



International

EUROPEAN FREE TRADE ASSOCIATION

CONVENTION INITIALED BY SEVEN EUROPEAN COUNTRIES:

The Convention for the European Free Trade Association (EFTA), to go into force on July 1, 1960, was initiated by Cabinet Ministers of Norway, Sweden, Denmark, Great Britain, Austria, Switzerland, and Portugal on November 20, 1959, at a two-day meeting in Stockholm. Initialing of the 400-page document followed a last minute British decision extending free trade status to frozen fish fillets on certain conditions.

The "Outer Seven" or EFTA representatives issued a communique emphasizing that establishment of EFTA was viewed as only a step toward an agreement among all 18 members of the Organization for European Economic Cooperation (OEEC), which also includes the six nations now joined in the European Economic Community or "Common Market," namely West Germany, France, Italy, Belgium, the Netherlands, and Luxembourg. Under the EFTA Convention, import tariffs in force on January 1, 1960, are due to be reduced 20 percent as of July 1. Subsequent tariff cuts, at the rate of 10 percent a year, are designed to achieve a free internal market among the Outer Seven after a 10-year transition period.

Following the Stockholm conference, the respective governments were slated to examine every provision in the convention, with the final signing expected to take place in mid-December. Thereafter, each of the national assemblies will consider ratification of the pact.

According to a dispatch appearing in the Oslo newspaper *Arbeiderbladet* for November 21, the dispute between Great Britain and Norway over the position of frozen fish fillets within the Outer Seven

area was not settled until the last minute. During the negotiations, Norway won acceptance of its principal objective, that all industrially processed fish products, including frozen fish fillets and frozen shrimp, should be considered as industrial products and thus enjoy free trade status within the Outer Seven area. At the end, British negotiators agreed to raise the joint Scandinavian quota for frozen fish exports to Great Britain from 20,000 to 24,000 metric tons a year over a transition period of ten years. At present, these exports total about 6,000 tons a year. Should frozen fish exports exceed the accepted quota to such a degree that they seriously disturb internal distribution in Great Britain, the whole question is to be re-examined. And if new negotiations fail to bring a solution, Britain reserves the right to impose import tariffs on all frozen fish from Scandinavia, including Norway.

The British Board of Trade President as well as the Norwegian Commerce Minister expressed the view that such an extreme development is virtually inconceivable. And the Norwegian Fisheries Minister said the British quota should allow for a natural expansion of the Norwegian fish filleting industry until 1970. (*News of Norway*, November 26, 1959.)

Note: Also see *Commercial Fisheries Review*, October 1959, p. 46.

FISH MEAL

INTERNATIONAL CONFERENCE OF MANUFACTURERS HELD IN SPAIN:

Representatives from 16 countries attended the International Fish Meal Manufacturers Conference in Madrid, Spain, during the latter part of October 1959.

By a unanimous vote it was decided that an International Association should be formed. This Association will be primarily for the purpose of promoting the exchange of scientific and technical information and of examining all matters

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which are of general interest to the industry, such as standards of quality and International regulations and legislation. The President of the United Kingdom Fish Meal Manufacturers Association will be the Association's first president, and the Secretariat will be provided by the United Kingdom. (Fishing News, November 6, 1959.)

FOOD AND AGRICULTURE
ORGANIZATIONREPORT OF THE TENTH
SESSION OF THE FAO
CONFERENCE:

On October 31, 1959, the Food and Agriculture Organization (FAO) of the United Nations convened its Tenth Conference in Rome, Italy. Eighty-six nations participated in the proceedings of the Conference. Among these nations were a number from Africa who were admitted to membership or associate membership. Guinea, Cyprus, Nigeria, Somalia, Cameroon, and Togo were elected new members, the membership of all but Guinea being contingent on the attainment of independence in 1960. Chad, Gabon, Madagascar, Federation of Rhodesia and Nyassaland, Senegal, and Sudan were the new associate members.

The Conference, which is the chief legislative and policy-making organization of the FAO, had before it a wide variety of tasks including consideration of program of work and budget for 1960 and 1961; discussion of the state of food and agriculture throughout the world; constitutional, legal, and administrative matters; and such special topics as the proposed Freedom from Hunger Campaign and the Mediterranean Development Project. The meetings lasted three weeks and ended on November 20, 1959.

B. R. Sen, of India, was reelected Director-General of FAO for a four-year term. A 1960-61 budget of \$21,536,850 was adopted, of which \$1,491,605 was allocated to the Fisheries Division for the two-year period.

The U. S. Delegation to the Conference consisted of agriculture, fishery, forestry, nutrition, programming, and fiscal specialists from various Government departments, as well as representatives from industry. United States fishery advisers on the delegation included Sidney Shapiro, Chief, Branch of Special Reports, U. S. Bureau of Commercial Fisheries; Wilbert M. Chapman, Director of Research of the American Tunaboat Association; and Charles N. Carry, Executive Director, California Fish Cannery Association.

At the Conference's first plenary meeting, Richelieu Morris, of Liberia, was elected chairman. Commissions were then established to work on the various activities of the FAO. Commission I dealt with such matters as the world food and agriculture situation, the Freedom from Hunger Campaign, and the Mediterranean Development Project. Commission II dealt with the current and future activities of the various technical divisions of FAO. Commission III was concerned with constitutional, administrative, and financial problems. The work of the fishery advisers on the U. S. Delegation was conducted primarily in the Technical Committee on Fisheries, established under Commission II.

Technical Committee on Fisheries: The first meeting of the Technical Committee was held on November 3, at which time it adopted the agenda and appointed A. L. Pritchard of Canada, Chairman, and T. S. Leach of the United Kingdom and S. F. Humphrey of Australia, Vice Chairmen. Representation at the meetings of the Technical Committee was excellent, delegates from 46 countries being present.

At the opening session of the Fisheries Committee, Dr. D. B. Finn, Director of FAO's Fisheries Division, made a general statement emphasizing future programs. Key points in his talk were the



Fig. 1 - United States Delegation to FAO's 10th Conference held in Rome, Italy.

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need for resource appraisal and for establishing fishery administrative systems in underdeveloped countries. He also noted that there is a lack of skilled personnel available to conduct FAO's fisheries programs. R. H. Fiedler, Chief of the Program Coordination Service of the Fisheries Division, discussed the Expanded Technical Assistance Program. The meeting then proceeded with a report by Allan Tubb, Executive Secretary of the In-

Technology, and Economics reported on their present and future programs of work.

United States Proposals for World Conferences: The Technical Committee recognized the value of holding world conferences in various fishery fields as a potent means of furthering the objectives of FAO. The reports of such conferences of experts form the basis for creative action, and determine the direction that future activities should take.



Fig. 2 - Delegates at the opening Plenary Session of FAO's 10th Conference held in Rome, Italy.

do-Pacific Fisheries Council (IPFC). He was followed by Mr. Girard, Executive Secretary of the General Fisheries Council for the Mediterranean (GFCM). At subsequent sessions of the Technical Committee, the Chiefs of the Branches of Biology,

Two major proposals by the U. S. Delegation for world conferences were accepted and written into the report of the Technical Committee. The first proposal, dealing with a world conference on the tunas and related species, was received favorably,

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and the Committee requested the Director-General to go into the possibility of organizing this symposium as a joint activity of the Fisheries and Nutrition Divisions, subject to the availability of funds.

Regional Fishery Organizations: The Committee requested in a resolution that the Director-General explore the possibility of establishing a regional fishery consultative body for West Africa, similar to the Indo-Pacific Fisheries Council and the General Fisheries Council for the Mediterranean. Another resolution requested the Director-General to study the possibility of creating a regional fisheries commission to serve the Governments of the American countries of the South Atlantic in a form similar to that of other FAO regional fisheries councils or commissions.

REPORT OF THE TECHNICAL COMMITTEE IN FISHERIES: At the fifth meeting of the Technical Committee on Fisheries, the delegates approved a report, which was then presented to Commission II. Subsequently the report was adopted with minor changes by the Conference. The report is as follows:

204. Fisheries: The Conference considered that the proposed program of work in the field of fisheries was well conceived and that, within the limits of the funds available, a balanced selection had been made of the fields of activity undertaken. It therefore approved the projected activities as set out in Documents C 59/3 and C 59/FI/4, subject to the comments which follow.

205. The Conference emphasized that the Director-General should endeavour to select for continuous work those biological, economic, technological, and other activities which are fundamental to the aims of the Organization. It was in this context that the Conference considered in detail the proposed program.

206. The Conference laid considerable stress on the need for an integrated approach to fishery problems. It noted with satisfaction that all the branches of the Fisheries Division were collaborating intimately in carrying out the program and expressed the hope that these working relationships would continue.

207. The Conference suggested that the Director-General, in reviewing future trends should endeavor to ensure that adequate resources were made available to the Fisheries Division to enable it to meet more fully the increasing demands by many Member Governments for services arising from growing concern with fisheries development, taking into account the over-all needs of the Organization.

208. The Conference recognized that the holding of expert meetings in various fishery fields was one of the most potent means of furthering the objectives of the Organization; in this connection, the comprehensive reports emerging from such meetings, for instance, those on Costs and Earnings of Fishery Enterprises, on the Economics of Fisheries, on Boats, and on Gear had broken new ground and formed the basis for new creative thought and action and for the direction that future activities and research should take. This

was also the case with the meetings on Fishery Cooperatives and on the Biology of Sardines, the printed reports of which were not yet available. The Conference also endorsed and commended the extensive use of consultants as an effective means of dealing with the very wide range of subject matter covered by the Fisheries Division.

209. The progress of the Expanded Technical Assistance Program was noted with satisfaction, but the downward trend in requests from governments for assistance in the field of fishery economics was regretted, in view of the importance of this discipline in evolving fisheries development programs. Closer technical supervision of recipients of fellowships was suggested. The Conference noted that the Organization was likely to be invited by the UN Special Fund to act as Executing Agent for two fishery projects in the near future, and that this would place an additional load on the professional staff of the Fisheries Division.

210. Fisheries Biology: The Conference noted with regret that due to lack of funds certain documents of the greatest value, such as Fishing Gear of the World, and the Current Bibliography for Aquatic Sciences and Fisheries, were published in English only and that this situation was likely to persist for the ensuing biennium. The Conference therefore requested the Director-General to avoid the recurrence of similar situations either through an increased over-all budget allotment for publications, or a suitable revision of the publications program in order that all documents published be available simultaneously in the three official languages of FAO.

211. The Conference endorsed the work being carried out and the program proposed in the field of fisheries biology. The Conference commended the progress made in the development of a methodology for collecting and storing information over a very wide field, and recognized that by these methods the production of a wide series of documents was made possible. The Conference also endorsed the proposal to publish in English the Current Bibliography for Aquatic Sciences and Fisheries (hitherto an internal document), in printed form through the medium of a commercial publisher, as an exceptional measure. The Conference also approved the preparation and issue of a series of manuals on a wide variety of biological and oceanographic subjects.

212. It was noted that during the biennium a number of fruitful expert meetings and training centers had been held; these included the World Scientific Meeting on the Biology of Sardines and Related Species, and the Training Center on the Methodology and Techniques of Research on Mackerel (*Rastrelliger*), the reports on which had proved particularly timely and valuable. The Conference approved, subject to the availability of funds, the continuation of a series of such meetings in the ensuing biennium especially dealing with important species of fish. The program for 1960/61 already included one on the Biology of Tuna, and a second, a Symposium on Fish Culture which would embrace biological, technological and economic aspects of the subject matter. A meeting on Hilsa should be held in the ensuing or a succeeding biennium if funds permitted.

213. Some delegations recommended further regional fishery studies such as that on the Me-

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kong River Basin; other delegations stressed the need for FAO assistance with the establishment of a training and research institute in inland fisheries at an appropriate place in the area. Some delegations also recommended that the problems arising from pollution of marine and inland waters should receive special attention. The Conference requested the Director-General to give these matters the attention that available staff and funds would permit.

214. The Conference commended the collaboration which the Organization had developed with other international governmental and nongovernmental organizations, specifically the relations with UNESCO and the International Scientific Unions, on fishery aspects of oceanographic research, especially in the Indian Ocean. It also noted with pleasure the acknowledgment contributed by the Observer from the International Union for the Conservation of Nature and Natural Resources, of fruitful collaboration with that body.

215. Fisheries Technology: The work accomplished in the field of fisheries technology was commended and the programs in the fields of fish processing and of fishing craft and gear were endorsed. The Conference noted that during this biennium the Second World Fishing Boat Congress had been held during the biennium with successful results.

216. The Conference requested the Director-General to examine the methods being used in the production of the World Fishery Abstracts, especially with respect to its relation with other publications, and with due regard for the audience for which these Abstracts were intended. The Conference, however, suggested that no radical changes should be introduced without consulting with Member Governments.

217. The Conference endorsed the practical field work in fishing gear and methods technology performed during the biennium, and appreciated the initiation of research work in this field, that had already led to valuable results.

218. The Conference noted the initiation of studies on the safety of life at sea, where applicable to fishing craft, with special reference to the question of stability, expressed the hope that this matter would be kept under continuous review, and requested the Director-General to explore the possibility of establishing a standing committee to consider these matters so as to provide criteria for the consideration of Member Governments.

219. The Conference recognized the value of the work being undertaken on the design of fishery research vessels. It was suggested, however, that in order to relieve the pressure on the small staff available for this work, activities accepted by the Organization should be restricted to the organization of expert meetings, the exchange of information and, where specifically required by Member Governments, and as the budget allowed, to design studies to serve as a basis for further work by fishing vessel designers outside FAO, and to advise on plans submitted.

220. The Conference noted with approval the development of recent work on the improvement

of traditional methods of fish processing and the development of new fishery products. It also requested the Director-General to look into the possibility, subject to the availability of funds, of organizing a symposium on the Nutritive Value of Fishery Products as a joint activity of the Fisheries and Nutrition Divisions.

221. Fisheries Economics and Statistics: The Conference was gratified with the work carried out in fishery economics, statistics and related fields, endorsed the program proposed, and noted that the work was fundamental to any sustained fishery. It hoped the work would be intensified, especially in regard to fishery institutions and services, cooperatives and statistical methods. The Conference noted the small number of professional staff members engaged in this field and the breadth of the subject matter covered, and hoped that the number of staff allocated to this sector would not fall below the minimum essential to carry on the work.

222. Some delegations hoped that the Fisheries Economics Branch of the Fisheries Division would be strengthened from both the budgetary and personnel points of view, so as to be able to carry out satisfactorily the intensified work mentioned above.

223. The Conference recognized the fundamental importance of economics and statistics as an indispensable basis for the entire work of the Fisheries Division, and that its effective operation required that the biological, technological and economic experts should operate on a coordinated basis to conduct a thoroughly rounded fisheries program. In this context, some delegations stressed the desirability of retaining the Fisheries Statistics in the Fisheries Division, but agreed upon the desirability of maintaining close contact with the Statistics Division.

224. The Conference noted with appreciation the progress reported in the improvement and simplification of fishery statistics, took note of the Report of the Expert Meeting on Fishery Statistics in the North Atlantic area (Edinburgh, 1959), and recommended that this work should be followed up in the terms of the following resolution:

Resolution No. 23/59

FISHERY STATISTICS IN THE
NORTH ATLANTIC AREA

THE CONFERENCE:

Notes with satisfaction that the Expert meeting on Fishery Statistics in the North Atlantic Area, organized by FAO, co-sponsored by the International Council for the Exploration of the Sea and the International Commission for the Northwest Atlantic Fisheries, and held in Edinburgh, Scotland, 22-30 September 1959, has agreed on recommendations to governments and international organizations designed to improve and considerably simplify the collection and reporting of fishery statistics in the North Atlantic area,

Accepts the recommendations of the Meeting that FAO should transmit its report to the governments and international organizations concerned with the request

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that they consider implementation of the recommendations contained in it,

Accepts further that FAO should, in due course, publish a fully documented edition of the report,

Welcomes the suggestion of the Meeting for the establishment of a Continuing Working Party on Fishery Statistics in the North Atlantic Area to keep under continuous review the progress made in the implementation of the recommendations of the Meeting, consult with the officers of governments and of international organizations with respect to difficulties encountered and, keeping in mind the actual state of fishery statistical services in the different countries, make suggestions for further national and international action in its field to governments and international organizations as appropriate,

Agrees that the Working Party should consist of one governmental expert each nominated by the Governments of Canada, the Federal Republic of Germany, Iceland and the United Kingdom, one expert each nominated by the Secretary-General of the International Council for the Exploration of the Sea and the Executive Secretary of the International Commission for the Northwest Atlantic Fisheries, one expert nominated by the Director-General of FAO, and such additional experts as may be nominated by the Working Party itself, and

Authorizes and requests the Director-General to establish the Working Party in accordance with Article VI of the Constitution and to arrange, as requested by the Meeting, for the FAO Fisheries Division to function as secretariat for the Working Party.

225. The Conference commended the highly efficient performance of the Fisheries Division in the Yearbook of Fishery Statistics, not only as to its timeliness of issue and technical soundness, but also as to its convenience of format and increasing coverage, all of which were of the greatest value to Member Governments. The Conference noted that the staff producing the Yearbooks was also engaged on other essential activities of the Division, and that the efficiency of their work was enhanced by their close contact with other fishery specialists in the Division.

226. The Conference in endorsing the proposed program of work on fishery economics, statistics and related fields, specially referred to the proposal to hold a technical meeting on financial assistance to fishery industries, in order that administrators of credit and subsidy schemes in Member Countries should have an opportunity of exchanging experience and of reviewing methods of handling such matters.

227. The Conference endorsed a recommendation of the Fourth FAO Regional Conference for

Asia and the Far East for holding, under the Expanded Technical Assistance Program, a Seminar in Fish Marketing in the Indo-Pacific Region at the invitation of Malaya, as soon as funds permitted.

228. Activities in the Regions: The Conference approved the Report of the Indo-Pacific Fisheries Council (IPFC) on its work in 1958/59 (C 59/FI/2) and endorsed the program of the IPFC for the next biennium subject to the availability of funds. It recognized that the subject matters to which the IPFC had directed its attention had a great deal in common with those that fell within the responsibility of the outposted fishery officers in the region, and that the staff of the Fisheries Division, in servicing the Council, were thereby enabled to carry out more effectively the Organizations fisheries program in the region.

229. Some delegates from the Indo-Pacific region asked that the attention of the Director-General be drawn to the need for assisting Member Governments in strengthening fishery administrations and research services, in order to develop a sound institutional and scientific basis for the development of the fisheries in the region.

230. The Conference approved the Report of the General Fisheries Council for the Mediterranean (GFCM) on its work in 1958/59 (C 59/FI/3), and endorsed the program of the GFCM for the next biennium.

231. The Conference noted the growing volume of the work in the Regional Fishery Office for Europe and the Middle East, due not only to normal representational work in the region, but also to the growing output of the General Fisheries Council for the Mediterranean, and to the formation of the European Inland Fishery Advisory Commission. The Conference therefore approved the Director-General's proposal to strengthen the staff of this office by the appointment of an additional Regional Fishery Officer to be stationed in Cairo; this appointment had originally been recommended by the 4th FAO Near-East Regional Conference, Damascus, 1958.

232. The Conference requested the Director-General to explore the possibility of setting up a fisheries consultative body for the Near East.

233. The Conference noted with approval that effect had been given to the decision at the 9th Session of the Conference to form the European Inland Fisheries Advisory Commission. Fourteen countries had already indicated their interest in taking part in the work of the Commission, which would hold its first meeting in Dublin in April 1960, at the invitation of the Government of the Republic of Ireland.

234. The Conference noted that the post of Regional Fishery Officer in Africa authorized by the Ninth Session of the Conference had been filled. Delegates from West African countries expressed their interest in the establishment of a regional fisheries consultative body in West Africa, and in the following resolution, which it adopted, the Conference requested the Director-General to explore this possibility:

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Resolution No. 24/59

REGIONAL FISHERY CONSULTATIVE BODY
WEST AFRICA

THE CONFERENCE:

Considering that the States and Territories of the West African Region members of FAO are desirous of developing the fisheries of that area,

Noting that these States and Territories have many common problems connected with such development and that they wish to co-operate amongst themselves in planning and carrying out work that will forward such development and also to exchange fisheries information in order to keep abreast of new knowledge, and

Noting further how successful the Indo-Pacific Fisheries Council and the General Fisheries Council for the Mediterranean have been in developing fisheries in the Indo-Pacific and the Mediterranean areas respectively,

Requests the Director-General to explore the possibility of establishing a body in the western part of the African Region to serve that area in a manner similar to that in which the IPFC and the GFCM serve their areas.

235. The Conference noted that the outposted fishery staff in the Latin American Region, as authorized at the Ninth Session of the Conference, had been strengthened by the appointment of a Regional Fishery Officer at Rio de Janeiro.

236. The Conference noted that only two notifications of acceptance of the draft agreement for the establishment of a Latin American Fisheries Council had so far been deposited. This matter is reported further in paragraphs 632-633 of this Report.

237. The Conference now took the view that in Latin America smaller groups of States might more readily find matters of common interest in the field of fisheries, in contrast to the wide scope of the earlier proposal for a Latin American Fisheries Council, which had been open to all the States in Latin America. The Conference, in this context, adopted the following Resolution introduced by Argentina on behalf of the Delegations of Argentina, Brazil and Uruguay:

Resolution No. 25/59

REGIONAL FISHERIES CONSULTATIVE BODY
WESTERN SOUTH ATLANTIC

THE CONFERENCE:

Considering that Agreement for the establishment of the Latin American Fisheries Council has not been ratified by the neces-

sary number of countries to enable the Council to come into being,

Observing that the American States of the South Atlantic (Argentina, Brazil, and Uruguay) have expressed particular interest in co-operating among themselves on common problems in order to promote fuller use of the marine resources in the Western-South Atlantic in accordance with sound economic and scientific principles, to coordinate studies, research and techniques and to determine their common needs,

Recognizing that the general objectives of the proposed Latin American Fisheries Council could best be achieved within a limited area comprising a number of countries which, through their geographical location, have problems in common and which are disposed to coordinate their activities in order to advance the development of their fisheries industries,

Requests the Director-General to study, together with the Governments of the American countries of the South Atlantic concerned, the possibility of:

- (a) Creating a Regional Fisheries Commission to serve the said zone in a form similar to that of other FAO Regional Fisheries Councils or Commissions, and
- (b) Developing a coordinated project of fisheries technical assistance in the said region and advising the Governments concerned on the best way of implementing the same.

238. Future Trends: As regards future trends, the Conference requested the Director-General to take into account the following suggestions if, at some future time, additional funds should become available.

239. Greater emphasis should be placed on the institutional and structural aspects of fisheries generally.

240. Work should be intensified in the fields of fish marketing and distribution, fishery co-operatives; and, in particular, detailed study should be made of productivity in marine and inland fisheries and of the problem, of the protection and conservation of marine fishery resources.

241. Work on the appraisal of fishery resources should be intensified and the problems of exploitation examined from the biological, economic, and technological points of view.

242. A series of forecasts by continents of the trends of output over the ensuing ten years should be undertaken, if possible.

243. The Conference noted the opportunities which were available to Member Governments for contributing to freedom from hunger by promoting increased consumption and production of fish and fish products; it stressed the increasing signifi-

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cance of the fisheries in those parts of the world which still suffered from malnutrition, especially for those people whose diets lacked high quality protein. It suggested, therefore, that within the general work of FAO to promote freedom from hunger, considerable attention should be paid to fisheries.

--By Sidney Shapiro, Chief, Branch of Special Reports, Division of Industrial Research and Services, U. S. Bureau of Commercial Fisheries, Washington, D. C.

