

Trade News



April, 1957



Trade News



PUBLISHED MONTHLY BY THE DEPARTMENT OF FISHERIES OF CANADA

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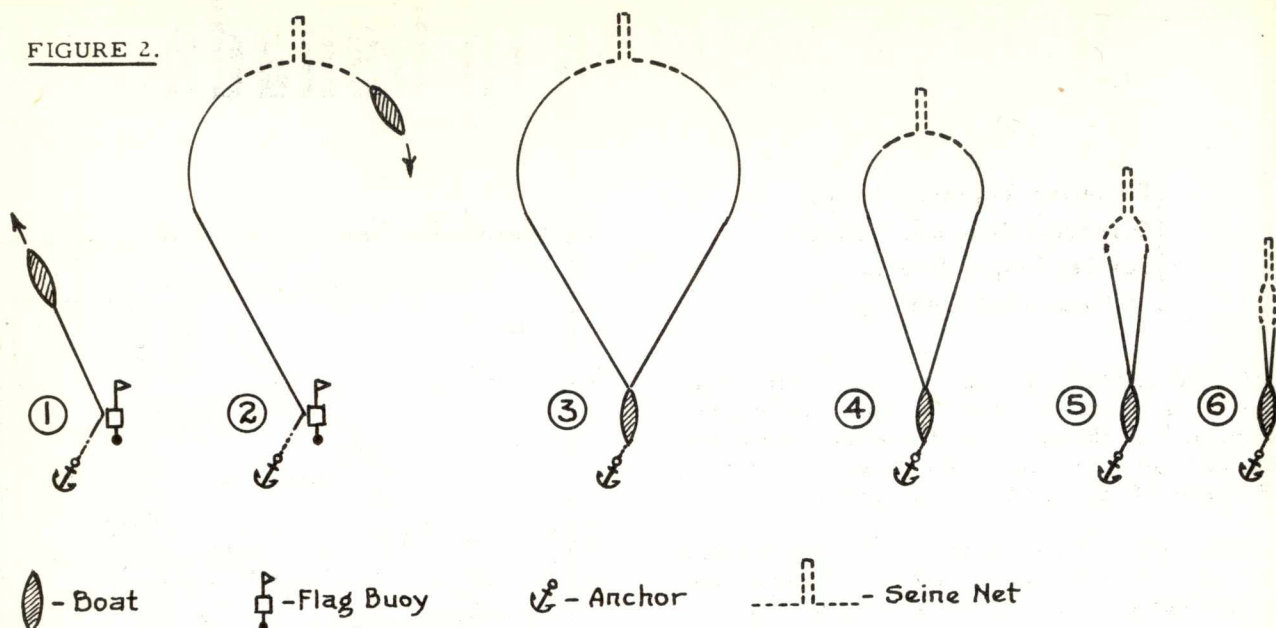
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COVER PHOTOGRAPH -- Fishermen at Lismore, N.S., preparing for the opening of the lobster fishing season. Lobster landings along Canada's Atlantic seaboard are at their highest in May.

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FIGURE 2.



1. With the anchor and buoy in position, the seiner commences laying out a long warp, usually $2\frac{1}{4}$ inches manila, anywhere from 600 to 1500 fathoms long.
2. The boat having turned across the tide, the net is shot away with the wings drawn wide open. A second warp is attached to the net and the boat continues in a wide arc, returning to the buoy from which it set out.
3. Back at the anchor, with all fishing gear properly set out, hauling of the seine commences. The warps are winched in slowly, at about $1\frac{1}{2}$ m. p. h. The action of the rope on the bottom chases the fish into an ever-decreasing area.
4. With one-third of the ropes taken in, the winch is speeded up to about $2\frac{1}{2}$ m. p. h. bringing the net towards the boat. The fish become concentrated in a narrow area and the speed of the winch is increased to 3 to 4 m. p. h.
5. As the net approaches the boat the fish are swept in. Both the ropes and the wings of the net are closing, and when about two-thirds of the rope has come in they are completely closed.
6. The net is winched in at top speed until all the rope has been taken aboard. The net is pulled in by hand and the catch in the cod-end is taken aboard with the tackle.

In preparing for the survey, the scientists made a study of the otter-trawl catches of witch flounder made in previous years by the research vessel "Investigator II", and the most likely areas were selected for investigation. Data obtained by the "Investigator II" was used in charting the probable composition of the sea bed. From this information the more favourable areas were selected for the most intensive work. Where the bottom was suitable the explorations were extended over a range of depths, so that any local concentrations due to temperature could be discovered. Some areas with bottom temperatures apparently too low for witch flounder were included in the investigation in order to discover whether American plaice or Greenland halibut could be fished commercially by Danish seining.

The regions investigated (figure 1) were divided into natural sub-areas according to the type of sea bottom, and the results obtained are detailed separately in the Bulletin. For clarity and brevity, the investigations are dealt with in geographical order, running counter clockwise from the Rose Blanche Bank on the southwest coast, rather than in chronological order.

SOUTH COAST INVESTIGATION

The Rose Blanche bank, at the western end of the south coast, was found to be very rough and uneven. The western slopes were also hard and, although in the deep water the bottom became smoother, it was not soft enough to allow the use of the Danish seine. East of Rose Blanche Bank towards the Burgeo area, the rough slope dipped down

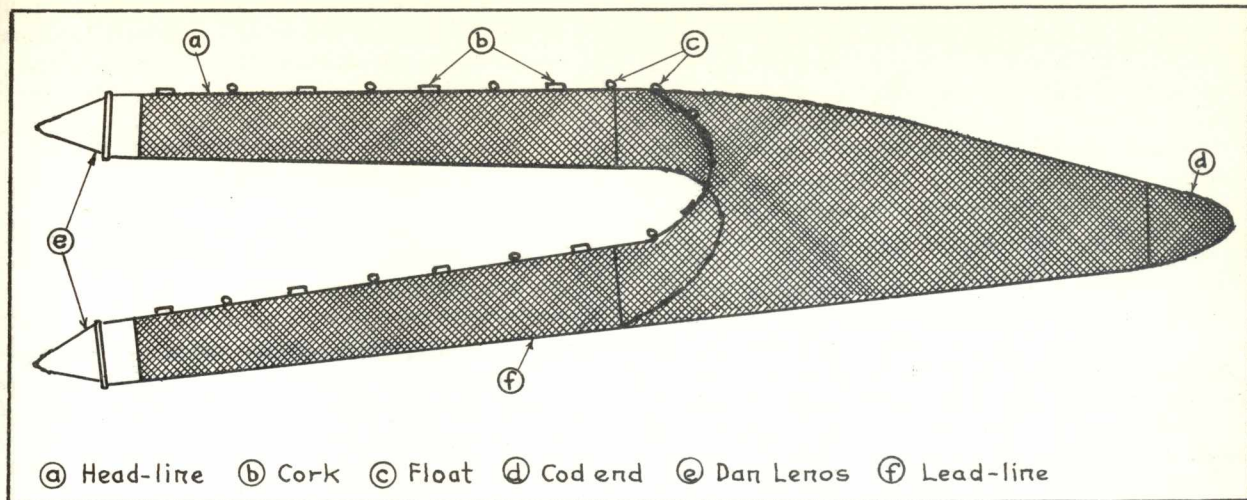


Figure 3. The net used in Danish seining. Set out with the wings stretched wide apart, the net catches fish in a manner similar to that of the otter trawl as it is drawn along the bottom.

to uneven mud banks. In the seven sets attempted in the Rose Blanche Bank area, the gear was caught on the bottom on all but one occasion and only two witch flounder were caught.

Exploratory fishing was conducted in both 1953 and 1954 in the Burgeo, Hermitage Bay, Miquelon area, and a total of nineteen sets were made. This fishing effort, together with the accompanying fathometer survey, show that the coastline and bays are rocky, and the narrow channels are not generally suitable for Danish seining.

