



International

TERRITORIAL WATERS

UNITED STATES RESERVATION ON INTER-AMERICAN JURIST COUNCIL RESOLUTION ON TERRITORIAL WATERS: The Inter-American Council of Jurists concluded a meeting in Mexico City on February 5, and in the concluding session of that meeting a resolution on territorial waters was passed. The Council is made up of specialists in international law from each of the American Republics. The United States and other delegations raised basic questions regarding the contents of the resolution, and the United States representative filed a strong reservation on behalf of the United States both as to the contents of the resolution and the method used to pass it. The text of the reservation filed by the United States Government follows:

DECLARATION AND RESERVATION OF THE UNITED STATES OF AMERICA
ON THE RESOLUTION ON TERRITORIAL WATERS AND RELATED
QUESTIONS, ORGANIZATION OF AMERICAN STATES,
INTER-AMERICAN COUNCIL OF JURISTS,
THIRD MEETING, MEXICO CITY,
JANUARY-FEBRUARY 1956

For the reasons stated by the United States representatives during the sessions of committee I, the United States voted against and records its opposition to the Resolution on Territorial Waters and Related Questions. Among the reasons indicated were the following:

That the Inter-American Council of Jurists has not had the benefit of the necessary preparatory studies on the part of its permanent committee which it has consistently recognized as indispensable to the formulation of sound conclusions on the subject;

That at this meeting of the Council of Jurists, apart from a series of general statements by representatives of various countries, there has been virtually no study, analysis, or discussion of the substantive aspects of the resolution;

That the resolution contains pronouncements based on economic and scientific assumptions for which no support has been offered and which are debatable and which, in any event, cover matters within the competence of the specialized conference called for under resolution LXXXIV of the Tenth Inter-American Conference;

That much of the resolution is contrary to international law;

That the resolution is completely oblivious of the interests and rights of States other than the adjacent coastal States in the conservation and utilization of marine resources and of the recognized need for international cooperation for the effective accomplishment of that common objective; and

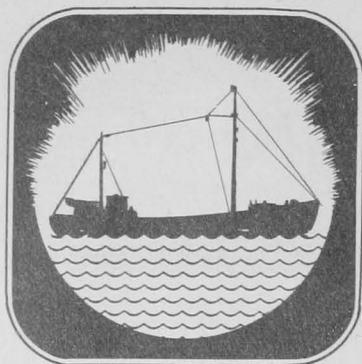
That the resolution is clearly designed to serve political purposes and therefore exceeds the competence of the Council of Jurists as a technical-judicial body.

In addition, the United States delegation wishes to record the fact that when the resolution, in the drafting of which the United States had no part, was submitted to committee I, despite fundamental considerations raised by the United States and other delegations against the resolution, there was no discussion of those considerations at the one and only session of the committee held to debate the document.

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

NORTHWEST ATLANTIC FISHERIES COMMISSION

ANNUAL MEETING ANNOUNCED: The Annual Meeting of the International Commission for the Northwest Atlantic Fisheries will be convened at Commission headquarters in Halifax, Nova Scotia, June 11-16, 1956. The first plenary session is scheduled to open on June 11. A symposium on cod is to be held on June 14.



Notifications of the Annual Meeting have been circulated to member countries from the Secretariat.

Regulations of the trawl fishery for haddock and cod in subareas 3, 4, and 5 proposed by the Commission at its 1955 Annual Meeting were forwarded to the Depository Government (United States) for transmission to member countries. Up to date the Secretariat has been informed by the Depository Government of the acceptance of these regulations by Norway and Portugal, a February 10 newsletter from the Commission reports.

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UNITED STATES RESEARCH PROGRAM FOR 1956 IN COMMISSION AREA:

Operations of the "Albatross III": This vessel will be operated throughout the year in the Convention Area, principally in Subarea 5 and especially in the region of Georges Bank. In the winter and spring, plankton and hydrographic surveys will be conducted to determine the fate of the 1956 spawning of haddock. During the summer, studies will be made of sea scallops (*Placopecten magellanicus* (Gmelin)) and of bottom fauna as related to the occurrence of bottom fish. In the fall, studies will be made of the distribution of the 1956-year class of haddock. As time permits, other cruises will be made for purposes of tagging and mesh selectivity studies. No cruises are planned beyond Subarea 5 except to Browns Bank, south of Nova Scotia (Subarea 4).

Operations of the "Delaware": During 1956, the Delaware will make seven cruises in Subarea 4 in deep-water exploration for ocean perch. These cruises will average about 12 days each. Seven cruises are planned in Subarea 5 exploring for commercial concentrations of fish or shellfish in deep water. One cruise in April will be made in Subarea 5 to conduct antibiotic ice experiments.

Hydrographic Studies: The Woods Hole Oceanographic Institution will be making special hydrographic studies south of Cape Cod (Subarea 5) and will test a number of automatic devices for recording temperature and currents. Observations will be taken routinely from lightships.

Other Studies: In addition to the field work described above, the usual sampling of the commercial catches and also the general analyses for population studies of haddock and ocean perch will be done. To this may be added silver hake, red hake, and sea scallop in Subarea 5. Gear selection studies and studies of conversion factors will be continued.



Australia

QUEENSLAND SHRIMP FISHERY: The years 1954 and 1955 saw substantial increases in prawn or shrimp production in Queensland's waters following the introduction of trawling methods. These trawlers maintain constant radio contact over approximately 1,200 miles of coastline, from Cairns to the southern border, for the latest fishing information.

