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THE CANADIAN FISHERMAN

Official Organ of the Canadian Fisheries Association

VOL. VI

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No. 2

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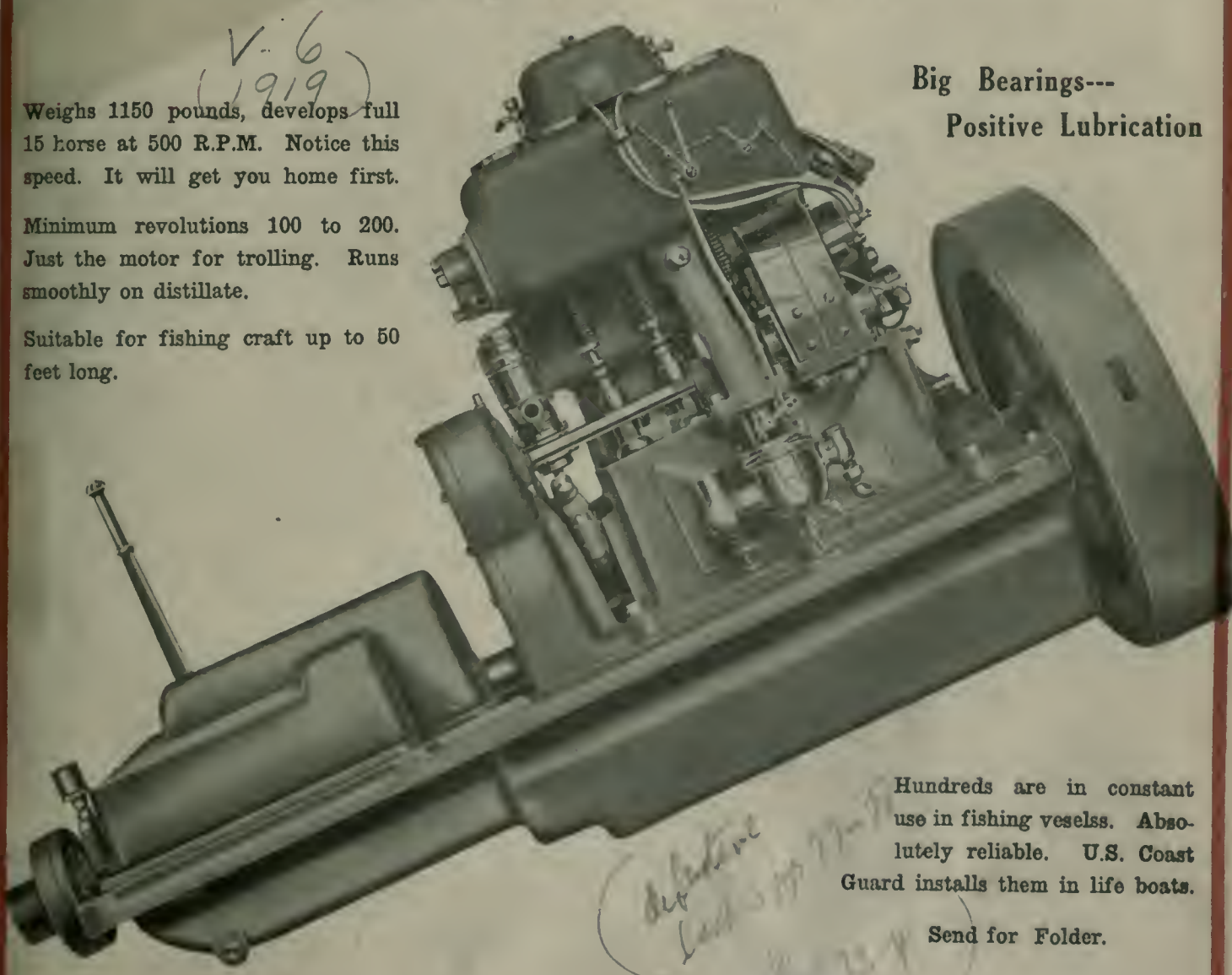
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THE CANADIAN FISHERMAN

A MONTHLY JOURNAL DEVOTED
TO THE COMMERCIAL FISHERIES
OF CANADA AND NEWFOUNDLAND
THE SCIENCE OF THE FISH CULTURE
AND THE USE AND VALUE
- OF FISH PRODUCTS -

F. WILLIAM WALLACE
EDITOR

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Vol. VI.

GARDEN CITY PRESS, St. Anne de Bellevue.

No. 1

SOME REASONS WHY EXPRESS RATE INCREASES SHOULD NOT BE GRANTED.

The Express Traffic Association of Canada made an application to the Board of Railway Commissioners for, as they say, increased express rates; and in the letter accompanying the schedule of proposed increased rates appears: "After a most careful study of the situation the Companies find that they require an average increase of at least 25% over present rates per one hundred pounds west of Sudbury and of 37% over present rates per one hundred pounds east of Sudbury." The real purport of the application does not appear on the face. On looking closely into the matter the Association asks for not only an increase in rates but for reclassification of certain commodities and in this the men interested in the fish industry should carefully consider just what this reclassification means.

Some years ago, when the Canadian express companies wished to compete with the United States express companies in the fish transportation they, of their own accord, made a special classification for fish. One is right in assuming that that classification was based upon reason and, it having been made by the express companies themselves, would continue as a classification. By reason of the existing rates on fish, which must have been very profitable heretofore and at least profitable at the present time, the Fish Industry on both the Pacific and Atlantic coasts has been developed to a great extent and its development was encouraged during war times because placing the cheaper fish on the market throughout Canada provided a splendid sub-

stitute for the other food commodities that were required overseas.

Of course the Express Association based their application for increased rates largely upon the increase in wages and the increase in the various materials they require in carrying on their business, but in considering this phase of it one should not lose sight of the fact that in the years prior to the war the express companies had a revenue which not only enable them to look after their own requirements but to return a very substantial surplus to the railway companies by which they were owned. This is not hearsay, but is taken from the judgment of the Chairman of the Railway Commission in 1911 in which he expresses himself as follows: "We are impressed with the fact that the earnings of the railway companies upon express traffic are, upon the whole, excessive and should be reduced." Since 1911 have the earnings of the railway companies on express traffic been reduced? A glance at the exhibits filed shows they are paying the railway companies more than ever before, although it appeared in the judgment of the Railway Board in 1911 that express ears then earned more money than any other ear operating, and it is fair to assume that the relative earnings of express ears to-day are what they were in 1911.

The application of the Association for increased rates at this particular time seems to be inopportune and is based on the highest wages ever paid and materials at the top-notch price. It is not only a fair assumption, but it is a fact that the trend of wages is on the decline and that the prices of most of the commodities either have fallen since the application

charges on a commodity on which the price is raised for no reasonable cause.

The steam trawler "James Carruthers," engaged in catching flat-fish, made 49 trips of a total duration of 151 fishing days last season for which each fisherman drew \$1,981 as his share. Food of the best description is provided by the owners of the trawler for which the fishermen do not have to pay. The fishermen do nothing but the actual work of fishing — shooting the trawl, hauling it aboard, cleaning and packing the fish, and unloading in port. In the new demands, we understand that several concessions are demanded such as \$1 per hour for repairing gear and payment for heads.

The demands were presented by the Union on January 8th and thirty days notice is given to comply with the increased scale. We are unable at the time of going to press to analyse the demands with regard to halibut and sable-fish, but insofar as flat-fish and eods caught by steam trawling is concerned, the increase is altogether unjustified and should not be granted as it is evident that under the old scale and with a rapidly increasing demand for these fish, trawler fisherman can earn wages more than commensurate with the practically unskilled nature of the work which requires no more ability than a freedom from mal-demer, ordinary muscular strength, and the knack of using a fish knife.

It is to be hoped that some of the thinking men in the Fishermen's Union, and we will admit there are some, will see the utter unreasonableness of this course and be content with the old scale. If the whole matter was presented to the public, it is safe to assume that a vigorous protest would be registered and their demands regarded as a hold-up for which there is no sympathy or excuse.

ANNUAL REPORT OF DEPARTMENT OF FISHERIES

The Annual Report of the Department of Fisheries for 1917 is quite a modest document compared with the bulky volume of former years and we believe it is a distinct improvement upon its fifty annual predecessors. Gone are the laborious statistical tables and precisely worded fishery overseer's reports, and we miss the familiar preface to the volume which invariably told us that "it was no exaggeration to say that Canada possesses the most extensive fisheries in the world."

A change for the better has been inaugurated in the publication of the report which will now contain the statistics for the year ending January 31st, instead of the statistical year ending March 31st. The detailed statistics which comprised the bulk of the former reports will now be embodied in the Census of Industry published by the Dominion Bureau of Statistics under the title "Fishery Statistics of Canada."

The present volume is readily understood and digested and the reader does not need to take a week off to absorb its contents. We would, however, like to see it published a month or so after the end of the year instead of twelve months after.

The report contains nothing but what has been published in this magazine during 1918, but it may be well to mention a tribute it pays to the C. F. A.

"The Canadian Fisheries' Association has done excellent work in organizing the industry to the extent it has, thus bringing about closer co-operation amongst

the different branches thereof. The department trusts that a realization of the benefits of such organization will speedily become general throughout Canada, on the part of the fishermen themselves as well as on that of the larger producers and of the wholesale and retail dealers, so that the Association will be able to speak with full authority for all parts of the industry."

The recognition of the value of the C. F. A. to the fishing industry by the Department is very gratifying and it is to be hoped that the coming years will see their good wishes justified and that both Association and Department will work together in the closest harmony for the common good of the industry they represent.

AMERICANS TO FORM FISHERIES' ASSOCIATION.

We note with pleasure that a Fisheries' Association is to be formed by those engaged in the fishing industry of the United States. The new organization will be known as the United States Fisheries' Association and their constitution is practically a duplication of our own Canadian Fisheries' Association with the same progressive objects and ideals.

A convention is to be held at the Hotel McAlpin, New York, on February 14th, at which the new Association will be formally organized and officials appointed.

We wish the organization every success and trust that both North American Fisheries' Associations will be able to co-operate fraternally with each other in developing and promoting the many interests we have in common.

Mr. Kenneth Fowler, Chief of the Fish Division, N. S. Food Administration, is the Chairman of the Organization Committee, and from what we know of Mr. Fowler and his work, the United States Fisheries' Association is an assured success.

WHOLESALE FISH DEALERS LICENSES.

Licenses for wholesale dealers in fish are now being issued by the Canada Food Board as the work of the Fish Section, on behalf of the industry, will be continued during the year. So far as possible the license numbers used in 1918 will be given for this year, thus avoiding loss to dealers who secured rubber stamps, stencils, and stationery bearing the number. Fees will be based on the standard plan adopted in other lines of food production, i.e., \$10.00 for each \$50,000 turnover in 1918, and no additional charge for branch license. New certificates are not to be issued. Instead pasters will be supplied to affix on the original certificate.

EXPAND FISH TRADE IN QUEBEC.

Quebec, January 24.

The Gulf of St. Lawrence Shipping and Trading Company has announced to the city its intention to open two big fish stores here, and to expend \$10,000 on each of them. The company plans to rent a portion of Montcalm market hall, at a nominal rate, for twenty years. It has a capital of three million dollars, controls large fisheries on the north shore and in the Gulf, has a fleet of five steamers which will bring fresh fish to this city and other points, and will sell at a very moderate rate.

The company will install up-to-date equipment in its stores, with modern refrigerating system and the like. It is expected to operate here by May next.

OBITUARY.

MARTIN MONK

Died January 18, 1919.

When Martin Monk passed on, the Fraser River fisheries lost a prominent figure in the industry. A man whose long experience was most valuable to the fishing interests and who had the welfare of the industry very much at heart. Mr. Monk spent a great deal of his time working for the propagation and protection of the Fraser River salmon. He had strongly advocated, for years past, the opening of the trout grounds to commercial fishing, claiming that the trout were the natural and most dangerous enemies of the salmon spawn. He also believed that a proper system used in the exterminating of the hair seals would save many thousands of the mature salmon that are headed up the Fraser, and which these seals destroy. Mr. Monk was a true friend of the fishermen, and worked continually in their behalf. Out of one hundred and fifty fishermen employed by Mr. Monk there were only six Japanese, which demonstrated his interest in behalf of the white fishermen.

Besides being Chairman of the Fisheries Committee of the New Westminster Board of Trade and Vice-President of the B.C. Wholesale Fish Dealers Association, Mr. Monk was a member of the Knights of Columbus, the Elks, the Eagles, and the Ancient Order of Foresters.

Mr. Monk was 57 years old, and was born in Essex, England. In 1897 he went to the Klondike over the Edmonton trail, and two years later came out over the same trail, and down the Fraser into New Westminster. He fished on the river for two years, and then decided to enter the wholesale business, which he has carried on successfully ever since, and he has also been interested in the Glenrose Cannery.

Two sons survive: Alfred, who is looking after the business, and George who is with the Canadian forces in Germany. Henry, another son, was killed in France.

In his lifetime the late Martin Monk produced a great deal of valuable manuscript for publication in various periodicals, principally on matters pertaining to the fisheries. This manuscript was not always in the form of prose as the following verse will testify.—*Editor.*

Increased Food Supply.

By the Ground Fish Laureate.

These days we hear so much of fish
They tell us what a dainty dish
Can be produced at little cost
From fish that otherwise were lost.
How ground fish such as Skate and Cod
(By cooks who understand the job)
Can be prepared in such a way
That everyone who eats will say:
"I care no more for chops or steak
I'd rather eat a piece of Hake
And as we wish to spare the hog
Why I will be content with Dog
Salmon, at seven cents per pound
The way it's sold on Puget Sound"
("Vide" Mayor Gale in daily press
Some people say it is worth-less)
Or any time they're scarce I feel
That I could eat a Conger Eel
Perhaps a steak of Whale or Shark.

Could hardly fail to hit the mark
And if my appetite goes kiting
Why then I'll try a dish of Whiting
(They're nice when boiled, but for the pan
There's nothing beats the Ooljichan)
Rat Fish, Cat Fish, Jew Fish, too,
Can be made up into a stew
With onions, spuds and such like things
That pleasure to the stomach brings



Mr. Martin Monk and his record catch of Fraser River Sturgeon, 13 ft. 6 in., 905 lbs., head 188 lbs.

While Grey Fish, so people claim,
Forms good gray-matter for the brain
As for those folks some call bounders
Why they should all be fed on Flounders
Then Char and Chub with Smelts and Dace
Should on the menu find a Plaice,
While epicureans' eyes will twinkle
At Lobsters, Prawns and Periwinkle,
And there are Crabs and Shrimps and Ray;
And let the Dog Fish have its day
With other fish too numerous to mention
Which space forbids to call to your attention.

Then God bless our good Mayor Gale
And may he still increase the sale
Of fish, and so enlarge our brains
That we'll seek shelter when it rains.

PISCATORIAL PARAGRAPHS.

Mr. H. R. Silver, of H. R. Silver, Ltd., Halifax, has been doubly honored by being elected to the Directorate of the Canadian Bank of Commerce and the Presidency of the Halifax Board of Trade.

A beautiful calendar came into the office from the London & Petrolea Barrel Company. It was a vision of feminine beauty upon which we feasted our eyes. For a day, it hung before us—a fair dream upon the blankness of the editorial wall—then some miscreant entered and walked off with it. What better testimonial to its attractiveness can we give? At the same time, we'd like to get the man who grabbed it.