A sandy bottom was found in the vicinity of Miquelon and there was an indication of good ground in deep water, over 90 fathoms, but the weather conditions and a very strong current made fishing difficult when the sets were made, October 10-26. One set produced 250 pounds and two others 100 pounds of witch flounder, indicating the possibility that small grounds for Danish seining do exist, although none were found during the survey. Fishing operations here, however, would have to contend with the strong current which prevails for considerable periods.

In Fortune Bay seven sets were made in the existing commercial fish area in order to test the working of the gear and catches were consistent with those obtained by the commercial vessels at the same time. Surveys of a large part of Fortune Bay with the echo-sounder indicated some suitable bottom apart from the commercial ground. However, sets made in the area north of the known fishing ground produced poor results.

In Placentia Bay suitable smooth bottom was found only in the deeper water, 115 to 130 fathoms. In depths less than 115 fathoms the sea bed is rocky and uneven, and south of the bay the water is shal-

lower and the bottom rougher. In the smooth area tested the catch of witch flounder was negligible and although up to 500 pounds of American plaice were taken per set, about half of this catch was of fish too small for commercial use.

The survey in St. Mary's Bay included a bottom area of sand and gravel in which longline fishing boats were reported to have made excellent catches of American plaice. However, this section proved to be too limited to allow the Danish seining gear to be set out clear of obstructing rocks, and attempts to fish these grounds were without success. Other parts of the bay fished also proved unsuitable.

Summing up, the survey of the south coast of Newfoundland did not locate any new fishing grounds for witch flounder. Farther offshore than the regions surveyed there was no reason to expect better results.

EAST COAST OF NEWFOUNDLAND

Fathometer and temperature tests indicated that the most promising areas for Danish seining on the east coast of Newfoundland would be found only in the bays and in an offshore area 50 to 60 miles east of the Northern Peninsula.

Most of the offshore survey was carried out from St. Anthony on a smooth muddy slope from 170 fathoms to 200 fathoms in depth. Although bottom temperatures there appeared favourable, the greatest catch of witch flounder was only twelve pounds while the catch of American plaice was also very low.

In other sections of this general area, the rough, rocky nature of the bottom made Danish seining impractical.

White Bay, which is very deep with a soft mud bottom and steep sides, is the scene of a commercial linetrawl fishery for Greenland halibut. Although the water is very cold, this bay was included in the survey to test the Danish seining method for Greenland halibut. Three sets in 132 to 196 fathoms produced no catches and in two sets in over 200 fathoms it was probable that the net was not fishing on the bottom. There was no suitable shallower water to be found.

Two sets were made in the mouth of Green Bay, which is similar to White Bay, and 35 pounds of witch were taken in one of them. The bottom temperature was very low. A level area south of Horse Islands, varying from 118 to 126 fathoms in depth, was tested but the rough bottom and strong currents made fishing impossible.

Three sets were made in the deep channel in Bonavista Bay and in two of these the gear became hooked up. In the successful set only four pounds of witch flounder and 80 pounds of small American plaice were taken. Tests made off Cape Bonavista indicated that the bottom was too rough for Danish seining.

Extremely poor results were also obtained in Trinity and Conception bays, the best catch being 50 pounds of American plaice caught in the latter bay.

The east coast of Newfoundland did not show any promise for Danish seining. The offshore deep water was the only ground of any extent on which the gear could be used satisfactorily, and the catches there were consistently very poor, although the bottom temperatures were suitable for witch flounder.

GRAND BANK OF NEWFOUNDLAND

The southwest edge of the Grand Bank of Newfoundland was extensively surveyed with 28 sets being made. In only four of these sets did the catch of witch exceed 100 pounds and only two produced good commercial quantities, namely 1,350 and 2,200 pounds. The catches obtained in this area consisted of a variety of species with variable numbers of American plaice, commonhake and haddock appearing in most sets.

Tests were also made in the Grand Bank areas known as Whale Deep, Green Bank Gully and Channel Gully but these were unsuccessful.

The sets on the southwest edge of the Grand Bank were made in July and August. Otter trawlers working the same area generally obtain witch in large quantities only during the spring months. The catch of a Danish seiner working this area in spring would probably be excellent, but a larger, more seaworthy boat than the "Matthew II" would be required to exploit the ground at that time of year.

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For each copy desired a remittance of 50 cents made payable to the Receiver General of Canada should be enclosed.

More work would be entailed in fishing on the southwest edge of the bank than in Fortune Bay, as the catches always had large amounts of trash fish, mostly common hake, which would have to be culled.

Danish seining would be possible in the southwest Grand Bank area, but because of the extra distance from port, and the larger size of vessel required to fish the ground in safety, it would not be economical while catches in Fortune Bay are high.

NORTH BAY, GULF OF ST. LAWRENCE

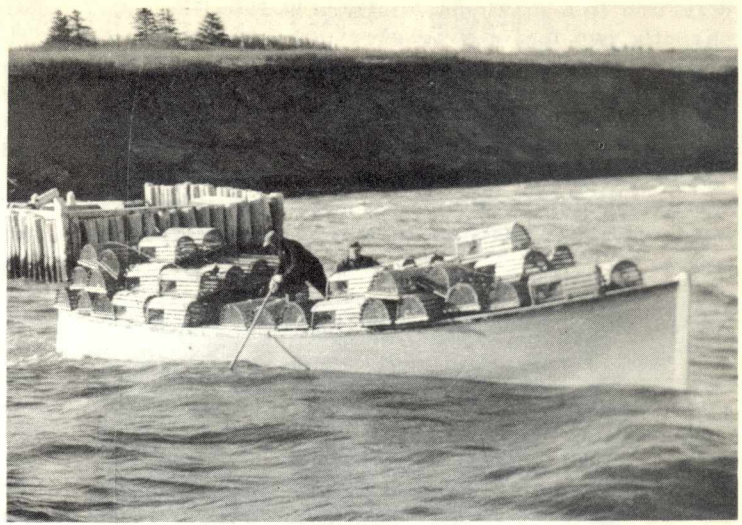
As mentioned previously, the investigations carried out in North Bay, in the Gulf of St. Lawrence west of Cape Breton Island, had excellent results. Near the shore there is a deep channel, the western side of which sloped gradually upwards to the Magdalen Islands. The sea bottom on this slope is smooth and consists of fine red sand. In the region between 46°20'N. and 46°55'N., and 61°09'W. and 61°42'W. a large area of sea bottom suitable for Danish seining was found. Five sets made in this area, in depths between 32 and 37 fathoms, produced excellent catches, varying from 4,000 to 9,000 pounds of witch flounder and American plaice.

The witch flounder catches were from 1,000 to 3,000 pounds for each set, and these fish were large and of good quality. American plaice made up the bulk of the catches, as much as 7,000 pounds to one set, and were mainly fish of good commercial size. Small amounts of scrod and small market cod were also caught.

North of the area the sea bottom became harder. Similarly, two sets made in Sydney Bight, northeast of Cape Breton Island, showed that the ground was too rough and the tidal currents too strong for the gear to function properly.

Summarizing the results obtained in North Bay, the Bulletin states that it contains an extensive area in which the sea bottom is excellent for Danish seining, and where very large catches of witch flounder and American plaice were made during October, 1954. Although otter trawlers were working the same area their catches per set were much smaller. ✓

*Research By Fisheries
Scientists Over Many
Years Indicates That - -*



Lobsters are Local

By D.G. WILDER

THE AMERICAN lobster is fished commercially from Virginia to Newfoundland. The catch in 1953 totalled nearly 75 million pounds with a landed value of over 25 million dollars. Proper management to make wise use of this extremely valuable resource is of utmost importance to the thousands of fishermen and others who depend on lobsters for a large part of their income. Effective management must be based on a thorough knowledge of the lobster's habits and behaviour and the factors controlling its reproduction, growth and survival.

