Brazil

FISHERMEN ORGANIZED IN COLONIES: Brazilian law requires that fishermen belong to colonies which must have a minimum of 150 members, according to a June 26 American embassy report from Rio de Janeiro.

The colonies levy a 3 percent tax on the catch out of which are provided certain services, including education, medical care, and loans for financing the purchase of boats and gear. There are 22 such colonies in the Federal District of Brazil.

In addition to belonging to colonies, fishermen may form cooperatives. The Director of the Fish Section indicated that the cooperative movement was making little headway among fishermen, presumably because the colonies provide a number of services normally provided by cooperatives.

Canada

FISH-PROCESSING INDUSTRY: Current employment in the Canadian fish-processing industry is estimated at about 5,500, according to a report from the Economic and Research Branch of the Canadian Department of Labor transmitted by the American Embassy at Ottawa on June 21.

This is, of course, an extremely seasonal industry, and the plants are only now preparing for their active seasons. From the experience of previous postwar years, it is estimated that the peak employment in this industry (which occurs during the late summer or fall) this year may be about 12,000. A great many of these additional workers will be casual employees, including Indians and part-time fishermen. With the uncertainty of European markets, to which a substantial portion of Canadian fish products have been shipped, there appears to be a greater seasonal variation in employment in this industry. In 1947, there was a difference of about 70 percent between trough and peak employment indexes on a June 1, 1941, base, while in 1949 the difference had increased to about 88 percent.

Records indicate that only a few (700 to 900) of the workers in the industry may be organized as fish processors or handlers. A great many may be organized as fishermen, while in Newfoundland a substantial number belong to unions of loggers. Of the unions of fish handlers, of which a record is available, most are independent, although some have only recently severed their affiliation with the Canadian Congress of Labour and one transferred its affiliations from the C.C.L. to the Trades and Labour Congress.

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APPROVES INTERNATIONAL NORTHWEST ATLANTIC FISHERIES CONVENTION:[1/] Canada signified readiness to cooperate with nine other countries in the development and protection of the fishery resources of the northwest Atlantic when Parliament on June 1 approved the International Northwest Atlantic Fisheries Convention, the Canadian Fisheries Department Trade News of May 1950 announced.

To be brought into force, the treaty had to be ratified by any four signatory governments. Such action already has been taken by Great Britain, Iceland, and the United States, and therefore, deposit of the Canadian instrument of ratification at Washington, D. C., makes the treaty effective. Ratification of the treaty by Canada extends to Newfoundland which entered Confederation since the signing ceremony took place.

1/ See Commercial Fisheries Review, November 1949, pp. 71-2; March 1949, pp. 73-82; December 1948, pp. 65-74.

Chile

FISHERY EDUCATION: The University of Chile may start a fishing school early in 1951, reports the American Embassy at Santiago in a dispatch dated June 9. It is proposed that youth of university age, who have graduated from the secondary schools of the nation, will be taken and trained to become fishing experts and engineers. There is, according to reports, an increasing interest in developing Chile's fishing industry.

There is at present in San Vicente near Talcahuano, a fishing school for primary-age children, most of them sons of fishermen in the region. In Miramar, a suburb of Valparaiso, there is also a marine biological institute connected with the University of Chile.

Denmark

DANISH INVESTIGATIONS ON CONTINENTAL SHELF JURISDICTION: A Danish Governmental committee has been studying the problem of jurisdiction over the continental shelf. The work of the committee has progressed slowly, according to an April 1 report from the American Embassy at Copenhagen. The purpose of the study is to determine whether Denmark should proclaim jurisdiction over the far-reaching continental shelf around the whole of Greenland and around the Faeroe Islands.

On January 20, 1950, Minister Georg Cohn, chairman of the Danish governmental committee, delivered a lecture over the Danish State Radio on the problem of jurisdiction over the continental shelf. In view of his position as Foreign Office adviser in matters related to international law, and his particular assignment as committee chairman, his remarks may be considered an official expression of the Danish Government.

In his lecture, Georg Cohn defends in general terms the extension of maritime jurisdiction considerably beyond the traditional limits as far as fishery rights are concerned.

The following excerpts from this lecture may be of interest in view of today's importance of the problem of jurisdiction over the continental shelf and the extension of territorial waters:

With reference to jurisdiction over a certain water area off the coasts, the speaker pointed out that originally "The State claimed jurisdiction over a certain water area off its coasts, but had only the water surface, and not the sea bottom in mind."

In addition, he declares that the scope of territorial waters even today remains an object of dispute. Denmark and Great Britain, for example, fix it at 3 miles, Norway and Sweden at 4 miles, and Russia at 12 miles, within which they maintain exclusive rights for fisheries, police inspection, etc. Also the character of the jurisdiction was highly disputed (originally), but in modern times it is generally accepted that there is question about real ownership. From this the conclusion was drawn that the jurisdiction applies also, as it does in the terrestrial territory, to the atmosphere overhead and the subsoil below the maritime territory. It was a purely mathematical or geographical calculation of distance which did not consider the detailed quality of the sea bottom, or the character of the water, whether flat sea or real ocean. The continental shelf, therefore, in most places extends much, much farther than does the maritime territory.

"The efforts of most recent times to obtain recognition of jurisdiction upon this far-reaching continental shelf off the coast originated from a quite different starting point and, in principle, has nothing to do with the maritime territory. Originally it was a question only about the title to the sea bottom, not to the water above it. Later developments have shown, however, that the two issues cannot be kept completely separated.

"The continental shelf and the flat sea above it are essentially different from the deep sea not only geologically and geographically, but also economically. All fisheries, which are such an important part of the world's nourishment, take place, with very few exceptions, within the flat sea, while the deep sea is comparatively barren of fish which are important for human nourishment.

"Also, borings for oil or other mineral occurrences can be performed on the shelf sea bottom just as well as in the terrestrial territory, and already are performed to a very large extent, while, so far, the greater depths are unaccessible for human enterprise. Finally, the vegetation, the vitamin contents of which contribute so much to the nourishment of the fish population and thus, indirectly, also to human nourishment, exists only in the flat sea, where the sun has a chance to affect vegetation...

"It is believed that newly discovered oil fields under the sea bottom of the Continental Shelf in the Mexican Bay will more than double the oil reserves of America. Similar occurrences are expected in submarine oil fields off the coasts of Louisiana, Texas, and Mississippi. It is obvious that the values at stake in this connection necessitate a decision as to ownership of these resources, and that a State will hardly be able to permit a foreign country to establish itself on the continental shelf off its territory, but must reserve the first priority on the natural riches for itself and its nationals.

"Considerations of a somewhat different kind assert themselves with regard to fisheries. Here the interest is about two different matters. The one is a national-egotistic interest in reserving for its own nationals, who perhaps to an outstanding extent have to rely upon fisheries for their nourishment, a certain exclusive right or preference to the fisheries; and the other is a more general world economic interest in the protection of fish occurrences against exhausting management (overfishing). For these purposes the hitherto recognized extent of a maritime jurisdiction of 3 miles is far from sufficient. Many areas which formerly were rich in fish, now are nearly barren, due to overfishing. But protection rules which can only be maintained within a distance of 3 miles off the coast are no remedy. On the contrary, it has been thought that a recovery of the fish population might be possible if inspection and protection regulations could be carried through for more extensive areas of the flat sea.

