trainees also learn about aids to navigation such as loran, direction finders, echo-sounders and radiotelephones, tide tables, radio beacons, signaling, and magnetism.

Like the navigation schools, the net and gear schools are at present held in convenient halls or classrooms. But already plans are afoot to provide a trailer classroom for the navigation courses, and provincial fisheries officials are planning also for future expansion in the nets and gear school.

In this school the fishermen learn to design nets, to alter designs and dimensions to suit the towing power and speeds of their boats, and how otter doors and warps and nets themselves are likely to act in a given set of circumstances. Even the basic rules for splicing rope and wire are taught. When he is finished, he knows the proper designs of otter trawls and the adaptation of any design to the methods and techniques of particular kinds of fishing.

Most classes are fitted into the off-season for fishing in the various districts. While they are attending the classes, the fishermen are given a subsistence allowance ranging from \$1.50 a day for single trainees living at home to \$3.75 a day for married men away from home. The only requirement in addition to being bona fide fishermen and residents of Nova Scotia is that they attend classes regularly and work seriously.

It all adds up to the fact that Nova Scotia's fishing industry is advancing with mighty strides. By 1954 the landed value of Nova Scotia fish was more than four times the prewar figure. The quantity has increased by close to 40 percent. Forty-three modern long-liners and 30 draggers have been added to the fleet. Several new fish-processing plants have been put into operation and millions of dollars have been spent, modernizing and expanding existing plants.

Note: Abstracted from article by A. C. Rhydwen in March 1956 Trade News, a publication of the Canadian Department of Fisheries.



## Chile

NEW WHALE PROCESSING PLANT: A Santiago newspaper (March 26, 1956) reports that a new whale processing plant will soon be completed at Iquique in the northern part of Chile by one of the country's most important whaling companies. The new plant is expected to double the company's processing operations by the latter part of 1956. (Foreign Trade, April 28, 1956, a publication of Canada's Department of Trade and Commerce.)

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REGULATIONS FOR EXPLOITATION OF SOUTH PACIFIC WATERS APPROVED: The Chilean Diario Oficial of April 7, 1956, published Decree No. 102 of March 9, 1956, approving the Regulations for Permits for Exploitation of the Riches of the Southern Pacific as drawn up at the tripartite conference held in Quito in December 1955 between Chile, Peru, and Ecuador, the United States Embassy at Santiago reports (dispatch dated April 11).

Note: See Commercial Fisheries Review, January 1956, p. 42.



## Ecuador

FIRST NATIONAL FISHERY CONGRESS HELD FEBRUARY 22-24: Ecuador's First National Fishery Congress, organized by private fishing interests, was convened in Quito February 22-24. The congress met with considerable support from the Government and passed a number of resolutions designed to stimulate Ecuador's fishing industry. A number of the resolutions adopted by the congress would have the effect, if enacted into law by the Ecuadoran Government, of further restricting foreign fishing operations in the territorial waters claimed by Ecuador, according to reports.



## German Federal Republic

NEW FISHERIES SERVICE VESSELS: The Fish Section of the West German Federal Food Ministry has placed an order with a shipyard in Cuxhaven for a new



The Meerkatze, a West Germany fisheries service vessel.

fisheries service vessel. The hull of the new ship will resemble that of the fisheries research vessel Anton Dohrn, placed in service about a year ago. Superstructure will be similar to that of the Meerkatze, another fisheries service vessel operated by the government. The new ship will be about 186 feet over-all, with a 30-foot beam. The new ship will have a 1,000 hp. oil-burning steam engine, and a crew of 26. The ship's keel was to be laid in May 1956; the new vessel should be in service by mid-1957. The total cost of the vessel is expected to be about US\$712,000, states a March 12 dispatch from the United States Consul at Bremen.

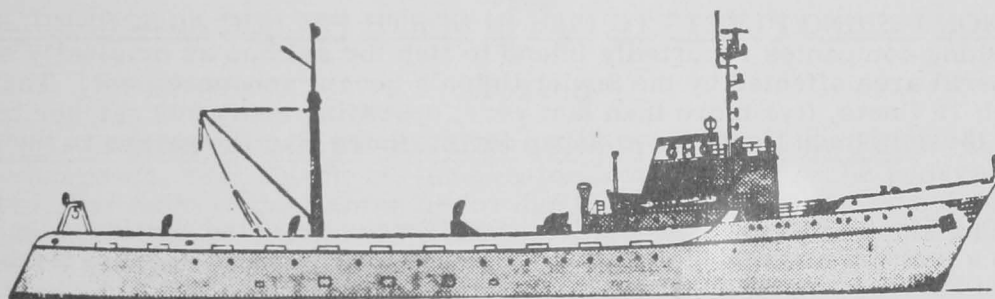
The Food Ministry is reported to have recently purchased a Hamburg fishing trawler of 330 gross tons to be converted into another fisheries service vessel.

This vessel will replace the obsolete service ship Frithjof (242 gross tons) which was built in 1916. The converted vessel will be put into service in July 1956.

The two fisheries service vessels (Meerkatze and Frithjof) fill a number of needs for German fishing vessels and their crews on the high seas are frequently giving help to fishing boats of other nations. The service vessels carry small hospitals staffed with qualified personnel to provide medical aid to fishermen on the high seas. The vessels are also equipped to give technical assistance to trawlers. The service ships carry meteorological observation stations and laboratories to conduct experiments and research in the field of marine biology and oceanography. During the six-year period from 1948 until 1954, the two ships made 121 trips, spent 2,595 days on the high seas, and medical aid was given in 7,183 cases.

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NEW TYPE FACTORYSHIP TRAWLERS TO BE BUILT: Following some successful trials of factory-type fishing trawlers by the British and also the recent delivery of the 12th factoryship trawler by a shipyard in Kiel to the Soviets, the West German deep-sea fishing industries have apparently decided to fall in step with the trend towards this system of fishing. Three trawler companies in Brem-



New type of "semifactory trawler" being built in West Germany.

erhaven have placed orders with a local shipyard to build a new type of fishing trawler which has been described as an interesting compromise between the traditional type of trawler and the latest version of a factory fishing vessel.