Shrimp are delivered to and sold by the Queensland Fish Board. The ex-vessel price is determined at auctions on the basis of supply and demand. However, shrimp caught in Queensland waters are not all sold in that State but may be shipped to and sold in other Australian states.

High prices are presently being paid for shrimp in Sydney markets, according to a February 23 communication received by the U. S. Fish and Wildlife Service.

A news release from Sydney, dated February 14, points out that Australian Trade Authorities are looking to the Australian fishing industry to build up export markets, particularly in North America. Spiny lobster exports already are a big dollar earner, and recently there have been inquiries, for shrimp, which abound in rich fishing grounds off the Queensland and New South Wales coasts. The yield from these grounds in 1955 was 6 million pounds. The Australian Director of Fisheries believes that shrimp exports could earn up to US\$10 million a year. A spokesman for the fishing industry said that the Federal Government had been asked to set up a Fisheries Council to develop and stabilize the fishing industry in Australia.

The big increase in the Australian shrimp catch in the last 12 months has been due principally to the discovery of rich fishing grounds off Bundaberg, Queensland. In New South Wales, the shrimp catch in the last five years has increased by about 1 million pounds each year, and the 1954/55 fiscal year yield was more than 4 million pounds. Queensland's catch in the same period was 2 million pounds. Queensland and New South Wales are Australia's main shrimp-producing states.

Note: See Commercial Fisheries Review, February 1956, p. 44.

--Personal Communication from Stewart McCracken,
El Monte, Calif. (2/23/56)



Ecuador

FIRST NATIONAL FISHING CONGRESS: Ecuador's first national fishing congress was held under the auspices of the National Fishing Institute (with the support of the Ecuadoran Government) at Quito, February 15-17, 1956. The agenda included: (1) Maritime policing of fishing vessels; (2) Fishing chart for ocean patrols; (3) Regulations of the activities of foreign vessels in Ecuadoran waters; (4) Regulations for bait fishing; (5) Necessity for new law on fishing and hunting; (6) A National Commission for fishing development; (7) The fishing industry and the State; (8) Regulations for radio communications between land bases and vessels; (9) Documentation of foreign seamen serving on fishing vessels in the service of national companies; (10) Oceanographic Institute.

The Central Bank was scheduled to participate in the Congress, according to a January 10 dispatch from the United States Embassy at Quito. The Bank is concerned with exports of fish and shellfish, the imports necessary for the fishing industry, and monetary regulations governing these exports and imports.



France

FISH CANNING TRENDS FOR 1955: The sardine catch in 1955, the lowest since 1948, had an adverse effect on the fish canning industry in Brittany, France, according to a January 30 note from the United States Embassy in Paris. Only the tuna catch enabled canneries to keep running.

At a meeting of the Sardine Industry Committee held at Nantes on November 3, 1955, it was unanimously decided to bar further importations of foreign and Moroccan sardines.



Guatemala

FISHING LICENSES: Decree 550, recently issued by Guatemala, authorizes the Ministry of Agriculture to grant licenses for a maximum period of ten years to fish in the country's rivers, lakes, or seas. This decree replaces a resolution of January 22, 1955, which authorized the granting of licenses (no mention made of time limit) without necessity of recourse to bidding, states a United States Embassy dispatch (February 23) from Guatemala City.



Iceland

SHRIMP AND LOBSTER FISHERIES: Iceland's 1955 production of frozen shrimp amounted to 20.1 metric tons and of lobster, 10.3 tons, reports a February 6 United States Embassy dispatch from Reykjavik. No other crustaceans are produced in Iceland.

The Fisheries Association estimates the annual canned shrimp production between 10 to 20 metric tons, the majority of which is consumed locally.

Exports of frozen shrimp and lobster during the year 1955 totaled 36.6 metric tons--30.9 tons to the United States and 5.7 tons to the United Kingdom. The export statistics combine shrimp and lobster and no breakdown of each is available.

The Icelandic shrimp is smaller in size and of a stronger taste than the shrimp caught off the United States east coast. The lobster caught off the Icelandic coast is of genus Ephrops norvegicus and lacks the chelae or pincerlike claws.



India

JOINT INDO-JAPANESE FISHING ENTERPRISE: An Indo-Japanese fishing enterprise (the New India Fisheries Limited) has been registered as a public limited company in Bombay to exploit the fishery resources in the deep sea waters off the Bombay and Saurashtra coasts. The company's stocks were being offered to the public in mid-February, a United States consular dispatch (February 17) from Bombay announces.

According to an announcement published by the promoters in the local press, the new company will have an authorized capital of 10 million rupees (US\$2,100,000) of which the initial issue will total Rs. 1,500,000 (US\$315,000). Of this amount, the Taiyo Fishery Company Limited of Japan, which will share its technical knowledge and experience with the new firm and also supply fishing trawlers and technicians, has been allocated 49 percent in consideration for the equipment and services it will provide. Of the remaining 51 percent, the Indian promoters of the firm and their friends have agreed to take up 2,056 shares of the total value of Rs. 205,600 (US\$43,176) and the balance of Rs. 559,400 (US\$117,474) made up of 1,443 preference shares and 4,151 ordinary shares of Rs. 100 (US\$21) each, are available for public subscription. The company will have 8 Indian and two Japanese directors.

A significant feature of the new flotation is the offer of certain financial guarantees by the Japanese firm. Besides guaranteeing the Indian shareholders a minimum dividend of 6 percent every year, the Japanese firm has agreed, in the event of liquidation of the company, to indemnify the Indian shareholders against any loss in capital.