"Finally, concerning the cultivation of the sea bottom of the Continental Shelf, only a few experiments have been made so far in places which are protected against rough sea. It should, however, be possible in such places, by the use of fertilizers, to increase production of crustacea and other organisms which can become highly important for the human nourishment...

"Certain doubts, however, assert themselves against an extension of jurisdiction of the State over the continental shelf, which expansion must be the consequence of the facts I just mentioned. There is question of serious curtailment of that 'Freedom of the Seas' which hitherto has been approved in International Law, and that exactly in the fields which are most important for shipping and fisheries. The fishermen of most countries do not content themselves with fishing in the flat sea off the coasts of their own country, but proceed to other areas where fisheries are most remunerative. Control and protection laws in such areas may very well limit their former freedom considerably, and also for the shipping trade limiting consequences may be anticipated. The world shrinks when the free international area is limited, and national supremacy is extended. This contradicts the efforts which otherwise have been made in modern time with a view of procuring the highest possible degree of freedom for all nations to participate in and develop the world's food supply. Some consideration has been given this viewpoint in the proclamations issued by the various States, but the general trend to damage international economy will, nevertheless, persist.

"The entire question is of a recent date and was brought up by the proclamations of The United States of September 28, 1945. The proclamations established a distinction between the sea bottom of the continental shelf which simply was made subject to State jurisdiction, and the establishment of fishery zones in the sea off the coasts where certain protection regulations, eventually in cooperation with other interested countries, might be introduced. But the character of the water area as open sea should be maintained, and particularly should the rights of other countries to free navigation in these areas not be curtailed. However, some American States very soon followed with more far-reaching claims. Under these claims, jurisdiction included not only the sea bottom itself and its mineral occurrences, but also the water areas beyond it (i.e., the entire flat sea) and the atmosphere. In reality this was an enormous expansion of the maritime jurisdiction to a hitherto completely unknown extent. This applies to the declarations of Mexico and Argentina, in 1945 and 1946, respectively. But this is not everything: On the west coast of South America where the Shelf, as I have already mentioned, is rather narrow, so that jurisdiction over it would not result in any farther expansion of claim than to the present maritime territory, Chile in a proclamation of 1947 quite simply claimed the total waters within a line 200 miles off, and parallel to, the coast. A similar zone is claimed also off all coasts of the insular possessions of Chile, including such points as Juan Formandez which is about 400 British miles distant from the mainland and Easter Island, which is more than 2,000 British miles away. Thus, there are enormous areas which in these districts are far outside the continental shelf, and have no relation whatsoever to the more recent theories of continental shelf jurisdiction. Something similar is true for the declaration of Peru of 1947, and of Costa Rica of 1948. Other States which have made more or less far-reaching claims to an expansion of their jurisdiction, are Great Britain (only, however, in limited areas), Nicaragua, Iceland (Law of April 5, 1948), and Saudi Arabia in a 1947-issued proclamation reserving the right to fix the exact boundaries by agreement with other countries.

"All this will show that most of these expansions of the jurisdiction of the States have taken place in the form of unilateral proclamations, and it therefore is very natural to ask: Are they really legal, and must they be respected by other States?. Former free admission to all parts of the open sea is considerably curtailed by these actions.

"In cases like those of Chile and Peru, and others, where irrespective of the bottom conditions, an enormous expansion of the maritime jurisdiction is carried through by a simple stroke of the pen, it can safely be maintained that protests will be made...On the other hand, where the expansion relates to a clearly defined continental shelf, it must be a consequence of developments during the most recent times that the other States have not protested against such expansion of jurisdiction, and thus silently have approved it; this means that other countries must also be entitled to take similar steps.

"In my opinion, it thus should be possible to proclaim today, without any further formalities, Danish jurisdiction on the far-reaching continental shelf around the whole of Greenland and around the Faroe Islands. It is somewhat more difficult with regard to the Danish parent country and Bornholm...These areas, together with the whole of Great Britain, the North Sea coast of France, Belgium, Holland, Sweden, and all the Baltic States are located within a flat sea where there cannot be said to be any shelf edge which borders on the deep sea. Only between Denmark and Norway is there a deep channel, where from the Danish side a claim could be raised to a range of continental shelf. In relation to the other countries, a division of the joint shelf - on which all these countries can be considered based—must be established. Such division is a natural claim in order to procure clear lines in the

future utilization of the natural occurrences in the subsoil, with regard to protection regulations for the fisheries, etc. The geographical or mathematical lines to be used as basis for such a division are dubious...The definite solution will, I believe, depend on negotiations and agreements among the various adjacent countries, and that can very well cause certain difficulties.

"Finally, you could imagine the entire question solved by a large international conference in which all States were represented, and where the final decision should be reached in these important problems which really are of major interest for all of them. The countries I have already mentioned, and which have issued declarations of their own, and a number of other countries where similar declarations are under preparation, apparently do not wish to abide by such an international solution. It will be extremely difficult to establish general rules because conditions, both geographic and economic, are very different in the various parts of the world. Countries off the coasts of which there is only a very narrow shelf will scarcely be content, for example, with regard to their fisheries, when simultaneously other countries with a wide flat sea take possession of enormous areas of the open sea and reserve them for the enterprise of their own nationals.

"In 1930 an attempt was made to solve, by way of an international conference, the comparatively much less complex question of the extension of the maritime jurisdiction, a field in which precedents could also be found in old established rules. It proved however, at that time, that conflicting interests among the States were so great that nothing could be settled, and the conference ended without results. This is likely to be true to a still higher extent if an international conference now is called for the completely new and unexplored field of jurisdiction over the continental shelf. It therefore is likely that it will be necessary for the individual countries who are interested therein to make their own arrangements, eventually through negotiation with their nearest neighbors, an arrangement which shall be in accord with the trend so clearly expressed in the proclamations already issued by a number of States, and which have found approval in international public opinion.

"In Denmark the Government established, in December, 1948, a committee for consideration and study of all these problems. The committee has already collected a lot of material which will be published in its report. When the report is completed, the Government, possibly through the Rigsdag, will decide what further steps shall be taken by the Danish State in this important question."

France

UNITED STATES NOTIFIED THAT FRANCE WILL POLICE FISHERIES OFF NEWFOUNDLAND AND GREENLAND: The French Embassy has sent a memorandum dated January 30, 1950, to the United States Department of State which states that France has detached the 1500-ton French frigate Aventure to police the fisheries off Newfoundland and Greenland in execution of the provisions of the Convention of May 6, 1882.

The convention referred to is the "International Convention for the Purpose of Regulating the Policing of the Fisheries in the North Sea outside Territorial Waters." The signatory nations are Belgium, Denmark, France, Germany, Great Britain, and the Netherlands. The objective of the Convention is to regulate the policing of the North Sea fisheries, except in territorial waters.