Note: Also see Commercial Fisheries Review, February 1958, p. 52.

GENERAL AGREEMENT ON
TARIFFS AND TRADEFIFTEENTH SESSION OF THE
CONTRACTING PARTIES:

The Fifteenth Session of the Contracting Parties to the General Agreement on Tariffs and Trade (GATT), held at Tokyo, ended November 20, 1959. Representatives of the 37-nation trade agreement group achieved further progress in removing barriers to world trade.

Balance-of-Payments Import Restrictions: A drive to eliminate discrimination against American and other dollar area exports was the highlight of the Session. The urgency of moves in this direction was touched off by the strong declaration of the United States at the opening Ministerial Meeting. The restoration of external convertibility to the main trading currencies of the world has removed any balance-of-payments justification for discriminatory restrictions by countries whose export earnings are largely in convertible currencies.

The drive to eliminate discrimination was greatly aided by the International Monetary Fund's decision of October 23 calling for removal of discriminatory restrictions with all feasible speed. This decision, which was made available to the Contracting Parties at the Session's opening, supported the strong statements against discrimination and restrictions made by the United States and other ministerial level speakers.

The Contracting Parties adopted a report which concluded that discrimination in trade on balance-of-payments grounds should quickly be ended. It indicated that the justification for such discrimination had been almost completely eliminated by convertibility of currencies.

The United States and many other countries also stressed the need to reduce the use of all import quotas by countries emerging from balance-of-payments difficulties.

Several countries took important steps to relax their trade controls and reduce discrimination during the Session. Among them were the United Kingdom, France, Japan, Sweden, and the Netherlands.

Other countries (including Australia, New Zealand, Malaya, Rhodesia and Ghana) were able to point to recent measures of a similar character.

Previously scheduled balance-of-payments consultations were held with six contracting parties: Australia, Japan, the Federation of Malaya, Norway, the Federation of Rhodesia and Nyasaland, and Sweden.

Expansion of International Trade: Three committees on the expansion of international trade, which have been meeting during the intersessional period, met again during the Session.

Committee I, on tariff reductions, submitted final recommendations setting forth the rules and procedures to be followed in the tariff conference to be held in Geneva in 1960-61. This conference will be divided into two phases: (1) The principal emphasis in the first phase (September through

December 1960) is to be on tariff negotiations and renegotiations incident to the formation of the European Economic Community. (2) The second phase, beginning in January 1961, is to be devoted to an exchange of new concessions among contracting parties and to negotiations with countries acceding to the GATT.

Committee II conducted its second round of country-by-country consultations on agricultural policies. The consulting countries were Burma, Ceylon, Malaya, Indonesia, and Rhodesia and Nyasaland. During the coming year there will be further rounds of consultations, at the end of which the Committee will report on the effects of agricultural protection upon international trade. The presentation of United States agricultural policy is scheduled for February 1960. (Fishery policies will be included with agricultural policies in some instances.)

Committee III is seeking ways of expanding the export earnings of the less developed countries as a means of accelerating their development and making them less dependent upon foreign aid. In a preliminary report, the Committee identified some of the obstacles to increased trade encountered by the less developed countries in foreign markets. These obstacles include high revenue duties, preferential arrangements, import quotas, and restrictive state trading, in addition to high tariffs. The Contracting Parties approved the Committee's recommendation that individual governments examine such measures of theirs as may impede the trade of less developed countries.

Avoidance of Market Disruption: During the discussions at the ministerial level the United States drew attention to the fact that sharp increases in imports, over a brief period of time and in a narrow range of commodities, can have serious economic, political, and social repercussions in the importing countries. He pointed out that the problem is to find the means to ameliorate the adverse effects of an abrupt invasion of established markets while continuing to provide steadily enlarged opportunities for trade. The subsequent discussions made it evident that the apprehension that such situations might arise had led some countries to maintain or impose import restrictions against particular imports from some countries.

The question was discussed in Plenary Session and it was agreed that, in view of the complex nature of the problem, the question should be deferred until the Sixteenth Session. Meanwhile, the Executive Secretary will prepare a factual report for the Contracting Parties. At the Sixteenth Session the Contracting Parties can consider whether to establish a panel of experts to examine the problem or whether some other method of approach is likely to be more appropriate.

Regional Market Arrangements: The Contracting Parties received reports on three movements toward regional economic integration.

The Swedish ministerial representative reported on the negotiations for a European Free Trade Association (EFTA) which Austria, Denmark, Norway, Portugal, Sweden, Switzerland, and the United Kingdom--the so-called Outer Seven--are negotiating. He said that the EFTA countries would continue to be bound by their GATT obligations in carrying out arrangements for progressive abolition of tariffs and quota restrictions on trade among the member countries. The first step in this process is to take place on July 1, 1960. He assured the Contracting Parties that EFTA does not intend to use quantitative restrictions in order to create a preferential trading system.

Delegates to Brazil, Chile, Peru, and Uruguay and observers for Argentina and Bolivia spoke about the plans of these countries to establish a free trade area. They referred to the draft treaty prepared at Montevideo last September, which is to take final form in February 1960. The delegates pointed out that the proposed free trade area was intended to increase trade and help raise living standards, and that improvement in economic conditions in Latin America would lead to increased trade with other countries.

A spokesman for the Commission of the European Economic Community (EEC) or "Common Market" gave the Contracting Parties an account of the progress of the EEC during 1959. He noted that the provisions of the Rome

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Treaty regarding reduction of customs duties and relaxation of quota restrictions in intra-EEC trade had been carried out on schedule, and that many tariff reductions had also been extended to the products of outside countries. He stated that the Commission hopes to submit proposals on agricultural and fishing policy to the EEC Council of Ministers before the end of 1959. He said that the EEC draft external tariff was receiving urgent attention, so that it would be ready in ample time to allow for preparation for the 1960-61 tariff conference. The representative spoke of the EEC's interest in helping countries in the process of economic development.

Other Items: Specific commodity problems were pursued bilaterally and informally by the United States Delegation at the Fifteenth Session with a number of other delegations, including those of Japan, France, Italy, the Federal Republic of Germany, Norway, Australia, Belgium, the Netherlands, and the Federation of Rhodesia and Nyasaland. The conversations are expected to result in the relaxation of some import restrictions on certain United States products in the very near future.

INTERNATIONAL OCEANOGRAPHIC CONGRESS

FISH BEHAVIOR STUDIES
COULD INCREASE YIELD:

A school or "congregation" of cod is a social organization with one dominant male and a whole hierarchy of inferior or less aggressive males set in an established scale, according to Dr. H. O. Bull of England, who reported to the International Oceanographic Congress at the United Nations, New York City, in September 1959. "Each male defends his chosen territory against invasion by other males but females can wander freely throughout the social order," he said. At spawning time, each female is pursued in a courtship dance with a male that may last for fifteen minutes before the eggs are laid and fertilized.

"Such studies of the psychology and social behavior of the commercial food fishes are essential if the fish harvest is to be increased," said Dr. Bull of the Dove Marine Laboratory where he has been studying cod in a tank 20 feet long, 5 feet deep, and 5 feet wide. The grunting noises made by the male during courtship, for instance, can be clearly picked up by microphones and could be used to locate schools of cod. Dr. Bull recommended that ocean fish be studied by close observation of their behavior in aquariums to lay the basis of more successful large-scale fisheries.

"There are three things that make an ocean fish suffer: light, temperature, and too little salt in his bath. All three increase his rate of respiration and his

heartbeat," reported Professor H. H. Friedrich, Institute for Marine Research at Bremerhaven in Germany, to the Oceanographic Congress. The fish cannot stand the combination of bright light in warm water and either get away or succumb. Tropical fish stay away from the surface for this reason and most fish seek the cooler and darker waters well below the surface.

Dr. Friedrich said that, on the other hand, the habits of many ocean fish are related to the phases of the moon so that they seem to be sensitive even to faint light. Echo-sounding devices that are used by trawlers to measure the depth of the water and to locate schools of fish by their echoes do not bother the fish. They seem not to notice them, but when sounds are used as signals for feeding time, the fish do respond to them.

Dr. N. K. Panikkar, Chief of the Fisheries Development Office in New Delhi, India, chairman of one of the meetings at the Oceanographic Congress, cited research on fish behavior as of prime importance to any country that depends on seafood for part of its food supply. In India there are usually large catches of sardines, mackerel, and shrimp, but the fish population fluctuates widely. In one year, 200,000 metric tons of sardines are caught while in the next year there may be almost none. The reasons are unknown. The psychology of fish behavior and habits needs international research.

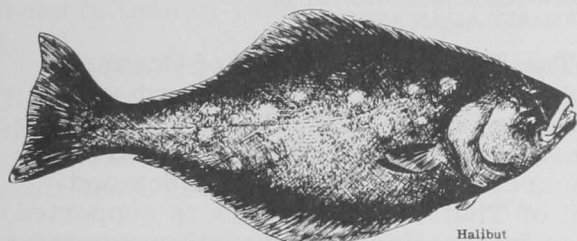
Professor Trygve Braarud of the Institute for Marine Biology of Oslo University, Norway, reported on the production of plants in the ocean, but plants so small that they are like grains of dust. The amount of production of these microscopic plants is at least equal to the production of all the land plants put together. He said that these plants--phytoplankton--contain many valuable minerals and vitamins and even antibiotics and that the explanation of fish aggregation may be partially due to the prevalence of these organisms. "There exists in the sea," he said, "areas like land deserts which can be explained by this phenomenon." He called for further research in this field as a possible food resource for men, land animals, and fish.

International (Contd.):

INTERNATIONAL PACIFIC HALIBUT COMMISSION

EFFECTS OF FISHING EFFORT
VERSUS CLIMATIC CHANGES ON
FISH STOCKS EVALUATED:

The controllable effects of fishing should be compared with the uncontrollable forces of nature in studying the effects of climatic-temperature changes. This is the advice to fishery managements given in a report on the commercial yields of Pacific, Atlantic, and North Sea fisheries to the Fisheries Research Board of Canada by F. Heward Bell and Alonzo I. Pruter of the International Pacific Halibut Commission. Their report points out that in their opinion inadequate provision has been made in some instances for changes in the amount of fishing, in economic conditions, or in the efficiency of the fishing fleets.



Halibut

"It has been usually believed that abundance has been little affected by fishing, natural fluctuations appearing to transcend by far the effects of man. However, lately this belief is being challenged. Hodgson, supported by Cushing and Burd (1957), provides some evidence that fishing has reduced the size of herring stocks. . . . For some demersal species, particularly the flatfish such as the Pacific halibut, sole, or brill the stocks seem to have been more responsive to fishing than to natural fluctuations."

Determination of stock sizes and their maximum utilization cannot be adequately resolved until fishing versus environmentally-induced changes in fish populations are each placed in their proper perspective, say the authors.

Regarding the possible effects of air and water temperatures on fish stocks, the report points out that on the north Icelandic offshore coastal area there is a long-term resemblance between sea-surface temperature and air temperature, but over short terms of 10 to 20 years the trends may be very dissimilar and frequently in opposite directions.

Extremely cold or unusually warm air temperatures during one month or over a limited period of the year were unlikely to be immediately reflected in midwater or bottom temperatures in the oceanic regions where halibut spawn, and where the eggs and larvae appear to spend their early existence.

Even within a restricted coastal area, such as that of North Iceland, long-term sea-surface temperature trends in some months may be very different between locations in close proximity.

In the examination of fishery statistics bearing on these matters, the authors suggest that wherever possible catch per unit of effort values should be used rather than production (landing) values.

They declare that the current belief, that the yield or size of stocks of demersal fish in the Barents Sea have been mainly influenced by long-term climatic changes, must be re-examined.

"Fishing in such distant waters, particularly Greenland, has been made possible due to the technological developments of the past 30 to 40 years. Mechanical refrigeration, oil rather than coal for generating steam, dieselization, depth finders, electronic positioning, and many other navigational devices, all have aided in the profitable expansion of the range of fisheries.

"The warming of the waters may have played a far less important role than is generally accepted in affecting the pattern of stock changes and of annual yields. Also, while it is true that warming of the seas could increase productivity through enhanced growth, increased recruitment or migration of adults, it is also true that the more clement weather would facilitate fishing."

Stressing the need for caution in judging the past, present, and the future productivity of the Pacific and Atlantic cod, the authors consider that some coincidence between climate and yields should not be allowed to militate against a balanced understanding of the manifold forces affecting the fisheries.

On conditions in Faroe and Iceland they quote A. D. McIntyre, of the Scottish Home Department, who reported in 1952 on an extensive analysis of the Scottish trawl and line catches of halibut from various North Atlantic areas for the years 1930 to 1949.

"McIntyre observed that on the Faroe grounds the Scottish trawl catch per unit of effort had declined in 1942 and 1943 from the higher 1940 and 1941 level in spite of the relatively low wartime fishing intensity by Aberdeen vessels, and it was concluded that the higher 1940-1941 level could be projected back to good brood years of 1937 and 1938.

"The 1940-41 high trawl catch per unit of effort could also be projected forward to a higher Scottish liner catch per unit of effort in 1943 and 1944 from older fish of the same year-classes. A similar situation was observed on the Iceland grounds for Scottish vessels, except that the projection into the liner catch per unit of effort was not apparent until 1945-1946."

McIntyre, the report goes on, used only the fishing intensity and yields of the Aberdeen fleets in judging the effects of fishing upon the several stocks. "The Aberdeen fleet's Icelandic production varied from 4 to 45 percent of the annual total by all countries during the period of study, 1930-1949, not including the war years.

"The data presented by McIntyre should not be considered indicative of the total forces to which these stocks have been exposed. It would be the changes in the total amount of fishing and the combined catches by vessels of all nations to which the stocks would be responsive."

The authors conclude, on the available evidence, that the effects of man's removals on the stocks appear to transcend any long-term effects that natural fluctuations may have had. They add: "The hypothesis that fishing, not natural forces, has been the major factor affecting the stocks appears well founded." (*The Fishing News*, October 16, 1959.)

INTERNATIONAL PACIFIC SALMON COMMISSION

FRASER RIVER SOCKEYE
FISHERY, 1959:

The 1959 Fraser River sockeye catch of 3,390,000 fish was 46 percent greater than the catch in any previous cycle-year in 56 years, according to the International Pacific Salmon Fisheries Commission. Also the escapement of 970,000 fish was up almost 300 percent over that of the previous cycle-year in 1955 and considerably greater than that recorded previ-



International (Contd.):

ously for any other year of that four-year cycle.

The record Fraser sockeye run in 1959 was a continued demonstration that the Fraser River sockeye runs are rapidly being restored to the abundant numbers prevailing prior to the slide at Hell's Gate Canyon in 1913. The Hell's Gate fishways combined with scientifically-designed fishing regulations and a fundamental research program are now proving their worth in millions of dollars of increased income to Puget Sound and Fraser River fishermen.

In the 1958 cycle-year the Fraser River produced a total run of 19 million sockeye. This was the largest run on that cycle-year in the 85-year history of the commercial fishery and the largest run of any year since the famous run was almost destroyed by the Hell's Gate slide in 1913. By 1918 the cycle-year pack had declined to 70,000 cases, but in 1958 the cycle pack was 1,223,000 cases worth \$49 million, an increase of \$46 million in value as compared with 1918.

The International Pacific Salmon Fisheries Commission was established by a Convention between the United States and Canada in 1937 to rehabilitate the Fraser River sockeye fishery and to manage the fishery after eight years of research to the end that the fishery would be preserved and the allowable catch divided equally between Canadian and United States fishermen. In 1957 the Convention was amended to place Fraser River pink salmon under similar jurisdiction by the Commission.

MARINE OILS

INCREASE IN 1960 FORECAST FOR WORLD PRODUCTION AND EXPORTS:

World production of marine oils (includes whale and sperm whale oils and fish and fish-liver oils) will be up about 2.9 percent and world exports will be up about 6.2 percent in 1960 as compared to 1959. The U. S. Department of Agriculture's Agricultural Marketing Service in its November 1959 issue of The Fats and Oils Situation (1960 Outlook Issue)

forecasts that world production of marine oils will be 1,050,000 short tons as compared with 1,020,000 tons in 1959. The forecast for world exports of marine oils in 1960 is 775,000 tons as compared with 735,000 tons in 1959.

| Marine Oils | 1960 ^{2/} | 1959 ^{3/} | 1958 | 1957 | 1956 | 1955 | Average | |
|------------------|--------------------|--------------------|-------|-------|-------|-------|---------|---------|
| | | | | | | | 1950-54 | 1935-39 |
| | (1,000 Short Tons) | | | | | | | |
| World production | 1,050 | 1,020 | 1,030 | 1,025 | 1,110 | 1,060 | 990 | 1,055 |
| World exports | 775 | 730 | 760 | 730 | 745 | 725 | 694 | 710 |

^{1/}Includes whale and sperm whale oils and fish and fish-liver oils.
^{2/}Forecast.
^{3/}Partly forecast.

MARINE RESOURCES SURVEY OF SOUTHEAST ASIAN AREA

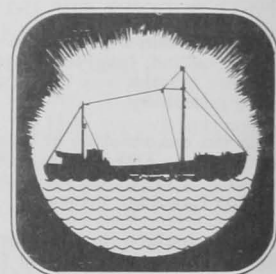
The Scripps Institution of Oceanography (La Jolla, Calif.) research ship Stranger is now in the Southeast Asian area for a two-year survey of marine resources of the South China Sea and Gulf of Thailand. The work is supported by an International Cooperation Administration grant.

The survey work of the ship is planned in conjunction with a Regional Training Course in Marine Sciences at Nha-trang, South Viet-Nam, sponsored by the Republic of Viet-Nam and the United Nations Educational, Scientific, and Cultural Organization Science Cooperation Office for South-East Asia. Practical experience will be offered to the participants in the course on board the Stranger.

NORTHWEST ATLANTIC FISHERIES COMMISSION

TENTH ANNUAL MEETING:

Following an invitation from Norway, the Tenth Annual Meeting of the International Commission for the Northwest Atlantic Fisheries will meet in Bergen the week of May 30, 1960. The Annual Meeting will be preceded by meetings of the Standing Committee on Research and Statistics and of groups of advisers to panels on May 24-28.



* * * * *

MORE COUNTRIES FISH IN NORTHWEST ATLANTIC:

To the countries which have begun fisheries in the Convention Area during re-

International (Contd.):

cent years is now to be added East Germany. Trawlers with Rostock on the Baltic as their home port in 1959 landed several cargoes, mainly redfish or ocean perch and cod, from the Labrador-Grand Bank area. It is expected that this fishery will increase in the near future.

Reports from Vigo, Spain, indicate that the Spanish trawl fishery in the Grand Bank area in 1959 yielded better results than in 1958.

In 1959 trawlers from Poland began fishing in the Northwest Atlantic (Labrador region) for redfish or ocean perch. The report from the fishery states that excellent results were obtained.

SOUTH PACIFIC COMMISSION
ON MARITIME RESOURCESSIXTH MEETING HELD IN QUITO:

The Sixth Ordinary Meeting of the Permanent Commission on Maritime Resources of the South Pacific and the Second Meeting of the Commission's Scientific Advisory Committee were held in Quito from November 12-19, 1959, with delegates from Chile, Peru, and Ecuador in attendance. Addressing the inaugural session of the Commission, Chile's Ambassador to Ecuador praised the progress attained in the scientific investigation of the fish and whale industries, "proving what can be done with international cooperation." "It is the hour for abandoning outdated conceptions of isolation and for entering an era of interdependence," the President of the Ecuadoran delegation added.

Reports of the three delegations indicated considerable cooperative study of the problems of exploitation and conservation of marine resources. Ecuador reported establishment of a library of scientific and technical publications for use of the Commission and establishment of a National Fisheries Institute. The Scientific Advisory Committee recommended the acquisition of a special laboratory vessel for the Commission's investigation of whales, and the preparation of a dictionary of scientific terms in the fishing industry. In the closing

session the Commission elected Dr. Galo Leoro Franco, of Ecuador's Foreign Ministry, as its permanent Secretary General.

Note: See Commercial Fisheries Review, October 1957, p. 23.

TUNA

SOUTHERN EUROPEAN COUNTRIES
BUILD NEW TUNA FISHING VESSELS:

Several southern European countries are building tuna vessels. In addition to six tuna clippers under construction in Genova, Italy, Portugal is also building six tuna vessels. At present Portugal is operating two large tuna vessels.

Both Italy and Portugal will fish for tuna in the Atlantic Ocean. France, too, is pushing construction plans for tuna vessels. At Dakar, French West Africa, about 9,000 tons of tuna were landed during the first quarter of 1959. Five Dakar packing plants used about half of the landings and the remainder was shipped to France. (Suisan Tsushin, November 19, 1959.)

UNITED NATIONS

SECOND CONFERENCE ON THE
LAW OF THE SEA TO OPEN
ON MARCH 17, 1960:

The Second United Nations Conference on the Law of the Sea will convene in Geneva, Switzerland, on March 17, 1960. It is hoped that the task of the Conference will be completed by April 14, 1960. Should it prove impossible for the Conference to finish its work within that four-week period, arrangements can be made to enable the Conference to continue through the following week, April 19-22, 1960.

Preparations for the Conference are being made by the United Nations Secretariat, which expects to circulate to the invited Governments, specialized agencies, and intergovernmental bodies a draft agenda and draft rules of procedure for the Conference, as well as certain recommendations concerning the method of work and procedures, and other questions of an administrative nature.

Attention is drawn to the terms of paragraph 3 of the resolution which invites all states members of the United

International (Contd.):

Nations and states members of the specialized agencies to include among their representatives experts competent in the matters to be considered.

Note: Also see Commercial Fisheries Review, February 1959, p. 49.

WHALING

COUNTRY QUOTAS FOR 1959/60 ANTARCTIC SEASON:

The Norwegian Government has approved a recommendation from the Norwegian Whaling Council that Norway's quota for the 1959/60 Antarctic whaling season shall be limited to 5,800 blue-whale units. (One blue whale equals 2 fin, 1½ humpback, and 6 sei whales.) Altogether 8 Norwegian expeditions, one less than last season, are participating in Antarctic whaling. They are using a total of 77 catcher vessels as compared with 100 during 1958/59, including 7 vessels operating out of the Norwegian land station at Husvik Harbor. The factory-ship Suderøy and its 6 catcher vessels, which took part in last season's whaling, have been bought by the Norwegian Whaling Association and will not participate. Norwegian expeditions and the Husvik land station vessels will have a combined complement of 4,210 men, or 497 fewer than in the 1958/59 season. Another 1,975 Norwegian whalers will be working for British and Argentine companies.



Also engaged in the Antarctic whaling this coming season are expeditions from four other countries, including 6 Japanese, 3 British, 2 Russian, and 1 Dutch, plus two land stations--1 British and 1 Argentine, using a total of 158 catcher vessels. There will thus be altogether 20 expeditions, same as last season, assisted by 235 catcher vessels, as against 256 in 1958/59. While Norway has withdrawn the 11,000-ton Suderøy, the Soviet Union is sending its new 40,000-ton Sovietskaya Ukraina, accompanied by 20 catcher vessels.

At a conference in London nearly a year ago, the five major whaling nations

reached tentative agreement that the Soviet Union should be allocated 20 percent of the international quota for a period of 7 years. On the basis of a maximum catch equivalent to 15,000 blue-whale units, the Soviet Union should thus be entitled to 3,000 units. At subsequent conferences, Norway, Great Britain, Japan, and the Netherlands failed to work out agreement on distribution of the remaining 80 percent of the whaling quota. In view of this development, Norway withdrew from the International Whaling Convention as of July 1, 1959, and the Netherlands later followed suit. Thus, the International Whaling Convention now includes only three nations--Great Britain, Japan, and the Soviet Union.