One compelling reason for this development is the length of the fishing trips made by German trawlers. The long trip makes it extremely difficult to land fish in a fresh condition and to meet the public's ever-growing demand for better-quality seafood. German trawlers travel for about one week to reach their fishing grounds for demersal fish (ocean perch, cod, haddock, etc.) off the Icelandic and Greenland coasts. One week of fishing is followed by a one-week return trip. The fish caught during the first days at the fishing grounds are about two weeks old before they arrive in port, and often a substantial percentage of the early catch has to be sold to the fish meal factories, a March 15 dispatch from United States Consul General in Bremen states.

Several factors have delayed an earlier switch to factoryships in West Germany. Apart from the hotly-disputed question of the economy of such ships, the cost of the vessels, which is estimated to amount to more than US\$710,000 has been one of the major obstacles. The German Federal Government is subsidizing interest rates for loans to build factoryships and this fact has gone a long way to facilitate the necessary investments by the trawler companies.

The length of the new type of "semifactory trawler" between perpendiculars is about 200 feet, width about 30 feet, height up to the top deck about 22 feet, draft about 15 feet. The ships will be powered by two Diesel motors each of 650 hp. One ship will be equipped with two horizontal Voith-Schneider propellers making the

installation of a rudder superfluous. The other two ships will be built with the conventional-type propeller and rudder. The ships will have two decks. The top deck will carry the usual type of catching gear. The lower deck will carry the fish-processing machines, including a 15-ton fish meal plant, fish-oil extractors, filleting machines, and sharp-freezers. Only the fish caught during the first few days will be processed. The rest will be transported to the home ports fresh, in fish holds capable of carrying 600,000-700,000 pounds of fish. The fish meal and oil plants will permit the vessels to utilize the waste from the filleting and cleaning operations.

The outstanding feature of the new vessels will be the stern trawl now in use on British and Soviet factoryships. Instead of fishing across the broad side of the ship, the trawl net will be towed over the stern. A slanting slide facilitates the bringing in of the net. Through two chutes the catch is dumped on the lower deck for dressing and processing. The total crew of this type of ship, including fish processors, will number about 33.



## Japan

SALMON FISHING FLEETS TO FISH IN NORTH PACIFIC AS SCHEDULED: Japanese fishing companies reportedly intend to fish for salmon as originally scheduled in the general area affected by the Soviet Union's recent announcement. They plan to dispatch 19 fleets, five more than last year, operating some 500 catcher boats. Normally these salmon fleets leave Japan for northern Pacific waters in the first week of May.

The Dai Nippon Fishery Association has already presented the Japanese Government with a petition protesting the action of the Soviet Union and, because of the vagueness of the Soviet pronouncement with respect to the area affected and specific measures to be taken, is apparently willing to risk fishing in the area, in support of its contention that the unilateral action on the part of the Soviet Union is a violation of international law.

The Association also stated that the companies are taking the risk on their own and are not "troubling" the Japanese Government. The Association is hopeful that a settlement of this question may be reached before the fleets are dispatched.

The Japanese Government has presented a strong protest to the Soviet Union and has publicly announced its willingness to discuss fishing matters with the Soviets without regard to the other unsettled issues pending between the two countries.

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SALMON LONG LINERS ASK POSTPONEMENT OF LICENSING: The chairman and 16 representatives of the Committee for promoting salmon long-lining in the North Pacific visited the Japanese Fisheries Agency and members of the Diet from Miyagi Prefecture in March to request that the application of a licensing system for salmon long-lining south of 48 degrees north latitude, which was scheduled to begin in April, be postponed for one year. (Nippon Suisan Shimbun, March 8.)

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TUNA GROUNDS IN ARABIAN SEA SURVEYED BY TRAINING SHIP: The Japanese training ship Shunkotsu Maru (577 tons) of the Ministry of Agriculture and Forestry's College of Fisheries at Shimonoseki returned on March 2 from a training cruise to the Arabian Sea. The ship sailed about November 15 with 47 students



aboard and made a survey of the tuna long-lining grounds in the Arabian Sea at the western extreme of the Indian Ocean. Stops were made at Singapore, Colombo, Bombay, and Keelung en route, according to the March 8 Nippon Suisan Shimbun, a Japanese newspaper.

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SWORDFISH EXPORTS TO BE HANDLED BY ASSOCIATION: All exports of frozen swordfish from Japan will be handled by the Japan Frozen Food Exporters Association, beginning April 1, 1956. Individual Japanese exporters may designate their United States importer, but if no designation is made the Association will make the selection. The plan is not designed to eliminate United States importers, but only to control export volume and prices. Japanese exporters are no longer permitted to deal directly with United States importers, according to a March 23 dispatch from the United States Embassy in Tokyo.

For the Japanese fiscal year 1956, 8 million pounds will be exported at prices varying from 18 cents a pound for 30-pound slabs or fillets to 28 cents a pound for slabs of 100 pounds or more.

JAPANESE GOVERNMENT



Mexico

FOREIGN SHRIMP BOATS OUTSIDE JURISDICTIONAL WATERS: During a press conference, held March 14, the Senator from the Campeche province of Mexico stated, that most of the fishing by foreign boats off Campeche takes place outside the Mexican 9-mile jurisdictional limit. The Mexican Coast Guard has been instructed to maintain the 9-mile limit.

Foreign ships fishing inside the 9-mile limit will be apprehended and made subject to Mexican law. International practice permits foreign boats to seek haven in Mexican ports without violating the law in case of storms or distress, a March 15 dispatch from the United States Embassy in Mexico City states.

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SHRIMP SEASON ON PACIFIC COAST NORTH OF MAZATLAN ENDED: The west coast of Mexico north of Mazatlan was closed to shrimp fishing on March 15, 1956. This area includes the most productive area on Mexico's west coast. The southern Pacific coast area of Salina-Cruz will remain open and some production can be expected from this area until June, at which time fishing usually ends due to poor catches.

The area from Mazatlan north will close for 30 days and the closed period may be extended 30 additional days which will carry over into the non-productive season.