German Federal Republic

FISHERIES TECHNIQUES BEING USED TO DEVELOP FISHERIES OF OTHER COUNTRIES: German fishing vessels and techniques are being used to an increasing extent in the development of the fisheries of other countries, reports a May 19 American consular dispatch from Bremerhaven.

Turkey has been exploring the possibility of using Marshall Plan credits to procure 30 to 40 new fishing cutters in Germany, as well as fish-meal and other fish-processing machinery. German experts probably will go to Turkey to supervise the installation and initial operation of the machinery.

The South American countries of Chile, Argentina, and Columbia are reported to be procuring fishing cutters and cutter crews in Germany for use in their own fisheries.

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1950 FISHERIES FAIR: The 1950 German Fisheries Fair, which was held in Bremerhaven from May 20 to May 31, inclusive, had an estimated paid attendance of 70,000 persons. Since the fair was well advertised, it attracted people from all parts of Western Germany, the American Consulate at Bremerhaven reports in a June dispatch. The scheduling of the annual conference of German fish wholesalers and retailers in Bremerhaven during this period was a contributary factory in obtaining wide representation.

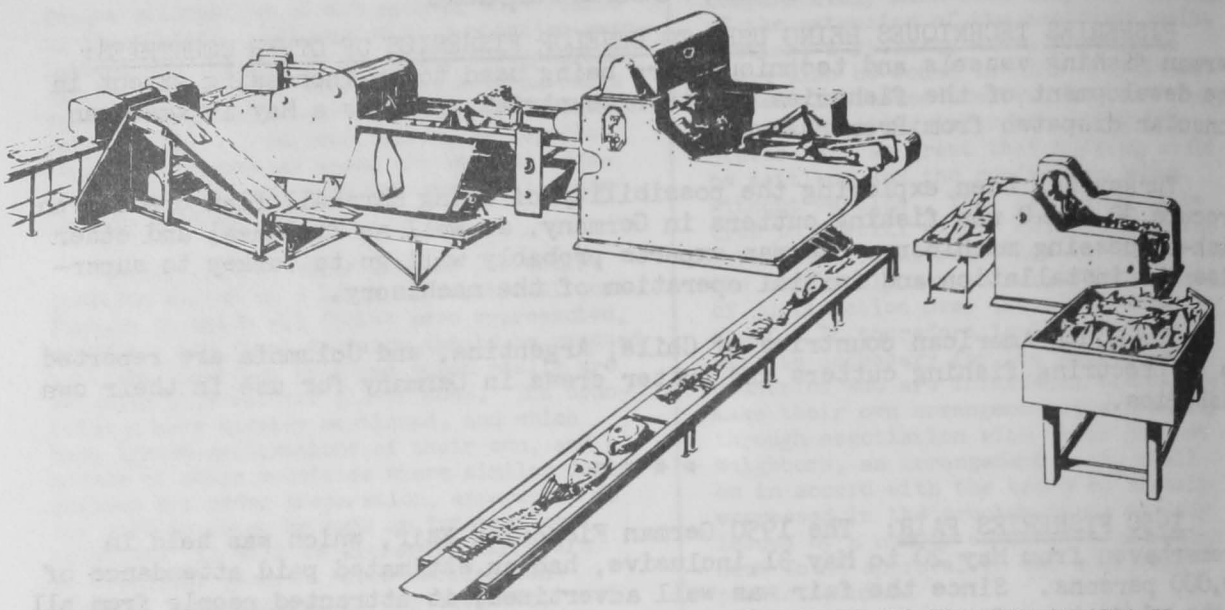
The objectives of the fair were:

1. To promote the fishing industry;
2. To display newly developed products and fishing techniques; and
3. To acquaint the owners of fishing vessels with the latest advancements in ship designs, harbor construction, and related subjects.

There were approximately 350 exhibits, all of which were presented by private or government organizations of West Germany. Fish catching, processing, distribution and preparation, and marine science were represented. In the processing section, a filleting machine designed by the Nordischer Maschinenbau, Rud. Baader, Luebeck, was one of the most recent mechanical developments and attracted considerable interest.

NEW FILLETING MACHINE: The new German filleting machine consists of four units which, when set up in line, occupy a space approximately 35 by 8 ft. One unit removes the head, ventral-fins, and scales; the second, fillets; and the third and fourth, which are identical, skin the fillets. Before processing the fish are gutted by hand.

It is claimed that four persons can fillet from 1,200 to 1,800 fish per hour, obtaining over 5 percent more meat than is possible if the operation is done manually. Two additional personnel are required to pack the fillets as they leave the skinning units.



NEWLY-DEVELOPED GERMAN FILLETING MACHINE CONSISTS OF FOUR UNITS AND OCCUPIES AN AREA OF APPROXIMATELY 35 BY 8 FEET.

The machine can operate without adjustment on fish ranging from 40 to 120 cm. (from over 15 inches to 47 inches) and was designed for European cod, coalfish (pollock), ling, haddock, and others having a similar skeletal structure. It was stated that, because of the high degree of mechanization and precision obtained, the machine was extremely specialized in regard to the varieties of fish on which it can operate successfully.

It was adopted from a circular type, which has been manufactured for several years by the same company, in order to overcome the inability of the latter to fillet freshly-caught fish which are stiff and have not passed the rigor mortis condition. This defect made the circular filleting machine unsuitable for use on vessels. It is planned to operate the new model at sea as well as on shore.

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WHALING: The conversion of a T-2 American tanker, Herman F. Whiton, into a whaling mothership was reported in the February 1950 Commercial Fisheries Review, page 50. The Erste Deutsche Walfang Gesellschaft m.b.H. of Hamburg states that the published wording could lead to a misunderstanding and that the whaling fleet in question represents not a German-American enterprise, but a purely American one. The firm claims that the whole enterprise is controlled by a whaling company with offices in New York City, with the Erste Deutsche Walfang Gesellschaft m.b.H. acting only as the sole agency of the American firm for such purposes as supervision and equipment.

Germany, before World War II, was the largest whale oil consumer in the world and frequently bought more than 45 percent of the world production of whale oil. The average production and consumption figures of 1932/33 and 1935/36 clearly illustrate that the German average annual consumption at that time amounted to 203,000 metric tons out of a world whale oil production of 454,456 metric tons.

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CULTIVATION OF FRESH-WATER FISH: In southern Germany, and particularly in Bavaria, fresh-water fish are cultivated on a commercial scale in specially constructed ponds, a May 19 American consular dispatch from Bremerhaven reports. In unfertilized ponds in Bavaria, an average annual yield of 90 pounds per acre has been obtained; in fertilized ponds, the yield has reached 195 pounds per acre.

Carp and trout are the fish usually cultivated, and are sold alive. At the end of March 1950 in Munich, live trout were being retailed at approximately 76 cents a pound; live carp were selling at 43 cents per pound.

MODERNIZATION OF HIGH-SEAS FISHERY HAS INTERNATIONAL IMPACT: Although Germany is not a fish-exporting country, the modernization of the German high-seas fishery has had an international impact. Iceland has been particularly affected. Having sold Germany 60,000 metric tons of iced fish in 1949, Iceland was able to sell only about one-third of this amount in 1950 under the German-Icelandic trade agreement negotiated early in 1950. This agreement limited Icelandic fish exports to a value of $2,500,000.