We regret to learn that Mr. John P. Baheock, Assistant Commissioner of Fisheries for B. C. has been laid up with the "Flu." The man who has escaped the prevailing epidemic these days is to be classed in the lucky minority.

Major Hugh A. Green has arrived back in Canada and has visited Montreal and Ottawa. Major Green will return to England again shortly.

Hon. C. C. Ballantyne, Minister of Naval Service, Marine & Fisheries, was stricken with appendicitis early in January. The Minister is now recovering and will resume his duties sometime in February.

HERRING ON CANADA'S ARCTIC COASTS.

The discovery by the Stefansson expedition party of great herring fisheries in the Far Northern waters of Canada, is announced in a statement issued through the naval department. The statement asserts that abundance of herring has been found along the Arctic coast of Canada, east and west of the mouth of the Mackenzie River, and that this will have an important bearing on Canadian northwest fisheries. If the difficulties in transportation can be overcome, the herring fisheries discovered may develop rapidly.

The department states that it is too early to decide with any definiteness on the results which the Stefansson expedition has accomplished for Canada. Between forty and fifty scientific specialists have been busy for months studying the extensive collection of Arctic fishes and marine life, as well as minerals, etc., of which many tons of specimens have reached Ottawa. If, as is considered probable by the officers of the

department, the Stefansson expedition reveals other great fishery resources, possibly including supplies of salmon, like those of the great Pacific rivers, the fishing industry of Canadian Northwest Arctic waters will figure largely before many years.

HOW BRITISH FISHERMEN HELPED WIN THE WAR.

Since war broke out, says the London Fish Trades Gazette, the industry has equipped the navy with 3,000 steam trawlers and drifters, and with 40,000 to 50,000 trained men; of the latter some thousands have laid down their lives. The full story of their endurance and achievements has yet to be written. It will form not the least inspiring chapter in the Naval History of the War. But for their aid the submarine blockade would have vanquished us. So much for the fishermen enrolled as fighting men. But the men debarred from naval service have also played their part. They have kept the sea steadily in all weathers. Their work has been no less hazardous than that of the fighting men—for from the beginning the enemy has dealt with them as combatants—and it has been, if anything, more arduous. For most of them were either too old or too young for naval service. Many of their vessels were old and uncomfortable, they have had little leave ashore, and they were generally short-handed. But in spite of it all they have fished, and defended themselves while fishing, right up to the coast of Iceland—anywhere in fact where fish were to be found—and where the grounds were not closed by the Admiralty. Their duty was to feed the nation, and they did it. How well they did it the following figures illustrate:

Total landing of trawl fish at the chief trawler ports in Great Britain, 1918:

Port.	Dates.	Weeks ending.	Cwts.
Grimsby	May 4 to	Sept. 14	892,790
Hull	May 4 to	Sept. 14	301,380
Fleetwood	May 4 to	Sept. 14	140,778
Milford	May 4 to	Sept. 14	154,720
Tyne	May 4 to	Sept. 14	42,405
Aberdeen	May 4 to	Sept. 14	122,031
Swansea and Cardiff	Aug. 31 to	Sept. 7	4,660

1,658,764

Such are the men the fisheries have bred. Valuable from the economic and commercial standpoint, indispensable for the maintenance of maritime power.

BACK FROM HUDSON BAY.

An auxiliary motor ketch-rigged vessel commanded by Capt. H. T. Munn and manned by a crew of 12 has arrived at a Nova Scotia port from an Arctic cruise. The vessel has been visiting whaling stations of the Arctic Gold Exploration Co. and has returned laden with polar bear skins, fox skins, whaling products and a few hair seal skins.

The Arctic Gold Exploration Co. is a Canadian syndicate backed by English capital which has as its object the opening to trade of the northern coasts of Canada and the exploration of the natural resources of the region. The company has three whaling stations in Hudson bay and among the islands, and it was to visit these stations that this vessel, the *Albert*, sailed from Scotland in July.

GOOD PROSPECTS FOR CANADIAN FISH OVERSEAS.

Ottawa, January 22.

While in Ottawa to-day on his way back from France and England. Major Hughie Green, known to Canadians as "The Fishmonger-General," who has been in charge of all the chilled fish supplies for the Canadian army overseas, the British War Office and the Ministry of Food, says that Canada's fisheries will now come into their own, if the Government will give that encouragement to the sea fisheries which they should have had years ago.

"Canada's fisheries, if modern methods of steam trawling and drifting are now encouraged, can feed the people of the Dominion with the finest sea food in the world at cheap prices, and then have as much over to export as would feed the world," said Major Green.

"If the Government will intelligently co-operate with the fishing interests that exist to-day, and with the interests which will spring up to start fishing in Canadian waters, there is every reason to prophesy that within the next few years Canada's fisheries will in money value equal, if not surpass, the money value of our harvest of the fields and give employment to as many people. It is not only the fisheries direct which will need all the labor than can be afforded them, but the subsidiary companies and interests which must spring up, as they did in Britain, to support and equip the fisheries. Take net and rope-making, for instance all the steam trawlers of both Canada and the States now bring their trawling nets, ropes and equipment from Grimsby, England, and they could easily be made here; a soldier who has lost his sight could be well paid and employed on work such as this, and even maimed men could find useful work in the fish-curing, smoking and tinning business, which must arise now that the world is calling for cheap, nutritious food.

"The timber trade, the nail trade and all that work which goes to produce the fish boxes and the nails to make them up, and the labor to do all these things, will and must make themselves grow to take care of the business which is assuredly going to come.

Building of Trawlers and Drifters.

"Canada has shown that she can build trawlers and steam drifters as good as ever were built in Great Britain. Why not continue this work and employ labor? The yards to look after the repair work of a big fleet of steam trawlers and drifters alone would employ hundreds of men.

"Canada's chilled fish has found a market now for all time in Britain, and the civil population are asking for more. France is also in the market for many millions of pounds, and Italy also wants supplies."

Major Green, who originally introduced Canada's fish to the Canadian army, says that a market in Britain has been found for the Canadian fishermen for various varieties of fish which they had not troubled to catch previously, as they had no market for them in Canada, owing to the people not being conversant with them.

"What Canada needs now," said Major Green, "to put her in the forefront as the largest producer of fish in the world is cold-storage on the coast, steam trawlers, steam drifters, and plenty of refrigerator steamers or special fish-carrying vessels to take her product to Britain and the continent. Before the war Britain was supplying enormous quantities of smoked haddies, kippered herrings, tinned fish, etc., to South Africa, New Zealand, Australia, and this trade to-day is open to Can-

ada if she will only take hold of it, as Britain can't supply the fish at anything like a reasonable price, owing to the enormous prices which are now being paid by the people of Britain for all the fish which is being caught.

"The looking after of this business alone would give employment to hundreds of men and women who would be engaged in the preparing of the fish for export. We have the finest fishing banks in the world, and the quality of our fish can't be beaten, and there is no reason why we cannot stir ourselves to be great fish producers and exporters and tell the world that along with the wheat which now supplies the loaves to the masses, we are now getting ready to also supply the fishes, and in a very short time the Canada brand of fish should be known throughout the world as the finest procurable."

INCREASED SUPPLIES OF FRESH FISH IN GREAT BRITAIN.

The noticeable improvement in the monthly returns of sea fisheries which was evidenced in October, when the figures rose from 77,368 cwts. in 1917 to 1,057,110 cwts. in 1918, was well maintained, and indeed proportionately improved in November when the quantity of wet fish landed in England and Wales aggregated 682,134 cwts. as against 357,362 cwts. in November, 1917, the respective values being £1,488,041 in 1918, and £998,839 in 1917.

In view of the still restricted supplies of meat, the restoration of the sea fisheries is a matter of the greatest importance to this country and one which is already receiving the most active attention; operations for the removal of mines and other hinderances having been promptly commenced immediately upon the cessation of hostilities, while, as many vessels and other accessories of the fishing fleets which have been diverted to war purposes will be made re-available for the fisheries with the greatest possible despatch, it is anticipated that the almost unlimited supplies of fresh fish which have always been a valuable diet to the population of this country will be gradually restored.

FISH TRADE WITH BRITISH GUIANA.

(Trade and Commerce Reports.)

Since the war there has been a falling off in the total quantity of dried and smoked fish imported, and last year less than in any year of the decade though the value was highest. There has been also a falling off of about 20 per cent in the total quantity of pickled fish imported. For many years Canada supplied on an average about 85 per cent of the dried fish, but this percentage has not been maintained and has dropped to about 75 per cent. The duty on smoked and dried fish per cwt. is 50 cents preferential and 56 cents general.

The comparative statement of trade with Canada in the years 1915, 1916 and 1917 (imports) were as follows:—Fish (tinned or canned), 1915, \$165; 1916, \$1,046. Dried and salted: 1915, \$761,707; 1916, \$863,693; 1917, \$1,034,840.

TANNING FISH SKINS.

Kristian Bendiven. Can., 183,882, April 30, 1918. The skins are treated with a solution of soda which is then neutralized with hydrochloric acid, washed in the water and then treated with tanning material. — From Chemical Abstracts.

Who's Who in the Fishing World

Among those who have assisted in popularizing fish during the war is Mr. E. O. Sawyer, Jr., Assistant Superintendent of the Fish Section of the Canada Food Board, Ottawa. Most of those in the fish trade of Canada have heard from Mr. Sawyer at one time or another, and we are glad to be able to publish his photograph and some particulars regarding him.

Mr. Sawyer's particular work in the Board has been in connection with the licensing of wholesale fish dealers, including canners, producers and distributors, but in all lines of the Fish Section's work, he has devoted considerable effort and attention.

He comes from the country popularized by Rex Beach—Seward, Alaska, where, for four years, he assisted in the development of Alaskan resources especially in the territory adjacent to Seward which is the terminal of the Government Railway to the interior coal fields. Through his efforts, in conjunction with others, he secured for Seward a fish freezer, cold stor-



MR. E. O. SAWYER, Jun.

age and salmon cannery and made that port an operating centre for fishermen in southwestern Alaska waters.

While Mr. R. Y. Eaton, of the T. Eaton Company, Ltd., Toronto, was devoting considerable time and attention to the fish affairs of the Canada Food Board, Mr. Sawyer came east and assisted him in the work in Toronto. Latterly, he was transferred to Ottawa to work in conjunction with Captain F. W. Wallace in managing the Fish Section of the Food Board.

Although engaged in newspaper work on the Pacific Coast for a number of years prior to going north, Mr.

Sawyer has always kept in touch with the world of fish. At the age of ten, he worked in a sardine cannery in San Pedro, California, and in his boyhood days tended trolls in the barracouta fleet for grub and the fun of it. The lure of the fishing game which attracted him at that early age still holds and he has thrown his efforts into the fish end of the Food Board's work with the vim of an enthusiast.

A West Virginian by birth, courteous, adaptable, and an indefatigable worker, Mr. Sawyer has impressed all whom he has come in contact with as being a man of clear vision and an enthusiast in the future possibilities of the Canadian fishing industry.

NOTES ON SEA FISHING RESULTS FOR DECEMBER.

On the Atlantic coast, to the eastward of Halifax, weather conditions during the month were favourable, and fishing results were better than for December last year; but to the westward of Halifax, however, occasional rough weather interfered with operations, and results were not so good.

The total catch of cod, haddock, hake and pollock all over was greater, however, and amounted to 84,900 cwts. against 82,200 cwts.

The smelt fishery along the Gulf shores yielded 2,000 cwts. more than in December last year, notwithstanding that the rivers and bays were insufficiently frozen over to permit of easy and successful fishing operations.

Lobster fishing has been in progress since the 15th of November in the counties of Charlotte and St. John, New Brunswick, and the total quantity landed up to the end of December was 2,689 cwts., against 2,335 cwts. during the same period of last year. The whole catch was consumed fresh.

From the scallop beds in Chester Bay, N.S., were taken 3,435 barrels of scallops, against 500 barrels last year. The greatly increased catch of this year was, no doubt, due to more favourable weather conditions.

On the Pacific coast, stormy weather prevailed during most of the month. This seems to have affected the offshore halibut fishery only, which returned 2,000 cwts. less. Fishing in the sheltered waters resulted in increased catches. The total quantity of herring landed was 128,000 cwts., against 68,000 cwts.; of salmon, 15,300 cwts. against 6,900 cwts.; of black cod, 6,500 cwts., against 6,300 cwts.; and of flatfish 900 cwts. against 430 cwts. in December last year.

The value of the total catch of sea fish on both coasts for the month amounted to \$1,173,648, at the point of landing. For the same month last year, the value was \$1,023,553.

Three men of Richmond County, N.S., were lost by drowning during the month.

FISHING BOOM AT LOUISBURG.

Louisburg is rapidly gaining the reputation of the principal fishing port of Cape Breton, and many fishermen from other island districts are contemplating making it their permanent residence. The fishing lately has been good. A small schooner, the Arichat, owned by Aleide Goysthehe, has landed 50,000 pounds of fish within a month, and another little craft landed over 50,000 pounds.

The Sea Fisheries of Europe

Italy.

Some of the Italian fisheries are carried on in the same way and by the same methods as in the times of the ancient Romans; the description by classical writers two thousands years ago or so might be applied at the present day. They are old in another respect. The innovations and improvements in the fisheries of western Europe have left the Italian fisheries almost untouched. Scarcely any steamers are employed, and though there were some motor-boats before the war, the number was relatively small, and formed a striking contrast to the motor-fleet of, say, Denmark. The gear used is inferior and comparatively inefficient. Various attempts have been made to bring about radical improvements in the fisheries, and it is now stated with some authority, that, after the war, they will be re-organized on a modern basis. The following table gives some information as to the progress made in recent years:

	Total value of fish, etc.	No. of boats and vessels.	No. of fishermen.
1895.	£ 789,840	22,000	90,000
1900.	817,640	23,000	94,000
1905.	880,680	24,500	109,600
1910.	1,392,000	27,400	115,600
1911.	1,336,000	28,400	113,800

The value is calculated on the basis of the lire, being worth 9.2 pence, and it includes all products, as corals and sponges. The total tonnage in 1911 was 79,000 tons, which gives an average of less than three tons for each boat or vessel. It will be observed that the average earnings of a fisherman was only a little over £11 in 1911. This is explained by the fact that the class of fishermen who devote themselves entirely to fishing is not large; along considerable stretches of coast fishing is carried on in a desultory manner by old men, women and even children.