Norway

AUREOMYCIN USED TO PRESERVE FRESH FISH: Experiments conducted by the biological-chemical division of the Norwegian Fisheries Directorate on preserving fresh fish with aureomycin have proved successful. Newly-caught fish have been kept fresh for 19 days by use of ice which contains small quantities of crude

aureomycin. With ordinary ice the fish can be kept only up to 12 days, states a United States Embassy dispatch (April 13) from Oslo. Because the aureomycin is destroyed in cooking, consumption of the treated fish will not build up resistance to the drug.

If the method is practical, it will be a significant advantage to Norwegian fresh fish exports, especially for shipping fresh cod from North Norway to the large British market.

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FISH EXPORT TRADE PROSPECTS GOOD: Prospects are good for Norwegian exporters of fishery products, according to a March 16 dispatch from the United States Embassy in Oslo. During 1955 the value of fishery products exports reached a record total of about US\$132.7 million (947.5 million kroner).

Exports of frozen fillets have improved because of a pick up in sales during February 1956. Large stocks had been accumulated at the beginning of 1956, due to the relatively high price asked for Norwegian frozen fillets. It was expected that all stocks would be sold by the end of April 1956.

The export price for dried fish was reduced by US\$1.60 a 100 pounds (25 kroner a 100 kilos), bringing the price down to about US\$26 a 100 pounds (409 kroner a 100 kilos) f.o.b. Bergen. This price reduction was necessary in order to enable Norwegian exporters to compete with Icelandic dried fish. Tariff reductions by one of Norway's chief customers (Nigeria) will permit the price reduction with very little loss to the exporters. It was believed that the 16,000 metric tons of dried fish on hand as of January 1 will be sold without difficulty.

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HIGH RAW FISH PRICES CAUSE FROZEN FISH PRODUCTION CUTBACKS: The high price of raw fish has caused most of North Norway's freezing plants to cutback production, according to director of Norsk Frossenfisk A/S. For direct delivery to the plant, the freezing plants pay higher prices to the fishermen for raw fish than the minimum of 70 øre per kilogram (4 U.S. cents a pound) fixed by the Government. The freezing plants are compensated by refunds from the Price Regulation Fund for Fish up to a fixed quota for each plant. If the plant uses more fish than its quota allows, it receives no refund, an April 13 United States Embassy dispatch from Oslo points out. The large catches of cod this year have made more fish available to the plants than provided for in the quotas, hence the plants are cutting production back to the quota level in order to avoid losing the benefit of the refund.

The high price of Norwegian frozen fish fillets has not hurt sales on most foreign markets, but reports indicate that it is impossible to compete profitably on the United States market. On the other hand, the Ministry of Fisheries is more inclined to blame the sales decline in the United States on current low market prices rather than on high raw fish costs in Norway.

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SALTED HERRING PRODUCTION FOR 1956 SEASON: The Norwegian Winter Herring Salters Association announced early in April that 600,000 barrels of salt herring would be packed for export from the 1956 season's catch, compared with 613,000 barrels from the 1955 season. Shipments of about 450,000 barrels (50,000 metric tons) to the Soviet Union should be completed by the end of May. Most of the rest of the herring has already been sold to several other smaller markets.

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**SHRIMP INDUSTRY:** Shrimp fishing in Norway is based on the deep-water shrimp, *Pandalus borealis*. It is usually found in deep fjords and in submerged channels of the coast on soft clay bottoms. The commercial fishery for shrimp is conducted in depths of about 50-220 fathoms, states an April 19 report from the United States Embassy in Oslo.

Year	Quantity	Ex-vessel Value
	Metric Tons	US\$1,000
1955 . . . . .	5,533	2,240
1954 . . . . .	4,961	1,890
1953 . . . . .	3,763	1,428

The shrimp grounds extend the length of the Norwegian coast from the Skagerak in the south to Varangerfjord in the north. There are no seasonal limitations and fishing goes on throughout the year. The boats used in shrimp fishing are from 20-50 feet long, the smaller boats operating in the more protected fjords while the larger boats are used on the open sea. Shrimp trawl nets of 13 to 16 fathoms in length are used.

There are many small receiving sheds and freezing plants along the coast where shrimp are fished most extensively. There are also a number of small canneries located near these installations whose chief activity is canning shellfish and small herring, brisling, etc. Most of the shrimp is either consumed in Norway or exported fresh, only a small percentage of the catch is canned (see tables).

Table 2 - Norwegian Fresh and Frozen Shrimp Exports, 1953-1955

Year	Quantity	Value
	Metric Tons	US\$1,000
1955 . . . . .	1,795	1,876
1954 . . . . .	1,585	1,568
1953 . . . . .	1,512	1,204
1946-50 Avg. . . . .	1,184	672

Table 3 - Norwegian Exports of Canned Shellfish, 1953-1955

Year	Quantity	Value
	Metric Tons	US\$1,000
1955 . . . . .	1,891	2,338
1954 . . . . .	1,713	1,988
1953 . . . . .	1,432	1,694
1946-50 Avg. . . . .	1,468	1,344

In the last few years there has been a considerable increase in the catches of shrimp, particularly in North Norway, although several productive grounds have been opened up on the southern coast. The commercial size of Norwegian shrimp varies from 9 to 12 centimeters (3.5-4.5 inches) total length, with 90-160 heads-on shrimp a pound. The smaller shrimp are ordinarily used for canning. The number per pound varies somewhat with the seasonal variations in the size of shrimp caught.

Most of the Norwegian shrimp is exported iced or frozen in the shell, although in the last few years there has been a growing market for frozen peeled shrimp in cartons or plastic containers. The United Kingdom and Sweden are the chief markets, accounting for 96 percent of Norwegian iced or frozen shrimp.

Statistics on exports of canned shrimp are not available. Shrimp is included with crab meat, lobster, and crayfish in the category of canned shellfish (table 3). The United Kingdom and Sweden buy about 80 percent of Norwegian canned shellfish exports.

Shrimp fishing in Norway is usually carried out from small boats manned by one or two fishermen. There are no government supports, loans, guarantees, or special concessions for shrimp fishing other than those for Norwegian fishing in general. The shrimp industry has, however, received some assistance from government research organizations in locating and mapping new shrimp grounds.