The aims and objects of the company, as set out in the Memorandum and Articles of Association filed with the Registrar of Companies, Bombay, include the exploitation of the fishing grounds in the Arabian Sea off the Bombay and Saurashtra Coasts by means of modern technical fishing methods such as are used in Japan. The company will also engage in other related activities, such as the installation of refrigeration plants and erection of fish storages. As catches increase, ancillary industries such as shark-liver oil production and fish canning will be organized.

It is understood that the Japanese company will provide the new company with four bull trawlers and about 30 technicians from Japan. It is proposed to train local personnel for the positions of skippers, mates, boatswains, engineers, and radio operators in due course. The boats were expected to arrive in Bombay the last week of March and fishing operations were to commence in April 1956.

The present venture is the outcome of the successful trial fishing operations by an otter trawler belonging to the Japanese company in the Arabian Sea during the last two or three years. In 1952/53, this trawler caught 1,163 metric tons of fish in 22 voyages and in the following year it caught 987.5 tons in 21 voyages. Fishery experts believe that bull-trawling will be even more successful as is evidenced by the results of experimental operations of the Government of India's Pilot Deep Sea Fishing Station in Bombay. Two bull trawlers belonging to the Station caught on an average 130 percent more fish than the Japanese trawler while operating simultaneously in the same fishing grounds off Saurashtra during 1953/54. Considering that the Government of India's trawlers were each only one-half the size of the Japanese trawler and, moreover, were not ideally suited for bull-trawling as these were built for otter trawling, their performance is said to underscore the relative superiority of bull-trawling. This method of commercial fishing in the Arabian Sea is believed to offer considerable potentialities.

Note: Values converted to US\$ equivalents on the basis of 1 rupee equals US\$0.21.



Japan

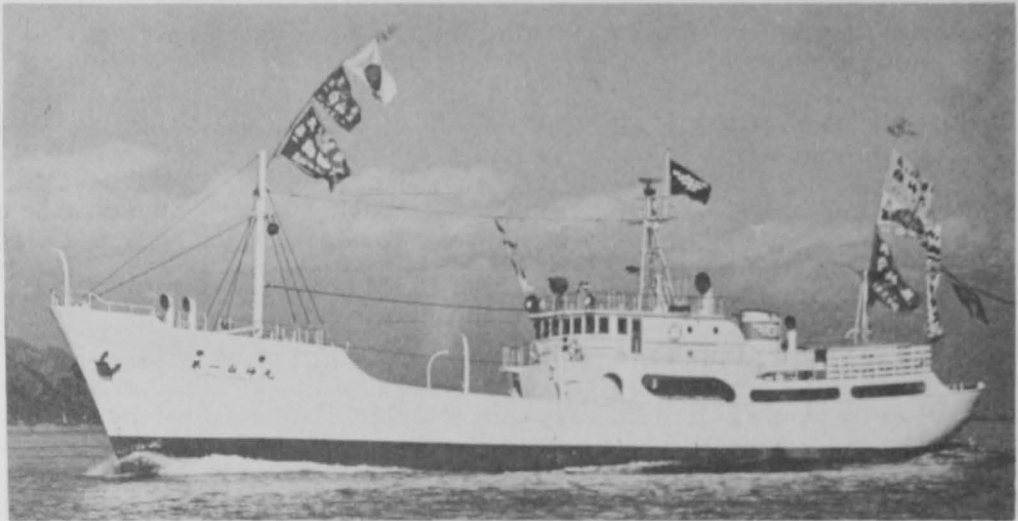
DESCRIPTION OF MOST ADVANCED TYPE TUNA VESSEL: The Kuroshio Maru No. 21, now on her fifth trip to the Indian Ocean between Ceylon and Madagascar fishing for yellowfin tuna, is one of the most advanced types of tuna vessels in Japan, according to a January 24 report from the United States Embassy in Tokyo.

This vessel, built in 1954, is a refrigerated-cargo carrier-type of 1,858 gross tons (1,383 deadweight tons), powered by a 2,100 hp. Diesel engine, and a speed of 13 knots. The vessel's equipment includes radar, loran, echo-sounder, direction finder, and gyrocompass.

As the term is used in Japan, a "mothership" is a larger vessel that accompanies smaller or catcher boats that do the actual fishing. The "mothership" acts as a carrier for the catch and as a source of supplies. The Kuroshio Maru No. 21 does not act as a "mothership" in this sense in that six smaller catcher boats are carried on deck to the fishing grounds. In addition, the vessel is equipped with long-line fishing gear which is fished directly from her own deck.

The trip to and from the Indian Ocean takes about 25 days each way, and the vessel fishes for about 30 days, making the total time for each trip about 80 days. Part of the catch is frozen by mechanical-refrigeration equipment, and the remainder is packed in ice for the return voyage. The catch expected from each trip is slightly over 1,000 metric tons. The owners of the ship state that its operations have been "fairly successful."

Upon the ship's return to Japan, the catch is disposed of through normal commercial channels for the fresh-fish trade, freezing, and canning. While a portion



Kuroshio Maru No. 21, Japan's most advanced type of tuna vessel.

of the catch may be utilized by the owners in their processing operations, the ship is not operated solely for that purpose.

After its return from the present expedition to the Indian Ocean, the ship will be used from May to September in the North Pacific salmon fishery as a cargo carrier.