The decline in fish prices in Germany further posed the problem to the Icelandic Government of either increasing the subsidy to Icelandic trawlers landing fish in Germany or devaluing the Icelandic krona. This latter course of action was decided upon and put into effect on March 19, 1950.

The large Icelandic trawlers of 600 gross registered metric tons have been used chiefly to deliver iced fish to Germany and England. Due to the limitation of Icelandic fish deliveries to the period of the German herring season, such vessels will not be able to operate nearly so economically this year, and some privately-owned Icelandic trawlers may be sold or chartered to German operators. Two large Icelandic trawlers, built in Bremerhaven in the late 1930's, have been offered to a newly-founded, joint Icelandic-German firm in Bremerhaven at less than $142,800 apiece, with one-half the purchase price to be paid by exports of German products to Iceland over a five-year period. The association of German Trawler Owners is opposing the registry of these two trawlers in Germany. However, three Belgian trawlers were purchased by Bremerhaven firms during the first quarter this year and were converted to German registry.

India

EXPERIMENTS WITH CHEMICAL ICE FOR PRESERVING FISH: Experiments are being conducted by the Fisheries Department of the West Bengal Government in cooperation with a local ice manufacturing concern for preserving fish in chemical ice, a June 8 American consular dispatch from Calcutta reports. The experiments are directed toward extending the time of preservation of frozen fish after it is taken out of the freezer from 6 hours to 48 hours. The extended preservation, if the experiments prove successful, will facilitate transportation for longer distance and to areas where cold storage or ice-packing facilities are not available.

Japan

EXPANSION OF JAPANESE TUNA-FISHING AREA WILL INCREASE TUNA PRODUCTION: In May the Japanese Government was authorized by SCAP to extend its tuna fishing area as far south as the Equator, and to send tuna-catching fleets into this prescribed area, subject to specific restrictions. Plans have been approved by the Japanese Government to dispatch a fleet of 25 vessels to the authorized area early in June, reports a June 9 American consulate dispatch from Tokyo. It was estimated that this fleet would catch about 3,600,000 pounds of tuna, with an even greater catch of shark and other miscellaneous products. The total value of the fleet's production would probably reach 520 million yen (approximately $1,450,000).

Permission to send tuna-catching fleets as far south as the Equator will greatly increase the availability of tuna on the Japanese local market, as well as permit a larger volume of canned tuna exports.

PEARL INDUSTRY OUTLOOK FOR 1950: Regarding its 1950 operations, the Japanese pearl industry was optimistic, and it was estimated that its production of cultured pearls would be about 413,000 pounds. This is a substantial increase over the 293,100 pounds produced in 1949.

Cultured pearl production was greatly reduced during World War II, and it was not until 1949 that new crops reached significant proportions.

Recent orders, principally from United States dealers, but including Swiss, Canadian, and West German buyers as well, indicate that the volume of trade will be substantially larger than that of 1949, when cultured pearls valued at $2,000,000 went to the export market.

JAPANESE GOVERNMENT

Netherlands West Indies

CURRENT FISH MARKETING SITUATION:[1/] Production of meat and agricultural products in the Netherlands West Indies (the islands of Curacao, Aruba, and Bonaire) is inadequate mainly due to the lack of water. Fish production is limited by preservation facilities, with ice prohibitively priced at $17.50 per metric ton. As a result, imports of fishery products play an important part in the economy of the Islands, according to Robert O. Smith of the U. S. Fish and Wildlife Service, who is conducting the Western portion of a South American survey to determine the possibility of locating South American markets for U. S. fishery products.

1/ This is the second report in a series to give information on current and potential markets for United States fishery products in South America. Milton J. Lindner and Robert O. Smith, United States Fish and Wildlife Service representatives, were in South America during June investigating markets in connection with a survey sponsored cooperatively with the U. S. Department of Agriculture's Office of Foreign Agricultural Relations. More detailed reports will be issued at a later date as "Foreign Market Circulars" and will be available from the Branch of Commercial Fisheries, U. S. Fish and Wildlife Service, Washington, D. C. The first report in this series was on the Argentine Republic (see Commercial Fisheries Review, June 1950, pp. 33-4).

The population of the Netherlands West Indies is reported to be about 160,000, of which 98,000 are on the island of Curacao, 54,000 on Aruba, and the balance on Bonaire. Ordinarily such a relatively small population would not use a great quantity of fishery products; however, the scarcity of locally-produced meat and agricultural products creates a demand for fishery products.

Production of fishery products in these Islands is estimated to total about 1.1 million pounds annually, or about seven pounds per capita, valued at $397,000 (U. S. currency equivalent).

Imports of fishery products amount to about 20 pounds per capita annually. During the first six months of 1949, the two Islands of Curacao and Aruba imported about 1,600,000 pounds of fresh, frozen, and preserved fishery products, valued at about $360,000 (U. S. currency equivalent).

To explain the unusually large proportion of imports, a number of reasons are advanced. Oil companies operating in the Islands contribute relatively high incomes to the area. These companies operate their own commissaries, supplies for which are purchased from main offices in New York, London, and The Hague. Until recent years, unloading facilities for large vessels were mostly lacking in the Caribbean area and large quantities of cargo were transferred to smaller vessels for final delivery. Approximately 10,000 ship arrivals and departures are reported annually.

Import licenses are not required except for shipment from European countries. There is no inspection prior to entry, nor any specific labeling requirements, or packaging preferences. All containers should show net weight in metric units.

Recently, a Netherlands economic mission visited the Islands for the purpose of studying the possibilities of increasing the sale of products from the Netherlands. Among the items suggested for heavier exportation to the colony was salted and brined herring.

Norway

FISH FILLET INDUSTRY TO BE DEVELOPED IN NORTH NORWAY: In order to utilize the fishery products in North Norway (where some of the biggest fisheries in the world are located), a large new company is being formed by the Norwegian Ministry of Fisheries, a June 24 news release from the Norwegian Information Service reports. Development of a fish fillet industry will be one of the main activities of the company, along with the production of fish meal and the preparation of dried fish.

The State will be the biggest shareholder in this new company, but stock will also be held by the Norwegian Fishermen's Organization, the Norwegian Trade Union Congress, and other organizations connected with Norwegian fisheries. The company will take over existing factories in North Norway and develop the industry further.

The initial capital will be about $1,680,000, and it will later be increased to $2,800,000. Through their organizations, fishermen will exercise a strong influence in the business administration of the company.

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PLANS TO DOUBLE FROZEN FISH EXPORTS TO THE UNITED STATES: After extensive marketing surveys and the employment of an American market counsellor, the Norsk Frossenfisk A/L (marketing and export sales agent for all Norwegian fish-refrigerating plants) began distribution of frozen fish in the United States in January 1948. An official of this company (which has been extremely active in the stimulation of Norwegian exports) states that from January 1948 through mid-1950 a total of 2,086 metric tons of frozen fish have been shipped to the United States. Current exports to the United States are at the rate of 1,000 tons annually, but it is anticipated that within the next six months this rate will be doubled, a June 8 American Embassy dispatch from Oslo states.