There are no foreign vessels or foreign capital engaged or invested in the shrimp fishery of Norway.

The potentialities for expansion of shrimp fishing in Norway are good, particularly in North Norway where operations up to now have been confined to the coast and a few fjords near freezing plants. There are also good possibilities for more extensive operation farther out to sea, for example near Spitzbergen and Bear Island where there has been no shrimp fishing previously. The extent of commercially-profitable shrimp fishing grounds in the Norwegian Sea have not been accurately determined, but cursory investigations by research and private vessels indicate that there are considerable areas where fishing could be expanded.

Market conditions for shrimp are favorable both in Norway and abroad. Exports will probably continue to rise at about the same rate as production. As new packing and freezing methods are adopted by the small plants along the coast, a larger proportion of the catch, both fresh and canned, will be exported.

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REVIEW OF THE FISHERIES, 1954-55: The total catch of all fishery products by Norwegian fishermen in 1955 was 1,635,233 metric tons (about 2.3 billion pounds). This was 269,648 tons less than the record catch of 1954. The catch for 1955 was

Year	Quantity	Value
	1,000 Metric Tons	US\$1,000
1955.....	1,635	84,012
1954.....	1,905	79,490
1953.....	1,398	68,025
1952.....	1,670	73,093
1951.....	1,669	68,949

the fourth highest on record, but the value of the 1955 catch (about US\$84 million) was the highest ever recorded, according to the January 1956 Norwegian Fishing News.

During 1955 the catch of herring and sprats decreased 332,222 tons or 23 percent under the 1954 total. The winter herring fishery produced 965,413 tons (valued ex-vessel at US\$27.3 million)--126,317 tons and US\$0.9 million less than the record production of 1954. The fat and small herring fisheries were considered a failure in 1955. The climatic con-

Type of Catch	1955		1954	
	Landings	Ex-vessel Value	Landings	Ex-vessel Value
	1,000 Metric Tons	US\$ 1,000	1,000 Metric Tons	US\$ 1,000
Herrings & sprats .....	1,138	34,481	1,470	38,765
Cod & cod by-products .....	249	25,773	204	19,572
Other kinds 1/.....	248	23,758	231	21,154

1/ Chiefly haddock, pollock, hake, ocean perch, and halibut.

ditions were not favorable to these fisheries. The fat-herring fishery yielded 35,312 tons, or a fourth of the 1954 catch; and the small-herring fishery, 100,994 tons--half of the 1954 catch. The 1955 catch of sprats was 5,904 tons, compared with a catch of 8,861 tons in 1954 and 13,297 tons in 1953. The sprat catch was light, and failed especially during the summer of 1955 in the main brisling-sardine packing season.

The total catch of Icelandic herring, mostly cured, in 1955 was 24,200 tons, an increase of 4,151 tons over the 1954 catch. The 1955 trawl-herring fishing (on the Fladengrund) yielded 5,077 tons, or 1,839 tons more than in 1954.

Due to price increases, the ex-vessel value of the herring and sprat catch was at a high level. The average winter herring price was about US\$1.30 per 100 pounds, compared with US\$1.12 per 100 pounds in 1954.

The catch of cod and cod byproducts ranked second to the herring group in 1955 and exceeded the 1954 catch by 44,867 tons.

Note: Values converted to US\$ equivalents on the basis of 7.143 kroner equal US\$1.

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SOVIET DELEGATION TO STUDY FISHERIES: A Russian fisheries delegation of 12 men, headed by the Minister of Fisheries, arrived in Oslo on March 11 by air on a study visit at the invitation of the Norwegian Government.

The visit, originally due to start on February 3, was postponed by the Russians after 16 Russian herring boats had been arrested on charges of fishing in Norwegian waters.

The program also was changed. Instead of studying the Norwegian herring fisheries, which were at their peak in February, the delegation was scheduled to study North Norway's cod fishing (The Fishing News, March 16.)

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WINTER HERRING CATCH SETS RECORD: The Norwegian winter herring fishery ended about April 1 with an all-time record catch of 1,144,000 metric tons (about 2.5 billion pounds). This record catch compares with 950,267 tons in 1955 and 1,088,000 tons in 1954. The value of the 1956 winter herring catch was close to US\$35 million as compared with US\$28.1 million in the previous record year of 1954, states an April 6 dispatch from the United States Embassy in Oslo.

On February 14 the Norwegian winter herring fishery turned from the sloe herring to the spring herring. At the beginning of the winter herring fishery this year, the hydrographical conditions were unlike those prevailing during the previous seasons. After the first reports from the Norwegian research vessel G. O. Sars of herring shoals approaching coastal waters, 16 days elapsed before the fishing made actual progress. The weather conditions were not favorable, but the principal reason for the poor catches were extraordinary hydrographical conditions. The sloe herring shoals, however, appeared from January 24 until February 14 at the usual fishing places and weather conditions were good. The winter herring fisheries extend generally from January to April.

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TRAINING SCHOOLS FOR FISHERMEN: Five Norwegian State-operated vocational training schools for fishermen, claimed to be the most up-to-date in the world, have begun a new year with full enrollment. They provide intensive courses lasting from five to ten months.

A total of 120 of the 240 students in the five schools take the head-fisherman course, 60 the motor-tender course, and 60 the cooking course. Other subjects are marine plant life, fish biology, migrations, and fluctuations in supply.

A new project is a program for advanced education of university graduates who have to deal with fisheries questions, launched by the Society for the Promotion of Norwegian Fisheries, which also sponsors a broader fisheries educational program for the public. This includes the Bergen Museum of Fisheries and a fisheries section in the Trondheim Science Museum.

A professor of marine biology at Oslo University says the fisherman's training provided in Norway is on a higher level than in any other country. "The industry is in process of rapid development. By continually relaying the latest research results to the working fishermen, the vocational schools and other educational schemes will be able to stimulate further growth of the industry. That Norway has pioneered in this field is due to the close and varied cooperation among fisheries trade organizations, government agencies, and private institutions." (The British periodical, The Fishing News of March 9.)