One important question is how much do lobsters move around. Do lobsters move off and on-shore at different seasons? If so, fishermen must take this into account in setting their gear. Do lobsters, like cod, herring and mackerel, migrate long distances? If so, intense fishing in one area could affect the fishery in other areas. Or do lobsters remain pretty much in the same area throughout their lives? If they do the lobster population is made up of a series of separate, local stocks each practically independent of the others. Under such conditions, regulations applied to one stock have relatively little effect on other stocks and the benefits of conservation are restricted to the groups of fishermen who are willing to practise it. Knowledge of lobster movements is so basic to sound management that the subject has received a great deal of attention in Canada, the United States and in northern Europe.

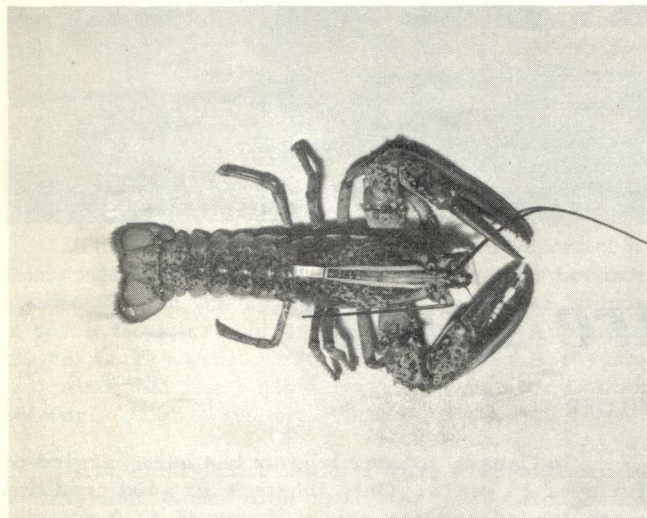
Dr. D.G. Wilder is scientist in charge of lobster investigations at the Fisheries Research Board of Canada, Biological Station, St. Andrews, N. B.

In Canada lobster tagging has been carried on for over 25 years. Only lobsters in good condition were tagged and the size and sex of each was recorded. The lobsters were liberated up to 10 miles offshore at many different points around the coast, at all seasons of the year at depths from 1 to 30 fathoms. Over 100,000 lobsters have been tagged and over half of these have been recaptured by fishermen. Some of these taggings are of particular interest.

From 1945 to 1952 a total of 7,959 tagged lobsters were liberated off southern Grand Manan, Charlotte Co., New Brunswick. These were distributed widely over the fishing grounds from near shore up to six miles offshore and at depths up to 20 fathoms. Of the 4,742 that were recaptured up to a year or more after they were released 99.8% were caught by Grand Manan fishermen. None were reported from nearby Campobello Island or Deer Island and none from the New Brunswick mainland. None crossed the Bay of Fundy to Nova Scotia -- a straight line distance of about 30 nautical miles. Eleven tags were reported by Maine fishermen fishing between Lubec and Mount Desert Island. The prize travellers were two lobsters that in five to six months reached Mount Desert Island -- a straight line distance of about 60 nautical miles.

From 1944 to 1955 a total of 12,039 tagged lobsters were liberated off Port Maitland, Yarmouth Co., Nova Scotia up to eight miles offshore at depths up to 20 fathoms. Of the 5,463 recaptured to date over 90% were caught by Port Maitland fishermen. Most of the others were caught by fishermen from neighbouring ports. A few tagged lobsters moved along shore in a northerly or southerly

direction to a maximum distance of 35 miles. Apparently two lobsters crossed the Bay of Fundy as one was reported caught off southern Grand Manan (40 miles) and one off Jonesport, Maine (60 miles). Most of the lobsters, however, were recaptured very close to the spot where they were liberated. Those released early November 1955 seemed to move around more than those tagged in other years but the average distance they moved was only 2 3/4 miles.



In the course of their extensive studies into the life history of lobsters, Canadian fisheries scientists have tagged thousands to determine the scope of their movements within districts and from one district to another. The photo shows how the tags are attached to the carapace by means of a rubber band.

From 1945 to 1956 lobsters were tagged at Fourchu and L'Archeveque, Nova Scotia. These two fishing areas on the outer coast of Cape Breton Island are about 10 miles apart. Of 13,447 tagged lobsters distributed over the two areas, 7,435 were recaptured. None of these tagged lobsters had moved from one area to the other. Similarly from 1944 to 1956 lobsters were tagged at Tignish and Miminegash, Prince Edward Island. Of the 25,025 tagged in the two areas, 16,696 were recaptured. None of these had moved from one area to the other -- a distance of about 10 miles.

These tagging results which are in general agreement with those reported from other countries show that lobsters are not truly migratory. The great majority of tagged lobsters that have been recaptured were caught very close to the place they were liberated. The few that do move appreciable distances seem to do so in a more or less random manner.

Of the more than 50,000 tagged lobsters recaptured only three moved as much as 60 miles. It appears, therefore, that the lobster population is made up of a series of separate independent stocks

with very little mixing between areas. This conclusion is confirmed by the striking differences in the colour, shape, sizes and sex ratios of lobsters from different areas. Rather marked differences have been observed in stocks separated by only a few miles.

There is no evidence in the tagging results to suggest that lobsters make seasonal migrations on and offshore. It is possible that in certain areas lobsters leave the immediate shore line and move to somewhat deeper water as winter approaches but the tagged lobsters gave no indication of such behaviour.

LARVAE SURVIVAL

Although adult lobsters apparently move around to only a limited extent there is the possibility that newly-hatched larvae are carried appreciable distances by surface currents. The distribution, growth, abundance and survival of lobster larvae have been studied in detail each year since 1948 in the Northumberland Strait area between New Brunswick and Prince Edward Island. During this period almost 200,000 larvae have been caught in nearly 4,000 half-hour surface tows with a specially designed fine-meshed net. In this area hatching starts about mid-June, continues at a high level through July and early August, then falls off rapidly and continues on a much reduced scale to the end of September. The newly-hatched larvae which are about 1/3 of an inch long are adapted for swimming and rise to the surface of the water. This free-swimming period continues for one to two months depending on the water temperature. During this period the larvae moult or shed their shells three times to reach the fourth free-swimming stage. Towards the end of the fourth stage the larvae which are then slightly over 1/2 inch long, settle to the bottom. Heavy losses normally occur during the free-swimming period but some years the survival is much better than others. In a good survival year up to 40 times as many larvae reach the settling stage as in a bad year.

Since larvae are hatched over wide areas and since there is as yet no practical method of marking them it is extremely difficult to determine the direction, speed and extent of their surface drift. There are indications in the Northumberland Strait area that steady winds blowing in one direction for several days will move the larvae several miles. Workers in Newfoundland also have evidence that larvae may be carried out of certain bays and concentrated in others depending on the direction of the prevailing winds and surface currents. In other areas such as the Bay of Fundy and Gulf of Maine very few larvae have been caught and very little is known of the seasonal pattern of surface currents. Until more is known speculations as to the drift of larvae in such areas appears to be of doubtful value. At this stage of our knowledge, restrictive regulation of the fishery on the basis of possible larval drift cannot be justified. ✓

May is Peak Month for Lobster Fishery

Increases in the legal minimum sizes of lobsters in two sections of the Atlantic area have been announced by the federal Department of Fisheries. The minimum size in Quebec, at the request of the provincial government, has been increased from two and three-quarters to three inches, carapace measure. In Lobster Fishing District 5, in Nova Scotia, the minimum has been increased from two and one-half to two and five-eighths inches.