This company is investigating the possibilities of inspection by the U. S. Food and Drug Administration or by Norwegian government official inspectors designated to conduct inspections (according to United States standards) of monthly shipments of frozen fish to the United States at places of embarkation in Norway.

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LARGE PARTICIPATION EXPECTED IN TUNA FISHERY: A survey by Norway's Raw Fish Association recently indicated that about 200 fishing vessels were planning to seek tuna this summer, according to the May 16 Fiskaren, a Norwegian trade publication. This compares with only 20 to 25 vessels which fished in 1949, and not more than 10 or 15 in 1948. Most of the vessels plan to operate along the Nordland and Nord Trondelag coasts.

From the standpoint of export possibilities, the Sales Committee of the Association is considering what regulations will be necessary because of the unexpectedly large participation in the tuna fishery this season.

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USE OF MONONATRIUM IN CANNING HERRING: Experiments and research on the use mononatrium to improve the quality of canned herring or fishery products are still being conducted and definitive conclusions have not yet been made, according to the latest information supplied by the American Embassy at Oslo in a dispatch dated April 20. This flavoring (mononatrium) was discovered at the Norwegian Canned Fish Industry's Quality Control Laboratory in Stavanger (see Commercial Fisheries Review, May 1950, p. 77).

According to the Norwegian Canners' Association, the Laboratory was issued USA patent 2461651 on February 15, 1949, covering the use of mononatrium in fish canning.

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EXPANSION OF HERRING OIL AND MEAL FACTORIES: For expansion of facilities of existing herring oil and meal factories, and for the building of new ones in West Norway, the Norwegian Government will guarantee a loan of $630,000 to a Norwegian company, the Norwegian Information Service reported on June 24.

The capacity of the Egersund factory will be increased from 5 to 10 thousand barrels per day; the Moltustrand factory from 5 to 15 thousand barrels; and the Horsöya factory from 9 to 14 thousand barrels. A new factory will be built at Florö to handle 15 thousand barrels a day.

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HERRING OIL FACTORIES TO PRODUCE FISH SOLUBLES: Two Norwegian herring oil factories have started condensation of stickwater on an industrial scale, the Norwegian Information Service reported on June 17. Stickwater is the liquid left over in the so-called reduction process after recovery of the dry matter (herring meal) and the separation of the oil. In the past, this liquid has been allowed to run to waste. The stickwater contains 5 to 7 percent total solids, by far the greater proportion of which is in solution. Most of these total solids consist of protein and protein-degradation products. In addition, the stickwater contains a number of B vitamins of great practical importance and in comparatively large amounts.

The stickwater may be utilized in various ways. Either fluid or powdery products may be obtained. Production of concentrates in liquid form is carried out by evaporation of the stickwater, mostly in vacuum. Provided the viscosity is no hindrance, the stickwater is reduced to a concentration of about 50 percent total solids. In order to improve its keeping qualities, acid (usually sulphuric acid) is added to the stickwater either before or after concentration. The fluid, viscous concentrate is shipped in barrels or in tanks.

Because of their high concentration of "animal protein factors" (APF), including vitamin B_{12}, the "herring solubles" are a valuable supplement to vegetable protein in the feeding of hogs and poultry. Relatively small quantities of the solubles added to the feed--a proportion of 3 to 5 percent--are usually sufficient to meet the APF requirements.

WHALE OIL PRICE JUMPS: The whale oil from the Anglo Norse and Jarama Norwegian expeditions off West Africa this summer has been sold in advance to Continental buyers at $280 per metric ton. Last year the Anglo Norse and Jarama expeditions produced 19,000 tons of whale oil. A similar output this summer should be worth almost $558,000.

Whale oil produced in the Antarctic this past season was sold in advance last fall for $224 per ton. But whaling circles expect to obtain $280 per ton for whale oil produced in the Antarctic next season.

The European market for whale oil has recently become very firm because of disappointing supplies of vegetable oil. Deliveries from the East Indies are hampered by strikes and other difficulties. It is also possible that stockpiling due to the "cold war" has increased the demand for fats. Tonsberg Blad, a Norwegian newspaper, also believes that the devaluation of sterling has helped to increase the price of whale oil.

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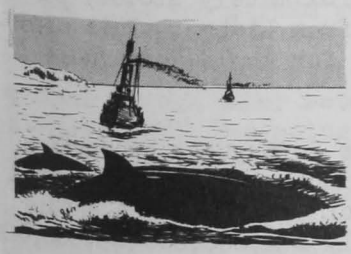


WHALING IN THE ANTARCTIC.

WHALING ENTERPRISES FORM POOL: With respect to Norwegian efforts to maintain a monopoly position in Antarctic whaling, newspapers in Norway recently reported the formation of a pool comprising all Norwegian whaling enterprises and the conclusion of an agreement on the part of the pool with British whaling interests to maintain minimum price schedules for the sale of whale and sperm oil through the world, a June 28 American Embassy dispatch from Oslo states. Although full details of this agreement have not been

made public, private Norwegian whaling interests and other sources have confirmed the existence of the pool and of the agreement with British whaling interests.

Panama

PLANS EXPORTS OF FROZEN FISH TO U. S.: A new Panamanian firm proposes to engage in the fishing industry and export frozen fishery products to the United States reports a June 23 American consular dispatch from Panama City. The exportation of shrimp, fillets of jewfish, red snapper, black snapper, mackerel, corbina, swordfish, tuna varieties, and other species are expected to be an important phase of the operations of the new company.

Peru

GERMAN-PERUVIAN COMMERCIAL AGREEMENT: A Commercial Agreement signed May 12, 1950, in Frankfurt-on-Main between the Federal Republic of Germany and Peru includes fishery products, states a June 9 American consular report from Lima. The agreement provides reciprocal most-favored-nation treatment and settlement of trade balances in free American dollars, in addition to other conditions. German imports into Peru will still be subject to Peruvian import control regulations which establish a "List of Permitted Imports." The agreement will be in force for one year and will be extended automatically for a similar period unless one of the Parties denounces it with an advance notice of 90 days.

Germany will import from Peru $30,000 of canned and frozen fish and $210,000 of fish meal; however, the amounts indicated do not represent maximums, and may be exceeded.

No fishery products are included in the list of German exports to Peru.

Portugal

GREAT BRITAIN CONTRACTS FOR PORTUGUESE SARDINES: Representatives of the British Ministry of Food on June 2 signed a collective contract with the Portuguese Canned Fish Institute for the purchase of 500,000 cases of sardines of the current season's pack at a price of 290 escudos (approximately $10.00) per case, according to a June 22 American consular dispatch from Lisbon. This agreement is in accordance with the arrangements already made for Anglo-Portuguese trade during 1950.

The quantity contracted for is a maximum, and if the Portuguese production fails to reach 2 million cases, 25 percent of the actual output will be reserved to fulfill the British contract. If the maximum amount of 500,000 cases should be supplied, the transaction would amount to approximately £ 1,800,000 ($5,000,000) and the assured market thus established would have a stablizing effect on the canning industry, which has been hard hit by two successive years of sardine shortages and reduced exports.