Norway for many years has been a strong advocate of measures to preserve the Antarctic whale stock. When efforts for agreement failed the Norwegian Whaling Council urged a national quota of 5,800 units, to yield approximately the same catch as last season. The quota for the Japanese expeditions has officially been fixed at 5,036 units. The British quota, though not officially announced, is known to be 2,500 units. And the Dutch company operating the Willem Barends expedition plans to catch the equivalent of 1,200 units. If the Soviet expeditions stay within the approved 3,000 units, the combined national quotas would total 17,500 units. The over-all quota set by the 18-member International Whaling Commission for 1959/60 would thus be exceeded by at least 2,500 units.

Marine biologists are of the opinion that to preserve the Antarctic whale stock the maximum quota for all nations should be limited to 10,000-11,000 blue-whale units. Protection of the blue-whale stock, they maintain, is especially important. According to a statistical survey, published in the last issue of Norsk Hvalfangst-Tidende (Norwegian Whaling Journal), the number of blue whales caught in the Antarctic during 1958/59 constituted only 4.4 percent of the total catch, as against 84.2 percent during the 1931/32 season.

The International Whaling Commission in 1959 decided to let the Antarctic fin and sei whale hunt start on December 28, one week earlier than in former years. For blue and humpback whales the opening dates were set at February 1 and Jan-

International (Contd.):

uary 20, respectively. The entire season could thus last 102 days, extending to April 7, 1960. Land stations, whose vessels catch only sperm whales, are not covered by the quota arrangement. From October 1 to April 1 they can catch an unlimited quantity. (News of Norway, November 26, 1959.)

Note: Also see Commercial Fisheries Review, December 1959, p. 93 and January 1960, p. 80.

WORLD FISHERIES

LANDINGS INCREASED THREE MILLION TONS IN 1958:

The world's total commercial fisheries landings in 1958 increased 3 million metric tons over 1957, according to the Yearbook of Fishery Statistics, vol. IX, released by the Food and Agriculture Organization of the United Nations. Japan, with a catch of 5.5 million tons, continued to be the largest producer of marine fishery products.

The Yearbook, published jointly with a yearbook on statistics on international trade in fish, covers the catch of fish from 1953 to 1958. The total 1958 catch was 33.7 million tons live weight, almost 13 million tons more than in 1938 or 1948, just before and after World War II. Russia reported the highest catch in her history, at 2.6 million tons. The 1958 total includes a rough estimate of six million tons for production of sea and fresh-water fish by Mainland China. This figure has been released by the Government of that country and represents a 100-percent increase over its reported catch in 1957.

Asia had 50 percent of the world's total catch. Japan contributed 17.2 percent of the Asian total. European fishermen, excluding those from Russia, caught more than 22 percent, and North Americans about 10 percent. The U.S.S.R. reported catches amounting to more than 8 percent of the world total. Africa contributed 5 percent, an outstanding increase over last year.

Seven countries each caught more than one million tons in 1958 and accounted for almost 60 percent of the world total. Japan's 1958 catch reached a level she had hoped to realize by 1960. The United States, Mainland China, and the U.S.S.R. each caught between 2 and 3 million tons of sea fish in 1958. Canada, Norway, the United Kingdom, and India each produced about one million tons. Korea, one of the great prewar producers with a catch of 1.8 million tons in 1938, produced less than 500,000 tons.

Herring, menhaden, sardines, and anchovies were the most important group of fish, accounting for 20 percent of the world catch. Sixteen percent were fresh-water fish, more than double the amount caught before World War II. Cod, hake, and haddock accounted for more than 13 percent of the total. In most groups catches were above prewar level. However, this still was not the case for salmon, trout, and smelt, which are commercially important though not a very large group in quantity. About one-half the 1958 total catch was marketed fresh or frozen; about one-quarter was cured by drying, smoking, salting, or marinating; about 14 percent was used to make fish meal and oil; 9 percent was canned; and the small remainder was used for other purposes.

* * * * *

TRADE IN 1957 EXCEEDED ONE BILLION DOLLARS:

International trade in fish in 1957 went over the US\$1 billion mark, according to the FAO Yearbook of Fishery

Statistics, vol. VIII. The Yearbook, published jointly with a volume on the actual landings of fish, is the first on international trade (fish exports and imports) published since 1953. It covers the years 1953-57, with 1948 given as comparison.

Trade is broken down into frozen, dried and salted fish, smoked and canned fish products, and fish oils and meals. There was a sharp upswing in the fish-meal industry. Exports of fish meal, which is used primarily for animal feeding, have increased from \$13 million in 1948 to \$80 million in 1957. Major exporters of fish meal, who have taken the lead due to the expansion of the fish-meal industry in their countries, are Angola, the Union of South Africa and South-West Africa, Canada, Peru, Denmark, and Norway.

Major markets for fish meal include the United States, whose imports increased from \$4.6 million in 1948 to \$9.5 million in 1957, and the United Kingdom whose imports went from \$3 million in 1948 to \$24 million in 1957. Western Germany increased her imports of fish meal from \$300,000 in 1948 to \$20 million in 1957.

Exports of fresh and frozen fish went up 150,000 metric tons from 1953 through 1956. The greater position of this trade was in filleted fish rather than whole fish, reflecting the growth of the frozen fish fillet industry. In dollars, it increased by nearly 50 percent, from \$170 million to \$232 million. In Africa leading exporters of fish were Angola with a \$17 million trade, Morocco with \$26 million, and the Union of South Africa with \$37 million. Canada led North America with a \$136 million export volume. The United States exported only \$32 million, but imported \$270 million worth of fish--one quarter of the world total.

In South America, Peru did a \$20-million export business. Asia was led by Japan with an export of \$145 million. Thailand was second with \$33 million. Norway topped European fish exporters with \$164 million worth, followed by Iceland with \$55 million, Denmark with \$43 million, the Netherlands with \$32 million, and Portugal with \$37 million.

Salted cod exports and production have both expanded by 40 percent since 1948. Leading exporters were Canada, Denmark, France, Iceland, and Norway. Chief importers of dried cod were Cuba, Jamaica, Puerto Rico, Brazil, Greece, Italy, Portugal, and Spain.

Although production had been maintained in salted herring and sardines, there was a 20-percent drop in exports since 1948. Eastern Europe was the major importer of salted herring and sardines. Chief exporters are Canada, Iceland, the Netherlands, Norway, Sweden, and the United Kingdom.

The canned fish industry exported \$265 million worth. Of that total, 20 percent was Pacific salmon; 40 percent canned herring, sardines, and anchovies; 20 percent tuna and bonito; 10 percent shrimp, lobsters, and oysters; and 10 percent miscellaneous products.



Argentina

JAPANESE FREEZERSHIP TO OPERATE FROM ARGENTINE PORT:

The Japanese tuna freezer-fishing vessel Yoshino Maru arrived at the Argentine port of Mar del Plata on November 16, 1959, with 150 metric tons of tuna. The vessel left Japan on August 26 and fished for tuna en route to Argentina. After leaving Japan, the vessel fished in the Pacific along the equator and caught 70 tons of yellowfin, bluefin, albacore, and big-eyed tuna.

Heretofore it was believed that there were no tuna off the Argentine coast, but

Argentina (Contd.):

the vessel found them 300-500 miles offshore in the Atlantic. The modern Japanese flag vessel is 180 feet long, has a beam of 29.5 feet, and is powered with a heavy-duty 1,150-hp. Diesel engine. The hold capacity is about 440 metric tons of frozen fish and freezing capacity is 17 tons daily. Equipped with all modern navigation aids, the vessel can cruise at 11.5 knots. She is manned by 8 officers and a crew of 50.

The Japanese vessel is under contract to a Mar del Plata fishing firm which plans to use the vessel to obtain frozen fish for the Argentine market. Following the unloading of the tuna caught en route to Argentina, the vessel was scheduled to sail early in December for its first trip from Argentina of about 50 days.

The Yoshino Maru is the second Japanese vessel fishing under contract to the Argentine fishing industry. The first vessel, the Eisei Maru (landed first trip December 17, 1958), has been tuna fishing for about one year for the Mar del Plata Fishing Canning Association. Due to the lack of credit facilities, it would be difficult for the Argentine fishing industry to build and finance vessels of the Japanese type. (The United States Embassy in Buenos Aires, November 17, 1959.)

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LANDINGS OF FISH AND SHELLFISH:

Marine landings of fish and shellfish in Argentina amounted to 71,655 metric tons in 1958, just 69 tons less than the 71,724.3 tons reported in 1957.

The principal marine species of fish caught in Argentina during 1958 and 1957

| Zone | January-March | | 12 Months | 12 Months |
|-------------------------------------|-------------------------|-----------------|-----------------|-----------------|
| | 1959 | 1958 | 1958 | 1957 |
| |(Metric Tons)..... | | | |
| Fish: | | | | |
| High seas | 7,973.6 | 5,485.8 | 25,185.6 | 25,248.6 |
| Coastal Zones: | | | | |
| Bahia Blanca | 307.6 | 299.3 | 1,504.6 | 1,338.3 |
| Quequen, Necochea | 1,189.0 | 1,657.2 | 3,665.5 | 4,616.6 |
| Mar del Plata | 7,841.8 | 11,954.9 | 36,699.5 | 34,814.4 |
| Rawson | 60.0 | 200.2 | 235.9 | 254.5 |
| San Antonio Oeste | 14.2 | 6.8 | 59.1 | 89.0 |
| San Blas, Patagonia | 48.6 | 11.3 | 42.3 | 78.3 |
| Tres Arroyos | 0.5 | - | 36.5 | 187.1 |
| Ushuaia | 0.1 | - | 1.6 | - |
| All other zones ^{1/} | 49.6 | 50.9 | 130.6 | 93.5 |
| Total Fish | 17,485.0 | 19,666.4 | 67,561.2 | 66,720.3 |
| Shellfish: | | | | |
| High seas | 156.3 | 205.2 | 421.4 | 388.6 |
| Coastal Zones: | | | | |
| Bahia Blanca | 140.7 | 131.6 | 459.3 | 386.8 |
| Quequen, Necochea | 625.6 | 348.9 | 1,724.3 | 2,811.3 |
| Mar del Plata | 49.5 | 50.3 | 468.9 | 149.9 |
| Rawson | 17.0 | 118.9 | 765.6 | 1,015.0 |
| San Antonio Oeste | 121.5 | 118.6 | 179.8 | 190.1 |
| San Blas, Patagonia | - | - | 1.0 | - |
| Tres Arroyos | - | - | - | - |
| Ushuaia | 0.3 | 3.3 | 58.0 | 52.8 |
| All other zones ^{1/} | 3.4 | 1.3 | 15.5 | 9.5 |
| Total Shellfish | 1,114.3 | 978.1 | 4,093.8 | 5,004.0 |
| Grand Total | 18,599.3 | 20,644.5 | 71,655.0 | 71,724.3 |

^{1/}Includes Comodoro Rivadavia, Gral. Madariaga, Puerto Madryn, Puerto Deseado, Rio Gallegos, Rio Grande, San Julian, and Santa Cruz.

Source: Direccion General de Pesca y Conservacion de la Fauna, Argentine Government.

Argentina (Contd.):

were hake--27,822 and 25,529 metric tons, respectively. Mackerel and an-

ary-March 1959 with a decrease of 2,970 tons as compared with the same period in 1958.

Table 2 - Argentine Marine Landings of Fish and Shellfish by Species, January-March 1958-59 and Annual Totals 1957-58

| Species | January-March | | 12 Months | 12 Months |
|----------------------------------------------------|-----------------|-----------------|-----------------|-----------------|
| | 1959 | 1958 | 1958 | 1957 |
|(Metric Tons)..... | | | | |
| Fish: | | | | |
| Anchovy | 0.5 | 8.0 | 10,186.7 | 8,817.2 |
| Sea bream (besugo) | 556.4 | 473.2 | 1,649.8 | 1,004.4 |
| Mackerel and mackerel-like ^{1/} | 6,736.5 | 11,229.3 | 16,027.7 | 21,240.2 |
| Conger eel (corvina) | 554.8 | 439.7 | 1,261.4 | 873.4 |
| Hake (<i>Merluccius hubbsi</i>) | 7,639.3 | 5,641.2 | 27,822.0 | 25,529.4 |
| Shark | 208.1 | 252.5 | 3,967.4 | 3,642.9 |
| Other fish | 1,789.2 | 1,622.4 | 6,646.3 | 5,612.7 |
| Total Fish | 17,484.8 | 19,666.3 | 67,561.3 | 66,720.2 |
| Shellfish: | | | | |
| Shrimp, small | 25.3 | 39.1 | 260.6 | 236.5 |
| Shrimp, large ("langostinos") | 141.8 | 236.9 | 1,084.3 | 1,338.3 |
| Mussels | 656.0 | 380.5 | 2,044.2 | 2,827.3 |
| Other shellfish | 291.4 | 321.6 | 704.6 | 602.0 |
| Total Shellfish | 1,114.5 | 978.1 | 4,093.7 | 5,004.1 |
| Total Fish and Shellfish | 18,599.3 | 20,644.4 | 71,655.0 | 71,724.3 |

^{1/}Includes caballa, cornalito, and pejerrey.

Source: Direccion General de Pesca y Conservacion de la Fauna, Argentine Government.

Table 3 - Argentine Marine and Fresh-Water Fishery Landings, January-March 1958-59 and Annual Totals 1957-58

| Type of Fishery | January-March | | 12 Months | 12 Months |
|-----------------------------------------------|-----------------|-----------------|-----------------|-----------------|
| | 1959 | 1958 | 1958 | 1957 |
|(Metric Tons)..... | | | | |
| Marine fish and shellfish | 18,599.3 | 20,644.4 | 71,655.0 | 71,724.3 |
| River and lake fish: | | | | |
| Food | 3,426.1 | 3,759.5 | 8,593.6 | 8,962.4 |
| Industrial use ^{1/} | 2,361.6 | 2,953.5 | 4,662.2 | 5,038.6 |
| Total River and Lake Fish | 5,787.7 | 6,713.0 | 13,255.8 | 14,001.0 |
| Total Marine and Fresh-Water | 24,387.0 | 27,357.4 | 84,910.8 | 85,725.3 |

^{1/}Consists of "sabalo" (*Prochilodus platensis*), related to shad.

Source: Direccion General de Pesca y Conservacion de la Fauna, Argentine Government.

chovy were the other important species. The leading shellfish products were mussels and shrimp.

During January-March 1959, shellfish production increased as compared with the same period in 1958. But total marine fish production decreased 2,182 metric tons, or 12.5 percent, during the first three months of 1959.

Argentina's total marine and fresh-water fishery landings in 1958 decreased slightly as compared with 1957. The downward trend continued during Janu-

--By Ing. Daniel O. Alvaredo,
Temperly, F.C.G.R., Argentina

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MACKEREL AND ANCHOVY LANDINGS AT MAR DEL PLATA:

The port of Mar del Plata is the most importance fishery port in Argentina. Two of the important species landed at that port--mackerel and anchovy-- show considerable fluctuation in landings from season to season. (See tables 1 and 2.)

Argentina (Contd.):

| Month | 1958/59 | 1957/58 | 1956/57 | 1955/56 | 1954/55 | 1953/54 |
|----------|---------------|---------|---------|---------|---------|---------|
| | (Metric Tons) | | | | | |
| December | 768 | - | 2,461 | - | 1,403 | 535 |
| January | 1,850 | 3,169 | 4,467 | 1,242 | 3,994 | 2,885 |
| February | 1,661 | 2,828 | 2,216 | 2,274 | 3,346 | 3,246 |
| March | 1,661 | 3,038 | 5,085 | 1,779 | 2,797 | 3,241 |
| April | - | 1,593 | 749 | - | 1,982 | 1,251 |
| May | - | 89 | 3,508 | - | 277 | 436 |
| Total | 5,940 | 10,717 | 18,436 | 5,295 | 13,809 | 11,594 |

| Month | 1958 | 1957 | 1956 | 1955 | 1954 |
|-----------|---------------|-------|-------|--------|-------|
| | (Metric Tons) | | | | |
| August | - | - | 249 | 247 | 274 |
| September | 1,925 | 1,922 | 3,257 | 2,087 | 4,774 |
| October | 5,905 | 4,948 | 4,903 | 6,897 | 1,804 |
| November | 1,449 | 562 | 606 | 2,765 | 1,855 |
| Total | 9,279 | 7,432 | 9,015 | 11,994 | 8,707 |

--By Ing. Daniel O. Alvaredo,
Temperley, F.C.G.R., Argentina

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SHRIMP INDUSTRY TRENDS:

Landings: Since 1956 there has been a steady drop in shrimp landings in Argentina. Landings in the first two months of 1959 were only half the amount landed during the first two months of 1958.

| | January-February | | 1958 | 1957 | 1956 |
|---------------|------------------|------|-------|-------|-------|
| | 1959 | 1958 | | | |
| | (1,000 Lbs.) | | | | |
| Shrimp, large | 209 | 423 | 2,390 | 2,950 | 4,266 |
| Shrimp, small | 40 | 81 | 575 | 521 | 1,171 |
| Total | 249 | 504 | 2,965 | 3,471 | 5,437 |

Exports: Shrimp exports to the United States began in 1952 with 5,000 pounds, rose to 227,000 pounds in 1953, and to 530,000 pounds in 1954. A price break in the United States market in 1953-54 and some quality problems resulted in no shipments to the United States in 1955. Exports were resumed in 1956, when 22,000 pounds were exported to the United States, followed by exports of 320,000 pounds in 1957, 914,000 pounds in 1958, and 419,000 pounds during the first six months of 1959. (See table 2.)

Fleet: Argentina has about 25 vessels active in the shrimp fishery as of November 1959. These vessels are about 66 feet in over-all length and are powered with 6-cylinder 160-hp. Diesel engines. According to reports, there are no immediate plans for the expansion of the fleet in the near future.

Ex-Vessel and Export Prices: In November 1959 Argentine shrimp vessels were paid about 25 pesos a kilogram (about 14.2 U. S. cents a pound) for head-on shrimp counting between 15 and 30 to the pound, the only sizes exported by Argentina. Ex-vessel prices for medium shrimp (31-50 count) were 12 pesos a kilogram (about 6.8 U. S. cents a pound) and for small shrimp (over 50 count) 8 pesos a kilogram (about 4.5 U. S. cents a pound).

The price of processed headless shrimp (15-30 per pound size) for export

| Country of Destination | Quantity | | | |
|------------------------|----------------|------|------|------|
| | Jan.-June 1959 | 1958 | 1957 | 1956 |
| | (1,000 Lbs.) | | | |
| United States | 419 | 914 | 320 | 22 |
| Uruguay | - | 16 | 100 | 77 |
| Paraguay | - | 3 | 12 | 1 |
| United Kingdom | - | - | 107 | - |
| Total | 419 | 933 | 539 | 100 |
| | Value | | | |
| | \$1,000 | | | |
| United States | 104 | 354 | 159 | 6 |
| Uruguay | - | 1 | 16 | 7 |
| Paraguay | - | 1/ | 2 | 1/ |
| United Kingdom | - | - | 14 | - |
| Total | 104 | 355 | 191 | 13 |

1/ Less than \$500.

Note: Export data for 1952-1955 are from United States import statistics; for 1956-1959 from Argentine official export statistics.

Argentina (Contd.):

loaded aboard reefer ships at Buenos Aires was about 55 U. S. cents a pound, which includes all costs except the profit to the exporter. Actual export prices in November 1959 averaged about 60 U. S. cents a pound for large shrimp. Export taxes amount to 10.5 percent, levied on the exporter's gross proceeds.

Since the shrimp prices dropped in the United States market, the export trade is not very attractive to Argentine exporters because of the low margin of profit for the processor-exporter. (United States Embassy in Buenos Aires, November 18, 1959.)



Australia

SPINY LOBSTER INDUSTRY, FISCAL YEAR 1958/59:

Exports: Australian exports of both frozen tails of and boiled whole spiny lobsters--7,673,199 pounds--set a new record in fiscal year 1958/59 (July 1958-June 1959) for both quantity and value. Spiny lobster tail exports in 1958/59 of 7,092,217 pounds were 22 percent more than in 1957/58. Almost all of the tails were exported to the United States and other dollar areas.

Dollar earnings from frozen tail exports in 1958/59 were estimated at US\$6.9 million as compared with \$5.9 million the previous fiscal year--up 17 percent.

Although prices dropped on the United States market, good prices were received for most consignments in 1958/59. Western Australian consignments accounted for 82 percent of total shipments.

Table 1 - Australian Exports of Spiny Lobsters, 1957/58-1958/59

| State | 1958/59 | | 1957/58 | |
|------------------------------------------|--------------|------------|--------------|------------|
| | Tails | Whole | Tails | Whole |
| | (1,000 Lbs.) | | | |
| United States | 6,842 | 477 | 5,626 | 641 |
| Hawaii | 216 | - | 158 | - |
| Singapore | 11 | 86 | 12 | 67 |
| Canada | 13 | 2 | 10 | 33 |
| United Kingdom | - | 6 | - | - |
| New Guinea/ Pacific Islands | 1 | 5 | 1 | 6 |
| Persian Gulf | 8 | - | 8 | - |
| Other | 1 | 5 | - | 4 |
| Total | 7,092 | 581 | 5,815 | 751 |

In the absence of more precise information as to the value of exports from other States, the average for Western Australia, as in past years, has been applied to all shipments. However, as lots of South Australian tails normally bring higher prices, this average price may be too low. Probably final figures will show that export earnings will exceed seven million dollars.

In Western Australia, midget and small tails accounted for approximately 57 percent of total State exports in 1958/59. For the year 1957/58, midgets represented 28 percent of total exports from Western Australia, whereas they constituted 29.4 percent of all 1958/59 exports from that State. At the same time the quantity of smalls exported has fallen from 30 percent to 28 percent. There has also been a decline from 22 percent to 19.3 percent in the quantity of medium tails exported from Western Australia. This size of tail brings the highest prices on the United States market.

In South Australia, small and midget tails together accounted for 25 percent of total tail exports and medium accounted for a similar amount. The other two sizes, large and jumbo, totaled 23 percent in Western Australia and 50 percent in South Australia.

This difference in percentages of sizes exported from those two States is, to a large extent, a result of the difference in size of the two species of spiny lobsters exploited in those States. The southern crayfish (*Jasus lalandii*), which is obtained in South Australia, Victoria, and Tasmania, is in general a larger spiny lobster than the Western Australian spiny lobster (*Panulirus longipes*) which constitutes the major portion of the Western Australia catch.

Table 2 - Australian Exports of Spiny Lobsters by States, 1956/57-1958/59

| State | 1958/59 | | 1957/58 | | 1956/57 | |
|-----------------------------|--------------|------------|--------------|------------|--------------|------------|
| | Tails | Whole | Tails | Whole | Tails | Whole |
| | (1,000 Lbs.) | | | | | |
| Tasmania | 185 | 110 | 118 | 93 | 224 | 73 |
| South Australia | 1,109 | 266 | 1,092 | 92 | 1,032 | 182 |
| Western Australia | 5,798 | 205 | 4,605 | 566 | 3,779 | 73 |
| Total | 7,092 | 581 | 5,815 | 751 | 5,035 | 328 |

Size details from States other than South and Western Australia are not yet available.