JAPANESE GOVERNMENT



Mexico

MERIDA SHRIMP FISHERIES TRENDS, OCTOBER-DECEMBER 1955: The Mexican area of Merida in Yucatan, which includes ports on the Gulf of Mexico, exported close to 3.6 million pounds of shrimp to the United States during October-December 1955. Other exports included 61,200 pounds of frozen fish, and 7,000 pounds of shark fins and shark skins, according to a January 27 dispatch from the United States Consul in Merida.

It was reported that production remained good for the quarter, particularly considering that this period was the season of northerly winds. The economic conditions for the area's industry are good although boat construction and heavy spending have started and indications are that many operators are overextending themselves financially.

Average prices f.o.b. Brownsville for frozen 15-20 count brown shrimp for the period under review were: October, US\$0.59; November, US\$0.69; and December, US\$0.73.

It was reported that a new Mexican company will start shrimp operations in the near future off the coast of Campeche with a capital of 2 million pesos (US\$160,000), and with its own fishing boats. Many of the fishing boats based at Tampico have left that port due to the destruction of the packing plants by the fall 1955 hurricanes. The shrimp boats are establishing their bases at Ciudad del Carmen, Campeche, temporarily.



Norway

FROZEN-FOOD CONTAINER TESTED: Norwegian State Railways are testing a specially-designed insulated container for transporting quick-frozen foods, primarily fish fillets. The container weighs slightly over 1.5 metric tons and can carry more than 4 tons. Dry ice helps to maintain a constant temperature of about -13° F. Chief advantage is that the packaged food can be delivered directly from the freezing plant to the point of destination without reloading.

Four of these containers fit on top of a railway flat car, or they can be transported by truck, with each semitrailer accommodating 2 containers. So far, the results have been very promising. At the present time, the test is limited to one container, but the State Railways have three more under construction. Eventually they are expected to speed up the transportation of deep-frozen fish to many parts of East Norway, reports the February 9 News of Norway, issued by the Norwegian Information Service.

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FISHERMEN'S LOAN FUND FOR NYLON NETS: During a recent session the Norwegian Parliament discussed the advantages of nylon nets and the need for making it easier for Norwegian fishermen to obtain them. As a result, the Parliament voted that US\$700,000 be made available in the budget for this purpose. The funds are placed at the disposition of the State's Fisheries Bank for loans to fishermen who wish to secure nylon nets for cod or pollock fishing, reports Fiskaren (December 7, 1955), a Norwegian fishery periodical. The loans can cover 75 percent of the cost of the nets.

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AGREEMENT ON SALTED HERRING EXPORTS TO RUSSIA: Recent negotiations between Norway and Russia have resulted in a trade agreement for the export to Russia of 50,000 metric tons of salt herring in 1956. This is approximately the same amount that was exported to Russia in 1955. The Norwegians obtained a slight price increase of about US\$0.28 a ton over the 1955 price, states a February 3 report from the United States Embassy in Oslo.



Peru

LICENSING AND TAXING OF FOREIGN FISHING VESSELS: Regulations for the issuance of fishing permits for foreign vessels is the purpose of Supreme Decree No. 22, dated January 5, 1956, and published in El Peruano at Lima on January 17, 1956. These regulations established a procedure for licensing and taxing foreign vessels operating in what Peru regards as its jurisdictional waters. Although not defined in this law, Peru elsewhere asserts jurisdiction over the waters 200 miles off its coastline. The preamble of the Decree points out that it is necessary to establish norms under which permits can be given to foreign flag fishing vessels which desire to fish in waters under national jurisdiction, for the purpose of protecting and conserving the use of the living resources of the sea essential for national life, to the end that they may be exploited only in a manner not causing detriment to the country's economy or its food production.

Article 1 indicates that the Government may grant permits to foreign flag fishing vessels to operate in Peruvian jurisdictional waters.

Article 2 points out that the regulation does not apply to foreign flag vessels contracted to work for the benefit and use of national companies with industrial plants established in the country and which deliver the fish produced to such plants; nor to vessels which come exclusively for the purpose of supplying fresh fish to national consumer markets since regulations for these types of vessels already exist.

Article 3 provides that the Permanent Commission (Peruvian Section) of the Conference for the Exploitation and Conservation of South Pacific Maritime Resources in accord with pertinent studies, may dictate conservation measures which fix or limit the annual fishing quota. In this case permits will not be granted to a

larger number of vessels than that determined each year by this Commission. When quotas are established for issuance of permits to foreign flag vessels, the interests of applicants who have previously operated in the zone will be given consideration.

According to Article 4, permits will be granted only for tuna and skipjack fishing, and for the appropriate bait fishes. Fishing for other species will only be authorized in those cases indicated in Article 2.

Article 5 points out that to operate in Peruvian jurisdictional waters, foreign vessels must have obtained previously a Registration (Matricula) and a Fishing Permit (Permiso de Pesca). The registration will remain in effect for one calendar year. The permit will be valid for 100 days from the date of its issuance.

Article 6 provides these fees for the registration: each ship will pay the sum of US\$200 and for the fishing permit will pay the sum of US\$12 per net registered ton, an amount which may be modified in accordance with fluctuations in the value of the product in the international market. . . .

Articles 7-9 indicate the procedures for applying for the permits, the documents needed with the application, and where the permits are obtainable.

Article 10 states that permits will be issued for refrigeration (freezer) ships only when these act as motherships for fishing vessels authorized to fish in accordance with the present regulation. These ships in applying for a permit will pay only the value of registration set forth in Article 6 being exonerated from payment of the fishing permit, but the fish which they receive will pay the same export duties established for fish which national companies export.