The sardines will be packed in the quarter-club size (4½ oz. net weight). The first shipment will reach Great Britain at the end of the year and supplies will be on sale in that country early next year.

The Portuguese sardine fishing season began in May, with some good runs reported from the coast of southern Portugal in May and early June, arousing hopes of an alleviation of the scarcity which has prevailed in the past two years.

Spain

SPANISH "PAIRS" SUCCESSFUL FISHING OFF NEWFOUNDLAND: This year, for the first time, a number of Spanish "pairs" (Spanish system of drag-net fishing by two vessels[1/]) fished the Newfoundland banks. These vessels are now reported returning to Spain after staying away 30 to 35 days (of which only 10 days were spent in actual fishing), and it is indicated that they have been exceptionally successful. Catches of 80 to 100 metric tons per "pair" were reported, according to a June 12 American consular dispatch from Bilbao.

Under present Spanish Government regulations, the vessels can sell in the fresh state only 25 percent of this catch on the market at Bilbao. The balance is to be salted and set aside for the national market and for the months to come.

1/ See Commercial Fisheries Review, May 1950, pp. 81-4.

U.S.S.R.

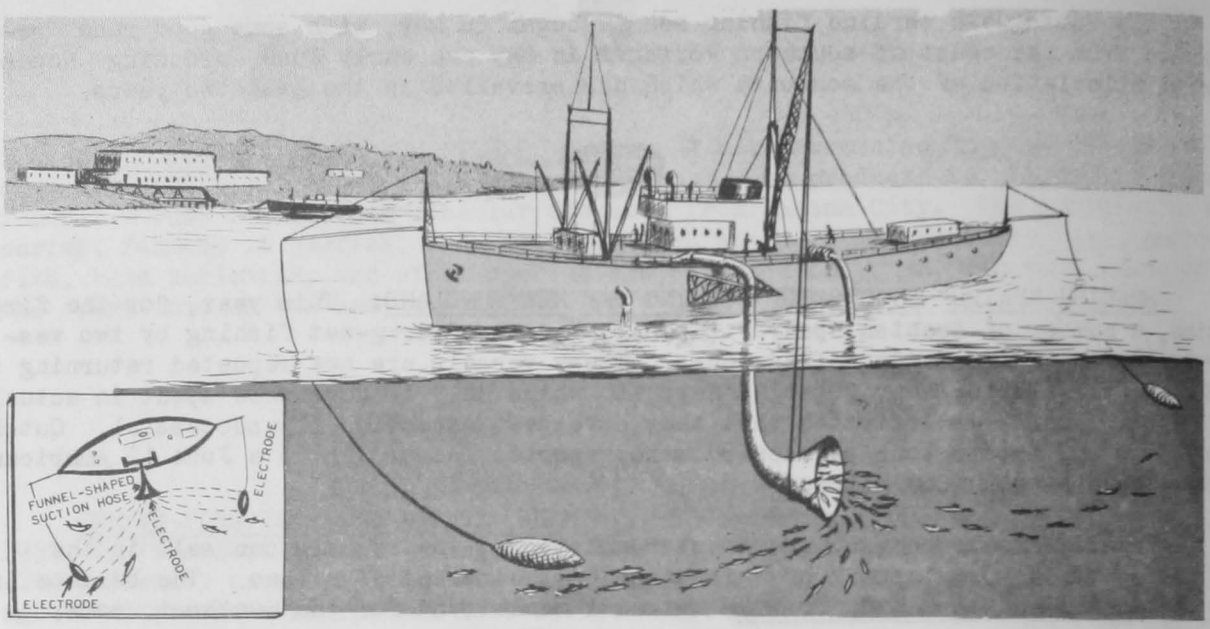
ELECTRICAL FISHING EXPERIMENTS WITHOUT A NET: Based upon present known methods of discharging fish from the holds of vessels with a vacuum pump, Soviet engineers claim they are experimenting with the same method for electrically catching and suctioning fish into the hold of fishing vessels directly from the river.

A Soviet engineer, M. F. Cernigin, claims that after much experimental work in the Lake Trust, the following electrical method of catching fish without a net was developed, according to an article which appeared in the Ceskoslovensky Rybar, a Czechoslovakian fishery periodical.

The vessel was equipped with an electrical pump and a high-voltage installation. On the river bottom, cables from the local power plant were laid. A rubber suction hose was lowered into the stream. Attached to the end of the hose lowered into the stream was a funnel-shaped tube. This was connected with the high voltage installation--the electrode. At a certain distance away there were two floats to which were attached metal plates, and high voltage wires were conducted to these plates under water. From an observation post on the boat, it was possible to observe what was going on in the depths of the stream.

At first when the pump was lowered, no fish entered the funnel-shaped opening. However, when the current was turned on, all the fish that were between the funnel and the electrode rushed towards the funnel. The current attracted the fish towards the funnel and the suction pulled the fish into the tube. In a steady stream, the fish were caught and suctioned into the hold of the vessel. With the use of this electrical fishing method, 2,500 pounds of fish were caught in eleven hours. Fish

were not damaged, and they were distinguishable from fish caught by other methods only by their fresh and clean condition. At the dock, the fish were suctioned from the hold of the vessel to the shore plant.



THE SKETCH GIVES AN ARTIST'S CONCEPTION OF THE USE OF THE SOVIET ELECTRICAL FISHING METHOD. AT A DISTANCE IN FRONT AND BEHIND THE BOAT, ELECTRODES HAVE BEEN PLACED. A SUCTION HOSE WITH A FUNNEL-SHAPED OPENING IS LOWERED INTO THE WATER. WHEN THE ELECTRIC CURRENT IS TURNED ON, THE FISH MOVE TOWARD THE FUNNEL AND ARE SUCKED, WITH THE WATER, TO THE HOLD OF THE SHIP. THE SURPLUS WATER IN THE HOLD IS PUMPED BACK INTO THE SEA. IN THE UPPER LEFT IS SKETCHED THE SHORE PLANT SHOWING HOW THE FISH ARE UNLOADED BY MEANS OF A VACUUM PUMP FROM THE HOLD OF THE VESSEL INTO THE PLANT.

Electrical fishing is not yet a reality, the Soviet engineer declares, but it is very promising. Only two persons are needed for fishing with this electrical method. Nets will be unnecessary. It will be possible to fish in stormy weather. However, according to the Soviet engineer, "there is much work ahead of us before electrical fishing can be placed at the service of the State."

RUSSIAN VESSELS EQUIPPED WITH LAMPS FOR FISHING: Numerous large Russian vessels in the Caspian Sea are equipped for fishing with electric lamps, according to Russian sources in London, the April 27 Fiskaren, a Norwegian periodical, reports. Last year many thousands of tons of brisling were caught in the Caspian Sea after having been lured up to the surface by powerful searchlights. This year the number of fishing craft so equipped will be doubled.

The Russian fishing fleet in the Pacific, according to the same source, uses "undersea electric rays." The current causes the brisling to move in the direction the fishermen desire when the brisling are ready to be caught.