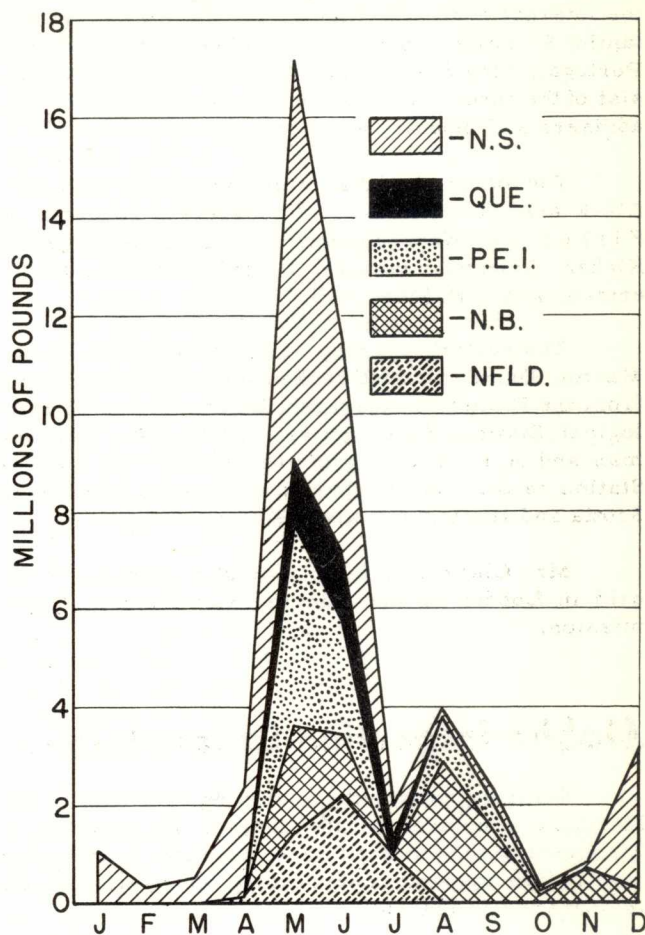
District 5 takes in that part of the coast between Coal Harbour in Halifax County and Ragged Point in Guysborough County, and the change in regulations there was made at the request of the fishermen themselves, in order to allow the lobsters to grow larger before being exploited. Some fishermen of that district wanted the minimum to be increased to two and three-quarter inches.

A change in the boundary between Districts 7A and 7B was also announced. District 7A now embraces the waters south of the Canso causeway in Richmond and Guysborough Counties, which were previously divided. District 7A formerly included the Cape Breton coastline in that part of Richmond County and the southern part of the Bras d'Or Lakes, while the mainland side, in Guysborough County, was part of 7B.

The foregoing changes are the only major ones in a complete revision of the lobster regulations, which are now issued in a new format but are essentially the same in content for all districts except 5, 7A, 7B and the province of Quebec.

Throughout most of the Atlantic provinces during April fishermen were making preparations for the lobster fishery, which ranks with the famed codfishery as a major contributor to the livelihood of thousands of Canada's Atlantic coast dwellers.

Although lobster fishing is in progress in one or more sections of the Atlantic area throughout the entire year, landings show a wide disparity between the various months. This is clearly indicated in the accompanying chart and table, showing average monthly landings covering the period 1953-56.



Lobster Landings - Atlantic Coast
Four-Year Average, 1953-56
(In thousand pounds)

	Nfld.	N. B.	Sub- total	P. E. I.	Sub- total	Que.	Sub- total	N. S.	Total
January	-	71	71	-	71	-	71	1,532	1,603
February	-	11	11	-	11	-	11	356	367
March	-	4	4	-	4	-	4	564	568
April	148	14	162	-	162	-	162	2,244	2,406
May	1,520	2,101	3,621	4,174	7,795	1,335	9,130	8,104	17,234
June	2,215	1,258	3,473	2,366	5,839	1,385	7,224	4,177	11,401
July	1,033	1	1,034	-	1,034	273	1,307	748	2,055
August	-	2,888	2,888	971	3,859	-	3,859	129	3,988
September	-	1,637	1,637	602	2,239	-	2,239	106	2,345
October	-	227	227	50	277	-	277	43	320
November	-	720	720	-	720	-	720	70	790
December	-	313	313	-	313	-	313	4,881	5,194
Total	4,916	9,245	14,161	8,163	22,324	2,993	25,317	22,954	48,271

Canadian Fisheries News

Attend ICNAF Meeting

Deputy Minister George R. Clark of the federal Department of Fisheries will head the Canadian delegation attending the Seventh Annual Meeting of the International Commission for the Northwest Atlantic Fisheries which is being held in Lisbon, Portugal, May 20-25. The official group will consist of the three Canadian commissioners, scientific advisers and industry advisers.

The other Canadian commissioners with Mr. Clark are the Hon. J. T. Cheeseman, Minister of Fisheries, Newfoundland, and J. Howard MacKichan, General Manager, United Maritime Fishermen, Ltd., Halifax, N.S.

The scientific group will consist of Dr. W.R. Martin, Dr. F. D. McCracken and J.E. Paloheimo from the Fisheries Research Board of Canada, Biological Station, St. Andrews, and Dr. W. Templeman and A.M. Fleming of the Board's Biological Station in St. John's. Industry advisers from Nova Scotia and Halifax will also be on hand.

Mr. Clark will later attend a meeting to be held in London of the International Whaling Commission.

Mobile Inspection Laboratory

Services provided the fishing industry in the Maritime provinces by the federal Department of Fisheries have been considerably enhanced by a new mobile fish inspection laboratory which was placed in operation in March.

The unit, a large truck-trailer assembly, is designed to provide a rapid, on-the-spot means of investigation where any unusual technological problems in fresh fish processing or in shellfish packing are encountered.

The mobile laboratory, which is operated by the Department's Inspection and Consumer Branch, supplements the services provided by the fish inspection laboratories at Halifax, Shediac, St. Andrews and Charlottetown, and two small mobile laboratories.

The laboratory is housed in a large trailer resembling a furniture van, but there the resemblance ends. For, both in interior and exterior design and appurtenances, it is a carefully equipped technological unit. Every inch of its capacity -- 34 feet in length, 8 feet in width and 11 feet 6 inches in height -- is fully utilized in providing for the spe-

cial appliances with which it is equipped and for working and storage space.

Among the larger fixed pieces of equipment are hot and cold water tanks, a pressure pump, generating plant, propane gas storage tanks, refrigerator, autoclave, incubators, stove, sinks and work bench. Added to these is a wide variety of specialized equipment such as is found in laboratories dealing in bacteriological analytical work.

Cabinet, cupboard and storage fixtures and areas are designed in a manner to provide as much space of this nature as the interior will permit without overcrowding. The floor is covered with linoleum, the walls with plywood and the ceiling with acoustic tile. The walls and ceiling are fully insulated and adequate lighting is provided by the ceiling and wall fluorescent fixtures.

The electrical services, which utilize 100 volt 60 cycle AC-DC current, are capable of being operated from either an outside "hi-line" power supply or from the laboratory's own generating plant.

Similarly, the water supply for normal operations can be supplied to the laboratory's piping system by either an outside pressure source via a hose, or from the trailer's storage tank via an electric pressure pump. Motive power is provided by a large truck-tractor which has a maximum carrying capacity of 22,000 pounds.

The mobile laboratory is based in Halifax and will serve the entire Maritimes area. Its outstanding feature is that it will be able to provide a highly technical service to outlying areas in a matter of hours.

Fisheries Film Wins Award

A 16 mm Department of Fisheries colour film illustrating approved methods of handling and preparing fish was awarded 1st prize in its category at the 4th Annual Golden Reel Film Festival in New York last month.

Entitled "Fish Spoilage Control", it is one of the Department's series of educational films on various aspects of the fisheries. It is especially intended for showing to fishermen and plant workers and stresses not only how fish can rapidly lose its rich goodness if not properly handled but also how fish should be preserved, processed and stored after being taken from the water.

The film uses the animation technique to good effect in presenting the scientific findings by the

Department's technological staff on this particular subject. It was produced for the Department by the National Film Board.

Honoured on Retirement

More than 100 friends and well-wishers from the Department of Fisheries personnel and their families gathered at Nanaimo, B.C., in March, to say "Good luck" to Mr. and Mrs. Harold E. Palmer on the occasion of Mr. Palmer's retirement on superannuation.



Mr. Palmer.

Mr. Palmer had been supervisor of Fisheries District No. 3 in British Columbia since June, 1952. He joined the Department of Fisheries in 1923 after service in the British Foreign Office and in World War I. Mr. Palmer is succeeded in the supervision of Fisheries District No. 3, B. C., by Mr. E. G. Moore of Nanaimo.