Article 11 provides that ships which are registered and while on the high seas wish to fish in Peruvian jurisdictional waters without having previously obtained a fishing permit, may communicate their desire by radio before entering Peruvian waters, being obliged to set their course immediately to the nearest major Peruvian port in order to obtain the fish permit in the form provided by the present regulation. In this case, the ship in question will be relieved of the documentation which the Codes and Regulations provide for foreign flag vessels entering Peruvian ports.

The balance of the regulations spell out some extensive obligations and duties of permit holders, indicate the penalties for violations, and point out that the funds collected for fishing permits and registration will be deposited in an account which will be called "Funds for hydrobiological investigations."



Portugal

FISHERIES TRENDS, SEPTEMBER 1955: Sardine Fishing: The Portuguese sardine fleet in September 1955 maintained the high catch level attained during the preceding months of the 1955 season. The September 1955 catch totaled 15,976 metric tons (ex-vessel value US\$1,737,000) of which 8,889 tons were purchased by the canners at a cost of US\$1,015,000. The balance of the catch was practically all used by the fresh fish trade. The port of Matosinhos lead all others with a catch of 10,869 tons of sardines and contributed 6,151 tons (ex-vessel value US\$615,000) to the canning trade.

Other Fishing: The landings of fish other than sardines totaled 1,993 tons, valued at US\$218,000 ex-vessel. The catch of fish other than sardines was 67.4 percent chinchards (1,343 tons), followed by anchovy (359 tons), mackerel (152 tons), and tuna (137 tons). The fishery for bonito was about ended for the season and only 2 tons were reported, the December 1955 Conservas de Peixe reports.



Spain

SHRIMP FISHERY: Three species dominate the commercial shrimp catches of Spain. These are: the "gamba" (genus *Penaeus*); the "carabinero" (genus *Aristeomorpha*); and the "quisquilla" (genus *Crangon*), with a small percentage of the genus *Palaeomon*. The entire catch is consumed in Spain, states a February 6 report from the United States Embassy in Madrid. The shrimp is either shipped as caught; or boiled, packed in coarse salt, and shipped in small boxes of about 11 pounds to the consuming centers.

Although there are no official figures which could reveal any exportation (the official customs statistics included canned shrimp among "all canned fish and seafood, excluding anchovies, sardines, and tuna"), all trade sources agree that the entire catch is consumed in Spain and that no canning is carried on.

The fishing area for both the "gamba" and the "carabinero" is the southwestern coast of Spain, between the South of Portugal and the Strait of Gibraltar, with the port of Huelva as the center. Between 75 and 83 percent of the total Spanish catch of "gamba," and between 80 and 85 percent of that of the "carabinero" is obtained there. The fishing area for the "quisquilla" includes two different shorelines: the eastern coast with Barcelona and Valencia as centers, where between 65 and 80 percent of the total catch is accounted for, and the northwestern shores, where practically all the rest of the catch is obtained.

The fishing seasons are: February through June for the "Gamba;" June through August for the "Carabinero;" and the cold months of October through February for the "Quisquilla." The vessels used are trawlers that are also engaged in other fisheries.

The total annual value of the shrimp catch is estimated to be close to US\$4.2 million and prices per pound ex-vessel vary between US\$0.26 and US\$0.68. The average sizes of the shrimp (heads-on) are: Gamba, 38; carabinero, 18; and quisquilla, 105 to the pound.

Table 1 - Spain's Shrimp Catch, 1952-54

Species	1954	1953	1952
... Metric Tons ...			
Gamba.....	10,824	8,122	9,247
Carabinero	872	970	849
Quisquilla	160	286	211
Total.....	11,856	9,378	10,307



Union of South Africa

PILCHARD SURVEY PROGRESS REPORT, 1954-55: The Union of South Africa's pilchard investigations for the fifth year (April 1, 1954-March 31, 1955) continued to follow the original scheme of research, according to the Director of Fisheries. A summary of the findings of the fifth year's investigations was presented in the December 1955 issue of The South African Shipping News and Fishing Industry Review.

Physical Environment: The sea area covered by the research vessels along the West Coast is discussed as a whole and as three subareas, viz., the outer, intermediate, and coastal areas. The commercial fishing area coincides mainly with the coastal area. The intermediate and outer areas are of great importance because of their direct influence on the water conditions near to the coast.

The following facts emerged from the year's work:

(1) The annual averages of temperature and salinity at the surface throughout the whole area did not differ materially from those of the previous year, but both were lower than the five-year average. The inorganic phosphate was lower than

in the previous year but slightly above the five-year average.

(2) In the 0- to 164-foot layer the annual averages of temperature and salinity were both higher than in the previous year, the average temperature being less than the five-year average. The inorganic phosphate was less than in the previous year but equal to the five-year average.

(3) Subsurface currents were more in evidence in 1954/55 than in 1953/54.

(4) In 1954/55 the average temperatures of the surface and the 0- to 164-foot layer in the outer area and part of the intermediate area were the lowest yet recorded, while the salinity was about

the average of all years except 1951/52. In the coastal area the temperatures in both the surface and in the 0- to 164-foot layer, while higher than in 1953/54, were about the same as the five-year averages. The salinities, however, were higher than in 1953/54.

(5) At individual stations the average surface temperatures were lower than the five-year mean everywhere. Salinity and phosphate data, however, did not always fall into line with the low temperatures of the surface.

(6) It is not yet possible to say whether the annual averages of temperature, salinity, and inorganic phosphate are of significance in determining the distribution and availability of pilchards and maasbankers in the area under investigation.