The first Russian experiments with electric fishing were carried out in Astrakan and Murmansk in 1936.

United Kingdom

EFFECTS OF DECONTROL OF FISH PRICES: The decontrol of fish prices and the end of the flat-rate transportation subsidy on April 15, 1949, in Great Britain brought into public discussion the critical situation of the entire British fishing industry, reports a May 22 American Embassy dispatch from London. The end of the transportation subsidy, which enabled fish landed at the northern ports to compete in the main fish markets, brought a storm of protests from the Scottish fishing industry.

Removal of price control was followed by an immediate sharp rise in prices, due also, in part, to the fact that weather conditions during the week end and immediately preceding it (April 15) had reduced landings at many ports. Stiff consumer resistance to the high prices quickly reduced them to more or less the levels at which they had been controlled, but the situation was not stable and price fluctuations were recognized as inevitable.

By the middle of May, or just a month after the price controls were removed, fish prices had again fallen sharply and reports from fishing ports stated that trawlers were being tied up and fishermen were out of work, as it was impossible to cover expenses of operation at current prices. The British Trawlers' Federation, which controls 700 out of the total of 1,100 British trawlers in operation, appealed to the Ministry of Agriculture for aid to the fishing industry which, the Federation states, is on the verge of collapse. The Federation considers this state of affairs due to the following causes:

1. Excessive and uncontrolled dumping of foreign-caught fish in this country.

2. The effect of oppressively high operating costs allied with the public's incapacity to pay correspondingly higher prices.

3. The fact that fish has to compete with other staple foods which, but for the food subsidy, would be on a price parity with fish.

4. A reaction by the public against fish as a diet in consequence of the sort of fish which was enforced upon them by reason of food shortages during the past ten years and also as a result of the poor quality of fish, much of which was imported when other fish was not obtainable.

5. A general reduction in catches in home waters due to overfishing by all Western European countries.

The question of aids to the fishing industry has been raised several times in Parliament, and it is expected that some action may be taken by the Government in this direction. However, there are good reasons advanced for giving the free market time to adjust itself, particularly since the current supply of eggs and other foods which can be used as a substitute for fish is seasonal, and since there is room for improvement in the handling and selection of fish offered for sale to consumers who are becoming more selective in their demand for fish.

During the first quarter of 1950 there were continued complaints of the critical condition in which the fishing industry found itself, due chiefly to rising costs and, it was claimed, to the prejudicial effect of imported fish on the market for the British catch. In this connection, it may be noted that while the landings

by the home fleet showed a decline during the quarter, imports of fresh and frozen fish also dropped sharply as compared with the same quarter of 1949.

Removal of the subsidies has given rise to retail price increases and some concern is felt lest the uncertainty as to prices and supply of fish in the retail markets may not result in a more or less permanent drop in consumer demand for fish.

ECHO-SOUNDING DEVELOPMENTS IN THE EUROPEAN FISHERIES AS REPORTED TO THE INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA: Latest developments in echo-sounding were the subject of some of the scientific papers presented at the meeting of the International Council for the Exploration of the Sea in Edinburgh, Scotland, in October 1949. These papers reported on methods of using echo sounders to identify schools of fish, to discover the behavior of fish schools under different conditions, and to study the action of fish nets while trawling.

One of these papers, delivered by Dr. William C. Hodgson of the Fisheries Laboratory at Lowestoft, England, presented a general survey of the use of the echo sounder for spotting schools or shoals of fish, and described the recorded traces that appeared when the echo sounder contacted different species of fish. A brief version of this paper is given in the following paragraphs.

Dr. Hodgson commenced with a brief historical resume of the development of the echo sounder. The first echo sounder of the sonic type to be installed on a fishing vessel was one which used sound waves of low and audible frequency. The machine which consisted of an electric hammer for producing the impulse and a hydrophone for receiving it, was fitted to a steam trawler out of Hull, England, in 1928. It was found to give accurate soundings to a depth of 270 fathoms. Later, in 1933, the first recording instrument used in fishing was installed in the steam trawler Glen Kidston by Henry Hughes and Sons. This machine used a magneto-striction ultra-sonic oscillator and it recorded the depth electrolytically on a roll of paper. The first cruise made from Hull to Bergen with this instrument aboard was a historic one, for the skipper was able to produce a continuous trace of the sea bed on paper to a scale of 70 fathoms to 5 inches of paper.

In 1935, Oscar Sund, using this type of machine on the Norwegian coast, made the first identified record of fish; in this instance they were cod. On the Lofoten grounds in the following year, he was successful in producing records of herring shoals. The success of these experiments firmly established the recorder in the Norwegian fisheries as a suitable instrument for discovering cod, herring, and and brisling.

Dr. Hodgson pointed out that, since these early experiments, there has been a progressive development in the effective use of echo-sounding equipment. It has been especially noticeable after the recent war that a great increase in the use of the sounder for locating shoals of fish has taken place. Both drift gill-netters and purse seiners are now beginning to rely on the information given by the recorder before shooting their nets. Drifters consider the sounder important in finding the exact depth at which the fish are swimming. The importance of this knowledge is realized when it is considered that in the North Sea the greatest depth reached by the nets is 9 fathoms (nets are about 7 fathoms in depth and are suspended from the buoys by ropes which are usually 2 fathoms in depth). In many parts of the North Sea, it has now been found that the herring will rise at night only to within 10 or 15 fathoms of the surface, which means that the drift nets cannot possibly catch the fish unless the buoy ropes are lengthened.

One of the most outstanding discoveries in connection with the use of the sounder is that certain species of fish can be identified definitely by the type of echo recorded on the paper trace. Dr. Hodgson reported that, during the course of the work, a collection of traces has been made of different fish, all of which have been identified either by catching them in nets or by catching them on various forms of hand lines. The observations have resulted in the knowledge that with both herring and pilchards, clear echoes are obtained even when the concentrations are very light. In large masses, too, they are easily distinguishable from each other, for the edge of the herring trace is always diffused--as though it had been shaded with a pencil--while the pilchard trace is dense and the edge appears to be painted with India ink.

Other species of fish show distinctive characteristics in their traces. Small sprat, for instance, show a diffuse, cloudy trace like the herring, but dense shoals of adult sprats usually have peculiar comet-like formations scattered throughout the trace. This has been found to hold true in both the North Sea and the Norwegian sprat shoals.

Cod, coalfish, and pollock all give a trace which seems to be characteristic of these gadoids. They are shown on the records as a series of specks instead of dense shaded traces such as the herring-like fishes produce.

Mackerel traces are unlike any others. These fish produce a striated trace which has a peculiar ribbed appearance, irrespective of the density of the shoal.

In addition to traces of these species of fish which have been identified, other investigators reported that they had traces quite distinct from the above, which probably represented fish of other species. They contemplate continuing work on identifying these fish and relating their appearance to that of the trace.

Another important function of the echo sounder, as related by Dr. Hodgson, has been its use to study the behavior of fish shoals in relation to wind, tide, and light; for it is possible to make a continuous record of the depth at which a shoal is swimming under the influence of these various factors.