The Italian waters are rich in species of fish — there are some 500 different kinds — but the number which are of commercial importance and at the same time abundant is relatively small. Amongst those regularly taken are sardines, anchovies, tunnies, mullets, gurnards, mackerel, hake, turbot, soles, garfish, conger eels and other eels, breams, dogfish, rays. The crustacea include the spiny lobster (*Palinurus*), crabs, shrimps and prawns; the molluscs, mussels, cockles, cephalopods and many others. Most species of "cuttlefishes" are used as food, as are also several species of sea anemone, sea urchins, dogfishes and even the larger sharks. There is a great variety of fishing apparatus, from the huge nets for tunnies and the harpoons for the swordfish to the dredges for coral. Nets are classified into standing or fixed nets (*reti da posta*) which are of many kinds and used for the capture of various species, as sardines, anchovies, atherines, pelamids, etc, and drag or trawl nets (*reti da strascico*), of which there are also several varieties, much used; some are dragged by a single boat, others between two boats, and others are dragged to the shore. There are likewise various kinds of lines and hooks. The chief fishing ports are Messina, Palermo, Naples, Chioggia, Trapani, Bari and Ancona. Not far short of half the catch (as shown by value) is from the Adriatic, then comes the Tyrrhenian Sea, the waters around Sicily, and, of much less importance, Sardinian waters and the Ionian Sea. The larger boats frequent the waters off the coasts of other countries, as Aus-

tria-Hungary, Tunis, Greece, Crete, Egypt, and European and Asiatic Turkey; in 1911 the value of the fish so caught was 5,923,000 lire, of which 4,419,000 lire were earned in Tunisian waters. The sardine and anchovy fisheries are important; the sardine is taken on the coasts of the Tyrrhenian Sea and the Adriatic with fixed nets (*sardellare*), and, in the middle of the season, from June to September, with drift-nets and bait (crushed shore-crabs, not cod-roe); also with large seines (*tratta grande*), a torch, or acetylene light being used to attract the shoals. Anchovies are caught in much the same way, and, with the sardine, in Tunisian waters. The coral and sponge fisheries are special and important.

Italy, with a population of about 37,000,000, imports fish to a much greater value than it produces; it depends more and more on foreign fish. In 1900 the value of the imports was 30,466,000 lire; in 1905, 48,804,000 lire; in 1908, 83,488,000 lire, and in 1914, 90,000,000 lire (£3,600,000). The fresh sea fish and freshwater fish (chiefly carp) are consumed mostly by the better-off classes; the common run of people prefer the dried fish imported, while the poorest class rarely get fish at all. The imports consist of fresh fish, from France; salted sardine and other fish from Spain, Portugal and Algeria; red herrings from England, and dried codfish. The imports of the latter in 1913 amounted to 41,199 tons, of which 16,145 were from Norway, 12,191 from British North America; 4,413 from France; 3,953 from Iceland and the Faroes, and 3,501 from Great Britain.

Austria-Hungary.

The sea coast of this country is limited to the eastern side of the Adriatic, and the fisheries are essentially the same as those carried on by the Italians in that sea. In 1912 the fisheries were prosecuted by 17,358 fishermen with 5,383 boats (valued with gear at £268,538); the quantity of fish taken amounted to 12,462 metric tons, valued at 10,392,676 krone, or £433,000. The chief fish taken were sardines, 5,369 tons, valued at 2,620,600 crowns; mackerel, 1,345 tons, valued at 855,929 crowns; red mullet, 285 tons, of a value of 477,661 crowns; cuttlefishes, 576 tons, valued at 461,673 crowns; tunny, 297 tons, valued at 278,873 crowns, and eels, 189 tons, of a value of 228,969 crowns. The fisheries have been improving for a number of years; in 1903 the total value was only £232,000. A great Hungarian company ("Nekton," of Fiume) was greatly helping in this development before the war, with modern equipment and motor boats. In 1917 the total catch amounted to about 4,000 metric tons, 4,500 men and 650 boats being engaged. There are important preserving industries, especially in Dalmatia, Istria and the gulf of Trieste, the value of the fish preserved being about £170,000; 7,631,796 tins of sardines in oil were produced, besides 138,034 tins of mackerel in oil, 1,542 metric tons of salted sardines, as well as anchovies and smoked eels. There are about thirty tinning or canning factories in Dalmatia. Austria-Hungary imports large quantities of fresh and preserved fish, the fresh freshwater fish coming (before the war) chiefly from Roumania and Russia, but also from Germany and Italy; the fresh sea fish mostly from Germany (13,026 tons of a total of 15,028 tons, in 1912), Italy and Great Britain. Smoked and salted herrings came from Germany (8,294 tons of a total of 19,467

tons), Great Britain, Norway and Holland. The imports of stockfish and dried codfish are chiefly from Norway.

Greece.

By custom and inclination the Greeks are, and always have been, a fish-eating nation, but as they have been rather lax in developing their fisheries or protecting the fish in their seas, they now depend for the most part on imported fish, and the imports are increasing every year. Statistics of the fisheries do not appear to be regularly published, or published at all, but from older estimates it may be concluded that between 5,000 and 6,000 men, with from 1,500 to 2,000 boats, are engaged in the sea fisheries, including the sponge fisheries, which are the most valuable of all. The fish include a number of species of rays (amongst them the thornback, blue skate and fuller's ray), the sardine, sardinella (*Clupea aurita*), a sprat (*C. phalerica*), shads, anchovy, several species of mullets (*Mugil*; *Mullus*), several species of tunnies, the mackerel and so-called Spanish or Mediterranean mackerel (*S. colias*), which is the more abundant, eel, conger, garfish, swordfish, John Dory, horse-mackerel, several species of gurnards, and many species of Sparidae, Percidae and Labridae. The cod family is represented by the hake and a kind of whiting (*Gadus poutasson*, Couch's whiting), and the flatfishes include the sole, turbot, brill and the common flounder. The sardine fishery is carried on mostly at Corinth, Chaleis and Euboea, in summer, with shore-nets, and anchovies and sprats are taken also; from 3,000 to 5,000 barrels are salted yearly. The tunny fishery is carried on chiefly from Spezzia. The most appreciated product of the fisheries is boufarga, a kind of caviar prepared by salting, crushing and drying the eggs of the grey mullet, used as a "hors d'oeuvre." A variety of fishing apparatus may be noted—fixed shore-nets, traps, seines of various kinds, drift-nets, trawls (between two boats) drag-nets, casting nets, numerous styles of lines and hooks, and harpoons. As stated, the native fisheries are unable to supply the national needs. The imports comprise dried codfish, mostly from Labrador; stockfish, from Norway; salted anchovies from Portugal; sardines from Portugal, Algeria and Dalmatia; red herrings from England; dried cuttlefish from Tunis and Syria; pickled salmon from Newfoundland, red caviar from Russia, etc. Fish usually comes fourth in the list of imports. In 1907 the value was £299,489 (and exports, £38,916); in 1910, 5,763 tons of codfish were imported, 75 per cent from Labrador and Newfoundland; in 1912 the salted fish imported were valued at £57,992, the herrings at £35,400, the dried codfish at £124,421. On two days in each year, 7th April and Palm Sunday, a dish of dried codfish is the rule in Greek households; in the strict Lent of the Orthodox Church all kinds of fish are prohibited, but lobsters and other crustaceans may be eaten.

Turkey.

No statistics are published referring to the fisheries as a whole, but there is a fair amount of information as to the fisheries and the consumption of fish, especially in the markets of Constantinople, Brussa, Adrianople and Mytilene. The fisheries are carried on in the Black Sea, the Bosphorus, the Sea of Marmora, the Dardanelles and the Aegean Sea; in the former the Turk comes in contact with Russia and in the latter with Greek fishermen. The migratory fish are of overwhelming importance, especially those be-

longing to the Scoumbridae, or mackerel family, in particular the tunnies and the mackerel itself. On the technical side the fisheries may be regarded as fairly highly developed, the gear employed being similar to that used in Greece, Italy and even France. The large tunny trap-nets (Madrague, Tonnara; Turkish, Dalijan), of which there are four in the Sea of Marmora and several in the Bosphorus and Black Sea, may measure 200 metres by 50, and some of the seines may be 900 metres long and cost £500. Various kinds of set-nets, trammels, traps, seines, drift-nets and lines are used, as well as harpoons; trawling is forbidden. Conservation is not much developed; the processes of curing fish are salting, smoking and drying; a small quantity of tunny and swordfish is put up in oil; the fish smoked are mostly mackerel, and sturgeon, and swordfish flesh. The most important fish is the Pelamide (*Pelamis sardo*), sometimes confounded with the bonito; it is put on the market in all sizes, many millions in number. The average value in the seven years, 1,325-1331 (1909-10 to 1915-16) of the pelamides put on the four markets above referred to was 11,313,000 piastres, or about £102,000; about two-thirds are eaten fresh, the rest salted or smoked and chiefly exported to Greece, Bulgaria, Roumania, etc. The true tunny and the germon are also caught. The catch of mackerel varies from two million to fifty or even eighty million; they are used fresh, salted or dried; the value of the Spanish mackerel (*S. colias*) is from about one to three million piastres. The average value of the swordfish put on the four markets is about 400,000 piastres; of the sardines 1,700,000 piastres—from 800 to 1,400 tons are caught, and mostly salted. Other fish regularly caught are anchovies, sea bream (*Pagellus*) the lesser grey mullet (*M. chelo*), the red mullet, turbot, soles, shads, horse-mackerel, garfish. In 1913 the value of the fish sold in Constantinople market was £220,450. Turkey imports much fish—in 1908, 1,131 tons, valued at £43,700; in 1910, 1,597 tons, valued at £40,000; they consist of fresh fish, salt fish in barrels, dried and smoked fish (including Yarmouth herrings), black and red caviar, sardines in tins and in kegs, salted.

Russia.

The sea fisheries of Russia are of little importance compared with the fisheries of the inland waters, especially of the Caspian Sea. The following is a statement as to the yield of the various regions in 1910:

Region.	Quantity (1,000 ewts).	Value (1,000 £).	Persons engaged.
Caspian	7,700	7,100	172,000
Upper Volga	970	240	10,000
Prepontine	1,390	630	35,000
Baltic	890	550	21,000
Laenstrine	600	300	11,000
White Sea	300	210	14,000
European Russia	11,850	9,030	263,000
Ob Basin	250	240	4,300
Lower Yenisei	54	49	900
Baikal	90	79	2,500
Yakoutsh	20	7	500
Far Eastern	1,500	440	8,000
Turkestan	800	410	17,000
Asiatic Russia	2,714	1,225	33,200
Total	14,564	10,255	296,200

The statistics are probably not very accurate; they are obtained from the various regions and governments, and published, without co-ordination, in the "Recueil de Donnees Statistiques et Economiques" of the Agricultural Department. In an official bulletin the yield of the regions in 1910-1912 is given as follows, in millions of "pouds" (of 36 lbs. each):

	1910	1911	1912
European Russia.	17.9	15.2	15.6
Basin of the Caspian	17.9	15.2	15.6
Basin of the Black Sea and Sea of Azoff	0.9	1.2	1.0
Basin of the Baltic	2.7	2.9	2.8
Basin of the White Sea and Murman coast	1.1	0.8	0.9
Asiatic Russia.			
Basin of the Sea of Aral	1.1	1.5	3.2
The Far East	6.8	8.2	10.0
	30.5	29.8	33.5

The overwhelming importance of the Caspian region is evident. The chief products are sturgeons, caviar, herrings, perch-like (*Lucioperca sandra*), bream, carp and oil and skins of seals. Four species of sturgeons are caught, caviar being the chief object; there are a summer fishery, an autumn fishery and winter fishery, through the ice, the fish being cleaned and prepared by Calmuck & Kirghiz women. Herrings are important; there are seven species, but only five are of commercial value; the fishery in 1913 was the largest known, the catch in the spring alone giving 501,000,000 fish (213,000,000 from the river Volga), or 152,000 tons. In some years about 245,000 tons of fish and fishery products are despatched from Astrakhan, comprising approximately 30,000 tons of sturgeons, 100,000 tons of herrings, about the same quantity of various other fish, 1,600 tons of caviar, 100 tons of isinglass, and 1,500 tons of seal and fish oils.

The sea fisheries in European Russia are those in: (1) the White Sea, Murman coast and Arctic Sea; (2) the Baltic, and (3) the Black Sea. The yield is shown in the above tables. The White Sea and Murman coast fisheries are for herring, cod, salmon, haddock, coalfish, catfish (*Anarrhichas*) flatfish, smelts and seals. Herrings are caught in the White Sea all the year round, by seines and traps; they are marketed fresh, frozen, salted and smoked. In 1914 the quantity was 88,509 pouds, but in 1910 it amounted to 445,874 pouds. The catch of salmon was 46,500 pouds,

valued at 494,023 roubles; or "navaga" (a small cod fish, *Gadus navaga*, greatly esteemed in Moscow and Petrograd and caught, not on the Murman coast, but to the east as far as Nova Zemlia and the Kara Sea), 62,000 pouds, valued at 192,000 roubles. From 2,000 to 2,500 men engage in killing seals; in 1914 the number killed was 27,706, valued at 127,994 roubles; in 1913 the number was 67,213, and the value 276,806 roubles. In 1905 and succeeding years a great trawl fishery, particularly for plaice, was carried on off the Murman coast and the mouth of the White Sea by English and German steam trawlers, but after a few years it declined. The Russians also started steam-trawling, without much success.

The statistics for the Baltic include Finland. The more important fishes taken are the small Baltic herring ("stromling," *Clupea harengus*, var. *membras*), cod, smelt, whitefish (*Coregoni*), sprat, salmon and sea trout, flounder, turbot, and several freshwater fishes, which, owing to the low salinity, especially in the Gulf of Bothnia, are abundant on the sea coasts. These are pike, found near Petrograd to the top of the Gulf of Bothnia, perch, ide (*Leuciscus idus*), bream, roach, etc.; also the eel, though it is not very common. The catch of herring usually ranges about 10,000 to 12,000 tons.

The value of the fish taken in the Black Sea for Russian consumption in 1910 was £316,000; about 11,000 men, with 3,000 boats, were engaged. The most important fish was the mackerel, value £105,500; mullet, £25,000; turbot, £10,500; sturgeons, £10,500. Amongst the "mackerel" were no doubt small specimens of the pelamid, for this and other tunnies are caught. There are three species of herrings, two of shads, a sardine and an anchovy. One steam-trawler began operations in 1908; next year there were five, and in 1912 there were nine; 98 per cent of the catch consisted of sturgeons and from 1 to 2 per cent of flatfish.

Russia imports large quantities of fish, especially pickled herrings, and the imports are increasing while the Russian fisheries decrease from year to year. In 1911 the value of the imports was 30,055,000 roubles, viz., herrings, 21,602,000 roubles, other fish 8,453,000 roubles; the value from Great Britain was 9,252,000 roubles. Exports were valued at 7,391,000 roubles, viz., caviare, 4,277,000, and fish, 3,114,000 roubles.

Mussel Farming in France

By COLIN McKAY.

In a Paris restaurant one evening an American Red Cross officer ate a dozen oysters and a fair-sized lobster, and then ordered a platter of mussels and a bottle of good wine. Even the waiter who no doubt had witnessed some gastronomic feats in his time exhibited some polite surprise.

"That's all right," said the officer, genially, "I've been fed up with bully beef recently. I want a good dinner, and I could eat these French messels till further orders."

It was in the days before the French food controller fixed 20 francs as the maximum price of a four course dinner (*vin non compris*), and the officer's bill for his shell fish dinner and wine ran to about \$8.

In French restaurants mussels are served in the shell like oysters, the shells being as clean as those of

clams. They come from mussel farms, for mussel culture is practiced extensively in France — probably more so than in any other European country. Cultivated mussels are regarded as a dainty dish, rich in food values, though in their wild state they are usually small and deficient in fats, while when they are attached to rocks the shells are usually covered with ugly marine growths. Even the thrifty coast fishers of France do not trouble to gather wild mussels.

Mussel culture in France was originated in the eighth century by a shipwrecked sailor from Iceland, then one of the principal seats of science, learning and industry in Europe. This sailor began mussel culture in the Bay of Aiguillon where to-day there are many farms producing mussels of superior flavor. Also he is reputed to have invented the "aeon," a little

craft about 8 feet long and 3 feet wide, still used by the mussel farmers. When the tide is out they push these light craft over the soft mud of their farms by means of one foot.