(7) The average temperature of the surface layer was colder in the summer of 1954/55 than in any previous summer.

(8) In the routine area as a whole, the seasons when maximum salinity, temperature, and inorganic phosphate may be expected in the surface are winter-spring, summer-autumn, and winter respectively. Minima tend to be present in summer-autumn, winter-spring, and spring-summer respectively.

(9) According to drift-card experiments off the west coast, north-going inshore currents were most in evidence in summer, whereas south-going inshore currents were mostly found from late autumn to spring.

(10) Evidence of anticlockwise tidal currents was found in St. Helena Bay.

(11) The increased winter outflow of the Berg River considerably diluted the surface salinity inshore as far north as Lambert's Bay.

Plankton: Once again it can be stated that the St. Helena Bay area favored the growth of all forms of plankton which provided the main source of food for the pilchards and maasbankers of the West coast fishery.

The following findings of importance were made:

PHYTOPLANKTON: (1) Laboratory counts, done on samples from the St. Helena Bay area, showed that heavy blooms of phytoplankton occurred during every month of the period under review except in April, May, and July 1954.

(2) Some evidence was found which indicated a direct relationship between phytoplankton blooms and the temperature, salinity, and inorganic phosphate content of the water. This relationship is being investigated in detail.

(3) The concentration of phytoplankton in the commercial fishing area was at its peak in spring and summer.

ZOOPLANKTON: (1) The composition of the zooplankton by genera was in general similar to that of the previous year.

(2) The seasonal fluctuations in the quantity of zooplankton in the whole area of research corre-

sponded with those of the previous year, but the average volume in each season was lower than in 1953/54.

(3) In the coastal area also the average volume in each season was lower in 1954/55 than in 1953/54. The seasonal fluctuations in the quantity were different in the two years in that summer concentration of 1953/54 was high in relation to the other seasons, whereas the summer concentration of 1954/55 was relatively low.

The Fish: A considerable amount of data on various aspects of the biology of the pilchard and the maasbanker was collected during the year. Unfortunately, it was not possible to analyze in detail the data on the maasbanker. Consequently the findings in relation to this species are still rather scant. As regards the pilchard, however, a considerable amount of additional information was obtained from the year's work.

The findings to date in regard to the biology of the pilchard and the maasbanker can be stated briefly as follows:

(a) REPRODUCTION: Pilchard: (1) The estimated number of eggs spawned by a female pilchard per season is approximately 100,000.

(2) The size of the fish at first maturity is at a standard length of \pm 18 cm. All pilchards are mature at \pm 21 cm.

(3) Although the pilchard spawns in all seasons of the year, the main spawning period is from September to February, i.e., the pilchard is mainly a spring and summer spawner.

(4) The spawning seasons for Union and South-West African pilchards appear to be the same.

(5) Pilchards move away from St. Helena Bay for purposes of spawning and their incidence in the area of commercial fishing is highest when they are sexually least active. Although spawning takes place in St. Helena Bay, it varies in degree from year to year and the main spawning area is situated offshore, outside the commercial fishing area.

Maasbanker: It has not been possible yet to make a detailed analysis of the data collected in this respect. The indications are that the main reproductive activity occurs in the winter months.

(b) COMPOSITION OF THE CATCH: Pilchard: (1) The majority of pilchards caught off the west coast of the Union are fish of standard lengths ranging from 21 to 24 cm. This means that the pilchard catch consists mainly of sexually-mature fish. (According to the second Pilchard Research Report for South-West Africa, the commercial catch there consists of smaller fish, mainly in groups of standard length 19.5-22.5 cm. It is likely, therefore, that a considerable proportion of South-West Africa's pilchard catch is comprised of sexually-immature fish.)

(2) The mean ratio of males to females in the Union's commercial catch is 44:56.

(3) Evidence obtained from age studies, though not conclusive, indicates that the majority of pilchards in the Union's commercial catch are from three to five years old.

Maasbanker: It has not been possible so far to process the data on the composition of catch for this species.

(c) **FEEDING: Pilchard:** The previous finding that the pilchard is a plankton feeder with an apparent preference for phytoplankton was confirmed. It is unlikely, however, that definite selection of food organisms is made and the relative absence of zooplankton in pilchard stomachs may be connected with the varying rates of digestion of phyto- and zooplankton.

Maasbanker: The findings of the previous year were confirmed. Small maasbanker were found to feed exclusively on zooplankton, consisting mainly of crustaceans such as copepods, amphipods, and euphausiids. Large maasbankers fed on zooplankton, particularly amphipods, and on a considerable variety of small fish. Large maasbankers may be regarded as predators of juvenile pilchards.

(d) **CONDITION FACTOR: Pilchard:** (1) Throughout the year the biological condition factor, i.e. the weight length relationship, of male pilchards was identical with that of the females. This finding corresponds with those of the previous years. In general the seasonal fluctuations of the condition factor are as follows: it is high in summer, reaches a maximum in March, declines rapidly during autumn to a minimum in August, and begins to rise again in late spring.

(2) There appears to be a direct relationship between the seasonal fluctuations of the condition factor and the fatness of the pilchard as indicated by its oil yield. (Data on oil yield were obtained from factory production returns and not by means of laboratory analysis. It is felt that the industrial statistics of oil production may be somewhat misleading because factories do not draw a sharp distinction between oil produced from pilchards and that obtained from maasbankers. The above finding therefore needs to be confirmed by detailed laboratory analysis of the fish.)

(3) Condition factor shows no apparent relationship with the softness which affects pilchards at certain times of the year.