Production: Australian spiny lobster production increased substantially in the main fishing grounds in Western Australia. Victoria and Tasmania together also showed an increase over the preceding year of approximately 700,000 pounds. In South Australia and New South Wales, production fell. However, total Australian production exceeded the previous year's total by nearly 4.5 million pounds.

In all spiny lobster fishing areas the increase in the number of men and vessels in the fisheries, together with generally good weather, resulted in higher production. Owing to this increase in the competition for spiny lobster, the fishermen have been forced to fish over a large area; in many cases they are now fishing out to the 60-fathom line; and at the same time operating a larger number of pots than several years ago.

The South Australian Director of Fisheries attributed that State's lower production to bad weather.

Table 3 - Australian Spiny Lobster Production, 1952/53-1958/59

| Fiscal Year | New So. Wales | Australia | | Total |
|-------------|--------------------------|-----------|----------|-------|
| | | Victoria | Tasmania | |
| | (1,000 Lbs. Live Weight) | | | |
| 1958/59 | 471 | 749 | 3,045 | 4,000 |
| 1957/58 | 523 | 635 | 2,406 | 4,460 |
| 1956/57 | 473 | 689 | 2,579 | 4,385 |
| 1955/56 | 438 | 614 | 2,802 | 4,000 |
| 1954/55 | 510 | 832 | 3,256 | 4,294 |
| 1953/54 | 576 | 1,163 | 2,527 | 3,850 |
| 1952/53 | 543 | 831 | 2,770 | 3,500 |

Australia (Contd.):

The New South Wales Superintendent of Fisheries advised that the drop in production of 54,000 pounds was due to changeable conditions in inland waters during the fishing season.

The Western Australia Director of Fisheries reported that, although a greater number of men and boats operated, excellent weather conditions in all areas, which permitted the fishing fleet to work consistently throughout the season, were mainly responsible for the large increase in production.

The Victorian Director of Fisheries said the marked increase over the previous year was due mainly to good weather from January to June 1959.

The Tasmanian Secretary for Fisheries reported that good weather, and an active demand for live spiny lobsters in both Sydney and Melbourne, intensified the activities of fishermen both in old established areas and the new areas on the North West and Central West Coasts.

The production data in table 3 are subject to revision. There seems little doubt, on the basis of quantity of tails exported, that the data are underestimated and that 1958/59 production may exceed 26 million pounds live weight (Australian Fisheries Newsletter, October 1959).

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TWO VESSELS PLAN TO EXPORT TUNA CATCHES TO UNITED STATES:

Australia's two leading tuna vessels, Fairtuna and Tacoma, which fish from Port Lincoln, South Australia, are in New South Wales for the earlier tuna season there. The respective owners of the vessels intend to export their tuna catch, frozen whole, to the United States west coast. Export is being handled for them on a management/cost basis. Pending export from Sydney, the fish will be held in freezers there.

After the New South Wales tuna season, Fairtuna and Tacoma will return to Port Lincoln to fish.

Australia's tuna canneries in New South Wales had received 157 tons of the season's tuna to mid-September 1959, then bad weather spoiled fishing. A new tuna clipper, Estelle Star, is almost ready for fishing.

On September 15, a vessel about 300 tons, flying the Chinese Nationalist flag, was seen apparently long-lining tuna about 10 miles inside Rolley Shoals, 180 miles west of Broome, Western Australia. (Australian Fisheries Newsletter, October 1959.)

* * * * *

USE OF AIRPLANES FOR FISH SPOTTING INCREASING:

There are now four planes regularly employed in Australia spotting fish.

Fishermen of Lakes Entrance, Victoria, took delivery at the end of August 1959 of a £5,000 (US\$11,300) Piper Super Cub aircraft imported from the United States. They bought the plane primarily for Australian salmon (Arripis trutta) fishing. When a worthwhile school is sighted, the plane calls the fishing boats by radio.

A fishery firm and canner of Sydney was the pioneer of commercial fish spotting by plane in Australia, and still regularly employs the Piper Cub aircraft which came to Australia on the Fijian tuna clipper Senibua in 1950. The plane pilot is paid a retainer and a bonus based on the amount of fish landed.

At Lakes Entrance, an Auster plane is owned and operated by an owner of a salmon boat.

In Western Australia, an Auster plane, owned privately by a cannery operator, is also used by him to spot "salmon" schools for fishermen who supply his canneries.

A whaling company of Albany uses a chartered plane, as required, to spot whales.

The pioneer of whale spotting by plane in Australia was the company that operated the station at Point Cloates. Since they took over the former Australian Whaling Commission station at Carnarvon and concentrated all their whaling from that port, they have not used aircraft, but they have an arrangement with an airline that when it next has a helicopter available, it will be used for experimental spotting of whales. (Australian Fisheries Newsletter, October 1959.)



British East Africa

LAKE VICTORIA FISHERIES SERVICE UNDER HIGH COMMISSION TO END:

The Central Legislative Assembly of the East Africa High Commission voted on September 8, 1959, to hand over the responsibilities and assets of the Lake Victoria Fisheries Service to the individual territories--Kenya, Uganda, and Tanganyika.

generally speaking with inland waters some regulations to bind the common users were necessary if the fisheries were to survive, and that "this is the first retreat from common sense on the basis of interterritorial cooperation."

Officers of the Lake Victoria Fisheries Service will, in most cases, be transferred to the various territorial governments. Assets will be taken over by the



Lake Victoria, Kenya. A floating screen about 200 feet long constructed from papyrus rushes is poled out into the lake a short distance from shore. Two ends are drawn together forming a trap out of which surface-swimming fish cannot escape.

The date for winding up the Fisheries Service is upon repeal of the Act establishing the Service, but no later than June 30, 1960. The decision was based on practical considerations, according to the Administrator of the East Africa High Commission, who said that treating the fisheries on a territorial basis would be preferable on account of the different requirements of the individual governments. The Economic Secretary of the High Commission, who moved the motion to split up the fisheries service, stated that the Lake Victoria Fishing Board had some time ago reached the conclusion that in terms of dealing with its fisheries, Lake Victoria represented a number of lakes within a lake.

Both the Kenya Minister for Finance and Development and the Kenya Minister for Commerce and Industry described the measure as a "retrograde step." The Minister for Commerce and Industry stated that history had shown that

territorial governments were required for continuation of specific functions; other assets will be sold and the money raised used in conjunction with Colonial Development and Welfare funds for projects at the East African Fishery Research Organization (a High Commission function) at Jinja, Uganda. (United States Consul in Nairobi, September 11, 1959.)

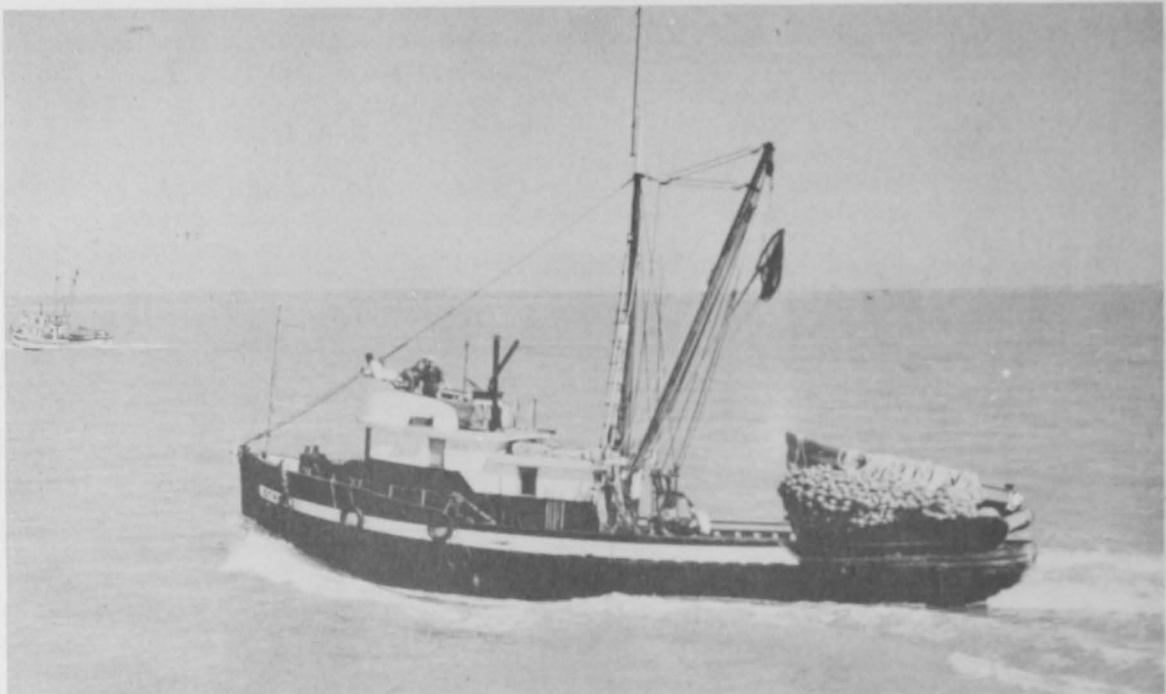


Canada

BRITISH COLUMBIA CANNED SALMON PACK LOWER IN 1959:

The 1959 canned salmon pack by British Columbia canneries of 1,089,799 cases (48 1-lb. cans) was down sharply from the near-record of 1,900,025 cases (revised) packed in 1958. Although the 1959 pack was much lower than that for 1958 and the 1955 pink and sockeye cycle year, it was considered to be fair by the

Canada (Contd.):



A Canadian purse seiner, one of the more important types of British Columbia fishing vessels, sailing out to seek the schools of salmon.

Table 1 - Pack of British Columbia Canned Salmon, 1954-59

| Species | 1959 | 1958 ^{1/} | 1957 | 1956 | 1955 | 1954 |
|-------------------|----------------------------------------------------|--------------------|-----------|-----------|-----------|-----------|
| | (Standard Cases--48-1-Lb. Cans). | | | | | |
| Sockeye (red) . . | 256,420 | 1,074,305 | 228,452 | 320,096 | 244,821 | 680,718 |
| Spring (king) . . | 15,760 | 10,550 | 10,481 | 11,671 | 17,853 | 14,080 |
| Steelhead | 1,254 | 1,205 | 1,126 | 1,254 | 1,590 | 3,733 |
| Blueback | 10,134 | 11,103 | 12,147 | 10,549 | 10,544 | 4,302 |
| Coho (silver) . . | 214,029 | 120,424 | 180,911 | 207,366 | 175,179 | 123,778 |
| Pink | 458,229 | 451,802 | 751,608 | 363,633 | 831,253 | 335,550 |
| Chum (keta) . . | 133,973 | 230,636 | 239,539 | 203,710 | 124,860 | 580,575 |
| Total | 1,089,799 | 1,900,025 | 1,424,264 | 1,118,279 | 1,406,100 | 1,742,736 |

^{1/}Revised.

biologists concerned with the conservation of the salmon of the Fraser River system. Price disputes between the salmon fishermen and canners early in the 1959 season curtailed the catch of sockeye salmon and resulted in a loss of about 200,000 cases.

Note: Also see Commercial Fisheries Review, March 1959, p. 61.

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**BRITISH COLUMBIA EX-VESSEL
AND CANNED SOCKEYE
SALMON PRICES UP SHARPLY:**

From 1950 to 1959 ex-vessel prices paid to British Columbia fishermen have increased 55.0 percent and during the same period the export price of canned

sockeye salmon has advanced 45.8 percent, according to the Fisheries Association of British Columbia.

| British Columbia Sockeye Salmon Ex-Vessel and Export Prices | | |
|-------------------------------------------------------------|-------------------------------------------------|----------------------------------------|
| Year | Ex-Vessel or Fishermen's Price (Canadian ¢/lb.) | Export Selling Price (C\$/48-lb. Case) |
| 1960 | 32 | - |
| 1959 | 31 | 40-46 |
| 1958 | 30 | 37-40 |
| 1957 | 28 | 40-38 |
| 1956 | 26 | 40 |
| 1955 | 24 | 35-38 |
| 1954 | 22 | 30-33 |
| 1953 | 22 | 30 |
| 1952 | 25 | 30 |
| 1951 | 25 | 34 |
| 1950 | 20 | 28-31 |

* * * * *

Canada (Contd.):

WEST COAST SALMON INDUSTRY TRENDS, 1959:

The dominant features of the 1959 Canadian west coast salmon fishing season were: a two-week strike which tied up the fishing industry during the latter part of July and the first part of August; an unusually high catch of Fraser River sockeye salmon for an off-season year; and the high price for canned salmon resulting from short supply and the increased price for raw fish. Another significant feature was the fact that less than ten percent of the salmon migrated through Johnstone Straits as compared with a much larger percentage in 1958.

The 1959 Canadian salmon pack, measured in 48-pound cases, was about 1.1 million cases. Of this amount, 253,000 cases were sockeye--the most valuable species. Authorities believe that had the two-week strike not taken place, the pack would have been about 200,000 cases more.

On the other hand, the price for salmon has reached an all-time high in the export market. Cannery as of mid-October 1959 reported prices of C\$46 a case (48-pounds) for sockeye salmon. This has resulted in some protests from British purchasers who last year were paying \$37 to \$40 for the same product. Cannery attribute this year's high price to the increased prices they must pay fishermen for salmon (31¢ a pound for sockeye) and to the small catch, which resulted from (a) a two-week strike during the middle of the season; and (b) an off-cycle year for salmon.

A large percentage of the British Columbia salmon pack is exported. In 1958, 1.5 million cases of the nearly 2-million-case pack were exported. The United Kingdom is traditionally the best market for the West Coast salmon pack. In 1958 the Netherlands took much more than usual because of the then low price.

In 1958 a large proportion of salmon came through Johnstone Straits (Canada) destined for the Fraser River, which permitted Canadian fishermen to catch them in that area without the necessity of dividing the catch with the United States fishermen under the terms of the Canada-United States North Pacific Salmon Convention. On the basis of scale analysis of samplings of the catch which show racial origin, less than ten percent of the sockeye took this unusual migratory diversion in 1959. Local authorities believe that the cause of the unusual migratory diversion last year was the fact that the Japanese Current struck the west coast of Vancouver Island at a point north of its usual course, causing salmon to mill about the northern end of Vancouver Island rather than about the southern end. Authorities state that in 1959 this unusual ocean condition did not exist and that therefore the salmon followed a more usual migratory pattern.

Failure of the packers and the Union to reach agreement on the price of raw fish resulted in the complete paralysis of the fishing industry for two-weeks from July 25 to August 9--the peak period of the fishing season. Most estimates agree that C\$4 million were lost as a result of the strike.

The two-year contract which ended the strike provided the following prices for raw fish:

| Salmon Species | 1960 | 1959 | 1958 ^{1/} |
|---------------------------------------------|------|-------------------|--------------------|
| . . . (Canadian Cents a Pound) . . . | | | |
| Sockeye | 32 | 31 | 28 |
| Pink | 11 | 10 ^{3/4} | 9 ^{1/4} |
| Coho, steelhead, red spring, blueback . . . | 22 | 21 | 16 |

^{1/}Old contract.

* * * * *

SALMON CATCH BY SPORTS FISHERMEN IN BRITISH COLUMBIA INCREASING:

An increasing number of sports fishermen are fishing British Columbia waters, principally for silver (coho) and

king (spring) salmon. British Columbia is pushing its tourist industry and salmon fishing is one of the local attractions. For example, sports fishermen accounted for 204,550 salmon in 1953, as compared with 408,900 salmon in 1958. The increasing pressure placed on the fishery by sports fishermen has made it necessary for the Canadian Department of Fisheries to maintain special records on the sport catch effort. This is accomplished by sending questionnaires to sports fishermen as well as by checking with various fishing stations which rent boats to sports fishermen.

There has also been a notable increase in the number of small boats suitable for salmon fishing purchased within the last two years by British Columbia residents. Moreover, many United States tourists bring their own boats to British Columbia, either by trailer or by water.

As a result of the increased pressure on the fishery, the Canadian Department of Fisheries is gathering and assessing information to assist in evaluating conservation and management needs to ensure that the present salmon stocks are utilized and protected to a safe, sustained productivity level.

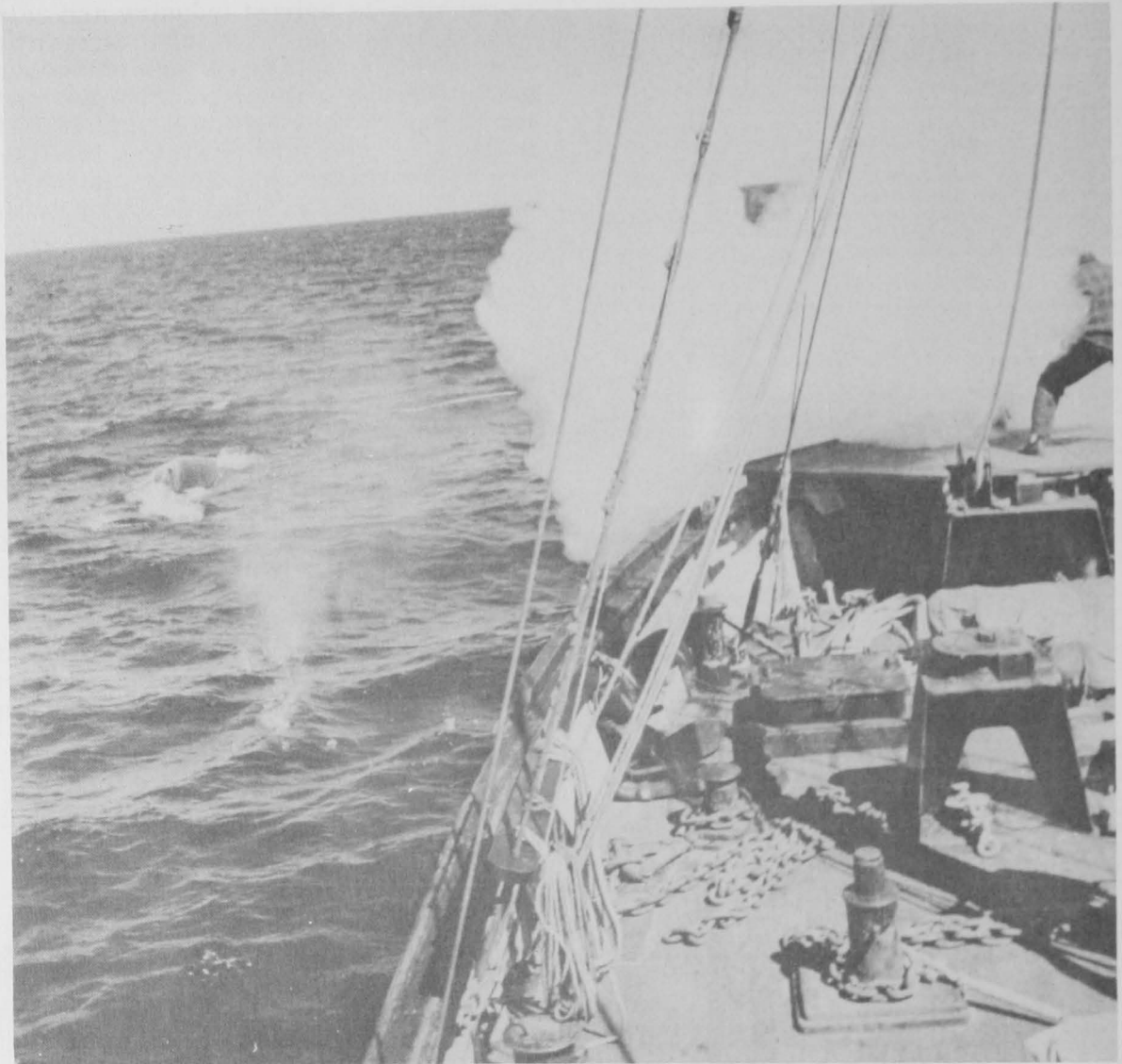
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BRITISH COLUMBIA WHALING IN 1959:

The whaling company operating out of Winter Harbor Station, Vancouver Island, British Columbia, landed a record number of whales during the April-September 1959 season. But the total tonnage was below that for 1958 due to the relatively large number of small whales caught. The 1959 catch by the company's six catchers of 869 whales consisted of 369 finback, 185 sei, 260 sperm, 28 blue, and 27 humpback whales. The catch of blue whales, which are among the largest and are the most valuable, exceeded expectations. The catch of whales in 1958 was 774 and in 1957 it was 635 whales.

The depressed world market for whale oil reduced the net profit from the 1959 operations to about the break-even level, the United States Consul in Vancouver reported in October 16, 1959. (See photograph on the following page.)

Canada (Contd.):



A swirl of smoke clouds the harpoon as the gunner fires the harpoon at the humpback whale off the port bow of a Canadian whale catcher. When whale is captured, air is pumped into the carcass to keep it afloat. It is marked with flagged and lighted buoys to be picked up later and towed to the factory.

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**CHAMBER OF COMMERCE
POLICY DECLARATIONS
INCLUDE COMMERCIAL FISHERIES:**

Policy declarations of the Canadian Chamber of Commerce for 1959-60 included the following: "Commercial Fisheries: Fisheries are a basic industry of Canada that provide a livelihood for a large number of people, both directly and through secondary industry. The Chamber emphasizes the need for support of policies for the protection, conservation, and development of the fishery resources of our inland and coastal waters. Such policies require adequate

recognition of pollution problems and adequate safeguards in relation to forestry and water-power developments. The importance of protecting Canada's offshore fishing interests is emphasized.

"Water: To encourage the maximum utilization of our water resources, Government should continue to prosecute with vigour all hydrometric surveys, should carefully appraise the needs of fishing, irrigation, navigation, and other interests concerned. Special attention should be devoted to pollution problems, solutions for which are becoming increasingly urgent. The Chamber believes in

Canada (Contd.):

the development of a program for the establishment of a national policy for the control, conservation, and development of water resources for multiple purposes on which all interests can unite and on which a maximum of local and provincial autonomy is assured."

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FISHERIES RECOMMENDATIONS INCLUDED IN REPORT OF ROYAL COMMISSION ON PRICE SPREADS:

Recommendations for improvement of Canadian fisheries are included in a report released on December 3, 1959, by the Royal Commission on Price Spreads appointed by Parliament in December 1957.

The seven-man Commission was appointed to study the extent and the causes of the spread between prices received by producers of food products of agricultural and fisheries origin and the prices paid by consumers for those food products.

The investigation was the natural outcome of two conditions prevalent in 1957. At the time prices for fisheries and farm commodities had been falling for a number of years with a resulting decrease in the farmers' and fishermen's share of the national income.

The Commission's report lists among the causes for increased prices to consumers, higher freight rates, labor costs, promotional activities, and rising real estate costs. On the other hand the Commission reports as causes for declining prices to commodity producers the following: overproduction, reduced per capita consumption, inefficient marketing, and lack of quality products.

Specific recommendations covering fisheries were as follows: a Federal Fish Marketing Act to pave the way for fish marketing arrangements similar to compulsory agricultural marketing boards; establishment of a fish grading system and grade definitions for products processed and sold by fishermen; and improvement of

statistical information available through the services of the Bureau of Statistics with regard to Newfoundland fisheries, catch and prices for fish and fish products, flow of total gross and net incomes from fishing, and incomes of fishermen including earnings from all other occupations.

* * * * *

FISH FLOUR DEVELOPMENTS:

The Canadian Fisheries Research Board of Canada's technological station at Halifax has closed one chapter in its development of fish flour, but has announced a new fish flour project that promises even greater potential than the original research experiment--exploring the abundant stocks of herring and alewives as the raw material for a new type of fish flour.