Course for B.C. Fishermen

For the third year in succession a two-week course of instruction was given to British Columbia fishermen at the University of British Columbia. Known as the Fishermen's Short Course, the event attracted an enrollment of 35 commercial fishermen, most of them skippers of purse seiners, trollers or gill net fishing boats.

Lectures on a wide variety of subjects connected with fishing and the fishing industry were given by instructors from the University Alumni, the Department of Fisheries, the Fisheries Research Board, international fisheries commissions, the B. C. Provincial government and executives of various industrial organizations.

Continues as Commissioner

Robert J. Schoettler, who recently retired from the position of Director of Fisheries for the State of Washington, has consented to continue as a member of the International Pacific Salmon Commission until his successor as commissioner has been appointed. The announcement of his retirement as Washington Director of Fisheries stated that he was also resigning from the salmon commission. However, the Department of State in Washington, D.C., asked him to continue to serve on the commission, of which he is chairman. Mr. Schoettler consented to do so. He has been a commissioner, twice as chairman, since 1950.

North Pacific Programme

Approximately 20,000,000,000 pounds, one third of the world's supply of fish, comes from the North Pacific Ocean, Roy I. Jackson, Director of the International North Pacific Fisheries Commission, recently told a gathering of Canadian fishery officers in Vancouver, B.C. He added that the potential yield from the Pacific is even greater, but that scientific study and conservation must be maintained at all times.

Of the nations exploiting the North Pacific Ocean Japan takes most fish with a total annual catch of about 8,000,000,000 pounds. Chinese and Russian fisheries also account for a heavy annual catch. United States fishermen take approximately 1,000,000,000 pounds and Canada 600,000,000 pounds a year.

Mr. Jackson described the organization of the North Pacific Commission since its formation in June, 1953, when Canada, the United States and Japan brought in effect a treaty made for the protection and maximum productivity of the Pacific fishery potential under a ten-year agreement. The plan could terminate at the end of ten years on a one-year notice from any one of the three nations, Mr. Jackson explained, but without such notice the agreement could continue indefinitely.

Referring broadly to terms of reference in the agreement, Mr. Jackson pointed out that certain established fisheries were protected by abstention clauses. Under this arrangement Japan had agreed to refrain from fishing for salmon, herring or halibut in waters of the eastern Pacific Ocean.

The protection afforded by the abstention clauses only applied if the country concerned carried out specific requirements as to research, protection and the maintenance of maximum productivity. Beginning in 1958 the Commission will review such fisheries annually and determine whether or not fisheries now under abstention shall continue to qualify.

A vast and detailed programme of scientific research had been set in motion shortly after the Treaty was signed, and in 1955 the three nations had initiated one of the greatest ocean surveys in history, Mr. Jackson said.

The commission plans an overall research programme but its execution is carried out by the fisheries research agencies of the three countries. Co-ordination of research and interpretation of its results are functions of the Commission, Mr. Jackson explained.

Practical operations began on a limited scale in 1955 and in the following year the programme was in full swing. Mr. Jackson said the three countries sent out a total of 20 research vessels. Thirteen boats fished for salmon in all parts of the north Pacific with the primary object of discovering and recording distribution and collecting samples. Three ships were operated for the sole purpose of catching, tagging and releasing salmon as the first step in tracing migratory patterns. Four vessels engaged in a programme of oceanic research aimed at the accumulation of detailed knowledge of ocean currents, temperatures and all conditions affecting fish in these latitudes.

Dr. Hiroshi Kasahara of Japan, Assistant Director of the Commission, said the programme to date has shown very good promise of meeting conditions of the treaty. Research operations for 1957 will be expanded and refined in accordance with what has been learned in the past few years.

Fish Inspection Tour

H. V. Dempsey, Director of the Inspection and Consumer Service of the Department of Fisheries, Ottawa, is making a tour of European fishing centres to study fish inspection programmes and quality control methods, with respect to fresh and frozen fish products and processing plants, as well as the canned fish and dry salted fish industries.

He will visit fishing centres, processing plants and laboratories in England, Scotland, France, Denmark, Germany, Norway and Iceland.

An Emperor's Dish

There are many famous lobster dishes, but few if any surpass the elegant Lobster Newburg. According to popular belief, this dish was created for Napoleon Bonaparte by his chef Bailly and was originally named Lobster a la Napoleon. The Emperor, however, thought better of the title and called the dish instead, Lobster Thermidor -- Thermidor being the 11th month of the First French Republic, corresponding on our calendar to the period July 19th to August 17th.

Should you care to try your hand at this hotel and restaurant specialty, consumer tested directions are given below.



Lobster Thermidor

- 2 lobsters, about 1½ pounds each
- 2/3 cup chopped mushrooms
- 3 tablespoons butter
- 3 tablespoons flour
- 1/4 teaspoon salt
- 1/8 teaspoon dry mustard
- Dash paprika
- 1 ½ cups milk
- 1/4 cup grated Cheddar cheese
- 3 tablespoons sherry or lemon juice
- 2 tablespoons finely grated Cheddar cheese

Broil lobsters. Split and remove meat from body and claws, reserving baby shells. Cut meat into bite-sized pieces. Saute chopped mushrooms in 1 tablespoon of butter until tender. Melt remainder of butter in top part of a double boiler and blend in flour and seasonings. Add milk slowly and cook over hot water, stirring constantly until thickened. Stir in 1/4 cup of grated cheese and continue stirring until melted. Add lobster, mushrooms, and sherry or lemon juice. Combine all ingredients well and when thoroughly heated, spoon into the lobster shells arranged in a shallow baking dish. Sprinkle with 2 tablespoons of finely grated cheese and broil 4 inches from top heat for about 2 minutes or until cheese is golden brown. Makes 4 servings.

Severe ice conditions experienced along parts of the Atlantic seaboard threatened a set back in the early stages of this year's lobster fishery. Following an extremely cold winter, heavy pack ice was in evidence in various areas, preventing fishermen from setting out their gear. In 1956 landings in all the Atlantic provinces totalled 51,220,000 pounds which had a landed value of \$17,764,000.

Fishery Figures For February

SEAFISH: LANDED WEIGHT AND LANDED VALUE

	May - Feb. 1955-56		May - Feb. 1956-57	
	'000 lbs	\$'000	'000 lbs	\$'000
CANADA - TOTAL	1,797,370	73,222	1,690,008	78,221
ATLANTIC COAST - Total	1,178,141	44,482	1,210,366	46,628
Cod	534,848	13,051	578,434	14,230
Haddock	123,207	3,621	104,855	3,300
Pollock, Hake & Cusk	56,970	927	64,814	1,092
Rosefish	39,266	897	54,629	1,192
Halibut	3,395	718	4,044	1,012
Plaice & Other Flatfish	77,528	2,480	72,908	2,306
Herring & Sardines	169,382	1,902	164,266	1,932
Mackerel	26,935	1,083	21,805	825
Swordfish	4,564	1,100	4,153	1,169
Salmon	2,604	871	2,608	947
Smelts	4,216	478	3,704	457
Alewives	16,911	140	15,689	143
Other Fish	39,991	451	38,939	440
Lobsters	45,654	15,108	48,336	15,621
Clams & Quahaugs	8,943	378	7,715	381
Scallops	1,599	682	2,280	759
Other Shellfish	22,128	595	21,727	822
PACIFIC COAST - Total	619,229	28,740	479,642	31,593
Pacific Cod	5,766	404	7,262	530
Halibut	18,960	2,469	22,500	4,892
Soles & Other Flatfish	6,186	297	7,365	332
Herring	440,159	6,298	315,034	4,606
Salmon	129,147	18,250	110,110	20,341
Other Fish	7,015	174	7,127	185
Shellfish	11,996	848	10,244	707
BY PROVINCES				
British Columbia	619,229	28,740	479,642	31,593
Nova Scotia	366,517	19,349	361,642	19,506
New Brunswick	155,395	6,380	173,393	7,285
Prince Edward Island	35,015	3,178	40,046	3,737
Quebec	96,369	2,578	114,692	3,488
Newfoundland	524,845	12,997	520,593	12,612