Maasbanker: (1) The condition factor of the two sexes was identical throughout the year.

(2) As in the previous year the condition factor was highest in summer, declined in autumn to reach a minimum in winter, and rose again in spring.

(3) **PREDATORS: Pilchard:** (1) The Gannet Cape Cormorant and Jackass Penguin are important predators of the pilchard. It is estimated that gannets consume approximately 37,000 metric tons and cormorants about 1,800 tons of pilchards a year in the St. Helena Bay area alone. It has not been possible yet to estimate the quantity eaten by penguins.

(2) Other important predators of pilchards are sneek, seals, and stockfish.

Maasbanker: Gannets are estimated to consume about 12,000 tons and cormorants about 550 tons of maasbankers a year in the St. Helena Bay area. The quantity consumed by penguins cannot be estimated as yet.

The Fishery: The landings of pilchard and maasbanker in the Union during the 1954 calendar year amounted to 220,693 short tons of which 91,322 tons were pilchards and 129,371 tons maasbanker. The catches for the past four calendar years are shown in table 1.

Year	Pilchard	Maasbanker	Total
	(Short Tons)		
1954	91,322	129,371	220,693
1953	150,987	93,140	244,127
1952	187,424	113,136	300,560
1951	109,610	111,292	220,902

This table is naturally a temptation for those inclined to theorize in statistics, but in actual fact the figures cast no light on the fundamental question of what effect fishing is having on the stocks. In the first instance, reliable evidence of the level of fishing intensity in each year is lacking, and secondly the distinction between the catches of pilchard and maasbanker is by no means a sharp one. In other words, any attempt to arrive at the catch per unit of effort is in vain. The value of these catch figures lies only in their historic interest and in the fact that they are needed in relation to closing the fishery annually, if it so happens that the permissible 250,000 tons are caught.

The truth of the whole matter is that we cannot begin to understand the population dynamics of the pilchard and the maasbanker unless the following statistics are made available by the commercial fishery:

- (1) Accurate catch returns for the pilchard and the maasbanker, separately.
- (2) Accurate data in respect of the fishing intensity (effort).
- (3) Accurate data on tag recovery, once tagging has started.

Over a number of years these data, when fully processed together with the basic "vital statistics" which are being compiled continuously by us, and coupled with the results of current environmental studies, should enable us to keep a finger on the pulse of the resources.

The above observations show that proper conservation of the resources cannot be achieved on the strength of our present knowledge, i.e. we do not know at which level and in what manner the stocks should be fished to insure a sustained yield of maximum size and quality. But although knowledge in this respect is lacking, it does not necessarily follow that there should be no control over the fishery. On the contrary, there is quite enough justification for control, especially when the economic and social aspects are considered. For the present, therefore, we can do no better than to continue with the somewhat arbitrary system of regulation and regard it as a policy of "precautionary conservation."

United Kingdom

COMMERCIAL FISH LANDINGS AT HULL UP IN 1955: The Hull fleet of 143 distant-water trawlers landed 562.3 million pounds of fish in 1955, or close to 40 million pounds more than in 1954, but about 4.6 million pounds less than in 1952. The Hull fleet in 1955 was smaller by 5 vessels than in 1954, but the size and fishing capacity of the boats more than compensated for the lesser number of fishing craft. In addition to the landings at Hull, trawlers from that port landed about 49 million pounds at Grimsby.

The increased landings were made with shorter trips to the banks, averaging 20.8 days in 1955 as compared with 23 days in 1952. In addition, the catch per vessel per day at sea for the first 11 months of 1955 increased to 13,286 pounds from 11,718 pounds for the same 11 months of 1954.

The over-all average ex-vessel price for fish landings at Hull declined from about 5.81 cents a pound in 1954 to 5.73 cents for the first 11 months of 1955. The average prices are based on not only the sales on the open market, but also those sales made through other channels at lower prices.

The Hull fishing fleet is largely a deep-water fleet and during 1955 landings from the Bear Island grounds doubled, but some increases were noted for landings from the White Sea and from waters off the Norwegian coast. There was very little production from the Greenland fishing grounds and catches from the Iceland area decreased, states the

January 6, 1956 Fishing News, a British fisheries magazine.

Disposition of Hull Fish Landings, 1954-55		
Sales to:	Quantity	
	1955	1954
	(Millions of Lbs.)	
Fresh-fish trade.....	498.4	486.1
Salt-fish trade	13.5	15.8
Animal-food manufacturers ...	9.7	12.1
Unsold <u>1</u> /	40.0	7.4
Condemned <u>1</u> /	0.7	1.6
Total Landings	562.3	523.0
<u>1</u> / Probably went to byproducts plants.		

The 1955 landings at Hull were absorbed mainly by the fresh-fish trade--498.4 million pounds (see table).

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SHRIMP FISHERY OF GREAT BRITAIN: The shrimp fishery of England, Scotland, and Wales is relatively small with annual catches averaging close to 4 million pounds during the 1952-54 period. In British fisheries statistics a distinction is made between the terms "shrimp" and "prawn," with the term "prawn" applied to the varieties commonly referred to as shrimp in the United States. The term "shrimp" is applied to the small varieties common in North Atlantic waters, a February 6 dispatch from the American Embassy in London points out.

The species of shrimp taken include the brown shrimp (Crangon vulgaris), the pink shrimp (Pandalus montagui), and the prawn (Leander serratus). The catch of prawn is light or only about 16,000 pounds a year. The shrimp are taken on both the east and west coasts of England and in a few restricted areas on the Scottish and Welsh coasts.