In the Bay of Aiguillon the mussel farms usually have a length of 1,000 metres, and a breadth varying from 25 to 100 metres. Four-fifths of the farm is devoted to growing mussels, and the remainder reserved for reproduction. The installation of the growing part consists of rows of oak posts a few feet apart, interwoven with a sort of wicker work of branches of willow or chestnut trees. These wattle fences which run for long distances in parallel lines are about 6 feet high, and the lower interlacing branches are 16 inches or so from the soil, in order to allow the tides to shift the soft mud freely, as otherwise it would pile up in ridges. In the part reserved for reproduction the oak posts are planted close together, but are not connected by any wickerwork.

The cost of constructing a barrage for growing purposes 800 metres long, and a barrage for reproductive purposes 200 metres long, in the Bay of Aiguillon is as follows:

	Francs.
500 oak posts at 2 frs. apiece for growing barrage	1,000
1,000 oak posts at 2 frs. apiece for reproduction barrage	2,000
500 fagots for wicker-work at 1 fr. apiece..	500
10 bunches of withes to tie wicker-work to posts	27½
Various tools	100
Cost of labor for construction	1,200
Total	5,022*

The expenses of maintenance and operation annually are as follows:

	Francs.
Rent to the State at 0 fr. 27 centimes per metre	70
Posts and fagots for repairs	500
Three men at 1,000 francs each	3,000
Various expenses	200
Redemption in 10 years of 5,022½ frs.	502¼
Total	4,372¼

A mussel farm of this size when properly stocked and cultivated will produce 70 kilos of fat mussels per metre each year, or 56,000 kilos. The average selling price is 12 francs per 100 kilos. So the farm will produce 6,720 francs worth of mussels, yielding a net profit of 2,347 francs, or nearly 50 per cent. In France the working of these farms is usually a family affair, and as the labor of looking after them is not onerous and does not take up very much time, the same family may have opportunity for other occupations, such as agriculture or shore fishing.

The reproductive power of the mussel is enormous. In July and August the "boueholeur," or mussel farmer, strips bunches of young mussels from the breeding posts and places them on the growing barrage; or "bouehots d'eleavage." The boueholeur endeavor to strip off the young mussels in bunches the size of a man's fist or larger. When he has collected a sufficient quantity in his net, he slides it over the mud to the growing grounds, and inserts the bunches of young mussels in the interspaces of the branches forming the wicker fences. When the young mussels come off in small bunches he collects them in packets

of the desired size, wraps a bit of old sardine net about them, and attaches them to the bouehots d'eleavage. Before the old net rots the young mussels put out filaments and fix themselves firmly to the branches. As the mussels increase in size, the bunches are thinned out, the eulk being put in pieces of old nets and attached to unoccupied parts of the barrage, a work which is largely regulated by the tide. When given sufficient space mussels usually attain their full growth at the age of 18 months. They are generally marketed before they are two years old. After that their shells do not increase in size, though they become more full-bodied, but marine growths form upon them making them less presentable, while their mortality increases rapidly.

Mussels attached to the lower branches of the barrage achieve their growth more quickly. As they attain maturity they are picked off, and transplanted on the higher branches. In their new position, being longer exposed to the air, they acquire the habit of conserving their water, a habit which helps to keep them in good condition when they are put on the market. Moreover, they are then more in contact with the currents of fresh water, from which they extract materials which make them fat and gives them a fine and delicate flavor.

Mussels and oysters are deadly enemies. The mussel absorbs great quantities of mud, and after extracting its nourishment, rejects it. This excretion accumulates on the bottom or drifts about—a sort of poison that is fatal to even big oysters. Young mussels also fix themselves in masses upon the shells of young oysters, and smother them. On the other hand oysters, especially the Portuguese variety, which grow very fast, are equally dangerous to the mussel, because they absorb available nutriment so much faster than the mussel can do that the latter soon starves. The State, recognizing this incompatibility, prohibits mussel culture in the vicinity of oyster beds, and also attempts to destroy natural mussel beds forming near oyster beds.

In the Bay of Aiguillon there are 300,000 linear metres of bouehots—186 miles. Their production is between 35,000 and 45,000 tons of mussels per year, valued at 2,000,000 francs.

The boueholeurs begin to gather mussels for the market in the middle of May. One man will very readily gather 400 kilos in a single tide; value 48 francs or near \$9. In some cases one man has gathered 1,500 kilos in a tide; value 180 francs, or \$35 at the pre-war rate of exchange—a tidy sum for a few hours' work. When cold weather comes the gathering stops, as the mussels cease to be fit for the market.

Mussel production in France, however, does not meet the demand, and importations obtainable from Holland are eagerly bought up.

COLD STORAGE FOR ST. PIERRE AND MIQUELON.

It is reported that the French Government have awarded the sum of forty million francs to build a cold storage and equip a fleet of steam trawlers and fast fish carriers for the Miquelon fisheries. The cold storage will be erected at St. Pierre and trawlers will operate on the Banks and land their catches there. Fish carriers will transport the chilled fish to France.

Order-in-council number sixty-five fixing prices on winter caught western lakes fish was cancelled on January twenty-eight.

Opportunities in Canadian Sardines

By E. D. SAWYER, Jr., Canada Food Board.

Considerable attention is being given to the Canadian sardine herrine industry at present with a view to create demand for a higher grade product. Attempts to improve the sardine output of New Brunswick are not new, however, and unless care is taken the results will be nil, and producers will continue to follow the policy once paramount in the paper pulp business—i.e., export the raw material and let the other fellow take the profit on the finished product.

The present situation in the industry is unique and deserves review in order that those interested may know what factors to consider during the coming year.

With hostilities at an end importation of European brands will undoubtedly be resumed and vigorous efforts to regain trade lost during the war may be expected.

During the war California sardines gained a more important place in domestic trade and when Norwegian canners, who could no longer ship their product from home, invested in the land of sunshine they commenced production on a scale already making itself felt in Canada. There was one sardine cannery in Southern California up to 1903, while now there are a score and more are being planned. When the tin plate situation became acute during the war, the California packers conceived the idea of packing sardines in "Tuna" cans and so popular was the idea that there were some 600,000 cases put up during the past year as compared to 350,000 cases of quarters, half squares and ovals. The economy of the round can is at once apparent from the statement of a prominent packer who says that "The case of 48 number one run cans, based on \$15.00 fish, may be packed on the southern coast at a cost of \$3.92, whereas a case of number one ovals costs \$5.95." Another important factor in the round can venture is the fact that larger fish may be used than in quarters. Nevertheless, the round can pack for the first year may not prove a very profitable venture as a whole, for many of the tuna packers lacked the skill necessary to put up a properly

processed can of sardines, and it is stated on good authority that 60 per cent of all the round cans packed did not turn out satisfactorily to the consumer.

This feature will undoubtedly be corrected during 1919, for thousands of cases packed by those thoroughly informed on handling round cans and packing sardines turned out all right and have proved good sellers. These round cans are now to be found in the Canadian market selling in competition with the domestic pack. The package is attractive, has a brilliantly colored label and catches the eye of the prospective buyer.

Out in British Columbia several firms, not being able to catch sufficient salmon, in recent years have turned to the pilehard, packing these fish in one pound talls. The pilehard is merely the "California sardine" full grown and as it has the same flavor it will undoubtedly prove a competitor to its younger brother. The only difference is in the shape of package, and the fact that the youngster is canned whole, while the fish which lived to reach full growth in Canadian waters is canned in sections. British Columbia packers also produce herring in talls and flats but this is strictly a herring product.

On the New Brunswick coast the Booth Fisheries Company is operating plants at Chamcook and St. John, the latter being a new establishment, while Connor's Brothers, the veterans of Canada's sardine industry continue to operate at Black's Harbor. These concerns are confronted with the necessity of special labels for fish going to European countries where the statutes forbid the use of the word "Sardine" when applied to the small herring of the east coast, reserving that cognomen for their own small fish. Too much attention has been paid to this controversy over the word sardine, for expert fish packers have demonstrated time and again that small fish, either pilehards or herring can be canned in a manner equal to, if not surpassing, any fish packed in Europe. It is not the fish so much as the skill in packing and flavoring the



Sardines being distributed on the flakes prior to be cooked in the steam boxes.

contents of the can that counts and in this article the purpose is to call attention to the necessity for skilful packing.

Sardine canneries have come and gone on the east coast but one firm has kept right on canning, content with satisfying the demand for a low priced goods, while the others tried for fancy stock and failed. This might be considered as evidence that it is better to leave the fancy goods alone, but such conclusion is hardly borne out when considering the additional evidence that packers on the American side take raw fish caught in Canadian waters and turn out fancy stock at a profit.

Small Atlantic herring properly cleaned and canned and attractively labeled have found a market in Canada and the United States and will continue to do so. The question is whether the packing is to be done in Canada or outside of Canada. The sardine, as packed in Southern Europe, is a luxury and fish to compete



Unloading Sardine Herring.

with it, here and across the border, must be treated as a luxury instead of a standard low priced food product, where quantity production is a vital factor.

High grade fish must be handled as soon as possible after being caught. The size of fish is not so vital a factor as some would make it appear, although fish running not more than 20 to the can are desirable. A very fine product can be packed from fish running 16 to the can and California packers use fish running 12 to the can for a fine product.

Special care is necessary in removing heads and entrails, and in flaking, for, although a small bit of en-

trail remaining in a fish may not detract from its food value or flavor it will certainly prove an offence of sorts in my lady's eye when it draggles across her plate, and scales are anything but desirable.

Eastern packers, have, for the most part, been content to cook by steam, while the finer grades in California are fried in olive oil before the fish are placed in the can. Those doubting the value of the frying process need only to compare the flavor to decide in favor of this process for handling small fish. Considerable attention should be given to salting for the best pack may be a poor seller if flat for lack of salt, while too much is equally bad.

One of the most important features in canning small fish is the label, for the very best pack under a shabby label is a shabby article. Bright, clear labels either stamped on the can or pasted on the oiled wrapper are an essential to successful merchandising.

A factor to be considered in packing to compete with Europe in foreign fields is cost. It is evident that the Mediterranean packer with fish, olive oil and cheap labor right at hand can undersell any competitor who must import olive oil and then ship the finished product an equal or greater distance. To compete at all the Canadian packer must seek some method of reducing his cost of production, and to date the only one tried has been cotton seed oil instead of olive oil. Recently California packers have tried nut and fruit kernel oils and recent reports show a fairly steady demand for this pack. Fancy Maine sardines in olive oil and blended peanut and olive oil have had a fair call in some quarters, and it is reported that these are now moving in export. A fortune awaits the packer who can improve the flavor of his low priced pack, in fact the secret of success in competing with higher grade goods abroad lies in developing an equally tasty pack in a lower priced oil, and Canadian packers will do well to give the subject their attention at least to the extent of using sufficient salt in cotton seed oil packed fish to prevent a flat taste in the finished product.

Canadian packers put up two high grade brands at present, "Bofisco" by Booth Fisheries, and "Glacier" by Connors Brothers. Both brands are packed in pure olive oil and both possess excellent appearance and flavor so far as the fish are concerned, but there is room for improvement in the labels. The Canadian pack includes the usual brands in one-fourth pound "keyless" oils, mustard and tomato sauce, key oils, some half pound squares in tomato sauce, and half pound and pound ovals. Prices range from \$6.00 for the lowest priced keyless to \$10.00 for the best pack in cotton seed oil key cans.

To bring foreign sardines into Canada is an aggravated case of carrying coals to Newcastle and yet the last custom house reports indicate that in the fiscal year 1917 foreign sardines to the value of \$100,960 were brought into Canada. For this addition to the trade deficit Canadian packers have to pay through the nose. Duty on these imports amounted to \$33,597, so the consumer after profit was added, paid out something like \$150,000 which should have remained at home. Over half of these imported sardines were brought in from the United States, comprising for the most part fish which had been shipped out of Canada raw at between two and three cents per pound. The others came from Norway, Portugal, France and Great Britain.

British Fishermen at War

By R. E. CROPLEY
(In Pacific Marine Review.)

My first experience with the fishermen of England during the war was when the ill-fated "Tuscania," on which I was crossing, was approaching the danger zone. We were a hundred miles or so off soundings, and it surprised me when coming on deck one morning to find, way out there, several trawlers, which in times of peace I had seen hugging the coast as they dragged their trawls. They are queer little boats, these English trawlers, with their high bows on which are now mounted a tiny gun, seemingly only serviceable enough to harpoon a whale. They all are blest with a high stack, no doubt a badge of their society, and one would think a good walloping sea would sweep their superstructure clean off.

As the "Tuscania" made her hard advance over a nasty wintry sea, sometimes I thought a hand were raising from the bottom of the ocean and tossing the trawlers skyward, the next minute dragging them under in the hollows of the waves, till I could but see the tops of their funnels or the tips of their masts. The way those tiny packets were being treated reminded me of a cat torturing a mouse before she killed it. Up they'd come, shaking the water off like a terrier, and then plunge headlong into the next comber. With the aid of a glass I could see a mummy at the wheel, swathed in oilers on which the spray froze as it fell. I could imagine, as I learned later in many similar cases, that the blue nose of that mummy was tipped off by an icicle.

It was a fascinating picture and my heart thanked God for the stamina of these trawler men who have stuck it out and saved so many of us civilians from the death which the U-boats have wished upon us. And well have I cause to thank God for them, as some of them saved the "Tuscania" off the coast of Ireland the next day, as unarmed she staggered about in the delirium of a zigzag, trying to outmanoeuvre the German bent on her destruction. The tiny trawler guns sputtered and roared and found an echo in my heart. Although the following tale of the trapping of a U-boat is not the incident which occurred when I was on the "Tuscania," still it's about what happened then, as I learned later:

"Four trawlers got between the submarine and her merchant ship prey and their gun-fire, forced the Hun to submerge, releasing a couple of mines as he did so. The trawler men called these mines "Fritz's Eggs" and ignored them. With dexterity they engaged the U-boat as it lay on the bottom, by means of cables which were tediously passed under it, until they had it snared like an animal. The German of course tried to free himself and released more mines, but it was to no avail.

"Now the trawler men had no love for Fritz for the lack of sportsmanship he had constantly exhibited, yet that was no reason why they in turn should not play the game of life and death fairly or be unnecessarily cruel. They hung on to him and let him fight to free himself from their net, and when he knew he was caught and could not get away they gave him ample time to come to the surface and save the lives of his crew. (This the German commander did, who was after the 'Tuscania.') A small can of T. N. T. was slipped on one of the taut wires which held him and

allowed to slide down to the submarine's hull. A key was depressed and a gray, oily mound of water followed a muffled explosion. It was an awful death for human beings, yet they would have sent to their death women and children on passenger liners if they but had the chance."

Submarines by the score came out from Germany and never returned. Others sallied forth perplexed against a mystery, and these, too, never returned, or returned in mysteriously diminishing number. Day and night, summer and winter, till the American destroyers came into the game, the mystery had been the lines of innocent looking fishing smacks strung out from coast to coast across channel and Irish Sea, fishing for U-boats and sweeping for mines. And what Fritz has done to them, bringing his frightfulness to sea as he has exhibited it ashore, I'm afraid will never be duly appreciated. He has taken me on board the submarines with him and made them risk death at the hands of their friends. He has vented his senseless fury on unarmed fishing boats.