In Cornwall, experiments were carried out on the effect of using strong searchlights on the pilchard shoals. It was found that as soon as the light was switched on there was an immediate shock reaction which caused the fish to descend for a few seconds. Then, under the influence of the light, they rose again. When the light was switched off, the fish at once fell to a lower level but rose again as soon as the light was restored.

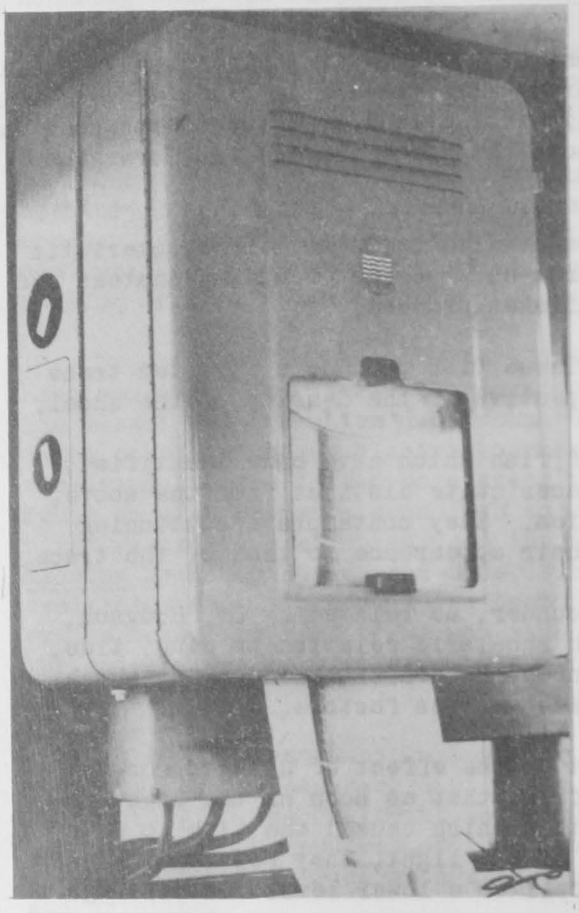
The diurnal migration of sprat also has been studied in the Thames estuary. Here, continuous records show that the fish were at the bottom during daylight, but after sunset they gradually rose to the surface. At dawn, they would sink again to the deeper water.

It was found also that the sprat were packed together in dense shoals during flood tide and also during ebb tide, but at the period of slack water the shoals dispersed so much that it was difficult to obtain echoes from them.

A further and most interesting use of the echo sounder was reported on at the Council's meeting by B. B. Parrish and Henry Wood of the Marine Laboratory at Aberdeen, Scotland. These men had used the echo sounder to study the behavior of trawl nets and had reported on their techniques and results. One vessel shot the trawl net and streamed a float about 60 feet in front of the estimated position of

the headrope of the trawl. The second vessel, equipped with the echo sounder, was towed by the first. By slacking the towline slowly, the second vessel moved backward from the float, and by gently sheering the vessel from left to right it was possible to make a full traverse of the net from side to side and from front to back.

In the foregoing experiment with one small net (specified as a 20-foot trawl), it was found that the headrope or square was 4 feet from the bottom; the sides $3\frac{1}{2}$ feet; and the cod end $2\frac{1}{2}$ to 3 feet. With another net, called the "Explorer's Trawl" (specified in other papers as a long-winged trawl with 1 112-foot headrope), they estimated the height of the headrope from the bottom as 6 feet. Further observation of this trawl showed that the footrope sometimes rose from the bottom. It had been found previously that this net had caught less flatfish and skate than other trawls; thus it was possible with the echo-sounder to determine that the net was not fishing sufficiently close to the bottom.



THE HUGHES ECHO-SOUNDING MACHINE.

The Europeans, especially the British and Norwegians, have been adapting echo-sounders for the purpose of locating schools of fish for many years, and their instruments have some advantages over those which have been built in the United States. One of their favorite machines is the Hughes Model 20. This machine has a phasing adjustment that most American machines lack. Only 60 feet or 60 fathoms is recorded on the paper at one setting, but the machine can be set to indicate depths down to about 2,000 fathoms. Thus, with one machine it is possible to sound in deep water and also to receive a magnified echo of a school of fish only a few feet thick. Another mixed blessing is the use of wet paper. This paper is wet and fragile and not permanent, but it records echoes very smoothly with a wide range of brown tones. Using this paper, it has been possible to identify the different species of fish by a close study of the striations, comet-like formations, and varying densities of the echoes--effects which are doubtless caused by the schooling habits peculiar to the different species.

It was apparent from the contents of the papers delivered at the recent meetings of the Council and from talks with fishermen and scientists that the echo-sounder has been found to be an important addition to the fishing industry. Fishermen and scientists alike agreed that the echo sounder has become indispensable, not only for navigation, but also for finding fish--thus serving a dual purpose. And with the expected improvements increasing the efficiency of the instruments and the further development of techniques of using them, all were agreed that echo sounders would become even more important.

--Reported by William F. Royce, Fishery Research Biologist, Branch of Fishery Biology, U. S. Fish and Wildlife Service and United States Observer at the meetings of the International Council for the Exploration of the Sea held at Edinburgh, Scotland, in October 1949.

U. S. Trust Territory of the Pacific Islands

NO APPLICATIONS RECEIVED FOR TUNA FISHING IN THE TRUST TERRITORY: The Trusteeship Council of the United Nations in June examined the annual report for the year ending June 31, 1949, on the administration of the Trust Territory of the Pacific Islands under United States administration.

In the examination of this report, the Philippine representative noted, with reference to economic progress in the Trust Territory, that although the right to fish for tuna in the Territory's waters was open to outside companies, no applications from outside had ever been received. The Philippine representative thought that the Administering Authority could train the indigenous people to use the tuna resources for industrial production.

The Special Representative of the Administering Authority declared, at the examination of the report of the Trust Territory, that fishing had been given much attention without any spectacular results.

International

INTERNATIONAL WHALING COMMISSION MEETS IN NORWAY: The second annual meeting of the International Whaling Commission will convene at Oslo, Norway, on July 17. This Commission, established under the terms of the International Agreement for the Regulation of Whaling signed at Washington, December 2, 1946, has the authority to make such regulations of whaling activities as are necessary in the interest of conserving the already badly depleted whaling resources. This Agreement has been ratified by the United Kingdom, the United States of America, Australia, Norway, Iceland, Union of South Africa, U.S.S.R., Panama, Netherlands, France, Sweden, Canada, Mexico, New Zealand, Brazil, and Denmark. Japanese whaling activities conform to the regulations prescribed under the Convention, and SCAP will be represented at the meeting by an observer.

Two standing technical committees, established at the 1949 meeting of the Commission, will hold sessions during the week beginning July 9 in order to prepare certain matters for the consideration of the full Commission.

The United States delegation is composed of Dr. Remington Kellogg, Director of the U. S. National Museum, Commissioner; Dr. H. J. Deason, Chief of the Office of Foreign Activities, Alternate and Advisor; and Fred Taylor, Department of State, Advisor.