The original project with cod and haddock was a success. Not only has the fish flour produced from cod and haddock fillet waste at the Halifax station proven to be of good quality, but it has another quality that was heretofore missing. The latter factor evolving from the last stage of the experiment involved a special treatment of the product that makes it easily mixed in liquids such as milk or water. One of the problems had been the difficulty in suspending fish flour in liquid, but the new treatment has corrected that. There is now more uniform suspension and the fish product becomes as easily suspended in milk or water as does ordinary flour.

Capping off the fish flour experiment was the recent work which indicated that the product, which is roughly 90 percent protein, has a nutritive value equivalent to egg albumen, which is the standard used in nutritional assays.

The station's venture into the herring-alewife field as a source of fish flour has met with good results so far. While it is true that herring fish flour is not as white (it is slightly grayish) as the product made from cod and haddock, it is, for all practical purposes, tasteless and odorless.

Experiments so far also indicate excellent fish flour can be produced from alewives. Work is being carried on to measure the nutritional value of the new products. Analyses of the amino acid content of the new flours will be followed by nutritional assays made on rats.

Development of fish flour was a postwar project sponsored by the Food and Agriculture Organization of the United Nations. It was undertaken by many of the world's leading fishery research laboratories, including the station at Halifax. The program was prompted by a desire to supply underprivileged nations with a cheap supply of animal protein. There was another reason too for emphasis on the work in countries in the Western Hemisphere. For instance, dietetic studies showed that in Canada and the United States there was need for additional proteins in some diet formulations, especially for people engaged in heavy manual work, post-operative patients, and elderly people. One of the simplest uses of the product has been as an additive to bread and cereals.

Raw material for fish flour made from cod and haddock is the trimmings from fish filleting (but not the heads). In the case of herring and alewives the whole fish is used. From the latter species byproducts other than fish flour are also being developed.

Abundance of herring and alewives on the east coast of Canada gives the current experiment an added attraction. That is the economic feature which, in all probability, would make production of the flour cheaper than the "white fish" flour. (Canadian Trade News, October 1959.)

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Canada (Contd.):

SWORDFISH VESSEL TRIES NEW ELECTRONIC HARPOON:

A new electronic harpoon, which is a modified version of one originally developed by a West German fisheries scientist, was demonstrated aboard the swordfish vessel Terry and Gail off the Nova Scotia coast in the summer of 1959.

Using the new harpoon showed that in 11 hours of fishing at the height of the season, 13 swordfish were sighted, 13 were killed, and 11 were landed. The two escapes were said to be the result of faulty barbs.

The modified version of the electronic harpoon which has been developed by the research staff of a United States company uses a 250-volt charge which is carried by cable (replacing the former rope) to the harpoon head. The shock instantly kills the swordfish which means that it can be landed in a matter of a few minutes as compared with the average of 30 minutes to 3 hours using the old technique. It is also reported that killing by shock leaves the meat of the swordfish in better condition than if caught after a wild struggle.



Ceylon

SHRIMP FISHERY:

The catch of shrimp in Ceylon is estimated to be about 0.5 million pounds annually. Small shrimp are available in local markets, but the catch is not considered important enough by Ceylon's Department of Fisheries to show it separately in official statistics.

The small catch of shrimp is taken in lagoons or near shore with cast nets by wading fishermen. Imports during 1958 amounted to about 1.7 million pounds of dried shrimp, mainly from India. No shrimp is exported.

A research officer provided under the Colombo Plan to the Department of Fisheries has conducted a survey of shrimp fisheries for over two years. His survey located some of the shrimp

breeding grounds, but the survey was discontinued in favor of an investigation of the spiny lobster resources in the waters around Colombo.

Development of a fishery for shrimp is not included in the program of fisheries development under the Ten-Year Plan. Under present conditions it is unlikely that Ceylon will become an exporter of shrimp to the United States in the near future. (United States Embassy in Colombo, December 4, 1959.)



Colombia

MARKET FOR FROZEN TUNA INCREASING:

Frozen tuna was available in Barranquilla, Colombia, during most of November 1959. As the best grade of tuna retailed at only two pesos a pound (about 29 U. S. cents a pound at the free rate of exchange), it represented a saving to workers on their food bills. The tuna has been accepted by all sectors of Barranquilla, not merely in lower-class neighborhoods. As a result, distributors are now found in nearly all parts of the city, including the better residential areas. The tuna has been supplied by the Japanese fishing vessel Seiun Maru.

The fish canning firm engaged in the marketing of tuna recently made statements indicating that the marketing of tuna will greatly increase and will be extended throughout Colombia. The firm plans to introduce 500 tons of tuna monthly into the country. The fish will be unloaded on both the Pacific and Atlantic coasts. (United States Embassy report from Barranquilla, December 4, 1959.)



France

LOBSTER TAILS PACKED IN VACUUM-SEALED PLASTIC BAGS ABOARD VESSEL:

The French vessel Francoise Christine is the world's first craft equipped with an installation for packing spiny-lobster tails in vacuum-sealed plastic

France (Contd.):

bags. Launched in February 1959, the vessel sailed for Port-Etienne in Mauritius a few weeks later.

Two specialists, a packaging expert and an engineer, accompanied the craft on her first trip but remained onboard only 15 days until the crew had been trained to handle the vacuum-sealing plastic-packaging machinery.

Although the actual catch and packing on the first trip was not revealed, it is estimated that average production per trip will be around 25 metric tons. The Francoise Christine uses trawl nets for catching the spiny lobsters, which are cut, packed in plastic bags, vacuum-sealed, and then frozen.

Freezing is carried out in three tunnels with a capacity of three tons per 24 hours. The tails are then stocked in a cold storage hold with a temperature of -9° F. The hold has a capacity of 25 tons.

The Francoise Christine can also carry live spiny lobsters in tanks with a capacity of 70,000 to 80,000 lobsters.

A second craft, Le Charleston, which will be longer, 99 feet instead of 90 feet, will have a larger capacity, and will soon be ready to operate. It is estimated that the two vessels will, between them, produce from 200 tons to 250 tons of frozen products annually, equal to 500 tons of live spiny lobsters.

Special crushing equipment crushes the discarded edible part of the body for use in the making of lobster bisque. (World Fishing, November 1959.)



French Guiana

FISHERIES EXPANSION INCLUDED IN PROPOSED DEVELOPMENT PLAN:

Expansion of fisheries is included in a new economic development plan for French Guiana. Various parts of the plan have been under discussion for

some time and final completion was scheduled for December 31, 1959.

The three principal objectives of the plan as it concerns fisheries are: (1) to assure sufficient fish for consumption in French Guiana; (2) to exploit the shrimp grounds off the Guiana coast and develop at Cayenne a packing and shipping industry for shrimp; and (3) to build a plant for the manufacture of fish meal (for fertilizer and animal feed) by utilizing a fish known as "poisson limon," which is found in coastal waters and the estuaries of French Guiana. This species is plentiful on the muddy bottom and is not utilized as food at the present time. (United States Consulate, Martinique, November 10, 1959.)



German Federal Republic

CERTIFICATE OF INSPECTION FOR FISH MEAL IMPORTS REQUIRED:

An ordinance passed by the Hamburg Senate on February 14, 1958, "for the protection against the danger of introduction of salmonella through feedstuffs of animal origin imported from abroad," concerns West German imports of fish meal as well as other animal feeds. This ordinance forms a part of uniform German state legislation in this field, the provisions of which are applicable to all fish meal imports into Germany.

Although the United States exports very little fish meal to West Germany or any other country, an understanding of the regulations may save present or future United States exporters from losses. One misconception on the part of United States fish meal exporters is that the "certificate issued by the competent authority" mentioned in the ordinance (Section 2) means a certificate issued only by the U. S. Department of Agriculture. Officials of the Hamburg Hygienic Institute state that such certificates issued by competent Federal or state authorities are equally acceptable, but that they must be written in German. While such a certificate does not eliminate the necessity of inspection at the port of entry, German customs authorities may

German Federal Republic (Contd.):

turn back an uncertified shipment. Shipments found to be infested with salmonella may be sterilized under customs supervision at the port of entry and thereafter admitted. (United States Consulate dispatch from Hamburg, November 23, 1959.)

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APPROPRIATIONS FOR FISHERIES,
FISCAL YEARS 1958/59 AND 1959/60:

Appropriations by the West German Federal Government for fisheries for the fiscal year beginning April 1959 and ending March 31, 1960, amounted to about US\$4.1 million. Appropriations for

Guatemala

SHRIMP FISHERY TRENDS:

The Guatemalan shrimp fishery has developed slowly, due principally to the fact that there are no areas on the Pacific Coast where most of the shrimp resources occur. Informed observers estimate that eventually Guatemala can produce between 1-3 million pounds of headless shrimp a year. According to reports no shrimp exports have been made since August 1959. The break in the United States market has made it more profitable to sell the catch locally. Local retail outlets are now disposing of about 20,000 pounds of frozen shrimp a month, or all of the current production.

No official statistics on shrimp landings are maintained, but according to estimates by observers, landings (heads-off weight) in 1956 and 1957 totaled 30,000 pounds, rose to 100,000 pounds in 1958, and were close to 300,000 pounds during the first 10 months of 1959.

For 1959 it is estimated that about 75 percent of the catch was *Penaeus schmitti* from the Caribbean Sea and about 20 percent was *Penaeus stylirostris* from the Pacific Ocean. The remaining 5 percent was a mixture of various species of *Penaeus* from both the Pacific and the Caribbean.

West Germany's Appropriations for Fisheries, Fiscal Years 1958/59 and 1959/60

| Purpose | Fiscal Year 1959/60 ^{1/} | | Fiscal Year 1958/59 ^{1/} | |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------|------------|-----------------------------------|------------|
| | 1,000 Deutsche Marks | US\$ 1,000 | 1,000 Deutsche Marks | US\$ 1,000 |
| Diesel fuel subsidy for luggers and cutters | 4,000 | 959 | 3,000 | 719 |
| Temporary medium-term loans for cutters and luggers . . | 480 | 115 | 750 | 180 |
| Revolving loan fund for building and modernization of cutters | 350 | 84 | 800 | 192 |
| Total in Revolving Fund | (5,000) | (1,198) | (4,650) | (1,115) |
| Loans from amortization of ERP investments for construction of factory-trawlers | 6,000 | 1,438 | 6,000 | 1,438 |
| Subsidy of interest rates of commercial loans for building and modernization of luggers, cutters, and factory-trawlers . . | 400 | 96 | 600 | 144 |
| Subsidy of interest rates of commercial loans for building of central freezing and distribution facilities | 100 | 24 | 200 | 48 |
| Subsidy of interest rates of commercial medium and short-term loans for trawler companies in financial distress . . | 100 | 24 | 550 | 132 |
| Management advice program for the cutter fishing companies | 100 | 24 | 100 | 24 |
| Exploratory fishing and gear research | 800 | 192 | 500 | 120 |
| Contribution to the Scientific Commission for the exploration of the Seas, Bonn | 150 | 36 | 160 | 38 |
| Operation and maintenance of the fishery research vessel <u>Anton Dohrn</u> | 805 | 193 | 796 | 191 |
| Federal Fisheries Research Institute, Hamburg, including: | 1,997 | 479 | 2,601 | 623 |
| Construction of new building for Institute ^{2/} | (300) | (72) | - | - |
| Construction of new building for Biological Institute, Helgoland ^{3/} | - | - | (785) | (188) |
| Testing of fishery products | (9) | (2) | (18) | (4) |
| Operation and maintenance of Federal Fisheries Policing and Protection Service of 3 vessels | 1,941 | 465 | 1,957 | 469 |
| Construction of third fisheries protection vessel ^{4/} | - | - | 32 | 8 |
| Contributions to International Organization: | | | | |
| International Council for Exploration of the Sea, Copenhagen | 24 | 6 | 24 | 6 |
| Overfishing Convention of 1946, London | 3 | 1 | 3 | 1 |
| International Council for North Atlantic Fisheries | 10 | 2 | 7 | 2 |

^{1/}Fiscal Year April-March.

^{2/}Total cost of project DM4,449,000 (US\$1,066,000).

^{3/}Total cost of project DM4,700,000 (US\$1,127,000).

^{4/}Total cost of project DM2,997,000 (US\$718,000) vessel placed in Service in 1957.

fiscal 1959/60 were lowered by about US\$200,000 from fiscal year 1958/59 appropriations. Funds for fisheries included subsidies on fuel oil for inshore craft, loans for construction and modernization of fishing vessels, subsidies on loans made to the fishing industry by commercial banks, and funds for operation of and construction of facilities for the Federal Fisheries Service.

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As of November 9, 1959, there were three shrimp vessels fishing in the Caribbean Sea and one in the Pacific Ocean. However, there were 3 more boats tied up for repairs in the Caribbean and one vessel under repair in the Pacific and scheduled to go into operation before December 1. A recently-arrived trawler-freezer was scheduled to start Pacific operations immediately.

In the spring of 1959, the Caribbean shrimp trawler fleet built up to 12 boats, but fishing slackened-off and 6 of the vessels returned to the United States. The fleet as of November 1959 consisted of two double-rigged (rigged for fishing two shrimp trawls simultaneously) trawlers, 60 and 68-foot in length, two old Biloxi-type luggers about 45 feet long (only

Guatemala (Contd.):

one operating), and two smaller craft about 35 feet in length (neither of which was active).

The trawler-freezer now in the Pacific operated there for about five weeks during the spring of 1959, then transferred to the Caribbean for a short period and returned to the United States for repairs. This vessel is a 78-foot converted purse-seiner. She is double-rigged and has glucose-brine freezing equipment. The other two vessels are standard-type shrimp trawlers.

No shrimp trawlers are under construction in Guatemala, but there are numerous and varied plans for bringing in more trawlers. Much will depend on the price of shrimp in the United States.

The Guatemalan Caribbean coast is extremely limited in area and so are the shrimp nursery grounds. Guatemala's Pacific coast, where most of her shrimp potential lies, is definitely handicapped in not having a port where vessels can get shelter, load and unload cargo, and obtain repairs.

There are only two shrimp fishing companies operating in Guatemala, with only one exporting shrimp in any amount. Practically all of the shrimp exported to the United States during 1959 were fresh. The fresh shrimp were packed in plastic bags with ice and transported by air. Air freight to Miami or New Orleans costs 5 U. S. cents a pound. Maximum plane capacity was 10,000 pounds per trip, but frequent trips were made with less than capacity loads.

Local wholesale prices run 75 U. S. cents a pound for shrimp 20 count and larger. Counts of 21-25 and over wholesale at 60 cents a pound. Very few shrimp over 30 to the pound are landed in Guatemala.

There are neither export controls nor export taxes. There is a municipality (severance) tax of 3 U. S. cents a pound, but an effort is being made to have this removed or reduced.

There is one small shrimp freezing plant in Guatemala. It is located at Champerico on the Pacific coast. Freezing is done in a cold room with a reported capacity of 5 tons daily. The plant also has a daily flake-ice capacity of 2 tons and a storage capacity of 5 tons. (United States Embassy dispatch from Mexico, November 18, 1959.)



Iceland

HOPES TO INCREASE SALES OF FROZEN FISH BLOCKS TO U. S.:

A United States Customs Court ruling has altered the tariff or customs classification of frozen fish fillet blocks, and effective September 15, 1959, fish blocks made from groundfish are dutiable under Tariff paragraph 720 (b) at either 12½ percent ad valorem or one cent a pound, depending on whether or not the blocks are packed in bulk or in containers weighing with contents, less than, or more than 15 pounds each. The definition of "immediate containers" by U. S. Bureau of Customs is the "outer cardboard carton holding the 4 or 5 frozen fish blocks." Therefore, fish blocks are now dutiable at 1 cent a pound instead of 17 cents under the quarterly

fillet quota and 2½ cents if imported over the fillet quota. Also, imports of fish blocks now do not fall under any quota provisions.

An article in the Icelandic newspaper Morgunbladid of November 10, 1959, points out that the lower U. S. tariff regulations now in effect on frozen fish blocks should result in more exports of Icelandic fish blocks to the United States.

The article also stated the Customs ruling represented a tariff reduction of approximately \$300,000 a year for Icelandic shippers, based on 1959 sales of fish fillet blocks to the United States.

The export of fish fillets in block form (11 to 13 pounds per block) to the United States was begun in 1953.

Morgunbladid's reporter asked the director of the Icelandic freezing plants corporation what effect this would have on the sale of fish to the United States. "He stated that it would facilitate and, it was hoped, increase the sale of fish to that country. This makes the American market more favorable for us Icelanders, in comparison with other fish markets. . . . He wished to point out that advertising was unavoidable in order to maintain and develop markets in the United States. The market could undoubtedly be increased by means of suitable, sensible advertising but, unfortunately, the funds which the corporation could use for advertising were very limited.

"The market for fish in the United States is good," said the director, "and it will undoubtedly increase considerably. The consumption of fish in the United States is still very low and, even if the consumption of fish per capita does not increase, the population does so by approximately 3 million per year. In order to meet that increase the Americans have to obtain additional fish amounting to approximately 15,000 tons per year."

FISH-FREEZING PLANTS NEED MORE TRAWLERS:

Some of Iceland's outlying ports have obtained loans for the building of local freezing plants and there are now 38 such

Iceland (Contd.):

plants in Iceland. These plants are now turning to the Government for help in obtaining the fishing vessels necessary to ensure raw material to keep the plants operating.

The twelve 250-ton trawlers ordered in 1958 from East Germany form part of this scheme and 3 of these were expected to be delivered before the end of 1959. In addition, 8 larger trawlers are to be ordered from West German yards for delivery in 1960-61. A definite commitment has been made for 4 of these trawlers and favorable terms are reported to have been obtained.

Considerable dissatisfaction has been expressed over the performance of the first of the East German 250-ton trawlers, which was delivered to an Icelandic north coast firm. It is claimed that the East German trawlers have a very small capacity for their size and that they are not really suitable for the purposes for which they were bought--fishing in home waters. (The Fishing News, November 6, 1959.)

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FISHERY LANDINGS,
JANUARY-SEPTEMBER 1959:

Icelandic fishery landings during January-September 1959 were 15 per cent higher than in the same period of 1958 and 29 percent higher than during

| Species | January-September | | |
|---------------------------------|---------------------------------|---------|---------|
| | 1959 | 1958 | 1957 |
| | (Metric Tons) | | |
| Flounders: | | | |
| Plaice | 768 | 536 | 967 |
| Lemon sole | 212 | 153 | 1,115 |
| Megrim | 629 | 362 | 142 |
| Witch | 143 | 156 | 89 |
| Dab | 33 | 19 | - |
| Halibut | 751 | 666 | 559 |
| Skate | 558 | 602 | 162 |
| Cod | 203,457 | 221,127 | 180,961 |
| Haddock | 12,672 | 14,558 | 15,417 |
| Ling | 1,779 | 3,063 | 2,362 |
| Wolfish (catfish) | 8,429 | 9,371 | 8,416 |
| Ocean perch (redfish) | 85,687 | 63,256 | 47,438 |
| Saithe | 8,898 | 9,751 | 8,931 |
| Cusk | 2,364 | 4,213 | 2,795 |
| Herring | 159,916 | 94,151 | 105,342 |
| Other | 1,314 | 1,154 | 1,974 |
| Total | 487,610 | 423,138 | 376,670 |

^{1/}Except for herring which are landed round, all fish are landed drawn.

January-September 1957. Cod and haddock landings were down, but landings of herring, ocean perch, and flounder were up in 1959. (Aegir, November 1, 1959.)

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FISHING FLEET TRENDS,
NOVEMBER 1959:

Since the stevedores at Grimsby, England, on October 26, 1959, lifted their ban on unloading fish from Icelandic trawlers, those vessels have reported good returns on their catches. The Icelandic trawlers have also received high prices at other British ports and in West Germany.

In November, the Icelandic trawler fleet was concentrating on the cod fishery off Iceland and Greenland. However, three trawlers were reported making good catches of ocean perch on new grounds discovered by the Germans.

The City of Reykjavik on November 3, 1959, authorized a loan of about Ikr. 10 million (about US\$615,000) in foreign currency to start the program of converting from steam to Diesel the trawlers owned by the Reykjavik City Trawler Company. It is expected that the Ingolfur Arnarson will be the first vessel to be converted starting in the spring of 1960. Complete conversion will cost about Ikr. 5-7 million (US\$308,000-431,000) per vessel. After conversion, operating costs will be reduced and the hold capacity increased from 250 metric tons to 300 tons.

For several months a controversy has raged over the many alleged shortcomings of the 250-ton trawlers built in East Germany. Three of the trawlers delivered in 1958 have been tied-up in Akureyri for repairs. According to reports, the aluminum lining of the fish holds is inferior and all the concrete ballast has had to be replaced. In addition, all the auxiliary engines of East German manufacture are reported to have broken down. Five East German shipyard experts have been in Iceland to try and correct the faults in the vessels. (The United States Embassy in Reykjavik reported on November 11, 1959.)

Note: Iceland kroner converted at rate of Ikr. 16.26 equal US\$1.

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Iceland (Contd.):

NONGOVERNMENTAL 1960 TRADE AGREEMENT WITH EAST GERMANY INCLUDES FISH:

The nongovernmental trade agreement between Iceland trade associations and East Germany was renewed in Berlin on November 10, 1959. The agreement provides for exchange of goods of about US\$5 million each way or about the same as in 1959.

On November 14, 1959, it was announced that the East Germans would purchase 10,000 barrels of Iceland south coast herring. Normally East Germany has taken about 15,000 barrels of salted herring from the south coast fishery, but due to unfavorable weather and scarcity of fish to November 12, it has been difficult for Iceland to fulfill commitments for herring exports. (United States Embassy from Reykjavik dated November 20, 1959.)



Italy

FISH CANNERS ASK RESTRICTIONS ON JAPANESE CANNED TUNA IMPORTS:

Italian fish canners and dealers are asking the Government to restrict imports of Japanese canned tuna in oil. The Italian Government is studying the effect of Japanese canned-tuna-in-oil imports on the Italian fish-canning industry. A concrete proposal was expected to be made during Japan-Italy trading negotiations under way the latter part of 1959

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JAPANESE FROZEN TUNA INCLUDED AMONG FREE TRADE ITEMS:

Italy is expected to include Japanese frozen tuna with items of free trade, and canned salmon and crab meat with bartered products. In the past, Japan's frozen tuna exports to Italy were bartered for Italian rice and for this reason tuna exports to Italy were limited on the basis of the quantity of rice imported by Japan to about 10,000 metric tons a year. Italian tuna imports from Japan amounted

to 11,738 tons in 1958. However, in 1959 Japan's imports of Italian rice were reduced because of continued bumper crops and frozen tuna imports by Italy were cutback accordingly. But including tuna by Italy with items of free trade may mean an increase in imports of Japanese tuna. Japanese exporters are in favor of raising the quota of frozen tuna exports to Italy to 20,000 tons a year. (Fisheries Economic News, November 10, 1959.)

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TUNA INDUSTRY:

The Italian Association of Fishing Industries states that Italy's principal ports for imported frozen tuna are: Venice, Bari, Naples, Genoa, Trapani, and Palermo. During the past year or so, Italy has been receiving direct landings of tuna by Japanese tuna vessels, but it also receives imports from Norway and one or two other European countries.