The case of the unarmed Granton trawler "Breadalbane" is a good example:

"She was quietly fishing one morning in June, 1917, when a submarine, without warning, opened a terrific fire on her. In a few minutes her funnel, engine-casing and bridge were smashed and a hail of shrapnel fell on the unfortunate crew, who rushed to the deck-house and tried to protect themselves. They had no means of fighting back and the captain decided to haul down his flag as a sign of surrender. The only response to this was a yell of derision from the Huns and a few moments later they let the "Breadalbane" have another broadside. For ten minutes the U-boat fired shells all over the tiny ship, while her crew were making frantic efforts to get their life-boat launched. The captain's head was blown off by a shell and a moment later, as the engineer was about to climb over the side, he was blown in halves. The dazed survivors pulled away from the doomed ship, towards the German, thinking that they were to be taken prisoners, but the Hun shouted at them that if they came nearer he would blow them out of the water. Then he submerged, as a patrol boat, attracted by the firing, came on the scene."

Then there is the case of the tiny "Achilles Adam," which wasn't either fishing for food or for Fritz, simply crossing from France to England. A U-boat shelled her when she was well out to sea and at the fourth shot the "Adam" hove it. A rain of shells continued to fall about her as her crew endeavored to lower a lifeboat. One boat was struck and destroyed and a man killed and several more casualties occurred before the crew were finally afloat. Fritz ordered the boat alongside of him. Four Germans entered it and were rowed to the "Adam," which they destroyed with a bomb. Returning to the submarine, the Huns broke the lifeboat oars, destroyed the tins of biscuits and the keg of water that the crew had and set the crew adrift in a sea which was rapidly becoming nasty. With no oars or means of helping themselves, no food or water, no sail cloth to keep off the surface spray which the wind whipped along with the cut of a knife, the "Adam's" crew drifted about in the North Sea.

all day and all night. Four men died of exposure and the injuries they had received and the others were on the point of collapse when rescued by a passing sailing ship.

I have taken these incidents of the "Breadalbane" and the "Achilles Adam" from official records. If they show what the peaceful fishermen have had to experience from the senseless fury of an insane beast, it is not hard to imagine what their fellows in the naval reserve have had to experience, even to being tied to a stanchion on the deck of a submarine, saturated with kerosene and set on fire, as an article of mine in the Atlantic Monthly has shown.

Without these men of the trawling fleet and their brethren of the merchant marine, both in and out of the Naval Reserve, long ago Germany would have won the war. That's why she tries to terrorize them with her murderous acts. It is only by the untiring efforts of these men of the sea that the soldiers have gotten to the trenches and been kept supplied with munitions and food. These men are the eyes and ears of the navy; they've had more than their share of the burden and horror of war; they've done work which gold or honors cannot pay for and never have thought of themselves — only the great cause which to them, with the light of pure gold in their eyes which a gale of wind wouldn't blink — means the end of cruelty — the punishment of those responsible for the crucifying of little children.

As simple fishermen in times of peace the trawler men never would have kept the seas in the weather they've been out in the past four years. They are a type of men who is an individualist in the matter of personal freedom. "Hard old nuts," as the naval officers call them. Yet these simple fisherfolk realized immediately that the success of their work in the war depended entirely on their being moulded into a unit, and gladly underwent a training which was so monotonous and galling to the individualist.

Day and night the Hun has laid his eggs — for the bottoms of passenger ships and hospital ships as well to strike; mines with cunning devices which kept them below the sweeping tackle for several days after being laid, making it necessary to sweep the same area daily to rid the seas of these horned devils of hell with which Germany has broken international law and the laws of God and common decency. There hasn't been a day but some trawler in the mine-sweeping fleet has been blown up. Yet there has always been another to take her place immediately.

Whenever there is a ship in distress the trawlers have somehow seemed to have appeared as if by magic. Though strange to the waters of the Mediterranean they've patrolled and fished for tin-fishes and succored the wounded. Though in comparison to the liner they are about as big as a peanut, still they are right there with the goods, and if it hadn't been for them the "Arabia" might have been sunk without leaving a trace. One trawler rescued 166 of her passengers, mostly women and children, and though she was dangerously overloaded, yet in thirty-six hours she made Malta, after a trip which subjected her entire complement of human beings to intense misery.

The stuff these men are made of is well exemplified in the case of the "Nelson" and the "Violet-May."

The "Nelson" was a little dinky fishing smack commanded by Thos. Crisp, R. N. R., and his son, Thos. William Crisp, R. N. R., as second mate. In the House of Commons, Lloyd George, in illustrating how

British fishermen have faced the perils of the war, said the father had been awarded the Victoria Cross and the son the Distinguished Service medal. The following official account of the action in which the "Nelson" was lost and the father died, giving orders up to the last minute, was kindly furnished me by Mrs. Theodore Roosevelt:

"On an August afternoon, at about a quarter to three, the trawl was shot from the smack "Nelson" and the smack was put on the port tack. The skipper was below packing fish; one hand was on deck cleaning fish for the next morning's breakfast, and then the skipper came on deck, saw an object on the horizon, examined it closely and sent for his glasses. Almost directly he sang out, 'Clear for action! Submarine!' And he had scarcely spoken when a shot fell a hundred yards away from the port bow. The motor man got to his motor, the deckhand dropped his fish and went to the ammunition room, the other hands at the skipper's orders 'Let go your gear,' let go the warp, put a dam on the end of it. Meanwhile the gunlayer held his fire till the skipper said, 'It is no use waiting any longer, we will let them have it.'

"Away in the distance the submarine sent shell after shell at the smack, and about the fourth shot the shell went through the port bow just below the water line, and then the skipper shoved her around. There was no confusion on board, not even when the seventh shell struck the skipper, passed through his side, through the deck, and cut through the side of the ship. The second hand at once took charge of the tiller and the firing continued. All the time water was pouring into the ship and she was sinking.

"One man, the gunlayer, went to the skipper to see if he could render first aid, but it was obvious that he was mortally wounded. 'It's all right, boy, do your best,' said the skipper, and then, to the second hand, 'Send a message off.' This was the message: 'Nelson being attacked by submarine. Skipper killed. Send assistance at once.'

"And all this time the smack was sinking and only five rounds of ammunition were left, and the second hand went to the skipper lying there on deck and heard him say, 'Abandon ship. Throw hooks overboard.' He was asked then if they would lift him into the boat, but his answer was, 'Tom, I'm done, throw me overboard.' He was too badly injured to be moved and they left him there on his deck and took to the lifeboat, and about a quarter of an hour afterwards the "Nelson" went down by the head.

"It was just drawing into dusk then and the crew of the boat pulled all night. Towards morning the wind freshened and blew them out of their course. They pulled all that day and had a pair of trousers and a large piece of oilskin fastened to two oars to attract attention. Once a vessel was sighted and once a group of mine-sweepers, but they passed out of sight. At night the weather became finer and through that night they pulled until daybreak, when at 10.30 a.m. they found a buoy and made fast to it. By afternoon they were sighted and rescued. The second hand, who took charge of the tiller after the skipper had been shot down, was his son, and so the great tradition goes on."

As for the case of the "Violet May," the following news item appeared in American newspapers last February. I give first the German version of the glorious battle and then the English:

"Berlin, Feb. 16, 1918.—On the night of February

14th our torpedo boats under the command of Capt. Heinecke made a surprise attack on strong forces guarding the English Channel between Calais and Dover on the north and Cape Gris-nex and Folkestone on the south. A large guardship, numerous armed fishing steamers and several motor vessels were forced to give battle, the largest part of them being destroyed. Our torpedo boats suffered no losses or damages. All returned."

Here is the English version:

"London, Feb. 15, 1918.—Eight British craft which were hunting submarines have been sunk by a flotilla of enemy destroyers, it is announced officially. After having sunk these vessels, seven of which were 'drifters' and one a trawler, the enemy destroyers returned rapidly northward before they could be engaged."

The weather was thick and the night very dark when the German destroyers made a raid on the tiny ex-fishing boats engaged in sweeping up Fritz's eggs and other delectable jobs which the Hun's barbaric warfare has created. The seven drifters were unarmed; the eighth, a trawler, referred to in the German report as a "a large guardship," carried a single tiny gun on her fore-castle. It was rough and the mine-sweeping tackle kept the "drifters" like a half-tide rock, never clear of the surging seas. Even if they had not been so handicapped, these tiny vessels had no chance of escape, once the German destroyers were amongst them.

As usual, the fishermen exhibited to the world the stuff they are made of. They had the same coolness and courage that their fellow mine-sweepers anywhere about the British Isles have shown in innumerable circumstances of danger and difficulty. The "Violet May," one of the unarmed drifters, was shelled at close quarters by two destroyers, whose heavy shells killed or wounded all the crew except two and set the "Violet May" on fire. These two—men of the engine-room fore—Ewing and Noble, succeeded in launching a boat, and finding the mate and a deckhand still lived, though mortally wounded, lowered them into the boat and pulled off. The remainder of the crew, mextricably entangled in the blazing wreckage, lay dead. The two men paddled clear, waited till the enemy had passed on and then approached their little ship again. The fire had hold of her forward, steam was pouring from her wrecked engine-room and German shells were still bursting over her decks. "A doot, she's sinkin'," said Ewing stoutly. Noble said nothing; he was not given overmuch to speech, but he made the painter fast to the "Violet May" and proceeded to climb aboard again, followed by Ewing, and between them they fought and overcame the fire.

"Dinna leave me, Jamie," said the mate, piteously. "Dinna leave me in the little boat!"

"Na, Na," was the reply. "we'll na leave yet."

And presently they brought their wounded back on board and took them below again. The mate was laid on his bunk and Ewing fetched shirts from his bag and tore them up into bandages.

"An' them his dress shirts!" murmured Noble. It was his first and last contribution to the narrative.

They took turn and turn about to attend the wounded and plug the shot holes and quence the smouldering embers of the fire.

"'Tis nae guid," said the mate at last. "Dinna fash about me, lads—A'll gang nae mair on patrol," and so died.

But Ewing and Noble saved their little ship and

she came into port to testify to the courage of the British fishermen in war.

Because courage and resource and determination are everywhere on the sea exhibited in the Naval Reserve or Merchant Service, a single glorious deed of two "drifter" men is nowhere elevated above the rest. One story differs from another, but in detail; the valor, not at all. All have done their duty with skill and devotion and all are heroes to whom the public has not as yet done justice.

It may be added that mine fishing is an art, about which it is useless for the curious to display any eagerness, for till the end of the war the knowledge of how it is done is a closed book. For dealing with these submarines the fishermen have their own methods, sometimes more primitive and courageous than effective, as when the master of a sailing vessel, imagining himself a destroyer, tried to ram a U-boat. Yet one guileless trawler by persistent harrassing pursuit so terrified a German commander, who was attacking a merchant ship, that he let his prey escape.

As one naval captain has put it, in speaking of the British fishermen:

"They're it—absolutely it. No weather's too bad for 'em. They're our eyes and our ears. They know every blessed wave in the channel, not merely as passing acquaintances, but they address 'em by their Christian name. They'll do anything and go anywhere and chance the luck. They're just simple fishermen, but they run the whole show and they run it magnificently — guns, semaphores, wireless, everything! They live on kippers and tea and I don't believe they ever go to sleep."

This opinion I have had expressed to me by many naval officers. If they who in times of peace are inclined to be elusive and superior, say these things of the fishermen, then further comment is unnecessary.

NEWFOUNDLAND CHILLED FISH IN ENGLAND.

The cargo of 3,250,000 lbs. of Newfoundland cod, haddock, capelin, turbot, salmon, etc., which was shipped by the Reid-Newfoundland Company's Anglo-Newfoundland Fisheries plant at St. John's, Nfld., on the steamer "Bayano" to England recently, arrived in splendid condition and was sold within ten days of arrival. Much of the success of the venture was due to the excellent refrigeration equipment on the steamer—a former West Indian fruit vessel. The freezing installation at the Newfoundland plant is of the best and capable of maintaining very low temperatures. It has been explained that the excellent out-turn of the Newfoundland fish is due to the fact that the fish was loaded direct from the freezer to the ship's hold and did not have to run the risk of variable temperatures through transportation in railroad cars and in shipments.

SAYS BRITAIN NEEDS FISH FROM CANADA.

London, January 8.

The Earl of Dunraven writes to the newspapers a letter which indicates the importance to the British population of Canadian-Newfoundland fish. He declares its importation, properly cold stored, would do more to alleviate the food shortage here than any other agency. At the same time, the Earl points out, it would stimulate public taste for valuable food and help to neutralize the present high prices.

The Fisheries of the North Atlantic

By WM. MEEHAN.

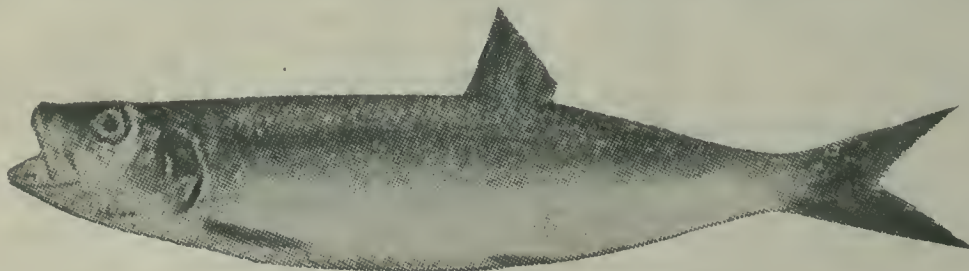
CHAPTER VI.

THE HERRINGS.

The herring is the most important family of fishes known. It is also the most valuable. The prosperity of some nations and colonies is largely dependent on it and constitutes a potent factor towards the support of mankind and forms the principal food of many other immensely important fishes, among them the Cod and the Mackerel. At times marine animals like the whale, dolphin, porpoise and seal subsists almost entirely on the herrings. The vast importance of the family is not confined to one section of the world, but embraces nearly, if not quite, half of it. It is that which gives it the superlative place among food fishes. Almost without exception the countries bordering on the Atlantic and Pacific from the arctics to the near tropics are directly and vitally interested in the catching of the fish and putting it on the market. The Herring family industry means millions of money yearly and the employment of hundreds of thousands of men to all the Atlantic coast states from Florida to Maine, and to the entire Dominion of Canada on both the Atlantic and Pacific; to Siberia, Korea, Japan, and to Great Britain and every nation in Europe bordering on the ocean and seas. The sardine industry by itself would supply the necessary

Of the first, less is known than the latter, and nearly all that is known of the latter is of their habits during the comparatively brief sojourn in tidal streams. What both types do, where they dwell, how they live when they leave the shores is a profound mystery. It is supposed that while not truly a deep sea fish, their native home when not inshore is in water beyond the reach of nets. It is assumed, but with strong evidence backing, that their food is almost exclusively *anima culae*, or minute marine animal life. The character of the mouth of members of all the family indicate a necessity for a confinement to this character of food. In addition, one species, the mud shad, that feeds when inshore, is known to subsist entirely on the minute life found among the mud on the bottoms.

Among the principal members of the Herring family found periodically along the Atlantic coast are: the Common herring, frequently called the Nova Scotia Herring from Labrador to New Jersey; the Menhaden or Mossbunker, from the Gulf of St. Lawrence to about the Gulf of Mexico; the Glut Herring from Northern Maine to Florida; the Branch Herring, Spring Herring or Gaspereaux from the Southern States to at least Newfoundland, Shad, from Florida to the Gulf of St. Lawrence; the Mud Shad, from New Jersey southward, and



Herring

revenues, in normal times, for almost any one of the smaller civilized nations. The Herring family may therefore be justly termed the sovereigns of the whole fish tribe and the Herring proper as the super-king of all.