MID-MONTH WHOLESALE PRICES, Feb., 1957

	Montreal	Toronto
	\$	\$
Cod fillets, Atl. fresh, unwrapped lb.	.280	.307
Cod fillets, Atl. frzn., cello 5's lb.	.219	.248
Cod fillets, Atl. smoked lb.	.318	.335
Haddock fillets, fresh, unwrapped lb.	.374	.420
Herring kippered, Atl. lb.	.240	.259
Mackerel, frzn., round lb.	.152	.174
Lobster canned, fancy case 48- $\frac{1}{2}$ s	38.14	37.89
Sardines, canned case 100- $\frac{1}{4}$ s	8.92	8.96
Halibut, frzn., dr., Pacific lb.	.440	.424
Silverbright, frzn., dr. lb.	.491	.474
Coho, frzn., dr. lb.	.621	.621
Sockeye canned, gr. A case 48- $\frac{1}{2}$ s	22.30	21.89
Pink, canned, gr. A " "	12.81	12.92
Whitefish, fresh lb.	.400	.400
Lake Trout, frzn. lb.	.415	.421

PRICES PER CWT. PAID TO FISHERMEN (Week ending Feb. 16th.)

	1956	1957
	\$	\$
Halifax		
Cod Steak	4.00	3.25
Market Cod	3.50	3.25
Haddock	5.50	4.00-5.00
Plaice	3.50	3.25
Yarmouth		
Haddock	6.00	5.50
Black's Harbour		
Sardines	2.50	2.00
St. John's, Nfld.		
Cod	2.25	2.00
Haddock	3.00	3.00
Rosefish	2.00	2.00
Vancouver		
Ling Cod	-	11.50-13.00
Gray Cod	5.00	6.00
Soles	6.00-8.00	6.00-8.00
Salmon, Redspring	38.00	38.00-45.00

Fishery Figures For February

STOCKS AS AT END OF FEBRUARY

	1956 ('000 lbs)	1957 ('000 lbs)
<u>TOTAL - Frozen Fish, Canada</u>	36,702	57,725
<u>Frozen - Fresh, Sea Fish - total</u>	19,777	32,194
Cod Atlantic, fillets & blocks	2,752	4,502
Haddock, fillets & blocks	4,754	3,798
Rosefish, fillets	890	1,144
Flatfish (excl. Halibut), fillets	1,565	1,719
Halibut Pacific, dressed & steaks	2,505	6,448
Other Groundfish, dressed & steaks	1,063	1,189
Other Groundfish, fillets & blocks	609	833
Salmon Pacific, dressed & steaks	1,915	6,965
Herring, Atlantic & Pacific	1,107	1,154
All Other Sea Fish, all forms	1,989	3,621
Shellfish	628	821
<u>Frozen - Fresh, Inland Fish - total</u>	3,297	5,493
Perch, round or dressed	23	515
Pickerel (Yellow), fillets	607	256
Sauger, round or dressed	138	425
Tullibee, round or dressed	195	323
Whitefish, round or dressed	676	791
Whitefish fillets	83	263
Other, all forms	1,575	2,920
<u>Frozen - Smoked Fish - total</u>	1,743	1,826
Cod Atlantic	772	646
Sea Herring, kippers	568	552
Other, all forms	403	628
<u>Frozen for Bait and Animal Food</u>	11,885	18,212
<u>Salted and Pickled Fish, Atl. Coast</u>		
<u>Wet - Salted - Total</u>	15,609	28,548
Cod	13,495	24,076
Other	2,114	4,472
<u>Dried - total</u>	14,249	25,922
Cod	13,181	24,363
Other	1,068	1,559
<u>Boneless - total</u>	518	1,095
Cod	492	1,045
Other	26	50
<u>Pickled - total (barrels)</u>	16,962	12,781
Alewives	8,504	5,985
Herring	2,482	4,810
Mackerel	5,976	1,986
<u>Bloaters (18 lb. boxes)</u>	103,774	84,829

CANADIAN EXPORT VALUE OF FISHERY PRODUCTS, MAY-JANUARY (Value in Thousands of Dollars)

	1956	1957
<u>Total Exports</u>	101,283	104,951
<u>By Markets:</u>		
United States	74,257	75,610
Caribbean Area	12,956	12,407
Europe	11,097	13,361
Other Countries	2,973	3,573
<u>By Forms:</u>		
<u>Fresh and Frozen</u>	59,294	62,851
<u>Whole or Dressed</u>	20,527	23,026
Salmon, Pacific	4,800	4,923
Halibut, Pacific	2,232	2,826
Cod, Haddock, Pollock, etc.	414	539
Swordfish	1,350	1,681
Other Seafish	2,354	3,105
Whitefish	3,977	4,145
Pickerel	2,128	2,252
Other Freshwater Fish	3,272	3,555
<u>Fillets</u>	22,832	24,562
Cod, Atlantic	7,727	8,585
Haddock	3,675	3,432
Rosefish, Hake, Pollock, etc.	1,690	2,506
Flatfish	4,374	3,865
Pickerel	2,918	3,405
Other	2,448	2,769
<u>Shellfish</u>	15,935	15,263
Lobster (live, Meat)	14,534	14,012
Other	1,401	1,251
<u>Cured</u>	18,456	17,229
<u>Smoked</u>	1,133	1,323
Herring	807	929
Other	326	394
<u>Salted, Wet or Dried</u>	14,381	13,307
Cod	13,082	11,741
Other	1,299	1,566
<u>Pickled</u>	2,942	2,599
Herring	1,461	1,304
Mackerel	847	679
Other	634	619
<u>Canned</u>	15,769	15,785
Salmon, Pacific	12,610	11,827
Sardines	1,248	1,623
Lobster	1,567	1,967
Other	344	368
<u>Miscellaneous</u>	7,764	9,086
Meal	3,705	4,598
Oil	1,336	1,307
Other	2,723	3,181

Fisheries News From Abroad

Tuna Fishing -- French West Africa

The harbour of Dakar, French West Africa, is the base for a tuna fishing fleet of 43 vessels, which started fishing in the middle of November, 1956, and will probably end in May, 1957. This fleet is made up of 22 "baby clippers" from the St. Jean-de-Luz area of the Basque coast of France, 19 trawlers from Brittany, adapted to tuna fishing, and one large tuna clipper permanently based at Dakar. This vessel, owned by a French citizen, was taken to Dakar last year under the Hondurian flag and has since been "naturalized" French. The owner of this tuna clipper is reported to have purchased a second such vessel in Peru for future use off West Africa. Fishing is done with rods, using live bait (sardinelle).

Between the middle of November and the end of December, approximately 2,000 metric tons of tuna were caught. Only one type of tuna is being fished, the albacore, which is known locally as yellow-finned tuna. Rather exceptionally cool weather conditions prevailing in the Dakar region have caused the tuna to swim farther south than is normal in this season and also to swim deeper, thereby seriously affecting the fishing, which was considered to be disappointing in comparison to that of the previous year.

The entire catch is reserved for French Metropolitan canneries, to which the fishing fleet and

supporting vessels are chartered. With the exception of the one tuna clipper, the fishing vessels have no refrigerating equipment. As soon as they return to Dakar with their loads they transfer them to a ship especially equipped for quick-freezing. This vessel was sent from France under charter to the French canneries. When the fish is frozen (whole), it is again transferred to one of the refrigerator ships (also operating under the same charter) for transport to France. The presence of such a ship equipped for quick freezing was reportedly necessary since even the recently expanded refrigerating facilities at the port of Dakar were not considered sufficient during the fishing season.

Since practically the whole catch is destined to Metropolitan France, and since the season is not yet completed, says the United States Market News Service, it is difficult to determine exactly the value of the catch.

Although this season's catch has not yet appeared to meet the high expectations formulated last year, the general belief is that tuna fishing along the western coast of Africa would be a worthwhile activity and that serious thought must be given to the establishment of a local cannery industry there. Two pilot plants are already functioning, but the decision to firmly establish a fish canning industry depends on a number of important factors.