There are about three leading processors of imported tuna. One is located in Genoa with a plant in the vicinity of Venice; another is also located in Genoa but has plants in Chioggia (Province of Venice), Favignana, and Formica; and the third one is located in Rome with a plant at Bari. One of the two firms located in Genoa that processes imported tuna, through a subsidiary, operates Italy's largest "tonnare" (areas where tuna are fished with fixed nets from shore) at Favignana and Formica, two small islands off the northwest coast of Sicily, in the Province of Trapani. Tuna caught in those islands is processed there. Tuna is also caught off Sardinia by another Italian firm. (United States Embassy report from Rome dated December 13, 1959.)



Japan

BERING SEA TRAWLER FISHERY TRENDS:

The Kinyo Maru, one of two fish-meal factoryships and fleets licensed in 1959 by the Japanese to operate in the Bering Sea, in mid-October 1959 was reported to have left the fishing grounds after attaining its production goal. The fleet, led by its factoryship, produced 13,000 metric tons of fish meal and some 2,000

Japan (Contd.):

tons of fish solubles, fish oil, frozen fish, etc.--a grand total of 15,000 tons of products. The fleet exceeded the 1958 production of fish meal by 4,530 tons and was scheduled to dock at Hako-date, Hokkaido, the latter part of October.

The second fish-meal factoryship fleet, Tenyo Maru, owned by two Japanese fishery firms, returned to Tokyo early in November. This was the first year of operation in the Bering Sea for this fleet, but it attained its production goal of 8,000 tons of products, mostly fish meal.

In 1960 four Japanese fish-meal factoryships and fleets are expected to operate in the Bering Sea. Two fleets will be operated by one fishery firm and will consist of the factoryships Kinyo Maru and Nissho Maru. Another fishery company, the one that operated the Tenyo Maru in 1959, will use a new mothership. A fourth fleet is being planned by still another fishery firm which expects to use as a factoryship the Gyokuei Maru, a 9,971-ton vessel which has been used as a tanker for Antarctic whaling. (Suisan Tsushin, November 6, 1959.)

Note: See Commercial Fisheries Review, September 1959, p. 76.

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CANNED FISHERY PRODUCTS EXPORTS, JANUARY-JULY 1959:

For the first seven months of 1959, Japanese exports of canned fishery products were 6.8 percent greater than in the same period of 1958. The increase was mainly in salmon.

| Japanese Exports of Canned Fishery Products, January-July 1958 and 1959 | | |
|----------------------------------------------------------------------------|--------------|-----------|
| Product | January-July | |
| | 1959 | 1958 |
| Crab (king and other) | 399,251 | 387,666 |
| Tuna: | | |
| In oil | 994,117 | 614,412 |
| In brine | 1,046,201 | 1,349,500 |
| Other | 31,327 | 49,357 |
| Total Tuna | 2,071,645 | 2,013,269 |
| Mackerel-pike (saury) | 402,829 | 440,905 |
| Sardine | 296,692 | 338,992 |
| Salmon | 1,058,107 | 885,461 |
| Other fish | 213,081 | 111,757 |
| Shellfish | 189,328 | 159,056 |
| Other aquatic products | 3,304 | 3,259 |
| Grand Total | 4,634,237 | 4,340,365 |

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CANNED PACK OF MACKEREL-PIKE:

The Japanese Export Canned Mackerel-Pike Fishery Association has announced the pack of canned mackerel-pike as of November 15, 1959: in tomato sauce 65,582 actual cases; in water 387,574 cases; and in jelly 500 cases--total 453,656 cases.

Since the canned pack quota has been established at 650,000 cases, there was still 196,344 cases to be packed to reach the quota.

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FREIGHT RATES TO UNITED STATES FOR CANNED GOODS INCREASED:

Rates per ton that are 5 percent higher became effective on October 1, 1959, for ocean freight shipments of canned goods from Japan to United States Atlantic and Pacific ports:

| | |
|--------------------|------------------------------|
| To Pacific Coast: | \$24.50--all canned products |
| | 21.00--pet foods |
| To Atlantic Coast: | \$30.00--all canned products |
| | 26.25--pet foods. |

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EXPORTS OF FISHERY PRODUCTS, JANUARY-SEPTEMBER 1959:

Exports of fishery products by Japan during September 1959 were valued at US\$21.4 million--higher by 20.9 percent from the August exports of \$17.7 million and up 91.1 percent from the same month in 1958.

January-September 1959 fishery products exports were valued at \$117.7 million, an increase of 12.6 percent as compared with January-September 1958. Fishery products exports in the first nine months of 1959 made up about 4.9 percent of Japan's exports of all products. (United States Embassy, Tokyo, November 6, 1959.)

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PLANS MADE TO ADVERTISE CANNED TUNA IN UNITED STATES:

Early in 1959 the Japanese had announced that ¥50 million (US\$139,000) would be used to advertise canned tuna in the United States. Half of the money

Japan (Contd.):

was provided by the Japanese Government and the other half by the Japanese canning and freezing industries. The Fishery Agency and the International Tuna Society have been studying how to spend the money. A plan for using one-half of the amount has been announced and it was expected to be implemented late in December 1959.

The money is to be spent as follows:

1. Newspapers - ¥6,038,377 (US\$16,800). Will be concentrated in northeastern states. Ads for Japanese canned tuna will appear 3 times in 14 newspapers, including the New York Times and the Chicago Tribune.
2. Trade paper - ¥774,132 (US\$2,150). Ads will appear 4 times in the weekly Supermarket News.
3. Recipe leaflets - ¥5,687,838 (US\$15,800). About 200,000 colored leaflets will be distributed at supermarkets.
4. Distribution of general information - ¥12,500,276 (US\$34,700). Articles and information on tuna will be provided to newspapers and magazines and also to retail stores. These will be brought to the attention of food editors by personal interviews, telephone, and mail.

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| Canned Tuna ^{1/} Exports by Country of Destination, January-June 1958-59 | | | |
|-----------------------------------------------------------------------------------|------------------------------|-------|------------------|
| Destination | January-June | | January-December |
| | 1959 | 1958 | 1958 |
| | (1,000 Actual Cases) | | |
| United States | 939 | 1,215 | 2,191 |
| West Germany | 105 | 113 | 287 |
| Canada | 80 | 70 | 149 |
| Switzerland | 67 | 40 | 77 |
| Italy | 38 | 10 | 37 |
| Belgium | 30 | 29 | 69 |
| Netherlands | 21 | 20 | 33 |
| Lebanon | 22 | 11 | 23 |
| Britain | 8 | 9 | 58 |
| Egypt | 15 | - | - |
| Others | 144 | 65 | 205 |
| Total | 1,469 | 1,582 | 3,129 |

^{1/}Includes all types of packs--in oil, in brine, etc.

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FISHING INFORMATION ON 1959/60 WINTER ALBACORE SEASON:

According to a forecast by the Fisheries Laboratory of Tokai University, Shimizu, albacore tuna was expected to show up late during the winter of 1959/60 off Japan. It was expected that they would first show 1,200 miles ENE. of Nojima Cape around 37°03'-39°00' N. and 163°-164° E., about mid-November 1959, for only a very short time. There was also hope that the main run of the albacore would show up 700-750 miles NE. of Nojima Cape, or around 38°-40° N. and 161°-162° E., from mid-November up to mid-December 1959.

Formerly about 30 albacore boats used to fish from Shizuoka-ken ports beginning late in October. But in 1959 through mid-November practically none were in operation. It was expected that the boats would shift from mackerel-pike or saury fishing to albacore fishing toward the end of November 1959. The cannery of Shizuoka district were waiting for the winter albacore to show up.

A research institute of Shizuoka Prefecture, Japan, released in November 1959 information on winter albacore fishing conditions off Japan.

"Oceanic Conditions: In the sea area east of the Sanriku (central part of Honshu), water temperatures are similar to the same period in 1958. Kurile currents are more powerful and lower temperatures are noted in general. The Black Current is running in a northeasterly direction near Kinkazan Island (off Miyagi Prefecture) and the water temperature of 18° C. (64.4° F.) is reaching 40° north latitude. A large warm current extends northward between 149°-154° east longitude and this pattern is expected to continue. The cold current is powerful east of 160° east longitude and no warm current is seen to be protruding into the area.

"Fishing Conditions: Because of a powerful cold current coming from the north, the southward movement of winter albacore tuna is expected to be earlier than usual. In the sea area north of 38° north latitude at 149°-152° east

Japan (Contd.):

longitude and 153°-154° east longitude, schools are expected to appear gradually and it is promising as a principal fishing area for offshore hook-and-line fishing. Conditions east of 160° east longitude do not warrant hook-and-line fishing judging from oceanic conditions. The promising fishing area for long-line fishing is expected to be at 164°-166° east longitude and 29°-32° north latitude with water temperatures ranging 19.8°-22.3° C. (67.6°-72.1° F.). (Fisheries Economic News, November 21, 1959.)

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RATE-OF-CATCH FOR ATLANTIC TUNA DROPS:

A substantial drop in the rate-of-catch of Atlantic tuna by Japanese fishing vessels is reported. Early in December 1959 a fleet of 20 to 40 long-line vessels was engaged in the Atlantic tuna fishery. Japanese vessels started fishing Atlantic tuna almost three years ago. The first year an average daily catch of 4,000 kan (16.6 metric tons) per vessel was reported. The next year it dropped to 2,000 kan (8.2 tons), but this was assumed to be natural for this type of ocean fishing. But in 1959, particularly since October, the catch has declined further. For instance, one vessel caught only a daily average of 1,200 kan (5 tons) and another only 670 kan (2.8 tons).

But in spite of the drop in catch rates, a Japanese fishery firm was planning to send two large tuna vessels--one 470-tons and another 1,100 tons--in January to the Atlantic for the first time. All other large Japanese fishery companies have tuna vessels fishing tuna in the Atlantic.

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SOVIET FISHERIES MISSION VISITS JAPAN:

A four-man Soviet fisheries mission arrived in Japan on November 17, 1959, for approximately three weeks of inspection of Japanese fishery facilities. The group comprised the chief of the Kamchatka Fish Conservation Bureau; a staff member of the Kamchatka Branch of the Pacific

Fisheries and Oceanographic Laboratory; the chief of the Inshore Exploratory Fishing Group; and an interpreter attached to the Maritime Province People's Economic Council. Their itinerary took them to Hokkaido from November 20 to 27 for visits to salmon hatcheries and other fishery installations, after which they went to Nagasaki, Shimonoseki, and Yaizu to gather information on mackerel and tuna fishing.

The exchange of such missions has been recommended in each of the past three years by the annual conference of the Japan-Soviet Convention on Northwest Pacific Fisheries. In 1957 the exchange did not materialize because of delays in the Soviet response to Japanese communications. In 1958 each side sent about a dozen of its fishery experts, and the reconnaissance tours were conducted on a large scale in both countries. In 1959 Japan sent only four men, headed by the research chief of the Japanese Fisheries Agency, and the group confined its activities largely to an inspection of salmon-fishing operations in Kamchatka over a three-week period in August-September.

The reciprocal Soviet mission was naturally concerned principally with salmon, especially with salmon-hatching activity in Hokkaido and with Japan's procedures for enforcing the conservation regulations established by the Japan-Soviet Fisheries Commission. Soviet accusations of Japanese violations of those regulations caused the Japanese delegation much trouble at the last annual meeting of the Commission.

The 1959 mission, like that which came to Japan in 1958, also showed an interest in whatever information it could obtain about the operating techniques in other major Japanese fisheries. Reports indicate that since 1958 the Soviet fishery for saury off Japan's coast has been put on a commercial basis and there are strong indications that the Russians intend to move on a large scale into fisheries for mackerel, tuna, and bottom fish in areas which are now dominated by the Japanese.

At their first press conference in Tokyo on November 23, the Russian Mission's spokesman reported that Soviet salmon production in Kamchatka in 1959 was 25 percent under the plan because of the effects of the Japanese high-seas fishery. In Hakodate, at another press conference on November 28, it was pointed out that the Soviet fisheries had made a very poor catch, especially of pink salmon; also that the U.S.S.R. might find it necessary to shut down salmon fishing in Kamchatka altogether in 1960, but that this would have little effect unless the Japanese also took steps to cut down their catch as much as possible. (United States Embassy in Tokyo, December 3, 1959.)

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YELLOWFIN TUNA EXPORT PRICE TO UNITED STATES FIRMER:

In November 1959 landings of tuna from the Indian Ocean consisted of fewer yellowfin tuna but more "bluefin Indo" and albacore tuna. This has firmed up the export price of frozen yellowfin to the United States. The price in November 1959 was US\$255 f.o.b. a ton (gilled and drawn fish of 20-80 lbs.) or about \$10 higher than in August. The landed price of fresh yellowfin was about ¥98 a kilo (\$247 a short ton). The higher Japanese export price is also attributed to a sharp decline in the transshipments of Atlantic tuna to the United States since August 1959.

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Japan (Contd.):

TRANSSHIPPED ATLANTIC FROZEN TUNA EXPORTS TO UNITED STATES DECLINE:

Japanese transshipped frozen Atlantic tuna exports to the United States that began in August 1958 have dropped off sharply because of the large percentage of rejects at United States west coast canneries in April and May 1959. On the other hand, there has been a sub-

stantial increase in direct landings of frozen Atlantic tuna at ports in Yugoslavia, France, and Africa. More recently direct landings in Colombia, the Canary Islands, Spain, and Libya were beginning to materialize. Further development of those new markets is expected in 1960.

it is fishing to assist in assembling oceanographic data.

In recent years the tuna catch ratio in the Indian and Pacific Oceans has been on the decline and exploitation of new fishing grounds has extended into the Atlantic Ocean. All operating Japanese tuna vessels have expressed concern over decreased catches and increased operating days to catch a full load of tuna.

Japanese Frozen Atlantic Tuna Direct Exports and Transshipments, 1959

| | January-March | | April-June | | July-September | | October-December ^{1/} | |
|----------------------------------------------|--------------------|-------|--------------------|-------|--------------------|-------|--------------------------------|-------|
| | Tons ^{2/} | Trips | Tons ^{2/} | Trips | Tons ^{2/} | Trips | Tons ^{2/} | Trips |
| United States (transshipments) | 7,592 | 21 | 6,082 | 19 | 2,751 | 11 | 840 | 4 |
| Direct landings by Japanese fishing vessels: | | | | | | | | |
| Italy | 2,864 | 9 | 2,612 | 7 | 4,362 | 18 | 2,080 | 8 |
| Yugoslavia | 435 | 1 | 1,469 | 5 | 3,325 | 10 | 3,160 | 9 |
| France | - | - | 476 | 2 | 1,972 | 5 | 2,368 | 8 |
| Dakar (Africa) | - | - | - | - | 1,145 | 4 | 392 | 3 |
| Others | 454 | 2 | - | - | 574 | 3 | 530 | 3 |
| Total other than U. S. | 3,753 | 12 | 4,557 | 14 | 11,378 | 40 | 8,530 | 31 |

^{1/}Planned.

^{2/}Short tons for shipments to United States, and metric tons for other countries.

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STATUS OF TUNA STOCKS IN INDIAN AND PACIFIC OCEANS:

The Director of the Tokau University Fisheries Research Institute issued the following statements about the status of tuna stocks in the Indian and Pacific Oceans:

(1) In recent years large-size tuna caught in the Indian and Pacific Oceans are decreasing in number and more small and medium fish are being caught. It is, therefore, necessary to change fishing methods to catch more medium and small size fish.

(2) Small and medium size tuna have more mobility and the location of fishing grounds changes according to oceanic conditions. Ocean conditions are deemed important and each Japanese vessel is requested to report on its position and water temperatures in the area

This condition is attributed to the fact that the catch of large fish is down and catch objectives should be shifted to small and medium fish which are more abundant than large fish. Schools of small and medium tuna are usually thick, but they are so sensitive to water temperature that a very small variation in the Indian Ocean brings about a change in their location. Accordingly, selecting fishing grounds becomes more difficult without proper oceanographic data.

Despite the fact that tuna fishing operations have been going on for the past few years in the Indian and Pacific Oceans, there are few data available on seasonal changes in ocean currents in the sea areas where tuna fishing grounds exist.

At present about 140 tuna vessels belonging to Shizuoka and Mie Prefectures are furnishing data which will be useful in assessing tuna fishing conditions. But in view of the great expanse of the Indian and Pacific Oceans, the data furnished are not adequate and the Fisheries Research Institute is calling upon vessels belonging to other prefectures to cooperate and is planning to put the collection of data on a nation-wide basis.

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Japan (Contd.):

FISHING VESSEL CONSTRUCTION UP SHARPLY:

There has been a sharp increase in fishing vessel construction in Japan, according to fishing vessel construction data for the first half of 1959 compiled by the Fisheries Agency. Actual construction of steel fishing vessels totaled 12,153 tons (30 vessels) in 1957, 18,412 tons (71 ships) in 1958, and 17,212 tons (103 ships) for the first half of 1959. Of the total for January-June 1959, tuna vessels amounted to 9,794 tons (29 craft), about twice as much as tuna vessel construction for 1958 of 4,731 tons (19 craft). Most of the increase in fishing vessel construction is in tuna vessels. (Fisheries Economic News, November 23, 1959.)

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EMIGRATION OF FISHERMEN TO ECUADOR PROPOSED:

Nagasaki Prefecture, westernmost prefecture of Japan, is planning to send a large number of fishery emigrants to Ecuador, South America. It has asked the Tokyo Fisheries College's scientific research mission, which was expected to leave Japan for Ecuador, to make an investigation. The mission is scheduled to use its training ship Umitaka Maru, 1,450 tons, for an investigation of the Galapagos Islands. Nagasaki Prefecture requested the mission to make a study of resources, fishing methods, and fishing seasons of shrimp, sardines, and tuna in Galapagos waters. (Suisan Tsushin, November 9, 1959.)



Latvia

FISH FACTORYSHIP ADDED TO FLEET:

The fishing fleet in Latvia now includes a new "floating fish processing factory" or factoryship, according to a report in Fiskets Gang (November 12, 1959), a Norwegian fishery trade periodical. The vessel, which is one of Latvia's best and most modern for catching and processing fish at sea, departed in November 1959 on its maiden

trip, according to a November 27 news item in Vodnyj Transport. The factoryship was built in a shipyard in Niko-laevsk.



Malaya

JAPANESE-MALAYAN TUNA FIRM SLOW GETTING STARTED:

The joint Japanese-Malayan tuna fishing enterprise, which was established at Peran, Malaya, in the summer of 1959, is slow getting started. The construction of a cold-storage plant was under way in November. Of the two fishing vessels scheduled to start fishing for the firm, only one, the Koshin Maru, 99 tons, of Mie Prefecture, has already been chartered. The company hopes to be in full operation by April 1960, when canned tuna for export to Southeast Asia, and fish sausage and fresh tuna for local consumption will be produced and on sale.



Mexico

PROGRAM INSTITUTED FOR SALE OF FISH AT ESTABLISHED PRICES:

Considerable public and press discussion in Mexico was evident during the summer of 1959 regarding the effort of the Federal Government to assure more reasonable prices of fish to the ultimate consumer. The Direccion General de Pesca has instituted a program whereby fish may be sold at established prices, either to the principal fish market in Mexico City (the Ferreria), or elsewhere. The principle opponents of the program have been some of the fish distributors.

Some of the fishermen are not too pleased with the plan, as they must bring in some of what has hitherto been considered inferior fish which bring lower prices in order to assure sufficient fish on the market. Despite these difficulties, it would appear that the Government program assures the fisherman the opportunity of selling his fish at an established price when there is an

Mexico (Contd.):



A Chilean "Eat-Fish" poster--one of several used in Mexico to increase the consumption of fish.

abundance of fish and when there are insufficient fish, apparently the fisherman can sell the fish to markets other than the principal market in Mexico City, if he believes it is to his advantage. (United States Consulate dispatch from Veracruz, dated October 12, 1959.)

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SHRIMP INDUSTRY, NOVEMBER 1959:

Shrimp landings at Mexican east and west coast ports January-July 1959 totaled 77.8 million pounds (heads-on), 48.7 percent more than the landings in the similar period of 1958. Landings on the west coast were up 47.1 percent and those on the east coast rose 53.2 percent.

| | 1959 | 1958 |
|---------------------|----------------------|------|
| | .. (Million Lbs.) .. | |
| Pacific coast | 56.1 | 38.2 |
| East coast | 21.7 | 14.2 |
| Total | 77.8 | 52.4 |

Vessels Registered for Shrimp Fishing: During January-July 1959, a total of 7,619 fishing craft was registered for shrimp fishing in Mexico. Of this total, only 1,198 were ves-

sels of over 10 tons. Due to possible duplication, it is estimated that there were only about 1,000 active shrimp trawlers operating January-July 1959. Fishing craft 10 tons and under are largely dugout canoes powered by oars, sail, or outboard motor and used for fishing in the inland bays and lagoons.

| Vessel Size | Pacific Coast | Gulf Coast | Total |
|----------------------|--------------------|------------|-------|
| |(Number)..... | | |
| 1-10 tons | 3,503 | 2,918 | 6,421 |
| 11-50 tons | 585 | 343 | 928 |
| 51-100 tons | 155 | 90 | 245 |
| 101 tons and over .. | 11 | 14 | 25 |
| Total | 4,254 | 3,365 | 7,619 |

Current Ex-Vessel Prices: Ex-vessel prices shown in table 3 are for Salina Cruz (west coast) and Ciudad del Carmen (Gulf of Mexico) and are current as of November 5, 1959. At that time in those two ports there was no price differential on the basis of species or color. This, of course, is unusual and reflects United States market conditions. In Mazatlan and Guaymas white shrimp commanded a higher price than brown.

| Size (Number/Lb., Headless) | At | At |
|-----------------------------|-------------------------------|-------------------|
| | Salina Cruz | Ciudad del Carmen |
| | .. (U. S. Cents Per Pound) .. | |
| Under 15 | 44 | 53 |
| 16-20 | 42 | 48 |
| 21-25 | 33 | 41 |
| 26-30 | 27 | 36 |
| 31-35 | - | 32 |
| 31-40 | 25 | - |
| 36-40 | - | 27 |
| 41-50 | 20 | 23 |
| Over 51 | 15 | - |
| 51-60 | - | 17 |
| Over 61 | - | 12 |

Packing, Processing, and Shipping Costs: At Salina Cruz and Ciudad del Carmen, November 1959 costs (in U. S. cents per pound) for packing, processing and shipping were: packing material, 3; export duty and other charges, 4; ocean freight to United States, 3; hauling charges, 1/2; storage charges, 1/2; association dues, 1/4. In addition, for grading, packing, and freezing at Salina Cruz costs were 7 cents a pound and at Ciudad del Carmen 3-1/2 cents a pound. At Salina Cruz there is also a cost of 1-1/2 cents a pound for freight to port of embarkation. Total costs at Salina Cruz were 19.75 U. S. cents a pound and at Ciudad del Carmen 14.75 U. S. cents a pound.

Export Prices: On shipments from the Carmen-Campeche Gulf of Mexico area, export prices for shrimp are based on f.o.b. Brownsville, Tex., prices minus 15 U. S. cents a pound. Export prices at Salina Cruz are also based on Brownsville prices minus 20 U. S. cents a pound.

| Size (Headless Count Per Pound) | White Shrimp Quality | | Brown Shrimp |
|---------------------------------|---------------------------------|-----|--------------|
| | 1st | 2nd | |
| |(U. S. Cents a Pound)..... | | |
| Under 10 | 72 | 67 | 62 |
| Under 15 | 72 | 67 | 58 |
| 16-20 | 72 | 67 | 58 |
| 21-25 | 56 | 51 | 49 |
| 26-30 | 47 | 42 | 42 |
| 31-40 | 38 | 35 | 35 |
| 41-50 | 33 | 30 | 30 |
| 50-65 | 28 | 26 | 26 |
| Over 66 | 26 | 23 | 21 |

Mexico (Contd.):

At Mazatlan on the central west coast of Mexico, November 1959 export or f.o.b. prices for frozen shrimp (as determined by deducting sales commission of 7 and 8 percent in the United States, freight, and border crossing fees) varied from 72 U. S. cents a pound for under 15 count first quality white shrimp to 21 U. S. cents a pound for 66 and over count brown shrimp.