The Herring family belongs to the soft-rayed fishes, or those having fins without spines. It is of an order that contains the earliest bony fishes of geological time, although the family itself came into existence at a later date. The characteristics by which the family may be distinguished are distinctive. There is but one dorsal fin; all the fins are without spines; there is no adipose or finlike projection; there are four gills, and a forked tail; there is a terminal mouth, thin and frail with weak or deficient in teeth; it has a fully sealed body, but a naked head. The scales are thin, and not set firmly on the body. There are no lateral lines, and the body has a general silvery coloration.

Scarcely anything is known of the life history of the Herring family, or rather of the members whose dwelling place is in salt water, for there are fresh water members of the family also. It is the most mysterious of all the important food fishes. It is known that some never leave the ocean while others are of anadromous habit.

the Hickory Shad, from Cape Cod south. One of these, the Mud Shad, strictly speaking does not belong to the Herring family, but is included because it is alone of its kind, and the relationship is exceedingly close.

Of the spawning habits of most of the herring, man is fairly well conversant, and several of the members are under the fostering care of fish culturists. The Herrings are of the non-nest building types, and of the division that scatter their eggs and abandon them as soon as they are deposited. To this type of fish, Nature gave more than the normal number of eggs. She gave so many that if they were all fertilized and hatched and the young all reached maturity, the world would be swamped and all other life crushed out of existence in ten or fifteen years. But it is estimated that under normal conditions at least ninety per cent of the eggs become food for fishes and that more than ninety per cent of the young are devoured before maturity.

The eggs of all the members of the family hatch in from four days to ten days, depending on the temperature of the water. The colder the water the longer the period of incubation. When hatched the young can swim at once, and the sac is absorbed in about the same number of days it required for incubation provided the



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water temperature is the same, for the period like the development is governed by the same conditions. The young of all the family are exceedingly minute and pronouncedly translucent, but they grow with great rapidity.

King Herring.

Almighty God created herring for the special benefit of Englishmen and their friends, according to an English writer a little more than two hundred years ago. He proved it to his own satisfaction at least, by describing how the fish, appearing annually in vast numbers, surrounded Great Britain, visited the coasts of Holland, Italy and Portugal, but avoided France. Then crossed the Ocean to the American shores and skirted the British Colonies until the Carolinas, then Spanish colonies, were reached, when they turned out into the open ocean and disappeared to show up again the following years at the north of Scotland and repeat the performance.

It almost seems a pity that the scientific world cannot adopt this explanation of the movements of the herring as correct, for it would have saved months, and years, of intense study and investigations which have not even yet resulted in anything like a general agreement of much knowledge of the life and wanderings of this valuable and wonderful fish. At least ten billions of herring are caught, prepared for the market and consumed by mankind every year, yet the sum and substance of acquaintanceship is so slight that it may be compared with a child's knowledge of reading when it had just mastered the alphabet.

Even the vastness of the numbers living in the seas cannot be conceived. It has been estimated that the staggering figures of ten billions or more caught annually in the world does not represent more than one of the many shoals of herring from which the total enormous catch was made. It is further estimated that the number of herring caught by man does not represent five per cent of the number killed and eaten by fishes and by marine and other animal life.

The number of theories that have been advanced concerning the migration of herring are so many as to be bewildering and excite admiration of the fertility of human imagination and theorizing. They have ranged, with scores of variations, from a central race of herrings in the Polar seas from which all kinds of large and small come, and from which large schools emigrate annually to different parts of the world, to the opposite extreme that the herrings have separate races each with a particular habitat.

Whatever may be the truth concerning their starting point, their movements are governed by some potential law, although they may seem capricious. There seems little doubt they approach the shores for two distinct purposes, one that of reproduction and the other for food. The two can be readily distinguished. When on spawning bent, they approach from the north and in closely packed schools; but when they come in for food, they do so from several directions and in smaller and more scattered schools. When the spawning is completed they leave even more suddenly than they came; but when their visit is on account of food they remain longer and depart more slowly.

Among the curious habits attributed to the herring are, that having once spawned in a certain place it does not seem to care to return there a second time, although it is declared that a herring spawning the first time will inevitably go to the grounds where it was born. It is said that the young after dwelling awhile by themselves in shallow water go out where it is deep and when

they return, do so in company with their elders.

The common herring is a graceful fish with an elongate body much compressed; and of a bluish color on the upper part and silvery with bright reflections below. The lower jaw projects and the back part reaches to the middle of the eye. In the front of the upper part of the mouth is a small ovate patch of permanent teeth, and there are teeth on the tongue. The gill rakers are long and slender.

The common herring is one of the type that does not make a practice of entering fresh water. As a food it is generally considered better when smoked, pickled or salted than when fresh, nevertheless a fresh herring is a dainty morsel.

Gaspereau and Glut Herring.

Besides the common herring there are at least two other species of great economic importance found in north Atlantic waters. They are known as the Gaspereau or branch herring and the glut herring respectively. Both have the name of alewife and both played an important part in the food resources of the early American colonists. The Gaspereau has a range from at least Newfoundland to the Carolinas, the glut preferring warmer waters from not much above the Gulf of Maine south to the Gulf of Mexico.

The name Gaspereau is used for the northern alewife almost exclusively beyond the United States. From Maine southwardly it is known chiefly by its other popular name, branch herring. Locally it has perhaps half a dozen others, the widest known being wall-eyed herring.

While both the gaspereau and the glut herrings are of immense importance as food products neither are universally regarded as equal in quality to the common herring, but a large proportion of the population consider it quite as well flavored, and a majority of this class are emphatic in the opinion that a fresh gaspereau is much superior in delicacy of flavor and not far behind its other famous cousin, the shad in this respect. In Pennsylvania and Maryland there is a far greater demand for Burlington smoked herring, or branch herring smoked on the Delaware and Susquehanna Rivers in a special manner, than for the smoked common herring of commerce.

The gaspereau differs widely in its habits from the common herring. Instead of being a purely ocean fish and moving mysteriously to the haunts of man, the gaspereau is an anadromous fish with a pronounced fondness for fresh water, and can, without any previous preparation continue life and rear progeny in it. It is without any reserve an exception to the general rule of nature that when an animal is taken from its natural environments to another, sterility is apt to follow either in the animal so changed or among its near descendants. Many years ago, branch herring were introduced into Lake Ontario by Seth Green, the American father of fish culture, and they have thrived and multiplied to a marvellous extent. The fish has also been successfully introduced into a number of other large fresh bodies of water.

A week or two after the appearance of the gaspereau or branch herring, the glut herring arrive. They crowd into the tidal waters in such vast numbers that the fishermen cannot begin to handle them all. A catch has often torn a net by the sheer weight of numbers. It is on account of this huge influx and the consequent overstocking the market that the fish receives its name of glut herring.

The spawning period of the two fishes is about the

(Continued on page 22).



DEPARTMENT OF THE NAVAL SERVICE.

SEALD TENDERS, addressed to the undersigned and endorsed on the envelope "Tender for Naval Vessels," will be received up to noon Thursday, the 20th February, 1919, for the purchase of naval vessels lying at Halifax, Sydney and Liverpool, including.

Steam Trawlers—Length 125 ft. B.P. Breadth Moulded, 23 ft. 4 in. Moulded Depth 13 ft. 6 in.

Steam Drifters—Length 90 ft. Breadth 19 ft. 3 in. Depth Hold 10 ft.

6 Patrol Vessels—Length 140 ft. Breadth 23 ft. 6 in. Depth Hold 13 ft. 6 in.

4 Steam Fishing Vessels—Ranging in length from 130 ft. to 170 ft. Breadth 22 ft. 3 in. to 24 ft. Depth 8 ft. 8 in. to 9 ft. 6 in.

Several small Steamers—Of various dimensions, and **Motor Launches** of various types.

Full particulars and permission to inspect the vessels may be obtained on application to the undersigned or to the Admiral Superintendent, H.M.C. Dockyard, Halifax, N.S.

G. J. DESBARATS,

Deputy Minister of the Naval Service.

Department of the Naval Service,

Ottawa, January 18, 1919.

Unauthorized publication of this advertisement will not be paid for.

JUST KEEP FISHING.

Hi Somers was the durnest cuss

For ketchin' fish—he sure was great!

He never used to make no fuss

About the kind of pole or bait,

Er weather, neither; he'd just say,

"I got to ketel a mess to-day."

An' towards the creek you'd see him slide,

A-whistlin' soft an' walkin' wide.

I says one day to Hi, says I,

"How do you always ketch 'em, Hi?"

He gave his bait another swish in

An' ehueklin' says: "I just keep fishin'."

Hi took to readin' law at night

An', pretty soon, the first we knowed

He had a lawsuit, won his fight,

An' was a lawyer! I'll be blowed!

He knowed more law than Squire MeKnab!

An' though he had no "gift of gab"

To brag about, somehow he made

A sober sort of talk that played

The mischief with the other side.

One day when someone asked if Hi'd

Explain how he got in condishin'

He laughed an' said: "I jest kept fishin'."

Well, Hi is Guv'nor Somers now,

A big man 'round the State, you bet!

To me the same old Hi, somehow,

The same old champeen fisher yet.

It wasn't so much the bait or pole,

It wan't so much the fishin' hole,

That won for Hi his big success;

'Twas jest his fishin' on, I guess.

A cheerful, stiddy, hopeful kind

Of keepin' at it—don't you mind?

An' that is why I can't help wishin'

That more of us would jest keep fishin'!

—Ray Clark Rose, in "The Vagabond."



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Reliable Ignition Batteries not only take you out but **bring you back**. They are "Lively and Lasting." Not a lazy streak in them. They start your motor and keep it going as only good batteries can. A fat, hot spark fires all the gas. Reliable Ignition Batteries put certainty into the fishing trip.

Take a Reliable Flashlight with you. Provides light that is always on tap, that rain and flying stray can't douse out—that you can flash over the side, into the boat, **anywhere**. Standard sizes, styles—also enamelled Tubular Flashlights and Searchlights in four colors.

Reliable Products are of genuine Canadian manufacture.

For sale by dealers everywhere.

DOMINION BATTERY COMPANY LIMITED
Toronto, Canada



RELIABLE
TRADE MARK
Canadian Products

"Lively and Lasting"



Mr. C. P. Rhodes, of the P. Burns Co., Calgary, and a Director of the C. F. A. for Alberta has been in the east during January visiting Toronto, Ottawa and Montreal.

same time. It is in the spring, and the exact period, as with most fishes, is dependent on the water temperature. Both species desire a temperature of between 65 and 70 degrees F. to set them to spawning freely. The females are much more prolific than the common herring, for one of average size will yield about 100,000 eggs. They are deposited at random in shallow water and adhere firmly to whatever they fall on. The period of incubation is about a week, and the little fish are at once active, swimming freely in the water without any apparent inconvenience from the yolk sac, which however is small and quickly absorbed. The young herring and glut herring are tiny and almost invisible on account of their being translucent. They grow with great rapidity and reach maturity in about three years.

The two species bear a superficial resemblance to each other, but a close examination shows the gaspereau to be deeper and heavier forward than the glut. The latter is more elongate, the fins lower, the eyes smaller and the back darker. The back of the gaspereau is bluish, its sides silvery with faint streaks along the rows of scales. There is also a round dark spot on the shoulder. The first ray of the dorsal of the gaspereau is about equal in height to the base of the fin, while the first ray of the dorsal in the glut is a little shorter than the base.

Pogy or Menhaden.

A wise man once said that it is never safe for a person to say that anything is larger, older or more important than something else, because it was certain that another would come forward with something he would declare outclassed it in one or all three particulars. This axiom is particularly applicable to the members of the herring family. If anyone for instance, pronounces the common or Nova Scotia herring to be the most important of all the family a partisan of the menhaden is almost sure to come forward with data to prove it to be of far greater importance in many respects. It must be admitted that the data is at least strong if not entirely convincing.

As a direct food product for mankind the common herring undoubtedly commands a higher place than the menhaden; as a by-product the menhaden is most likely of equal importance; as a food for other marine life there is reason to believe it is much more important than the herring, and that is saying much. It has been said and not controverted that if the menhaden should become exterminated or leave the North American waters for good our sea fisheries would be reduced to "at least one-fourth their present extent."

It has been estimated that the earnerous fishes, and in particular the tuna, blue fish, bonito, pollock, whiting, cod, striped bass, squeteague or weak fish devour more menhaden annually than all the species of fish combined caught yearly by man from Labrador to the Gulf of Mexico.

The menhaden has a host of names, but it is most widely known by three. From Cape Cod northwardly it is almost uniformly called Pogy. Along the greater part of the New England coast menhaden is the popular name, while along the seaboard of New York and New Jersey it is best known as mossbunker. Pogy and menhaden are either contractions or altered Indian names for the fish, both meaning much the same thing, namely a "fertilizer" and "that which enriches the earth."

Menhaden are found at times all the way from Nova Scotia to Brazil, but in a relatively narrow strip. They invariably travel in schools, and if anything happens

to break a school into small parts, the fragments gather together again as speedily as possible. The unerring instinct that leads to a complete re-assembling is one of the many wonderful characteristics of the menhaden.

As a general rule the members of a school swim so close together that their bodies nearly or quite touch, and sometimes two or three layers deep. Because of their nearness to the surface and a peculiar twirl of their tails, the water is so sharply ruffled that their presence can be detected some distance away. When startled, however, the entire school dives precipitously for the bottom, and this movement is so sudden that often the fish manage to escape the net. There is some difference of opinion why the menhaden swim so steadily on the surface. Many suppose that they are feeding while others believe that at such times they are at play. Either one or the other is possible, although the weight of evidence seems to be rather in favor of the latter thought.

The menhaden is naturally a bottom feeder and as far as can be ascertained its food seems to be mud containing algae and minute animal organisms found therein. On the other hand it is not impossible that when on the surface the fish are feeding on plankton life that is always more or less abundant there.

Although menhaden are found at times all the way from Nova Scotia to Brazil, it is generally believed that none of the schools ever travels north or south. In other words, it is thought that the same schools remain always in the latitude in which they were born. This is more or less speculative for really very little is known about the movements of the menhaden. It is, however, plausible and similar to the theory held regarding the movements of its great relative the shad. Carrying out the speculation to a logical conclusion, when the fish leaves the coast in the autumn or when the water becomes uncomfortably cold, they swim straight out to sea until they find a stratum, the water temperature of which approximates that in which it dwelt on the coast in the summer of sixty degrees or higher.

It is not believed that this stratum is at any great depth; indeed, it cannot be, because water of a suitable temperature cannot be very far beneath the surface, even in the Gulf Stream. From the fact that when they return to the shallows near the shores in the spring, the menhaden are found to be poor and thin, and with very little oil in their bodies and no food in their stomachs, three things are reasonably evident; first, that they have not been near the bottom during their absence, second that either they follow the practice of many other fish and partially hibernate or at least do not act, or third that in their winter resort there is no food of their requirements.