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WINTER COD CATCH GOOD: The 1956 Lofoten winter cod fishery ended about April 20 with a total catch of 63,500 metric tons. The catch was valued at US\$7.7 million (55 million kroner). The total catch for 1956 winter season at Lofoten exceeds the 1955 and 1954 catches by close to 20,000 tons, but is lower than the average catch since the end of World War II.

The cod catch at Lofoten plus the catch from south of this area amounts to 113,700 tons as compared with a total catch of 83,100 tons in 1955. Of this year's cod catch, 40,100 tons have been sold for drying, 56,300 tons for curing, and 17,300 tons for the fresh and frozen trade. The cod roe was disposed of as follows: 3,214 tons for salting; 1,345 tons for canning and the fresh trade. The cod-liver oil production amounted to 5,300 tons. (Fiskets Gang, April 26, 1956.)



## Panama

PINK SHRIMP RETURN TO THE GULF OF PANAMA: The "pink" shrimp, which were in the Gulf of Panama for several days early in March, returned later in the month. The catches were heavy and if the strong northeast winds continued another ten days as expected, Panama's catch of "pink" shrimp was expected to reach 1 million pounds, according to information received by the United States Embassy in Panama (March 22) from the Panamanian Government Fisheries Research Laboratory. Catches in previous years have not exceeded 300,000 pounds.

Because the Panamanian fishing industry was better prepared this year to handle the shrimp, the boats have been able to bring in catches of 5,000 to 7,000 pounds each. As much as 80,000 pounds of shrimp have been packed in one day as compared to the previous record of 30,000 pounds. Approximately 300,000 pounds of "pink" shrimp were caught up to the date of dispatch.



## Peru

EXPORTS TUNA TO WEST GERMANY: The part of the Peruvian fishing industry engaged in the freezing of tuna for export was encouraged by a recent purchase of frozen tuna for export to West Germany. The possible expansion of the market for both frozen and canned tuna in Europe would help to offset the weaker market for these products in the United States, according to reports, states a February 24 dispatch from the United States Embassy at Lima.



### Portugal

**FISHERIES TRENDS, NOVEMBER 1955:** Sardine Fishing: The catch of the Portuguese sardine fleet declined seasonally in November 1955 to 7,426 metric tons, or about 31 percent less than the October 1955 catch. The November 1955 sardine catch was valued at about US\$1.2 million ex-vessel as compared with US\$1.4 million in October 1955.

The sardine canning industry absorbed 63 percent (4,651 tons) with most of the balance consumed fresh. The port of Matosinhos lead all others with a catch of 4,816 tons of sardines and contributed 4,062 tons (ex-vessel value US\$704,600) to the canning trade.

Other Fishing: The landings of fish other than sardines totaled 956 tons, valued at US\$73,412 ex-vessel. The catch of fish other than sardines was 97 percent chinchards (924 tons), followed by bonito (21 tons), and 11 tons of mixed mackerel, anchovies, and tuna, the February 1956 Conservas de Peixe reports.

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**CANNED FISH EXPORTS, JANUARY-NOVEMBER 1955:** Portuguese canned fish exports totaled 6,522 metric tons (343,200 cases), valued at US\$3.4 million, during November 1955; and 57,223 tons, valued at US\$29.0 million, during January-November 1955.

Portugal's exports of canned fish in November 1955 declined about 18 percent when compared with the previous month. During January-November 1955 Germany continued as the leading receiver with US\$5.5 million of canned fish (about all sardines in oil), followed by Italy with US\$4.4 million (principally sardines and tuna), Great Britain with US\$4.2 million, and the United States with US\$3.6 million (principally 3,015 tons of sardines in oil or sauce, 39 tons of tuna and tunalike fish in oil, and 1,765 tons of anchovies). Exports of canned fish to these 4 countries (during the Jan.-Nov. period) amounted to 58.8 percent of the total exports.

Species	Nov. 1955		Jan.-Nov. 1955	
	Metric Tons	1,000 US\$	Metric Tons	1,000 US\$
Sardines in olive oil . . . . .	5,489	2,704	46,233	22,528
Sardinelike fish in olive oil . . . . .	470	404	4,394	3,113
Sardines & sardinelike fish in brine . . . . .	90	16	1,822	343
Tuna & tunalike in olive oil . . . . .	192	151	2,081	1,538
Tuna & tunalike in brine . . . . .	137	67	713	360
Mackerel in olive oil . . . . .	128	73	1,430	860
Other fish . . . . .	16	11	550	297
Total . . . . .	6,522	3,426	57,223	29,039

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**CANNED FISH PACK, JANUARY-SEPTEMBER 1955:** The pack of canned sardines in oil or sauce for January-September 1955 amounted to 18,214 metric tons

Product	Net Weight	Canner's Value	Product	Net Weight	Canner's Value
	Metric Tons	1,000 US\$		Metric Tons	1,000 US\$
Sardines in brine . . . . .	723	112	Tuna in brine . . . . .	69	33
Sardines in olive oil or sauce . . . . .	18,214	9,642	Tuna in olive oil . . . . .	833	695
Sardinelike fish in brine . . . . .	1,995	587	Tunalike fish in olive oil . . . . .	94	61
Sardinelike fish in oil . . . . .	2,672	1,458	Other species (including shellfish) . . . . .	560	293
Anchovies, rolled & fillets . . . . .	1,038	1,111			
Continued in opposite column			Total . . . . .	26,198	13,992

Note: Values converted to US\$ equivalent on the basis of 28.75 escudos equal US\$1.

(net weight). The September 1955 pack was 4,797 tons, about 17 percent higher than the 4,105 tons packed in August 1955.



## Spain

FISHERY TRENDS, MARCH 1956: The coastal fishermen of Spain had a poor winter due to severe weather and the lack of fish in the coastal waters. The larger more seaworthy offshore vessels fared better and catches were about average for this period of the year.

The anchovies, which are important to both the fishermen and the canners, reappeared late in March in the northern fishing areas and helped to alleviate the economic depression of the coastal fishermen.