International Fisheries Exhibition

For the first time, the United Kingdom is this year staging the International Fisheries Exhibition, which was situated in Copenhagen last year. It is to be held at Lowestoft, at a time of peak activity in this important fishing port and its neighbour, Yarmouth.

The Herring Board, which with the White Fish Authority are Patrons of the Exhibition, are during the allotted week reviving the medieval tradition of the Herring Fair at Lowestoft and Yarmouth, and this itself will provide many attractions to the area.

The period also coincides with the crest of the East Anglia herring season, when hundreds of Scottish and other owners, managers and skippers will be based on the two ports. In these respects, it is convenient that the holiday season in the two resort towns will not be straining the hotel accommodations.

The Exhibition will be worthy of the crowds of those with an interest in the fishing industry who

will be there to see it. The whole of two halls will be devoted to over 120 trade stands, already heavily booked by exhibitors from many countries. The Kensington Hall will contain land-based exhibits and marine engines, and the Pavilion, on the front, will house sea-going items.

In these buildings, over a dozen types of marine engines will be represented, capable of powering all craft used in the industry, with appropriate marine fuels and lubricants, engine-room controls, pumps and boilers. Electrical and electronic developments in radio, radar, echo-sounders, navigators and automatic controls, as well as in gyro-compasses, will be very widely demonstrated, together with physical controls such as steering and rudder mechanisms, propellers and drive systems.

Equipment used in the catching of fish will include nets (and net-making machinery), ropes, splicing equipment, cordage preservatives, winches and line haulers, as well as the disinfectants, detergents, fishpounds and containers used at sea.

Iceland

EXPORTS OF PRINCIPAL FISHERY PRODUCTS

January - December, 1956

For Comparative Table See "Trade News," March, 1956

Quantities in Thousands of Pounds

Value in Thousands of Kroner⁽¹⁾

DESTINATION	TOTAL EXPORTS		MAINLY COD						HERRING		FISH MEAL	OILS		OTHER ⁽²⁾ PROD.
	Value	Quan.	Fresh	Frozen	Dry Salted	Wet Salted	Stock-fish	Other Types	Fro-zen	Salted	th. lb.	Cod	Other	th. lb.
	th. kr.	th. lb.	th. lb.	th. lb.	th. lb.	th. lb.	th. lb.	th. lb.	th. lb.	th. lb.	th. lb.	th. lb.	th. lb.	th. lb.
U. S. A.	104,218	40,348	-	33,064	-	110	121	-	-	79	110	3,530	-	3,334
<u>Other Western Hemisphere</u>														
Brazil	30,552	8,637	-	-	8,637	-	-	-	-	-	-	-	-	-
Cuba	8,545	2,803	-	-	2,708	-	-	-	-	-	-	95	-	-
Panama	107	33	-	-	33	-	-	-	-	-	-	-	-	-
Puerto Rico	44	20	-	-	-	-	-	-	-	-	-	13	-	7
Uruguay	19	4	-	-	4	-	-	-	-	-	-	-	-	-
Venezuela	288	86	-	-	86	-	-	-	-	-	-	-	-	-
<u>Europe</u>														
Austria	77	66	-	-	-	-	-	-	-	-	-	-	-	-
Belgium	1,275	1,165	-	-	-	-	-	-	-	-	1,149	16	-	-
Cyprus	285	245	-	-	-	-	-	-	-	-	243	2	-	-
Czechoslovakia	61,650	28,049	-	16,270	-	-	-	-	5,012	353	6,033	375	-	6
Denmark	20,975	17,056	-	ø	9	4,467	60	-	-	194	11,137	997	16	176
Eire	5,247	4,650	-	-	-	-	-	-	-	-	4,650	-	-	-
Faroe Islands	474	368	-	-	-	-	-	-	368	-	-	-	-	-
Finland	37,458	17,096	-	86	-	-	478	-	66	10,849	4,458	928	-	231
France	10,378	5,739	-	1,709	-	-	507	13	-	-	-	7	-	3,503
Germany (East)	28,064	12,756	3,647	9,109	-	-	-	-	-	-	-	-	-	-
Germany (West)	80,927	75,569	31,453	64	-	937	946	293	-	ø	14,346	8,033	15,276	4,221
Gold Coast	44	11	-	-	-	-	11	-	-	-	-	-	-	-
Greece	15,318	9,988	-	55	-	9,735	-	-	-	-	-	-	-	198
Hungary	1,336	467	-	441	-	-	-	-	-	-	-	26	-	-
Italy	53,021	27,501	-	-	-	19,214	2,803	5,338	-	-	-	146	-	-
Netherlands	27,805	14,194	-	-	-	-	2,230	4	-	-	814	7,850	1,316	1,980
Norway	3,484	2,373	-	-	-	-	-	-	-	-	-	1,687	684	2
Poland	13,031	10,692	-	-	-	-	-	-	4,276	2,796	3,307	-	313	-
Portugal	51,203	29,770	-	-	-	2,297,768	-	-	-	-	-	-	-	-
Spain	29,687	9,149	-	-	7,528	-	479	-	-	-	-	110	1,032	ø
Sweden	32,493	19,273	-	1,129	-	243	205	18	-	12,551	1,184	247	-	3,696
Switzerland	678	553	-	-	-	-	-	-	-	-	443	110	-	-
Trieste	13	2	-	-	-	-	2	-	-	-	-	-	-	-
United Kingdom	75,144	43,925	5,360	1,766	-	7,345	7,179	-	-	2	12,957	42	-	9,274
U. S. S. R.	203,051	97,419	-	61,729	-	-	-	-	-	35,690	-	-	-	-
Yugoslavia	434	200	-	-	-	-	-	-	-	-	-	200	-	-
<u>Other Countries</u>														
Australia	1	ø	-	-	-	-	-	-	-	-	-	-	-	ø
Egypt	1,917	1,103	-	-	-	1,008	-	-	-	-	-	95	-	-
East Africa	2	ø	-	-	-	-	-	-	-	-	-	ø	-	-
Union of S. Africa	4	2	-	-	-	-	-	-	-	-	-	2	-	-
Indonesia	49	22	-	-	-	-	-	-	-	-	-	22	-	-
Israel	5,506	2,989	-	1,705	-	-	-	-	-	-	1,103	181	-	-
Fr. Equat. Africa	3,139	772	-	-	-	-	772	-	-	-	-	-	-	-
Lebanon	27	13	-	-	-	-	-	-	-	-	-	13	-	-
Liberia	7	2	-	-	-	-	2	-	-	-	-	-	-	-
Nigeria	37,400	9,616	-	-	-	-	9,574	-	-	-	-	-	-	42
Turkey	28	13	-	-	-	-	-	-	-	-	-	13	-	-
Sudan	1	ø	-	-	-	-	-	-	-	-	-	-	-	ø
Total Jan. -Dec. '56	945,406	494,739	40,460	127,127	19,007	72,827	25,369	5,666	9,722	62,514	62,000	24,740	18,637	26,670
Total Jan. -Dec. '55	788,108	411,943	22,954	102,257	21,549	71,413	14,449	5,358	6,101	52,582	58,786	22,218	11,206	23,070

(1) A "Kroner" is the equivalent of about 6 cents in Canadian Currency.

(2) Includes all Whale products which totalled 12,895 th. lb. in 1956 and 7,479 th. lb. in 1955.

ø Represents quantities less than 1,000 lb.

Current Reading

"Handbook of Freshwater Fishery Biology with the First Supplement," by Kenneth D. Carl-ander, (A publication of the Iowa Co-operative Fishery Research Unit, sponsored by the Iowa State Conservation Committee and the Industrial Science Research Institute of Iowa State College. Wm. C. Brown Company, Publishers, Dubuque, Iowa. \$6.60).

The widely scattered nature of fishery literature, with much important information in bulletins and miscellaneous publications not generally available, accounts for much of the value of such a summary as this, which is primarily a source book for quick reference to data on freshwater fishes. The author says an attempt has been made to include all tabular material for which conservationists and biologists have frequent need. Research workers will probably find it most valuable as a bibliographical guide to the original investigations.