Exports: Mexican shrimp exports during the first nine months of 1959 totaled 41.8 million pounds of frozen shrimp, valued f.o.b. at 315.4 million pesos (US\$25.2 million). Exports of fresh, canned, and dried (mostly fresh) shrimp amounted to only 10,000 pounds, valued at 76,000 pesos (US\$6,100). The bulk of the frozen shrimp exports were shipped to the United States. Of the 109,000 pounds shipped to other countries, a large percentage went to Nicaragua and some to Guatemala and Jamaica. Nearly all of the fresh shrimp exports of 9,500 pounds were shipped to the United States. Of the canned shrimp exports of 440 pounds, half were shipped to the United States and the other half almost equally divided among Guatemala, Spain, France, and Canada. (United States Embassy dispatch from Mexico, November 5, 1959.)



Morocco

LANDINGS OF FISH AND SHELLFISH, 1958:

During 1958 landings of fish and shellfish in Morocco amounted to about 355 million pounds. Landings of sardines made up 76.8 percent of the total. Other varieties of importance were about 17 million pounds of bluefin tuna (includes small amount of skipjack), about

Table 1 - Morocco's Landings of Fish and Shellfish, 1958

| Latin Name/ | Common Name | Quantity 1,000 Lbs. |
|----------------------------------------------------|--------------------------------|------------------------|
| <i>Sardinia pilchardus</i> | Sardine or pilchard | 272,844 |
| <i>Engraulis eucrassicholus</i> | Anchovy | 1,600 |
| <i>Thunnus thynnus</i> | Bluefin tuna | 16,638 |
| <i>Sarda sarda</i> | Atlantic bonito | 1,698 |
| <i>Katsuwonus pelamis</i> | Skipjack tuna | 132 |
| <i>Scomber scombrus</i> & <i>S. colias</i> | Mackerel & Spanish mackerel | 17,119 |
| <i>Axius biasus</i> | Frigate mackerel | 5,393 |
| <i>Euthynnus alletteratus</i> | Little tuna | 280 |
| <i>Merluccius merluccius</i> | Hake | 371 |
| <i>Merluccius senegalensis</i> | Hake | 4,367 |
| <i>Pomatomus saltatrix</i> | Bluefish | 7,227 |
| <i>Xiphias</i> | Swordfish | 486 |
| <i>Pagellus</i> sp. | Sea bream | 4,327 |
| <i>Trachurus trachurus</i> | Horse or jack mackerel | 4,011 |
| <i>Sargus vulgaris annularis</i> | - | 260 |
| <i>Chrysopterus aurata</i> | - | 57 |
| <i>Sciaenops ocellatus</i> | Maigre | 1,299 |
| <i>Lichia vadijo</i> | - | 539 |
| <i>Trigla</i> sp. | Gurnards | 1,084 |
| <i>Orcynopsis unicolor</i> & <i>Lichia arai</i> | - | 482 |
| <i>Morone</i> sp. | Bass or white perch | 133 |
| <i>Mugil</i> sp. | Mullet | 121 |
| <i>Mullus surmuletus</i> | Surmullet | 721 |
| Conger conger & <i>Muraena helena</i> | Conger & morey eels | 345 |
| <i>Anguilla vulgaris</i> | Common eel | 15 |
| <i>Alosa alosa</i> & <i>A. pinta</i> | Shad | 378 |
| <i>Scorpaena scrofa</i> & <i>S. poreus</i> | Scorpionfish | 64 |
| <i>Salpa salpa</i> | - | 371 |
| <i>Rhombus maximus</i> | - | 22 |
| <i>Solea solea</i> | Common sole | 614 |
| <i>Raja</i> sp. | Skates & rays | 791 |
| <i>Mustelus</i> or <i>Squalus</i> sp. | Sharks or dogfish | 701 |
| <i>Cadus luscus</i> | - | 661 |
| <i>Zeno falser</i> | - | 65 |
| <i>Eusytharus lingustula</i> | - | 66 |
| <i>Loligo</i> & <i>Sepia</i> sp. | Squid or cuttlefish | 1,128 |
| <i>Parapenaeus languostris</i> | Shrimp | 2,064 |
| <i>Palinurus vulgaris</i> & <i>P. mauritanicus</i> | Spiny lobster | 45 |
| <i>Homarus vulgaris</i> | Common lobster | 25 |
| <i>Nephrops norvegicus</i> | Norway lobster | 27 |
| <i>Mytilus edulis</i> | Mussel | 156 |
| | Unclassified fish or shellfish | 6,398 |
| Total | | 355,305 |

1/Some uncertainty as to correct spelling of latin names; obvious misspellings in original data corrected to correspond to United States usage.

2 million pounds of bonito and little tuna, and close to 22.5 million pounds of common mackerel, Spanish mackerel, and frigate mackerel. In addition, the 1958 landings included 7.2 million pounds of bluefish, 2.1 million pounds of shrimp, and 4.9 million pounds of hake or whiting.

About 3 million pounds of tuna are canned and a small amount frozen-- mostly exported to the French Customs Zone. Most of the tuna was caught by sardine purse seiners, but about one-third was caught by madragues (fixed nets leading out from shore). There are nine madragues fished in Moroccan territorial waters. (United States Consulate, Casablanca, November 30, 1959.)

Nicaragua

SHRIMP FISHERY TRENDS, APRIL-JUNE 1959:

Shrimp landings in Nicaragua fell off considerably during the second quarter of 1959 and the Collector of Customs reported only 107,000 pounds, valued at US\$46,316, exported during that period. About 90 percent of the exports went to the United States.

A French-owned concern is going ahead with plans for a modern fish processing and packing plant in Bluefields, on the Caribbean Sea coast of Nicaragua, and plans to buy some fishing boats in the United States. (United States Embassy at Managua reported on November 10, 1959.)



Norway

FROZEN FILLET SALES UP FOR 1958/59:

The Norwegian cooperative sales organization Norsk Frossenfisk A/L reports a total production of 19,546 metric tons in 1958/59 (July-June), with a gross sales value of nearly Kr. 67 million (US\$9.4 million). Fillet sales were 12 percent higher than in 1957/58, and total exports increased by about Kr. 5

Norway (Contd.):

million (about US\$700,000). Exports to the United States alone were valued at Kr. 25 million (US\$3.5 million) as against only Kr. 7 million (about US\$1 million) in the preceding year.

Meanwhile, Norway's second largest frozen fish producer has announced plans to expand the capacity of its fillet plant at Hammerfest, North Norway, from 5,000 to 10,000 tons a year. This will provide jobs for some 1,000 plant workers, as compared with about 450 at present.

Under a Government bill submitted to Parliament early in November, the North Norway Development Fund would be authorized to guarantee a Kr. 12.5 million (US\$1.8 million) loan to Norway's second largest frozen fish producer. The loan would help to finance the plant expansion, held to be of great importance to the economy of western Finnmark.

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RESEARCH VESSELS SEEK FISH IN DISTANT WATERS:

The Norwegian ocean research vessel G. O. Sars left the port of Aalesund early in December 1959 to search for the whereabouts of herring in the North Atlantic. After locating the main shoals, G. O. Sars will follow the herring on their eastward migration to spawn off the Norwegian coast.

During the second cruise, expected to start January 1960, the vessel was to be joined by another research vessel, the Johan Hjort, which in December was surveying fishing grounds off West Africa. Initial reports indicated that those waters offer very good conditions for factory trawlers.

Meanwhile, two Sunnmore fishing operators are actively planning to participate in the rich sardine fisheries off Ghana, possibly on a year-round basis. As a first step they have joined Ghana interests in setting up a Ghana-registered fishing firm. (News of Norway, December 10, 1959.)



Poland

FISHING INDUSTRY SEEKS NEW FISHING GROUNDS IN ATLANTIC:

With a marked decline in the Baltic fisheries over the past few years, Poland has turned her attention to searching for new distant-water fishing grounds. At the present time Poland is landing something over 80,000 metric tons of Baltic-caught fish and about 125,000 tons of fish caught in the North Sea and off the Norwegian coast.

The heavy building program for fishing vessels, and the fact that the first of the new series of factoryships is due to go into production in 1960, means however that landings are likely to be increased. By 1965, Poland plans to be landing 260,000 tons of fish annually, and nearly twice that amount ten years later. That is, she will have the capacity to do so, if she can find the fish.

Besides the Baltic and the North Sea, Poland is interested in the north and central Atlantic. But earlier this year the Jan Turlejski left Gdynia on an experimental voyage to test the possibility of using bottom trawls along the coast of West Africa. Fishing off Port Etienne, Mauritania, about 10 tons of various species of fish were caught in four days of fishing, and this was considered successful enough to make the trip worthwhile.

During May 1959, a second expedition left for Labrador Banks. Three trawlers, all oil-burning steam vessels of 500 tons, took part, much of their fishing equipment being supplied by East Germany, who also offered technical advice. The expedition took 31 days and about 200 tons of ocean perch were caught.

The third expedition in 1959 left in July for a 3-month voyage to be made by a 79-ft. cutter to the Bay of Biscay to fish for tuna. The results of this expedition will not be known for some time. (World Fishing, November 1959.)



Portugal

CANNED FISH EXPORTS, JANUARY-AUGUST 1959:

Portugal's exports of canned fish during January-August 1959, amounted to 43,349 metric tons (2,373,000 cases), valued at US\$22.3 million, as compared with 38,267 tons, valued at US\$20.4 million, for the same period in 1958. Sardines in olive oil exported during the first eight months of 1959 totaled 31,294 tons, valued at US\$15.1 million.

| Species | Metric Tons | US\$ 1,000 |
|-----------------------------------------------|-------------|------------|
| Sardines in olive oil | 31,294 | 15,116 |
| Sardine & sardinelike fish in brine | 1,095 | 221 |
| Tuna & tunalike fish in olive oil | 2,499 | 1,784 |
| Anchovy fillets | 4,166 | 3,094 |
| Mackerel in olive oil | 2,605 | 1,283 |
| Other fish | 1,690 | 765 |
| Total | 43,349 | 22,263 |

During January-August 1959, the leading canned fish buyer was Germany with 9,494 tons (valued at US\$4.7 million), followed by Italy with 6,300 tons (valued at US\$3.6 million), United States with 4,133 tons (valued at US\$2.9 million), Great Britain with 3,732 tons (valued at US\$1.7 million), and Belgium-Luxembourg with 2,751 tons (valued at US\$1.3 million). Exports to the United States included 1,731 tons of anchovies, 586 tons of tuna, 1,725 tons of sardines, and 29 tons of mackerel. (Conservas de Peixe, October 1959.)

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CANNED FISH PACK, JANUARY-AUGUST 1959:

The total pack of canned fish for January-August 1959 amounted to 25,290 metric tons as compared with 26,336 tons for the same period in 1958. Canned sardines in oil (15,667 tons) accounted for 61.9 percent of the January-Au-

| Product | Metric ^{1/} Tons | 1,000 Cases |
|----------------------------|---------------------------|-------------|
| In Olive Oil: | | |
| Sardines | 15,667 | 824 |
| Sardinelike fish | 541 | 28 |
| Anchovy fillets | 4,008 | 400 |
| Tuna | 3,864 | 138 |
| Mackerel | 406 | 16 |
| Other species | 804 | 42 |
| Total | 25,290 | 1,448 |
| ^{1/} Net weight. | | |

gust 1959 total pack, up by 8.3 percent from the pack of 14,468 tons for the same period of 1958, the October 1959 Conservas de Peixe reports.

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COD FISHING FLEET HAD POOR SEASON:

By early November 1959 the Portuguese cod fishing fleet has returned from the fishing grounds off Newfoundland and Greenland and confirmed earlier reports of a poor catch. The Delegate of the Portuguese Ministry of Marine, who accompanied the fleet, stated that the yield per hour of trawling in the Greenland area has declined from 4.19 metric tons in 1955 to 2.45 metric tons at present. The catches of the trawl-line vessels declined from about 4.13 tons to 2.79 tons per hour fishing per vessel. The drop in the catch per unit of effort is causing grave concern to the Portuguese cod fishing industry, the United States Embassy in Lisbon reported on November 19, 1959.

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FISHERIES TRENDS, JANUARY-AUGUST 1959:

Sardine Fishing: During January-August 1959, the Portuguese fishing fleet landed 45,242 metric tons of sardines (valued at US\$4,696,590 ex-vessel, or about \$103.80 a ton).

August 1959 landings of sardines totaled 16,802 tons valued at US\$1,712,834. Canneries purchased 59.6 percent, or 10,019 tons, of the sardines (valued at US\$1,048,661 ex-vessel or about \$104.67 a ton) during August 1959. A total of 6,770 tons was purchased for the fresh fish market, and 3 tons were salted.

Other Fishing: The January-August 1959 landings of fish other than sardines were principally 19,591 tons of chinchards (value US\$1,334,087) and 3,031 tons of anchovies (value US\$276,522). (Conservas de Peixe, October 1959.)

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FISHERY LANDINGS IN PORTUGAL, MADEIRA, AND THE AZORES, 1958:

Landings of fish and shellfish (exclusive of the whale and cod fisheries) in Portugal, Madeira, and the Azores in

Portugal (Contd.):

1958 amounted to 275,223 metric tons (about 606.8 million pounds), valued at

112,554 tons landed in 1957. However, the landed value of sardines in 1958 was down sharply (about \$88.39 a metric ton as compared with \$115.93 a ton in

Table 1 - Landings of Fish and Shellfish in Portugal, Madeira, and Azores, 1957 and 1958

| | 1958 | | | 1957 | | |
|-------------------------------------------------------------|----------------|----------------|---------------|----------------|----------------|---------------|
| | Quantity | Value | | Quantity | Value | |
| | Metric Tons | 1,000 Escudos | US\$ 1,000 | Metric Tons | 1,000 Escudos | US\$ 1,000 |
| Portugal: | | | | | | |
| Fish: | | | | | | |
| Tuna & similar | 2,475 | 12,192 | 427 | 1,909 | 10,580 | 368 |
| Anchovy & sprat | 13,332 | 28,720 | 1,005 | 7,499 | 38,146 | 1,327 |
| Spanish & common mackerel | 7,846 | 14,819 | 519 | 16,600 | 27,361 | 952 |
| Chinchards | 39,636 | 88,425 | 3,095 | 39,762 | 85,907 | 2,988 |
| Corvina | 1,375 | 9,075 | 318 | 957 | 6,878 | 239 |
| Sardines | 131,088 | 331,096 | 11,588 | 112,554 | 375,151 | 13,049 |
| Cachucho & besugo | 6,098 | 24,093 | 843 | 6,019 | 19,672 | 684 |
| Pargo & common sea bream | 10,506 | 48,418 | 1,695 | 11,519 | 56,555 | 1,967 |
| Scabbardfish | 2,614 | 14,358 | 503 | 1,673 | 8,999 | 313 |
| Whiting | 14,739 | 128,476 | 4,497 | 11,885 | 110,410 | 3,840 |
| Other | 25,853 | 134,070 | 4,692 | 28,895 | 146,194 | 5,085 |
| Total fish | 255,562 | 833,742 | 29,182 | 239,272 | 885,853 | 30,812 |
| Shellfish: | | | | | | |
| Crabs, lobsters, & other crustaceous | 780 | 17,769 | 622 | 1,420 | 20,732 | 721 |
| Squid | 833 | 5,551 | 194 | 956 | 6,404 | 223 |
| Cuttlefish | 1,663 | 7,123 | 249 | 1,509 | 6,462 | 225 |
| Octopus | 697 | 4,644 | 163 | 650 | 4,741 | 165 |
| Oysters | 869 | 263 | 9 | 491 | 160 | 6 |
| Other mollusks | 1,939 | 1,449 | 51 | 2,331 | 1,697 | 59 |
| Total shellfish | 6,781 | 36,799 | 1,288 | 7,357 | 40,196 | 1,399 |
| Fresh-water fish | 533 | 3,671 | 128 | 536 | 4,817 | 167 |
| Total Portugal | 262,876 | 874,212 | 30,598 | 247,165 | 930,866 | 32,378 |
| Madeira: | | | | | | |
| Fish: | | | | | | |
| Tuna & similar | 1,154 | 5,018 | 176 | 2,747 | 10,243 | 356 |
| Spanish mackerel | 528 | 1,300 | 46 | 508 | 1,242 | 43 |
| Chinchards | 620 | 1,745 | 61 | 452 | 1,275 | 44 |
| Pargo & common sea bream | - | - | - | 32 | 207 | 7 |
| Scabbardfish | 694 | 3,768 | 132 | 877 | 3,683 | 128 |
| Other | 489 | 2,578 | 90 | 949 | 1,721 | 60 |
| Total fish | 3,485 | 14,409 | 505 | 5,565 | 18,371 | 638 |
| Shellfish | 17 | 53 | 2 | 16 | 46 | 2 |
| Total Madeira | 3,502 | 14,462 | 507 | 5,581 | 18,417 | 640 |
| Azores: | | | | | | |
| Fish: | | | | | | |
| Tuna & similar | 2,824 | 5,544 | 194 | 5,511 | 12,898 | 449 |
| Spanish mackerel | 273 | 615 | 22 | 402 | 1,006 | 35 |
| Chinchards | 3,764 | 4,502 | 158 | 3,677 | 5,125 | 178 |
| Sardines | 1/ | 1/ | 1/ | 286 | 884 | 31 |
| Besugo | 1/ | 1/ | 1/ | 10 | 67 | 2 |
| Pargo & common sea bream | 1/ | 1/ | 1/ | 24 | 102 | 4 |
| Other | 1,934 | 6,673 | 234 | 1,123 | 4,513 | 157 |
| Total fish | 8,795 | 17,334 | 608 | 11,033 | 24,595 | 856 |
| Shellfish: | | | | | | |
| Crabs, lobsters, & other crustaceous | 22 | 589 | 21 | 21 | 542 | 19 |
| Squid, octopus, and other mollusks | 28 | 172 | 6 | 5 | 5 | 2 |
| Total shellfish | 50 | 761 | 27 | 26 | 547 | 21 |
| Total Azores | 8,845 | 18,095 | 635 | 11,059 | 25,192 | 877 |
| Grand Total: Portugal, Madeira, and Azores | 275,223 | 906,769 | 31,740 | 263,805 | 974,475 | 33,895 |

Note: Values converted at rate of 1,000 escudos equal US\$35.

1/ Values less than US\$500.

US\$31.7 million. The 1958 landings were up about 4.3 percent in quantity from the 263,805 tons (about 581.6 million pounds) landed in 1957, but dropped in value by 6.9 percent from the 1957 value of US\$33.9 million. Sardine landings in Portugal in 1958 of 131,088 tons were higher by 16.5 percent from the

1957) from the preceding year and reflected the slump in world markets for many canned fish products in 1958.

Note: Also see Commercial Fisheries Review, May 1959, p. 73.

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Portugal (Contd.):

SARDINE LANDINGS NEAR RECORD IN 1959:

During the fall of 1959 catches of sardines were good and the Portuguese canneries were active. After a late start, sardine landings improved and the total landings for 1959 will be close to a record. Landings of sardines during the last 15 days of October amounted to 14,150 metric tons, valued at about US\$1,127,000.

Exports of canned fish were good, but due to a shortage of tinplate, stocks on hand were declining as of November, the United States Embassy in Lisbon reported on November 19, 1959.

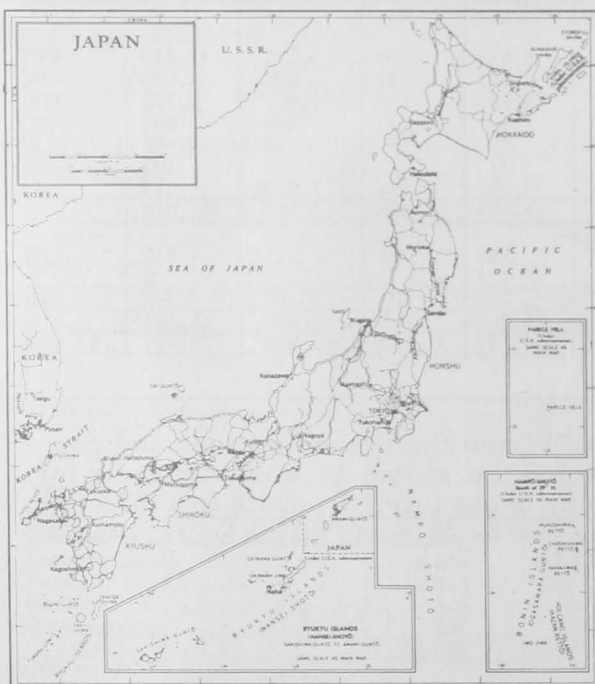


Ryukyu Islands

LANDINGS AND IMPORTS, 1958:

Fishery landings in 1958 in the Ryukyu Islands amounted to 15,786 short tons, excluding 7,785 tons of skipjack tuna.

Many Japanese vessels now exploit productive East China sea-fishing grounds within 250 miles of Okinawa. These fish are taken to Japan, then



shipped back to the Ryukyus for consumption in frozen or processed form.

Imports in 1958 totaled 8,121 short tons, valued at ¥\$2.3 million, as follows: frozen, 2,617 tons; dried and salted, 1,628 tons; dried skipjack sticks, 191 tons; canned fish, 3,685 tons. (Foreign Commerce Weekly, November 2, 1959.)



Spain

VIGO FISHERIES TRENDS, JULY-SEPTEMBER 1959:

Fish Exchange: Landings at the Vigo, Spain, Fish Exchange for the third quarter of 1959 totaled 21,636 metric tons, or 5,165 tons more than the second quarter of 1959 and 3,855 tons more than the same quarter of 1958. The value of landings during July-September 1959 at the Exchange totaled US\$3,723,000 (calculated at the current rate of exchange of 60 pesetas to the dollar), a decrease in dollar value from the previous quarter of about 10 percent, and about 22 percent below the same quarter of 1958.

Hake, small hake, and horse mackerel were the most plentiful species landed in the July-September 1959 period, and in total the most valuable. The albacore tuna season, that began favorably in June and July with landings running well ahead of those for 1958, finished the third quarter at a slightly lower level than for the same period of 1958 (4,230 tons as compared with 4,567 tons).

Sardine landings, after a slow start in June and July, were more plentiful in August and especially in September than they had been in several years. The catch for the quarter totaled 5,574 tons as compared with 2,011 tons for the same quarter of 1958.

Fish Canning and Processing: Fish bought for canning during the third quarter from the Vigo Fish Exchange reached the seasonal peak at 6,575 tons, an increase of 4,919 tons over the second quarter of 1959, and 880 tons more than the third quarter of 1958. Production of fish meal and other byproducts rose from 2,314 tons during the second quarter to 3,467 tons for the July-September quarter, and an increase of 1,665 tons over the third quarter of 1958.

Increased purchases at the Exchange by the canning industry reflect the adequate supply of albacore and the increased availability of sardines over 1958. The low price paid for albacore early in the season did not hold as canners' demand for albacore increased. The average price per kilo paid in September was 14.92 pesetas (about 11.3 U. S. cents a pound or US\$226 a short ton).