The general salary increases in Spain made effective by law on April 1, 1956 (5-6 percent for fishermen) will have little effect on the incomes of the fishermen because their income is largely based on a share of the value of the catch. The take-home pay of the fishermen is estimated to be between US\$49.31 (1,500 pesetas) and US\$65.72 (2,000 pesetas) a month, states an April 16 report from the United States Consul at Bilbao.



## Sweden

CANNED SARDINES SOLD TO EAST GERMANY: Shipments of canned sardines to East Germany by the Swedish sardine factories in Bohuslan in 1956 totaled US\$485,000 in value. The last delivery of sardines under the 1956 quota fixed by the Swedish-East German trade agreement was loaded in Stromstad on April 3, 1956, when three sardine factories in Stromstad together shipped 1,100,000 cans, representing a total value of US\$116,000.

Under the trade agreement, shipments of sardines from Sweden to East Germany in 1957 may total US\$872,000, but the Sardine Factories' Association does not yet know how much of this quota will be utilized, according to an April 5 dispatch from the United States Consulate at Goteborg.

Note: Values converted to US\$ equivalents on the basis of 1 Swedish kroner equals US\$0.194.



## Union of South Africa

FISHERIES TRENDS, MARCH 1956: Fishing in Union of South African waters improved quantitatively and qualitatively in March 1956 as compared to a disappointing catch and seasonally poor quality the previous month. Fish canneries were not working to full capacity, but their output was said to be substantial.

Prices of fish oil improved; those of fish meal declined slightly during the month.

Spiny lobster production remains satisfactory, with overseas demand for canned packs firm. Export prices to the United States of South African frozen spiny lobster tails (large and medium) were reported to have increased over the past few



months to \$1.05 per pound c.i.f. New York. Small sizes remained around 85 cents per pound c.i.f. New York, an April 5 dispatch from the United States Consular General at Capetown reports.

\* \* \* \* \*

FISH STICK SALES PROMOTED BY INDUSTRY: One of the most important developments in the South African fishing industry during 1955 was the major effort to promote the sales of fish by means of Union-wide advertising and publicity, states the February 1956 South African Shipping News and Fishing Industry Review. This campaign, now in full swing, is doing much to make the people of South Africa more fish conscious. It has been conducted simultaneously with the development of quick-frozen fillets and fish sticks by a processing firm. Quick-frozen fish, and especially fish sticks, have caught the imagination of the housewife, and have brought another important product into the seafood field.

Much of the success of fish sticks, sales of which have increased many times over since their introduction just over a year ago, has been due to the invention of an appealing little "fishy character" which appears on every package of fish sticks. This character is becoming as well known to the South African child as Donald Duck.

In addition to the producer's brightly-colored packages, the character is to appear on key rings and in the form of children's decals and in a children's painting and story book. This attractively-produced book with its gay-colored cover is being sold over grocery and fish-shop counters. The text carries no direct advertising of fish sticks, which are not mentioned anywhere, but carries the advertising theme unerringly and with great subtlety into the home. Attractive window displays and effective point-of-sale advertising are also employed.

Along with national advertising in all the principal newspapers and periodicals, an editorial publicity campaign is being conducted by a public relations consultant. This seeks to bring new ways of using and preparing fish, especially quick-frozen fish, before the housewife by means of articles and recipes in the editorial pages of newspapers and magazines.

The South African firm recently gave a most successful lunch at a Cape Town hotel for the Cape Town columnists, women's page editors, and cookery writers. The dishes served consisted of quick-frozen fish and fish sticks. Films of aspects of trawling were shown to the guests before lunch.

The latest public relations development is a "Fishstick Bar" which will be an attraction at the Community Carnival at De Waal Park, Cape Town, this month. Cooked fish sticks will be sold to the many thousands expected to attend, the proceeds to go to the Community Chest.

It is hoped to use this "Bar" at other public occasions, including the "Home That South Africa Built" exhibition at Goodwood in April.

On the practical side of bringing fish sticks to the attention of the housewife, cookery demonstrators are being employed. They demonstrate to housewives cooking of fish sticks at shops in all the main centers.



## United Kingdom

**ELECTRONIC EYE FOR MID-WATER TRAWL:** An electronic "eye" which may make mid-water trawls a commercial proposition is being used experimentally by the Hull trawler Benvolio. The equipment which can be lowered to the exact depth of a fish shoal has been used experimentally by the Benvolio during the last three months. "It is the first of its kind in the world. ..."

"If its first implications are correct, it may well revolutionize fishing. In some cases it might double the catch," The Fishing News (February 10) states.

The manager of the trawler company's fishing industry branch claims the electronic eye can determine the depth of water under a ship; gauge the depth of any intervening shoals of fish; gauge the depth of the trawl; show what fish, if any, are going into the trawl; and show what fish are being missed in a horizontal direction. "You can easily describe it as a four-way eye," he said. "All depth readings are recorded in the wheelhouse. Early experiments have already proved most successful. To operate mid-water trawls successfully trawler skippers must know at what depth shoals are. We believe the eye answers the problem and it is a distinct commercial possibility."

The equipment will be available commercially at the end of this year. Rental cost for a one-year period is understood to be about US\$840.

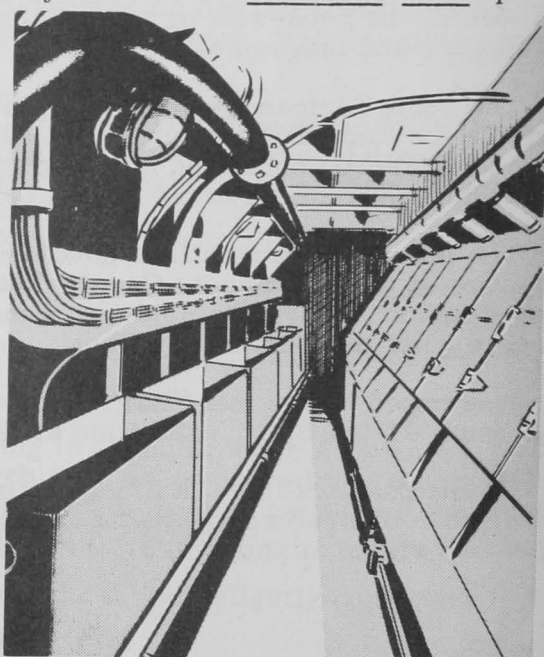
The British Ministry of Agriculture and Fisheries has been observing experiments with great interest. In addition, the Ministry has conducted its own experiments on Lake Windermere.