"Index and List of Titles, Publications of the Fisheries Research Board of Canada, 1901-1954," prepared by Yvonne Bishop, Neal M. Carter, Dorothy Gailus, W.E. Ricker and J. Murray Speirs, (Published by the Fisheries Research Board of Canada, Ottawa, \$0.75).

This subject-author index has been prepared in response to requests for a guide to the published work of the Fisheries Research Board of Canada and of its predecessor, the Biological Board of Canada. Because of the rather large number of publications involved, the Board's Publications Committee considered that a really comprehensive index would be too great a task, but that an index based mainly on the titles of papers would have considerable value. However, during its compilation many entries covering specific information in their text and tables, but not mentioned in their titles, were included.

The index deals with seven series of publications: 1) contributions to Canadian biology and contributions to Canadian biology and fisheries; 2) Journal of the Biological Board of Canada and Journal of the Fisheries Research Board of Canada; 3) Bulletins of the Biological Board and the Fisheries Research Board; 4) Canadian Atlantic fauna and Canadian Pacific fauna; 5) studies from the Boards' stations; 6) Research Bulletins of the Newfoundland Government Laboratory, and 7) Service Bulletins of the Newfoundland Government Laboratory.

The index has been prepared mainly from the titles of the articles, with some reference to the abstracts, subheadings and conclusions. With the biological papers, the aim has been to list the main

references to species and localities, and the kind of information obtained. Technological subjects are listed under the type of process concerned and the kind of product involved, as well as the fisheries source material. Names of authors and co-authors of papers are also included in the index.

For papers where only a few different species are mentioned, entries have been made under each species. For the biological papers that mention many species, entries have been made under one of the general headings such as Fauna; Distribution of Fish; Birds.

"Handling and Chilling of Fresh Fish on Vessels at Sea," by F. Bramsnaes, (a report in FAO Fisheries Bulletin, Vol. X, Number 1, January-March, 1957. Published by the Food and Agriculture Organization of the United Nations, Rome, Italy. \$0.30).

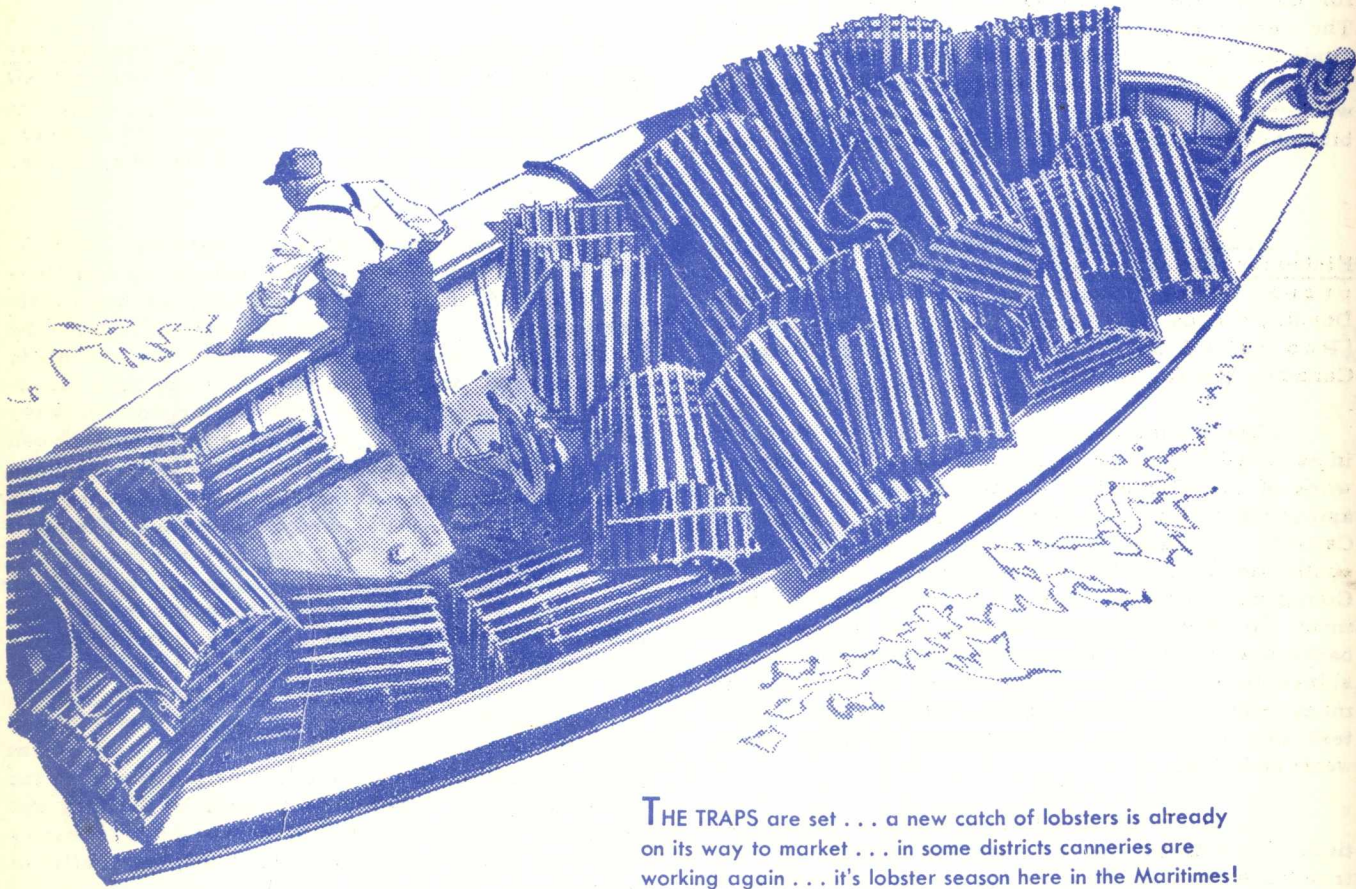
This report was made by Working Group 3, FAO Interim Committee on Fish Handling and Processing, to the FAO Fish Processing Technologists Meeting, held at Rotterdam, the Netherlands, June 24-29, 1956. It is intended to cover the scientific and industrial progress made since the FAO meeting on herring technology held in Bergen, Norway, in 1950, in the field of handling and chilling fresh fish. Many excellent scientific and popular surveys have been published during this period, and leaflets for industry and trade have been issued in various countries. The author did not have access to Russian and Japanese publications, and these are not included in the references, which are intended as a guide to the reader, and not as a comprehensive bibliography.

The author also points out that it has not been possible to deal in this paper with the important work carried out in the past five or ten years on the microbiology of fresh fish, mainly at British and Canadian research stations, or on the interesting work done on the bacteriology and keeping quality of shrimps.

The report says that since 1950, the field of quality assessment has been explored more fervently, if possible, than ever before with special emphasis in some laboratories on taste panel work. It adds: "It is interesting to note that while organoleptic methods in the earlier days of fishery work were considered deceptive or, at best, only in very rough approximation to the condition of the fish, taste panel results have lately become almost generally acknowledged as the real basis of all quality work. Incidentally, this does not apply only to research on fish."

It's time to get together again!

Plan Now For Better Lobster Fishing



THE TRAPS are set . . . a new catch of lobsters is already on its way to market . . . in some districts canneries are working again . . . it's lobster season here in the Maritimes!

Let's hope it's a good season, a profitable season for everyone in the lobster industry. And let's plan now to make it an even better season next year.

Here's how: Throw back the "berried" lobsters and give them the chance to reproduce. Throw back the shorts. Next year they'll have grown 15% longer and 50% heavier—they'll bring you a much better price. Do that, and the lobster crop will thrive and grow.

A bit of quick, easy money in your pocket today isn't much comfort if it means battling for a living tomorrow. Plan for even better lobster catches. Practice the simple methods of conservation. Then the lobster season can always be a good season for you . . . year after year after year.

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