In its movements the menhaden is one of the most uncertain of fishes, and in this respect as well as in several others, fail to follow the general rules observed by other genera and species of their family. Great schools will visit certain sections of the coast for years with great regularity appearing within a week or two of the same time or when the temperature is just right and then for reasons totally unsolvable by humans will cease their visits sometimes for many summers. For example prior to 1860 they were quite abundant along the coast of Nova Scotia, then for about twenty years, it is said, menhaden were rarely seen above the coast of Maine. Later they returned. Again since 1900 the number and size of the schools along the coast of New Jersey and New York have greatly diminished.



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LAND AND SEA.

School Teacher: Can any boy tell me what god represents the sea?

Small Boy: Father Neptune, sir.

School Teacher: That's right. Now can any boy tell me what represents both sea and land?

Another small boy: That's easy, sir. Fried fish and chips.

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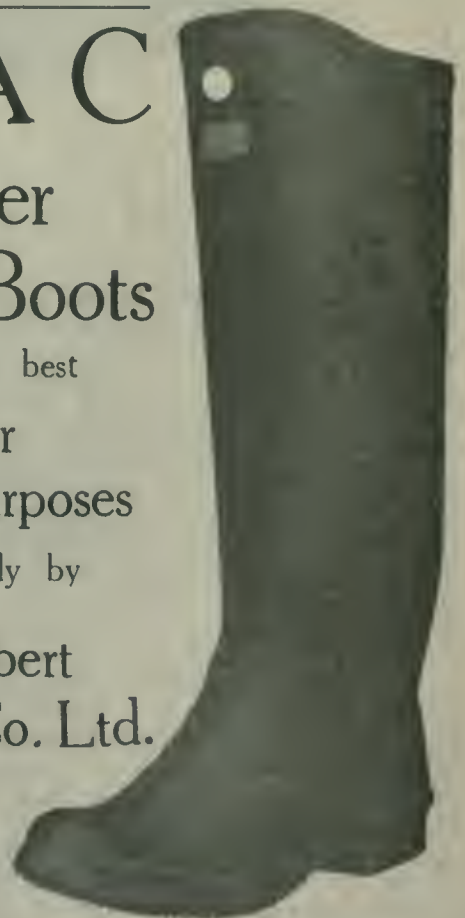
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The question naturally arises, what becomes of these schools during their long periods of absence from a particular section of the coast? Under some circumstances, or rather with some species of fish the question might be satisfactorily answered by showing that they had moved south or north of some other point on the coast; but it will not explain the whereabouts of the menhaden. In no instance when the fish have not returned to a particular locality are they found in greater abundance elsewhere. It is on this one undoubted fact that is based the certainty that menhaden do not travel north or south, and that it is the same schools or new schools born in the locality that visit the same waters yearly.

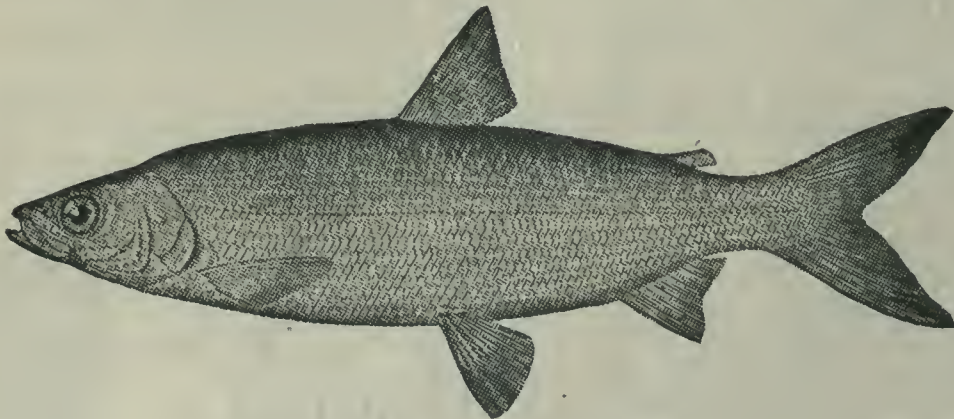
Many charge the intervals of scarcity to the ravages of the menhaden fishermen and these noting that with each disappearance or scarcity of menhaden a perceptible lessening in the number of valuable carnivorous fishes are strong in urging laws which will prevent or cause the menhaden fishermen to abandon their employment of catching these fish, excepting for bait purposes. They believe that the menhaden should be left alone by man for the sole use of carnivorous fishes.

That menhaden are governed entirely by water temperatures in approaching the coast is certain. They may be confidently looked for near Cape Hatteras in February; along the coast of Maryland and Virginia in

fine oil that the body yields. The residue makes an excellent fertilizer and also food for cattle and poultry. An "extract of beef" is also made from the fish, having, it is claimed, all the properties of the real article.

The body of the menhaden is much compressed and is deep forward. It has no teeth, but long slender gill rakers that give the idea that they can and may be used for straining the food as it is gathered. The scales overlap closely and are irregularly arranged. The fins are small and yellowish in color, with the caudal, like all the family, deeply forked. The color of the fish is strongly bluish on the back with the sides silvery, showing brassy tints. Back of the upper part of the gill covers on each shoulder is a roundish black spot with a number of smaller spots behind it that extend in irregular rows beyond the front line of the dorsal. An average menhaden grows to a length of from 12 to 18 inches.

The scientific name of the menhaden is *Brevoortia tyrannus*. The generic name is after an old time ichthyologist of New York, but the reason for the specific name is interesting. The Roman Emperors often called tyranni, in order that they might escape death at the hands of their enemies by poisoning, had tasters called Praegustatores to swallow a little of the food in their presence before eating themselves. Latrobe, who appears to have been the first to describe and name the



Lake Herring.

March; along New Jersey in April; along the New England coast the last of April, and Nova Scotia the last of May.

Less is known of the spawning habits of the menhaden than of their movements and feeding, which concretely means virtually nothing definite. Excepting that Dr. Goode said that certain small schools possibly spawn in the early spring at the east end of Long Island, there is nothing on which to ground a belief that spawning takes place either in the spring or very near shore. When the menhaden approach the land in the spring they are not only thin, but there are no traces of an approach to breeding. The consensus of thought is that either spawning takes place soon after reaching winter quarters or just before leaving them.

As a food for human use menhaden are not highly esteemed. Its flesh is too oily for most people, and it is by no means delicate in flavor. Nevertheless thousands of barrels are salted annually chiefly for export, and the fish is sold fresh to some extent in the markets. For many years menhaden were caught principally as a fertilizer, the fish being merely roughly chopped and ploughed into the soil, but while this was a temporary stimulant, the oil eventually ruined the ground. The chief commercial value now for the menhaden is for the

menhaden, found in the mouth of the fish a parasitic crustacean and having a sense of humor, he bestowed the specific name of tyrannus or Emperor tyrant on the menhaden and the specific name of praegustator, or taster on the helpless little crustacean, the generic name of which is Oniseus.

The Shad.

Among the conspicuous examples of man's reckless destructiveness for his immediate personal interests is to be found in the history of the shad, one of the extremely important and valuable food fishes on the Atlantic coast. At one time every river that flowed into the ocean from the lower end of Florida to the Gulf of St. Lawrence, literally swarmed from mouth to headwaters every spring with this great and highly-prized member of the herring family. Now only two or three of the rivers north of the Potomac are visited by the fish and at least one of these is only fairly maintained by the most strenuous efforts of the National fishery authorities. The remainder have either been rendered uninhabitable by deadly pollution from industrial establishments or made non-ascendable by huge dams. A fish industry of more than two million dollars a year has thus been recklessly and needlessly destroyed. The entire market of the country has now to depend almost

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wholly for its supply of shad on the rivers from the Delaware south and from the Pacific coast, where the shad was successfully introduced about fifty years ago.

Like most of the herrings, the shad is strictly an anadromous fish. It leaves the sea regularly every spring, and enters the river in which it was born as soon as the water temperature is right, or above 60 degrees, deposit its spawn, and then, if it survives the, to it, trying ordeal returns to the ocean.

Spawning for the shad is an act of supreme self-sacrifice, for fully fifty per cent lose their lives as a direct result, and those that survive to reach the re-vivifying sea water are mostly thin and feeble. This condition is brought about not only from the act of spawning, but because from the time they enter the river to their leaving they take little or no food.

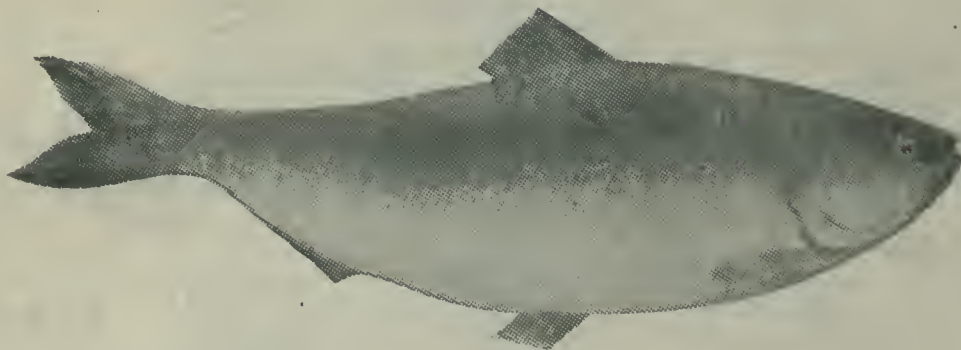
Their natural food is undoubtedly animalculae, the same as most of the family. It is on fresh water minute organisms that the young live during the months they are in the rivers. With rare exceptions when mature shad first leave the sea the eggs are not fully developed, but they ripen rapidly as they ascend to the spawning grounds. These are in the tide water, and the pools above even to the very source of the river. No nests are built for the eggs. The female swims close to the surface with back and dorsal out of water, and discharges

Later, when the run occurs the sexes are more evenly divided.

Where the shad go after spawning and where they spend the time that intervenes before returning is unknown. It is supposed that they follow the same course as their relatives, the menhaden, and go straight out to sea until they find somewhere in the Gulf stream a stratum of water of the right temperature. Undoubtedly, however, if they do this, they either take the precaution to locate where food is abundant, or do not hibernate, for whereas, when they leave the shores they are thin to emaciation, they return in the spring fat and full of vigor.

It has not always been believed that the shad winter as described. Until a few years ago, it was generally held that when the shad reached the sea, they turned southward and wintered in or near the Gulf of Mexico. In the spring they started northward, dropping detachments on the way in different rivers. This was, however disproved, because it was found that sometimes shad would be first in some of the more northerly rivers. Also when Government propagation was undertaken the only rivers benefitted were those in which the hatching was carried on.

Of all fishes brought to market the shad is the greatest in demand when the season is on, for it is held in



Shad

her eggs as she moves at a rate of about three miles an hour. The male swims a short distance behind her a few inches lower in the water, and as the eggs fall, he discharges the milt and it, sinking, fertilizes them.

A first spawner female deposits about 30,000 eggs, and this number is greatly increased with the age and size of the fish. A shad of ten or twelve pounds may have as many as 150,000 eggs. Incubation is completed in from four to seven days, depending on the water temperature, which should be between 60 and 70.

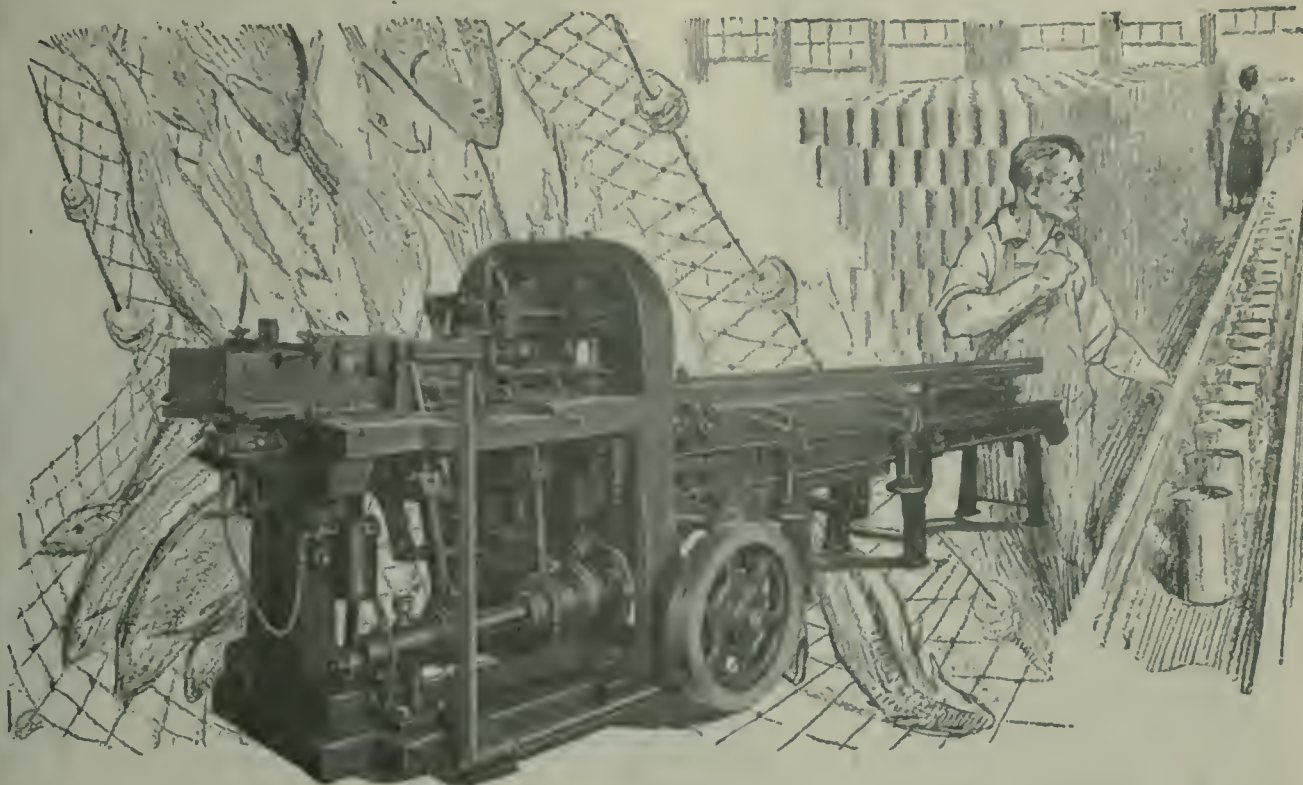
The young, tiny and translucent fish are free swimmers from birth, but grew with great rapidity, and when in the early autumn they begin their journey in big schools, to the sea, they average between four and five inches long. The following year they return, but confine themselves chiefly within the limits of tide water. They are often found among schools of glut herring and are about the same size. They come in again when they are two years old, when many are caught and marketed.

The majority of the first run of shad in the spring are males or bucks and these are followed shortly after by a second run in which roes or females predominate.

the highest esteem as a food fish of unusual delicacy of flavor. It is salted and smoked and canned, but none holds the same popular flavor as a shad fresh caught and broiled or planked.

The outline of a shad closely follows that of the menhaden. Its body is deep and the mouth large. The back is bluish and the sides silvery. Behind the gill covers there is a large dark blotch, and generally a short single row of smaller ones. The scientific name of the shad is *Clupea sapidissima*, which being translated means a herring that is the best to eat. The name was given by Mitchell, an ichthyologist who possessed a faculty of bestowing names of singular fitness.