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**EXPERIMENTAL FREEZER-TRAWLER COMPLETES TRIP:** The experiment in the quick freezing of fish at sea carried out by the trawler Northern Wave apparently has been successful.

The trawler left Grimsby, England, on December 31 and returned in January after spending eight days on the Norwegian fishing grounds. It was the vessel's first voyage since being equipped with special facilities for quick freezing, and a total catch of about 329,000 pounds was reported. Of this total about 70,000 pounds was quick frozen while the trawler was on the fishing grounds. This portion of the catch was thawed out and sent to inland dealers who were asked to report later on the reactions of customers.

The Northern Wave was chosen for experiments in quick-freezing at sea sponsored by the White Fish Authority and the British Trawlermen's Federation. The vessel carried a 23-man crew and three scientists from the Department of Scientific and Industrial Research who acted as instructors to the crew in how to handle the refrigeration machinery.



On the right of the above illustration is a bank of doors enclosing some of the quick-freeze compartments on the Northern Wave. On the left are the freezing cans into which the fish are placed for transfer to the cold storage room that is separately refrigerated by pipe grids at  $-20^{\circ}$  F.

The experiment is designed to make the fishing grounds off Greenland and Newfoundland more accessible to British trawlers by enabling the boats to freeze the first part of the catch. At present the catch for the first few days' fishing on these grounds has been wasted due to spoilage. (United States Embassy in London, dispatch dated February 13 and the January 6 issue of The Fishing News, a British trade periodical.)

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LOANS TO FISHING INDUSTRY, 1954-55: The British White Fish Authority loans to fishing vessel owners for the 12 months ending March 31, 1955, increased sharply over the 12-month period ending March 31, 1954. Loans for the purchase of new vessels were US\$1,725,000 and for the purchase of new engines amounted to US\$56,000, according to a March 12 dispatch from the United States Embassy in London. During the year ending March 31, 1954, White Fish Authority loans for the purchase of fishing vessels were US\$439,000, and for the purchase of engines US\$19,000.

Total loans issued up to March 31, 1955, were US\$2,240,000, and commitments outstanding on that date in respect to loans or balance of credits intimated were estimated to be US\$2,484,000. Loans refunded and paid over to the Minister of Agriculture and Fisheries totaled US\$78,000.

By March 31, 1955, applications for loans had been approved on 71 vessels between 70-140 feet in length, 154 vessels under 70 feet in length, and 118 engines for all craft up to 140 feet in length.

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MORE CANNED SALMON IN NEW BRITISH IMPORT QUOTAS CONCEDED TO JAPAN: New British import quotas conceded to Japan include additional canned salmon. The British have announced that provision is being made for additional trade over the next six months of about £150,000 (US\$420,000) each way between Japan and Great Britain. The new quotas conceded for imports from Japan include additional canned salmon covering more than half the £150,000.

The British Government stated on April 17 in reply to a question in the House of Commons on Anglo-Japanese trade talks that the midterm review of the arrangements made in October 1955 revealed that the agreement was working satisfactorily, reports a United States Embassy dispatch (April 17) from London.

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SCOTLAND'S SEAWEED INDUSTRY: Scotland's long sea coast with villages often at the head of the bays offers a profitable harvest of seaweed. Just how profitable it is can be seen from the fact that a new industry based on the products (alginate) derived from seaweed has been built up in Scotland. The products of this new industry are worth US\$2.8 million a year. In 12 months more than 40,000 tons of seaweeds were harvested, reports the February 1956 South African Shipping News and Fishing Industry Review.

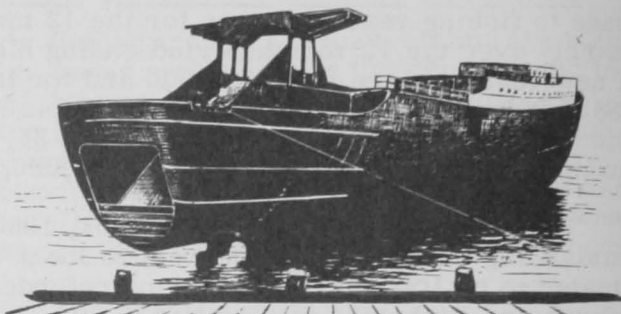
The seaweed industry existed to some extent before the last war, but emergency wartime needs of alginates forced a rapid expansion and since then research headed by the Government-sponsored Institute of Seaweed Research has found uses for alginates in food industries and cosmetics, in rubber, textiles, and dentistry.

About 10 million tons of seaweed have been located along Scotland's west coast that can be harvested at three-year intervals. Harvesting gives work to farmers who could not undertake full-time employment because of their own crops and cattle.

The seaweed is dried at drying stations dotted throughout the area and then processed at a number of small factories, often the only industry within many miles. As a result the British alginate industry, which ten years ago used only foreign seaweed now produces over a quarter of the total world production.

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STERN TRAWL ADOPTED FOR NEW BOAT: Experiments by British inventors and trawling companies in the development of factory-type fishing trawlers have proven the practical value of the stern trawl, now in use on the factoryship Fairtry. The system of bringing the trawl up through a stern chute was developed to overcome the difficulties encountered in using the conventional side trawl on a high-sided ship such as the Fairtry. The Fairtry, launched in 1953, has been reported to have been uniformly successful in bringing back good catches.



Stern view of Fairtry. Note chests for trawl net and unusual athwartship gallows.

A new Fishing and Research Company has been formed to further the development of the stern trawl and experiments are being carried out on the Benvolio, the Hull trawler that has also been experimenting with an electronic mid-water trawl. This firm has placed an order for a new 255-foot stern trawling vessel which will be equipped with the new trawl.

In a summary of his impressions of the stern trawl and the advantage a distant-water vessel would have if equipped with one, one of the partners in the new Fishing and Research Company states: "The crew are under cover during the major part of the hauling operation and totally so during gutting and other processing work. Fewer men are needed on deck actually to guide the net aboard. Stern trawling is a more flexible system and with the new electronic mid-water trawl which has been developed, less damage is caused to the nets, together with bigger catches.