The substantially increased purchases of fish for the by-products industry reflected an attempt by the fish meal industry to meet internal consumption needs, a fourth of which was estimated to have been met in 1958 through imports. As reported previously, import licenses for fish meal imports are not being granted until the National Fisheries Syndicate certifies that national production cannot meet demand. In addition, the processors have been able to purchase large quantities of sardines of inferior quality not suitable for canning, raw material which had previously been lacking, the United States Consul in Vigo, Spain, reported on October 13, 1959.

Note: Exchange rate for Spanish peseta was changed from 42 pesetas per US\$1 on July 1, 1959.



Sweden

HERRING EXPORT AGREEMENT REACHED WITH CZECHOSLOVAKIA:

The Swedish west coast fish organization, which handles the export of fish from the west coast of Sweden to Communist countries, has entered into an agreement with Czechoslovakia calling for immediate delivery of 350 metric tons of frozen herring and 500 tons of winter herring to be delivered in January 1960. (United States Consulate in Goteborg, December 1, 1959.)

* * * * *

HERRING SALES TO EAST AND WEST GERMANY INCREASE:

Swedish exports of herring to East Germany of about 4,500 metric tons that accumulated in cold storage plants during a temporary export stop to East Germany (ended late in October) were completed about the end of November 1959, according to a Swedish west coast fishermen's organization.

A spokesman for the organization describes the fall 1959 demand for herring in East Germany as good and sales presented no difficulties. The only problem was catching the fish.

Swedish herring was also in very good demand in West Germany where high prices were being paid. This encouraged Swedish fishermen, who operate large trawlers, to proceed to Cuxhaven when fully loaded and land their herring direct.

The reason for the large West German demand for herring is said to be a result of the poor herring catches made by the West German fishermen in the English Channel. Except for some bad weather during November which considerably reduced the Swedish herring catches off the Norwegian south-west coast at the Egersund Bank in the North Sea, the fishing there has been good. With the return of good weather later in November there were about 100 Swedish vessels fishing on the Egersund Bank, states a November 24, 1959, dispatch from the United States Consul in Goteborg.

* * * * *

NEW FISHERY RESEARCH VESSEL PLANNED:

The keel of a new steel Swedish fishery research vessel was due to be laid at the beginning of 1960 at the naval yard at Karlskrona. It is expected it will be possible to deliver the vessel in the fall of 1960. Its main dimensions are as follows: length over-all 30.25 meters (99.2 feet); length between perpendiculars 25.50 meters (86.7 feet); breadth 6.40 meters (21.0 feet).

An official of the Swedish Fisheries Board in a press interview said that in addition to the vessel's survey duties it will also serve as a supply ship for herring fishermen in the North Sea.

Experimental handling and processing of fish will be part of the work of this vessel, and for that purpose there will be two fish holds. In this field collaboration has been established with the Swedish Institute for Preservation Research which cooperated in planning quick-freezing equipment.

The ship laboratories (one large one for biological and hydrographical examinations and one small one for bacteriological research) will be placed in the forepart of the superstructure on the main deck in order to obtain maximum use of daylight and ventilation. This location also has the advantage of minimum movement while at sea.

The new survey vessel will have two separate echo-sounding units constructed for different frequencies. The larger unit, comprising a recording echo-sounder, a magnifying glass, and a periphone, will be installed in the navigation cabin, and the smaller unit, comprising only a recording echo-sounder, will be located in the laboratory. Further, a marine radar, will be installed. (United States Consulate in Goteborg, November 30, 1959.)

* * * * *

PLANT BEING BUILT TO MAKE FISH PROTEIN CONCENTRATE:

A plant for the manufacture of a protein product made from fish or fish waste and containing a food content consisting chiefly of albumen will be erected at Bua,

Sweden (Contd.):

a fishing village near Varberg, Sweden, according to a report in the Goteborg press. Production of the preparation is expected to commence early in 1960. From 12-15 persons will be employed in the manufacturing process at the out-set. The manager of the factory will be the Hungarian engineer who invented the process.

The product will be exported to underdeveloped countries through the Food and Agriculture Organization. (United States Consulate, Goteborg, November 17, 1959.)



Union of South Africa

EAST GERMANY AND YUGOSLAVIA PURCHASE FISH MEAL AND OIL:

The Chairman of the South African Fish Meal Producers Association returned to Cape Town in November 1959 from a 2½-month sales trip abroad and reported that he had obtained orders for fish meal and oil--US\$1,396,000 from East Germany and US\$698,000 from Yugoslavia. (United States Consulate, Pretoria, November 25, 1959.)

* * * * *

FROZEN FISH DEMAND GROWING:

A Union of South Africa firm has hired a frozen food expert to assist in the promotion of sales of all its frozen products.

It will be one of the expert's duties to tour the Union and possibly the Rhodesias advising retailers generally on the best way of handling frozen products, and of promoting rapid sales. His efforts are being backed by radio and newspaper advertising.

Among the new products recently put on the market by the firm are frozen breaded fish portions and frozen curried fish cakes, both of which are proving very popular with South African housewives.

Throughout Southern Africa in the past two years there has been a big swing towards frozen food products, and more and more products will reach the housewife in that form. (The South African Shipping News and Fishing Industry Review, October 1959.)

* * * * *

SEALING OPERATIONS:

From estimates of numbers on land, it is believed that the total number of seals of all ages inhabiting South African Cape rookeries does not exceed 50,000, one third of which are young animals, the South African Division of Fisheries reports. The term "Cape rookeries" is intended to cover those islands and rocks on which seals congregate--Elephant Rock, Jacob's Reef, Robbesteen, Duikerklip, Seal Island, Geyser Rock, and Quoin Rock.

A flourishing fur-sealing industry has been developed. The industry is mainly concerned with the export of raw pelts and has neglected the byproducts. The number of pelts taken during winter sealing has increased from 27,087 in 1950 to 37,317 in 1955.

So far the annual take of seals has prevented any large-scale recruitment to the adult classes and there is no special need to control the population on any basis other than the usual commercial one of annual killing for profit.

The report states that male seals are much larger than females, the former reaching a body weight of from 450 to 800 pounds, the latter fluctuating between 200 and 300 pounds. Young seals are seldom heavier than 100 pounds.

Seals are seldom found in large numbers at sea, small groups composed of two or three animals being most frequently encountered. Larger concentrations of seals occur only when prey is particularly abundant. Their food consists of fish, squid and crustaceans.

The remarkable growth of the Union's commercial fisheries obscures any impact that the seals may be having on re-

Union of South Africa (Contd.):

sources of small fish. It is considered unlikely that the seals compete seriously with modern fish techniques (electronic shoal-location and the use of lampara seine nets), nor do they affect the commercial catch to any great extent.

Where fishing grounds are artificially depleted, the seal, as a better organized predator, is able to compensate for lack of prey by adjusting its diet and hunting elsewhere. (The South African Shipping News and Fishing Industry Review, October, 1959.)

* * * * *

THREE PADDLE-WHEEL
VESSELS BUILT FOR
OYSTER-SHELL INDUSTRY:

Three of the most unusual vessels ever built in South Africa have been launched from a Cape Town shipyard. A shallow-draught dredger and two barges propelled by paddle wheels will

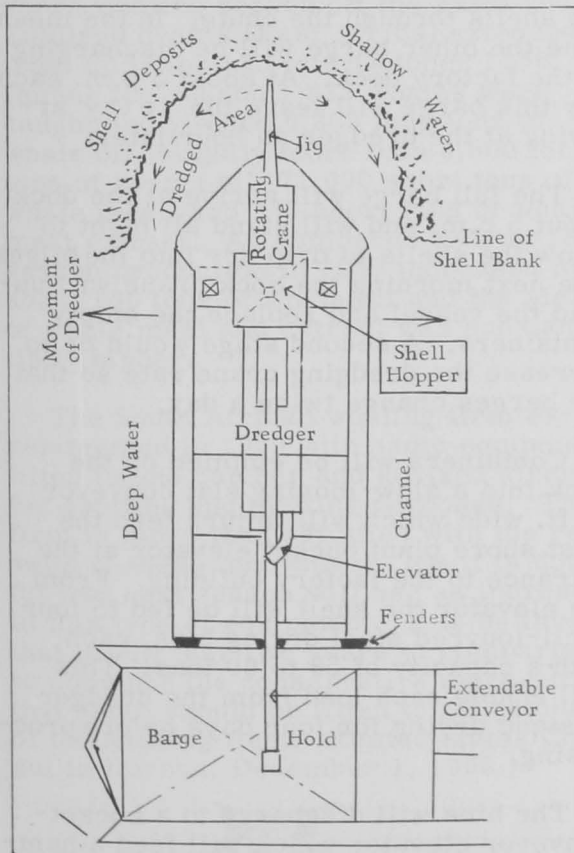


Fig. 1 - Side view of dredger digging oyster shells and loading them mechanically onto the barge, which will take them to the plant.

gather oyster shells from a deposit estimated at tens of millions of tons in the Langebaan Lagoon.

Behind this vast deposit lies one of the great marine mysteries of the Cape West Coast. Some time in this lagoon extension of Saldanha Bay, many years ago a species of red oysters, Ostrea atherstonei, thrived and abounded in countless millions. This species can still be found in small quantities on the Cape coast, but some change in water temperature or silting killed it off in the Langebaan Lagoon.

The oyster shells of Langebaan--in a 16 square mile area, 30 and more feet deep--form one of the largest known deposits in the world, approached in extent only by a deposit in Denmark and another in Chesapeake Bay in the United States.

The Langebaan shells have been gathered for 50 years and more, but their real value has only been realized in the past 7 or 8 years.

The shell beds, about six miles up the lagoon, are large flat deposits covered by a thin layer of silt and intersected by channels. They have been worked by a 90-year old converted lighter, which gathers the shells for washing and sun-drying ashore. These shells are then crushed and the grit and powder is despatched in hessian bags.

Production has reached 300 tons a month, all of it sold in the Union. This will now be stepped-up to 2,000 tons a month to meet all local requirements and perhaps also leave a surplus for export abroad where the market, like the Langebaan deposit, is almost unlimited.

To increase production, the South African firm is re-equipping its oyster-shell business. In addition to the three paddle-wheel vessels, a new factory was erected.

The two barges, which were launched last in September, are flat-bottomed vessels of welded steel construction. They have flat plate and cone section hulls, are each 58 ft. long, 21 ft. 4 in. wide, 5 ft. deep, and are designed to op-

Union of South Africa (Contd.):

erate in only 2 ft. 8 in. of water. Self-trimming vessels, they are designed to maintain an even keel while loading and carrying shells fed from the dredger. Each barge is equipped with two paddle wheels.

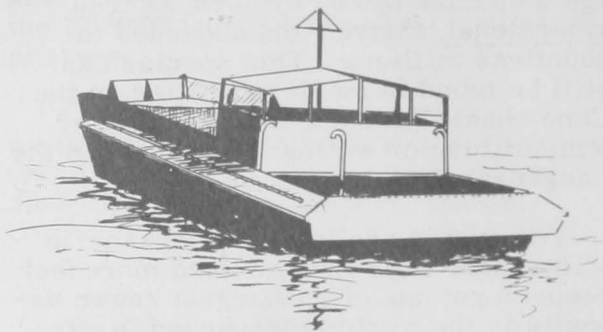


Fig. 2 - Wide-beamed 58-foot long paddle-wheel barge with shallow draft used for loading and carrying oyster shells in South Africa.

Each barge will carry 56 tons of shells in 24 containers measuring 4 ft. by 4 ft. by 6 ft. 6 in. Two types of container will be tried, one of metal framing with wire mesh to allow the shells to drip and one of solid plate with perforated plate bottom also to permit drip. These containers will be carried in a spacious hold 16 ft. 9 in. wide by 25 ft. 1 in. long.

The barges are utility craft. Buoyancy will be maintained by a watertight forepeak, a watertight compartment below the simple wheelhouse, and by watertight compartments aft around the two paddles.

The barges will probably be crewed by one man, who may be assisted by crew carried to and from the dredger.

This dredger, which is 51 ft. long, is similar in basic design and construction to the barges, but has a closed engine-room, raised bridge, and spacious accommodation for the crew.

The main paddle drive will be by a 40 hp. electric motor through double chain reduction with a tramway controller on the bridge. But the dredger's paddles are for auxiliary movement only as she will warp her way across the oyster beds and will only use them for

occasional movements to other beds, to and from the factory jetty, or for trotting her moorings. Thus the main function of the engine will be to generate electricity for motors driving the dredging plant and for lighting.

Dredging of the beds will be by a grab bucket dredging crane, mounted on the foredeck. This crane will have a 20-ft. boom and all-round revolving slewing gear. The receiving hopper of the dredger is arranged so that, when slewing from dredging, the crane will not have to luff.

From the grab bucket the shell will fall into a hopper and from this into a three-stage vibrating shell-washing plant below deck, which will remove sand and other foreign matter. After washing, the shell will be lifted in stainless steel buckets and fed through a telescopic chute aft down to the containers in the barge.

It is planned that initial recovery will be 56 tons of shell in an eight-hour working day. While the dredger works into the beds, the barge will lie aft receiving the shells through the chute. In the meantime the other barge will be discharging at the factory dock. At about 3 p.m. each day this barge will leave the jetty arriving at the dredger an hour later.

The full barge will arrive at the dock about 5 p.m. and will stand all night to allow the shells to drip dry into the bilges. The next morning the dock crane will unload the vessel and replace the empty containers. A second stage would be to increase the dredging crane rate so that the barges change twice a day.

Containers will be emptied on the dock into a slow-moving slat conveyor 14 ft. wide which will in turn feed the first shore plant bucket elevator at the entrance to the factory building. From the elevator the shell will be fed to four shell-louvred steel drying bins, each with a capacity of 56 to 60 tons. This will enable each load from the dredger to stand drying for four days before processing.

The bins will discharge to a bucket-conveyor elevator which will feed a hammer mill crusher. From this crusher the shell grit and powder will go to over-

Union of South Africa (Contd.):

head sieve screens which will divide it into grit, fines, and powder. Large-size overtailings will be returned by spout to the crusher feed.

Crushed and sorted shell will be piped to grading bins for feeding to the automatic packing and weighing machines below. These machines will pack it into paper valve bags, each containing 100 pounds of shell grit, fines, or powder.

A feature of the factory and dredging plant is that all conveyors, elevators, chains, elevator and conveyor sections, and electric motor drives will be identical and interchangeable. (The South African Shipping News and Fishing Industry Review, October 1959.)

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WHALING LAND STATION SEASON IN 1959 SUCCESSFUL:

The Union of South Africa's 1959 off-shore whaling season off the Natal and Zululand coasts (East Africa) extended from mid-April to mid-October 1959. During the season 1,829 whales were caught and yielded 6,285 long tons of whale oil, slightly more than 3,800 long tons of sperm oil, 71,000 short tons of whale meal, and 345 short tons of whale meat extract. As compared with the 1958 season production in 1959 increased by about 100 tons of whale oil and the yield of whale meal and extract was substantially higher.

The South African whaling firm experimented in 1959 with asdic equipment fitted to one catcher and utilized aircraft for spotting and plotting purposes. The firm is more than satisfied with the results of these innovations, but it is doubtful that next season will see an increase in this type of equipment. It is believed that it will take two years of comparison to convince the conservative management that asdic should be fitted to all catchers of the whaling fleet. (United States Consul in Durban, December 1, 1959.)



U. S. S. R.

GOOD FISHING GROUNDS FOUND IN DAVIS STRAIT OFF WEST GREENLAND:

Rich fishing grounds off the coast of West Greenland in Davis Strait have been discovered by the Soviet fisheries research vessel Muksun. The 400-mile stretch from Cape Farewell on the southern tip of Greenland to Disco Island on the west coast has been found to abound in cod, ocean perch, wolffish, and flounders.

The Muksun, whose catch on some days exceeded 12 metric tons, reported that the new grounds could be fished by all types of fishing vessels.

Purpose of the expedition undertaken by the Muksun, which carried scientists from the Baltic Sea Fisheries and Oceanographic Research Institute, was to map the ocean bed and concentrations of fish with a view to obtaining the most efficient trawling operations and improving techniques.

The maps prepared by the Muksun's oceanographers, it is expected, will help fishermen of many countries in exploiting the rich fisheries off the coasts of Greenland. (World Fishing, November 1959.)

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TUNA FISHING IN THE PACIFIC OCEAN INITIATED:

The Soviet Union has begun its first trial fishing for tuna in the Pacific Ocean, according to a report in Fiskets Gang (November 12, 1959), a Norwegian fishery trade periodical. The original news item appeared in Leningradskaja Pravda (October 18).

The first Russian specially-built long-line vessel for tuna fishing left port early in the fall of 1959. The 800-ton vessel has a Diesel motor of 600 hp. It is 151 feet long and almost 30 feet in breadth, and is equipped with special winches and fishing gear consisting of 74.6 miles of long line. The vessel can remain at sea for two months and has a crew of 25.

U. S. S. R. (Contd.):

In all there are 12 tanks on the vessel calculated to hold 120 metric tons of tuna plus freezer space. Two of the tanks are for the livers of sharks, which are often taken on the tuna lines.

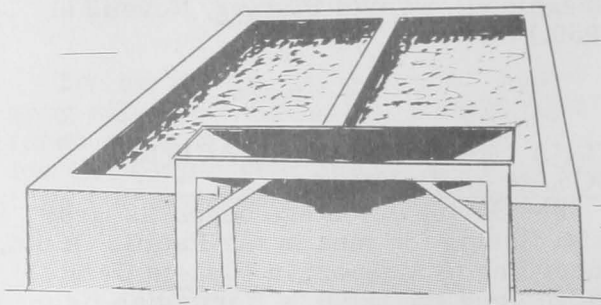


United Kingdom

CONTAMINATION IN OYSTERS ERADICATED BY NEW TREATMENT:

The British health authorities are permitting the sale of oysters harvested from suspected contaminated areas provided the shellfish are cleansed in tanks in accordance with the Ministry of Agriculture and Fisheries Laboratory's recommendations. A number of British oyster planters have installed and are operating cleansing tanks.

The largest cleansing plant is in West Mersea. The plant consists of three double 20 feet by 5 feet by 2 feet 6 inches reinforced concrete tanks laid side by side, with two sheds for housing water-circulating pumps, ultraviolet lamp batteries, weir tanks, and cascade towers.



Double reinforced concrete tank capable of treating 10,000 oysters at one time.

These and all the auxiliary equipment necessary to operate the plant--trays for the oysters, bagging equipment, and pumps and hoses for refilling the tanks--are enclosed by a 6-foot wooden fence. The plant covers some 400 square yards and costs between £1,500 and £2,000 (US\$4,200-5,600).

Oysters are brought into the enclosure in baskets and are carefully tipped (so that none of them are damaged) on to a clean concrete surface at the head of the tanks. There they are given a

thorough washing to remove all the mud. Then they are placed in 5 feet by 2 feet wood framed trays with wire netting at the bottom--500 to a tray, no more.

The trays are placed in the treatment tanks which have already been filled with clean sea water. Each double tank will hold 20 trays; so that the total number of oysters that can be treated simultaneously in that plant is 30,000.

Water is then circulated by the pumps installed in the sheds. It is drawn from the bottom of the tanks through pipes into overhead tanks in the sheds. In the tanks it passes at a very shallow depth over a weir and under ultraviolet lamps. Then it is carried to cascade towers in which it drops some 3 or 4 feet and is aerated in the process.

From the towers it is led back to large diameter pipes running round the top edges of the treatment tanks. From small diameter branch pipes, fitted at intervals in the large one, the water spurts upwards and inwards--for oxygenation--back into the tanks.

After 48 hours in the treatment tanks, the oysters are completely cleansed. They then have to be lifted from the trays and bagged for transport to market. (The Fishing News, October 16, 1959.)



Venezuela

JAPANESE-VENEZUELAN TUNA FISHING OPERATIONS IN CARIBBEAN:

The joint fishing venture in Caribbean waters by Japanese and Venezuelan interests is popular in Venezuela, according to a report from Japan. Two Japanese long-liners have been fishing in the Caribbean under an agreement between the Chiba Prefecture Fisheries Promotion Company of Japan and Venezuelan interests. The Japanese invested 49 percent and the Venezuelans 51 percent in the joint undertaking and Chiba Prefecture has supplied the two 85-ton fishing vessels and crews. The Prefecture is said to have agreed to construct two more fishing boats at a cost of US\$222,222

Venezuela (Contd.):

with construction scheduled to begin by the end of 1959.

The Venezuelans report that demand for tuna caught by the Japanese is heavy and steadily growing.

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TUNA VESSELS FISHING OFF BRITISH WEST INDIES:

Several Venezuelan fishing vessels, from 60-80 feet over-all length, are fish-

ing for tuna about 15 miles southwest of the British West Indies Island of Grenada. According to the West Indies Fisheries Bulletin of September/October 1959, the tuna are iced aboard the vessels and landed in Venezuela. Catches are reported to average 50 tuna a day per boat, with occasional daily catches of 100 tuna.



WHALE'S TEMPERATURE AND HEART BEAT RECORDED

Two Woods Hole scientists obtained a cardiogram and temperature observations of a 45-foot whale early in December 1959. For years scientists have tried vainly to obtain such information of the largest existing animals.

A marvelous opportunity occurred when a 50-ton male finwhale beached at Provincetown, Mass., on the tip of Cape Cod and stayed alive for several hours. Warned by a Woods Hole observer, Dr. John W. Kanwisher of the Woods Hole Oceanographic Institution and Dr. Alfred W. Senft of the Marine Biological Laboratory hastily collected equipment and took the measurements until shortly before the whale died.

The cardiograms showed a pulse beat of 25 per minute (human--72 per minute) and the estimated relative size of the heart as about 500 pounds, compared to some 250 grams (8.8 ounces) for a human heart. Dr. Senft also determined how the heart sits in the chest and the time interval from the pacemaker of the heart to the contraction of the ventricle. The electrodes necessary to measure the small electric currents which occur in connection with the contraction of the heart muscle were improvised by Senft by using some sharpened welding rods. These were stuck some 8 inches through the whale's blubber in positions similar to those used for a human cardiograph. The observed voltages did not differ markedly from those of man's heart, despite the size differences. Of course, it must be kept in mind that the beached whale was not a particularly happy one.

As the whale's condition deteriorated there were changes in the cardiogram not unlike those seen in humans when the oxygenation is impaired. It appeared that the whale suffered a conduction block, a common defect in man's heart.

While the cardiograms were made, Kanwisher obtained temperature measurements and collected respiration samples from the whale's blowhole. Kanwisher has worked for years on the temperature regulation of animals and has worked on questions such as: "How does a whale keep warm in polar seas" and "how does he lose heat when swimming fast"? A whale has no sweat glands and cannot take its overcoat (blubber) off. As in the case of the heartbeat of the large whales, observations have been unsuccessfully tried for years.

The Provincetown whale had an internal body heat of 92° F., while the fins and tails had a temperature of 50° F. Initially, the dorsal fin (used as a radiator) was much warmer.

Gas samples taken from the whale's breath showed that the animal's lungs were not functioning well. The whale extracted only one-third as much oxygen from the inhaled air as humans do.

The heart specialist Dr. Paul Dudley White, who has spent much time and effort to obtain cardiograms of large whales, was informed of the successful observations and offered to give his opinion on the records. Accordingly, Senft and Kanwisher met White in Boston, together with a representative of an instrument manufacturing company. It was emphasized that the obtained information is but one phase in a continuing program of observations and that much more work remains to be done. Accordingly, a program was initiated to make future plans for an expedition and to determine what sort of equipment should be readily available to prevent on the spot improvisation.