The principal method of fishing is by beam trawls, varying in width from 18-24 feet; small (25-50) vessels are used. On the northwest coast a "shank net" is used--a rigid-footed dredge net about 12 feet in width which can be drawn by boat or by a horse in shallow water. On rocky bottom near shore, pots and hoop (fyke) nets are used.

The pink shrimp are caught from mid-April to the end of November, the brown shrimp are taken throughout the year, except in very cold weather.

The catch of shrimp in Scottish waters is estimated to average about 224,000 (US\$31,000 ex-vessel value) a year.

There is no direct form of Governmental assistance for the shrimp fishermen. There is a

30-percent import duty on imported shrimp. The shrimp fishermen do not participate in the White Fish Subsidy Scheme, but they may qualify for financial assistance under the White Fish Authority in the formation of fishermen's co-operatives.

Fishermen engaged in the shrimp industry have, in the past, derived benefit from the Inshore Fishing Industry Act in the form of loans and grants for provision of boats and engines, but such financial assistance is now confined to fishermen engaged in fishing for white fish.

The brown shrimp attains a length of 2 to 3 inches (heads on), but the pink shrimp averages only 2 inches in length. Prawns may reach 4 inches.

Shrimp exports are not recorded separately, but as part of the shellfish category. It is believed, however, that limited quantities of shrimp have been exported to the United States during the past two years.

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SUBSIDY PLAN FOR CRAFT FISHING WHITE FISH REVISED: Full details of the changes in the rates and conditions of payment of the white-fish subsidy, under the United Kingdom's White Fish Subsidy No. 2 Scheme, 1955, approved by Parliament in December 1955, were announced by the Ministry of Agriculture and Fisheries and the Scottish Home Department. The new rates came into operation on January 2, 1956.

The new scheme provides for grants of 8d. a stone (US\$0.67 a hundred pounds) for drawn fish and 6d. a stone (US\$0.50 a hundred pounds) for fish in the round landed from inshore vessels of 70 feet and under in length.

Up to December 31, 1955, vessels between 70 and 140 feet in length received a flat-rate subsidy of 4d. a stone (US\$0.33 a hundred pounds) for drawn fish landed and 3d. (US\$0.25 a hundred pounds) for fish in the round. These rates were reduced to 2d. a stone (US\$0.17 a hundred pounds) for drawn fish and 1d. a stone (US\$0.08 a hundred pounds) for round fish.

These vessels may also receive payments for each voyage. The voyage rates for steam vessels are to be increased. Those for motor vessels remain unchanged, reports the January 16 issue of The Fishing News.

Other minor changes are the extension of the special rates hitherto paid for Faroese voyages, to Shetland voyages, and to vessels engaged in a hitherto unpractised method of fishing known as three-ship "pair" fishing. Provision is also made for seine-net vessels of 70 feet and under normally making voyages of at least eight days to receive a combination of voyage and landings payments instead of landings payments only as hitherto.

Year	Shrimp		Prawn	
	Quantity ^{1/}	Value	Quantity ^{1/}	Value
	1,000 Lbs.	1,000 US\$	1,000 Lbs.	1,000 US\$
1954	4,039	450	17	11
1953	4,170	400	12	8
1952	3,790	374	17	11

^{1/} Heads on.

The United Kingdom White Fish and Herring Industries Act, 1953, provides that in order to promote the landings of a continuous and plentiful supply of white fish (all sea fish except herring, salmon, migratory trout, and shellfish), a plan may be made for the payment of grants to the owners or charterers of fishing vessels not exceeding 140 feet in registered length engaged in catching such fish. The 1955 plan revokes the White Fish Subsidy Act in effect during 1955, and provides for payment of grants at revised rates in respect of voyages made and fish landed by vessels fishing the near- and middle-water grounds (between 43 and 63 degrees north latitude, longitude 17 degrees west), and for grants in respect to landings of fish by inshore vessels, during the period beginning on January 1, 1956, and ending July 31, 1956. The conditions under which grants may be paid remain the same as those under the previous plan, save for the provision that seine-net vessels not exceeding 70 feet in over-all length normally making voyages lasting more than 7 days may receive voyage and landing payments on the basis hitherto applicable only to vessels exceeding 70 feet in length.

Note: Values converted to US\$ equivalents on the basis of 1d. equals US\$0.0117.



WHY PORTION CONTROL IS IMPORTANT

The aim of the food service executive is to place before his patrons wholesome food properly portioned and correctly priced for profit; hence the food portion is the key to the entire food-control problem. This is becoming a prime factor in the choice of fish and shellfish purchases by restaurant operators and others concerned with the preparation of volume meals.

The restaurant operator must know the kinds of foods that will sell, the number of portions, and the price of each ready-to-serve portion. With this information, it is possible to begin with purchasing and planning each step of the preparation and cooking process.

Purchase control means regulating the quantity, kind, size, and weight of the materials that go into the finished products. Today, the smart restaurant executive or owner knows that it is difficult to control all of the possible losses in food processing. He, therefore, is increasingly interested in purchasing more ready-to-serve items. Among these are portioned fish, meat, poultry, vegetables, and fruits, as well as ready-mixed and portioned soups, juices, jams, and jellies. All of these items are table-ready or almost so, and lend themselves to very exact portion control.

Processors of fishery products have been leaders in the field of portion processing. As competing foods follow the same trend, there will be increased sales competition. Expanded sales will depend largely upon the ability of the industry to meet the buyers needs and specifications.