"In addition the ship gains more stability. It is therefore a better fishing platform and in heavy weather can continue on the fish since the vessel is headed into the wind with the trawl trailing over the stern.

"Side trawling for distant-water vessels is outmoded in the light of the new development. The future lies with the factory class of vessel where the whole catch is processed immediately. ..."

Redesigning the net gear was a corollary of the new trawling system. Among other improvements, the normal otter boards were replaced with "parotters." This type of otter board has curved surfaces which impart a far greater thrust to the mouth of the net without a resultant downward pull. Unlike the conventional otter boards they do not drag across the sea bed. The principal is the same as in the paravane designed for mine sweepers, according to the January 20 issue of The Fishing News, a British trade paper.

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TRAINING COURSES FOR FISHERMEN CONTINUED: Training courses for new recruits to the fishing industry have been organized at Hull, Grimsby, Lowestoft, Plymouth, and in Scotland. Additional courses to enable those already in the industry to improve their positions have also been organized At Grimsby, Hull, Fleetwood,

Lowestoft, Milford Haven, and in Scotland. The courses are under the direction of the local educational authorities with the Federal White Fish Authority donating maintenance grants and allowances, states a recent dispatch from the United States Embassy in London.

The rates of maintenance grants made by the White Fish Authority to those attending full-time training courses were raised in 1956 in accordance with increases granted recently by the Ministry of Labor for other industries. The White Fish Authority decided in 1955 to base its scales on those of the Ministry of Labor in order to encourage an extension of training in the white fish industry.

The new rates, effective January 2, 1956, range from 44s. (US\$6.16) for a 15-year old trainee to 90s. (US\$12.60) a week for those 20 years and older while living at home. The trainees living away from home are allowed between 30-60s. (US\$4.20-8.40) for the ages 15 to 20 and over plus a lodging allowance up to a maximum of 40s. (US\$5.60) a week. Married men or single men with dependents are allowed additional grants depending on the age of the trainee, age of the dependent, and the number of dependents.

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TRAWLERS SAY SUBSIDIZED ICELAND TRAWLERS MAY HURT THEM: Price competition with Icelandic fishermen when the ban on their landings in England is lifted (because of the high subsidy paid by Iceland to their trawlers) was referred to in a statement issued by the British Trawlermen's Federation and published in the March 9 issue of The Fishing News.

The subsidy is estimated at more than US\$308 a fishing day, or about US\$95,200 a year for each vessel. It is pointed out that if this same rate was paid to British trawlers it would cost US\$25.2 million a year.

The statement continued: "Our British trawlers, which are not permitted to land in other foreign countries, even when they land in British ports are in the unhappy spot of competing with heavily-subsidized foreigners.

"Nevertheless we believe that a settlement can be worked out and we think we have so arranged the details of our proposals that they will be readily welcome in Iceland."

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WHALING BUOY WITH RADIO TRANSMITTER DEVELOPED: An English electronics firm has designed a whaling buoy incorporating a radio transmitter, to enable whaling factoryships to recover and process whales killed by the catcher vessels. This type of buoy, although developed for the whaling expeditions, could be used for other fisheries.

The radio buoys (with individual call signals) are carried by each catcher, and once a whale is harpooned the buoy is secured to it by a 20-fathom nylon line attached to a barb. The buoy is switched on by means of an external control on the casing and left floating beside the whale. The equipment within the buoy ensures that the transmitter operates for two minutes in every ten, transmitting between 1.7 and 2.1 megacycles a call sign in Morse and a long continuous signal for direction-finding purposes. The call sign and direction-finding signal are repeated four times. These periods of transmission are broken after two minutes to ensure that the buoys will radiate in this way for 22 hours on one battery charge. It is usual at this point for the catcher to radio the factoryship that a buoy has been secured to a whale, and to give the approximate position and the call signal of the buoy.

The functioning of the transmitter mechanism is entirely automatic, being controlled by a time switch. This time switch is wound before the buoy enters the water and is capable of running on one winding for between 7 and 10 days. A clockwork motor drives a pair of cams, one of which switches on the filaments of the valves approximately half a minute before switching on the high-tension voltage. At the same time the coding mechanism commences turning, and contacts open and close as the specially-cut coding cam radiates the assigned call sign.

The transmitter portion of the equipment contains two valves and is crystal-controlled, the whole assembly being mounted on rubber supports to ensure that valves and components are protected from sudden shocks. A meter is fitted on the main top plate to facilitate tuning the transmitter. The transmitter power needs are supplied by an accumulator housed at the foot of the buoy in which position its weight adds to the stability of the buoy. A range of up to 150 miles has been obtained in the Antarctic due principally to the absence of interference on the 2-megacycle band in that region, an April 6 dispatch from the United States Embassy in London states.



## Venezuela

TUNA LONG-LINER LANDS GOOD TRIP: The long-liner Bozo Maru, operated by a Japanese crew and owned by a Venezuelan, landed 100 metric tons of tuna at La Guaira about the middle of March. The catch was made in 15 fishing days north of the island of Curacao. In a dispatch dated March 21, the United States Embassy at Caracas stated that 40 tons had been sold to wholesalers at La Guaira at about US\$300 a ton.

The Japanese captain reported that a total of 408 tons of tuna had been caught in 45 fishing days by the Bozo Maru, since it began operations off Venezuela. The wholesalers announced that this fish would be placed on sale in Caracas fish markets at the price of US\$1,050 a metric ton. The usual varieties of fresh fish are retailing at 61-68 U. S. cents a pound. Thus the tuna consumers will be getting fresh fish at 48 U. S. cents a pound.



### DO YOU KNOW:

It has been estimated that there are anywhere from 20,000 to 40,000 different species of fishes in the world. While the exact number will, of course, never be known, ichthyologists generally agree that there are more than 20,000 known species, with about 100 new species being described each year.

--Sea Secrets, The Marine Laboratory,  
University of Miami, Coral Gables, Fla.