According to legend the shad was not always as bony as it is now, and as its flesh was a delicate and as highly prized as by moderns, it was pursued so relentlessly that it was threatened with extinction. The fish therefore in dire extremity appealed to Neptune for aid. He recognized the justness of their plea and the danger they were in and promised to provide each shad with 30,000 bones. But when his servants began to insert them the pain was so great the fish freed themselves and fled. But Neptune had them recaptured and ordered the ser-



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vants to proceed with the work. They did so, but the fish squirmed so much, that they could not perform their task in a workmanlike manner, but had to stick the bones in as best they could in all parts of the body.

CHAPTER VII.

Smelts and Anchovies.

The family of smelts is not large, as there are only about half a dozen genera, and not many over a dozen species known in all parts of the world. Yet it is of great importance as a food product. Millions of pounds are caught and consumed annually, and these figures are the more pregnant from the fact that the fish are sold chiefly green and frozen, and therefore only are in the market a little longer than the months in which they are running.

There is a close relationship between the smelts and the salmonoids or the family to which the salmon, trouts and white fishes belong. They even have the adipose fin behind the dorsal that is characteristic of the Salmonidae. The only important structural difference is in the form of the alimentary canal. They are cold water dwellers, and some descend to considerable depths in the ocean and almost rank with the deep sea fishes.

All are silvery in color; all are small and travel in

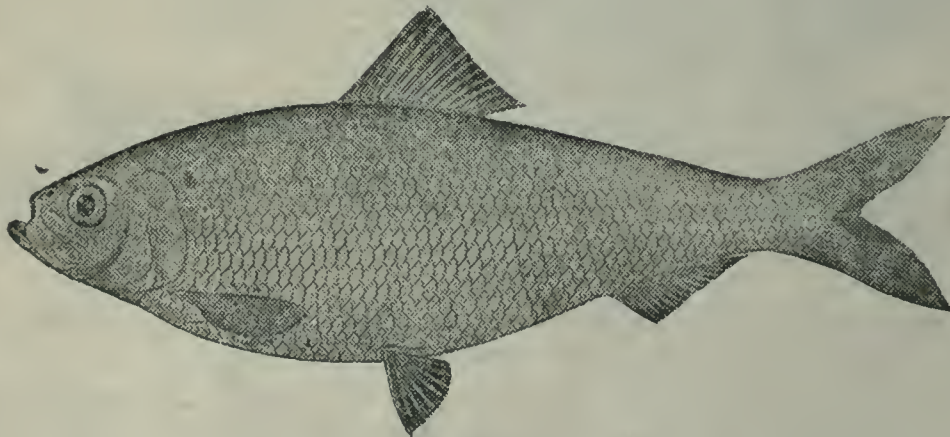
Capelin.

The northern smelt is best known under the names of capelin and ice fish. The northern limit of its range is unknown, but it is to be presumed that it has none, from the fact that the same species is found along the Alaskan coast, and that the arctic shrimp or "sea lice" fairly swarms in all polar waters ensuring it an abundance of food.

It forms with the arctic halibut one of the principal foods of the great herds of seals and in southern Greenland it is so abundant and so important an article of food that it is known as the "daily bread" of the natives. It abounds all along the coast of Labrador and Newfoundland, and the greater part of New Brunswick and Nova Scotia.

Purely an ocean dwelling fish the capelin does not enter fresh water at any time, not even for spawning. This latter function is performed on the sandy shallows or on the sandy beaches on the edge of low tide. The United States Fish Commissions Report contains the following graphic description of the curious method employed by the Capelin in spawning;

"The male fishes are somewhat larger than the females and are provided with a sort of ridge projecting on each side of their backbone, similar to the eaves of a house, in which the female is deficient. The latter on approaching the beach to deposit her spawn, is attended by two



Gaspereau.

huge schools. In North American waters there are but two genera with one species each, that have any interest for the commercial fishermen. One is purely a sea dweller and the other is pronouncedly anadromous. One is almost purely a resident of arctic or subarctic waters seldom passing below the line of the Bay of Fundy. The other starts along the upper part of New Brunswick and Nova Scotia, and is found as far south as Virginia, although not in great abundance below the northern part of New Jersey.

Both species are highly palatable, and caught with equal eagerness. The flesh is sweet and firm, and the body without bones excepting the vertebrae and the ribs. The yare so toothsome and tender that many eat the fish when cooked, heads, bones, flesh and all without their having been gutted.

The chief foods of both species are shrimps and small crustaceans, hence the fish are found in almost all depths of water. Excepting at spawning time, the natural roaming place of the smelts is at some considerable distance from land.

male fishes, who huddle the female between them, until the whole body is concealed under the protecting ridges, and her head only is visible. In this position all three run together, with great swiftness, upon the sands, when the males, by some inherent imperceptible power, compress the body of the female between their own, so as to expel the spawn from the orifice and the tail. Having thus accomplished its delivery, the three capelins separate, and paddling with their whole force through the shallow water of the beach, generally succeed in regaining once more the bosom of the deep, although many fail to do so, and are cast upon the shore, especially if the surf be at all heavy."

The Capelin is grayish silver with a dusky back. The old males have scales above the lateral line and on the sides of the body. It is these scales on the back that are probably described as a "sort of a ridge" in the Report of the United States Fish Commission.

The Smelt.

In the United States, particularly that part supplied by the markets of Boston, New York, Philadelphia and

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Baltimore, the common smelt or frost fish is, with little exception, the only species known. Like the capelin, it grows to a length of twelve inches or a little more, although the average size is much smaller. It is pronouncedly anadromous, and can easily be acclimated to permanency in fresh water. Indeed, in some cases where the common smelt has been introduced into some of the deep cold water lakes in the New England States and in New Brunswick and Nova Scotia, the fish seem to have improved in both size and in food quality. In many of the lakes in the sections named the introduction has been attended with wonderful success and a profitable industry developed.

The natural range of the common smelt is from Nova Scotia and New Brunswick to the northern part of New Jersey, although they are found in considerable numbers as far south as Virginia.

About the beginning of the winter months the smelt start entering the rivers and brackish bays in enormous numbers and from then until spring the business of catching them for the market is one of the greatest activity. Boys, women as well as men engage in the work, and in some places much of the spending money of the youth and women are obtained from this source. They are fished for in open water and through holes and lanes cut in the ice. Set nets, haul nets or anything like a net that will ensnare the smelts are used. Hand lines and rods and lines with a multiple of hooks are also freely employed, and sometimes the catches are as great as from some of the nets.

Smelt eggs are minute. They are so small that between 450,000 and 500,000 are required to fill a liquid quart. The number to each female is prodigious, considering the small size of the fish. It is estimated that a smelt of twelve inches will have from 100,000 to 150,000 eggs. They are deposited in the shallow waters of brooks flowing into bays, in large yellowish white masses. They are so adherent that the masses may easily be gathered with a shovel. This indeed is the method used in collecting smelt eggs by the New York State Fish Commission, the only fishery authorities that attempt the propagation of the fish.

It is a curious fact that although the eggs of the smelt are easily destroyed by strong light, the fish apparently takes no precaution against this danger beyond depositing them by night. The consequence is that the vast majority of the eggs never develop, excepting when they fall into the hands of the New York fishery authorities. These save and hatch a large percentage of the eggs by covering the jars in which they are incubating, with cloth and excluding the light.

Incubation takes place in from three weeks to a little more than a month, and the young fish when they emerge from the eggs are so small that they can easily pass through the meshes of coarsely woven cheese cloth.

The common smelt can be easily distinguished from the capelin. It is of a greenish tint with silvery bands, and on the back are dark points, and it has strong teeth.

Anchovies.

Strictly speaking, the anchovies have no place among the fishes of the extreme northern waters, for they belong rather to the warmer seas, but they are found in considerable numbers during the summer months as far as Cape Cod and possibly farther north. Moreover certain small fishes, some of which have no relationship to the anchovies, and others that have, are treated and put up in the same manner and sold under the name—fish that are natives and caught in the colder waters of the North Atlantic. Indeed, the commodity labelled

anchovies has generally come to be regarded as applying rather to the method of preparing for the market than as to any specific species of fish. Further, it may be said that grave and learned judges from the bench have so declared.

True, anchovies belong to a small family, closely related to the herrings. There are but three species in the western Atlantic ocean and none of these was known along the coast of America until 1854 when the Browns anchovy was discovered. It is this species that is the most abundant. It has a pointed snout that projects considerably; a belly somewhat serrated; teeth in both jaws, a translucent, compressed body with a silvery band along the side. All three species are exceedingly small, rarely exceeding a length of from four to six inches, and all have long deeply forked tails like the herring, to which they are nearly related, and baby herring are often prepared and sold as anchovies.

As a food the anchovies are sliced, rolled, preserved in oil and salt are eaten chiefly as an appetizer.

BRITISH FISH MARKETS.

Billingsgate, E.C., December 28th, 1918.

This week's trading has, of course, been interrupted by the Christmas holidays. All markets suspended business on Wednesday, being Christmas Day, while the following day, i.e., Boxing Day, which is observed in the United Kingdom as a Bank Holiday, was also a blank at most ports, while the few distributing markets which were open might just as well have remained closed for all the trading that was effected, very few buyers putting in an appearance, while the arrivals were quite meagre.

Contrary to the usual experience in ordinary times, when except for a few special kinds such as turbot, cod, and one or two other varieties, inquiry for fish is very slack on the few days immediately preceding Christmas, demand on Monday and Tuesday was insistent and all the fish available was rationed out at full control prices.

The holidays naturally will rather interfere with the regular arrivals and departures of fishing boats, and therefore no relief to the present great shortage can be looked for for a week or two. However, vessels are now arriving at the principal trawling ports from the Admiralty, and as soon as they are stripped of their war-time apparatus and refitted for the peaceful pursuit of fishing an appreciable expansion in the confidently expected that by the 2 shretaemfwy catches landed should take place.

Billingsgate, E. C., 4th January, 1919.

The markets generally have been characterized by an almost unprecedented scarcity of all kinds during the week just closed. The opening week of the year usually sees light landings, the regular operations of fishing vessels being interrupted by the Christmas and New Year holidays. As, however, the quantity of fish available even under the most favorable conditions falls very short at present of requirements any diminution in the arrivals at once converts the shortage into an acute scarcity.

Of course, New Year's Day is observed all round the Scottish coast as a holiday, while this year, as no convoys were expected at either Grimsby or Hull, both those markets were also closed for the day. Thus the supplies delivered at the markets in the consuming centres on Thursday formed but a mere bagatelle, with a result that large numbers of retailers were

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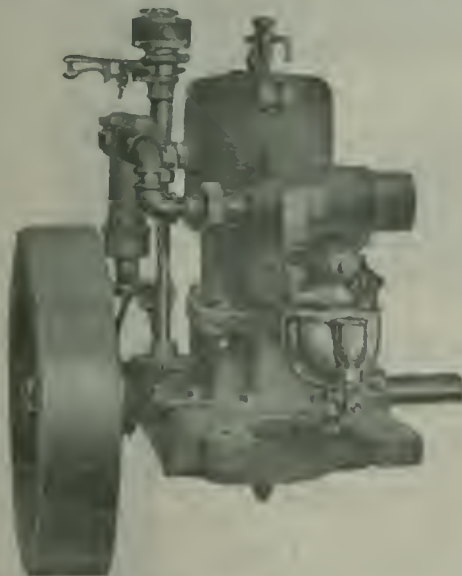
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quite unable to purchase any fish whatever. Owing to the Government maximum prices still being in force prices had no opportunity of rising to an excessive level, but it is quite problematical the height to which values of some varieties would have gone but for the control.

The difficulty experienced by the bulk of tradesmen in securing fish has reacted strongly in favor of the recent arrival of frozen fish from Newfoundland. It is stated by Peter Forge, the Government Distributing Agent at Billingsgate Market, London, that probably never before has demand been so sustained for a particular variety of fish: Not a single complaint has been heard regarding the quality of the fish in this consignment, and if exporters in Canada and Newfoundland would only maintain the high standard set by this shipment there should be a big future for this class of fish during such weeks as the one just experienced here. The packages containing 80 lbs. of fish have been most popular with the trade, so much so that practically the whole of this sized box has now been cleared, leaving only the 200 lbs. packages. The latter are also selling freely but they are not everyone's choice, and it can safely be said that for every two of the larger packages which can be disposed of, buyers can be found for ten of the 80 pound ones. The future of this trade will be watched with great interest and no doubt firms desirous of cul-

tivating export trade with the United Kingdom, will find the firm of Peter Forge only too willing to give any advice and information desired.

Numerous enquiries are still being made for frozen salmon but these remain unsatisfied owing to the absence of supplies.

It may be of interest to state here that from now until Easter there will be a great demand in this country for cod fish, and every package of best quality cod for which refrigerated freight can be obtained should be shipped so as to reach London by the middle of March.

NEWFOUNDLAND HERRING.

The Newfoundland fall herring fishery is over. The total catch is considerably below that of last year and will aggregate about 40,000 barrels for Notre Dame Bay, Bonne Bay, Bay of Islands, Placentia Bay and Fortune Bay. Notre Dame Bay will have about 20,000 barrels, Bonne Bay 5,500, Bay of Islands 12,000, and the remaining Bays 3,000. About 10,000 barrels have been so far shipped out of Notre Dame Bay by steamers, schooners and train from Lewisporte. An effort is now being made to get out the balance of the catch before navigation closes. The s.s. Sagona, s.s. Prospero and s.s. Diana will clean up about 9,000 barrels this trip if ice conditions permit.—Trade Review.

CERTIFICATES FOR RETAIL FISH DEALERS.

We reproduce herewith a cut of the certificate of commendation which is being granted by the Canada Food Board and the Canadian Fisheries' Association to retail fish dealers who maintain sanitary stores and

handle fish attractively and in good variety. Up to date, about fifty retail fish stores have qualified for the certificate which is a valuable asset to any fish business.



THE CANADIAN FISHERMAN

A MONTHLY JOURNAL DEVOTED TO THE COMMERCIAL FISHERIES OF CANADA AND NEWFOUNDLAND THE SCIENCE OF THE FISH CULTURE AND THE USE AND VALUE OF FISH PRODUCTS

F. WILLIAM WALLACE
EDITOR

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No. 2

WHAT ARE THE PLANS FOR THE FUTURE?

With the ending of the war and a gradual cooling off of the hectic enthusiasm which carried us along to the victorious conclusion of hostilities, the fishing industry of this country is beginning to look for a definite policy of fisheries development. During war-time, the Fisheries Association made numerous recommendations to the Government with regard to the development of the fisheries, but very few were acted upon. The country was busy winning the war and such small matters as were wanted by the fish trade could very well wait. The trade waited and the Departments dealing with fish conveniently pigeon-holed all recommendations and suggestions.

The war ended with startling suddenness, and it has ended without any definite policy being formulated to develop our fishing industry in order to fit it for the foreign trade which is vitally necessary if we are to pay the bills. The Canada Food Board built up the home trade in fish purely as a war measure, and not because it felt that the fishing industry was being neglected. This war board has done good work, and the results will be permanent, but within a few weeks the Canada Fish Board will have vanished, and its parental care of the home fish trade will be missing. Once more, Canada's Fishing Industry will be running around looking for a sympathetic foster parent to take it to its bosom, or failing that, it will have to depend on the puritanical hospitality of the Department of Naval Service, which, with so many departments to look after—Navy, Shipbuilding, Marine, etc.—cannot kill any fatted calf on the return of the Prodigal.

Our war debts must be paid out of our natural re-

sources — timber, minerals, agriculture and fisheries. We have the greatest fish resources in the world to-day. What Governmental policy has been formed to develop them in order that we might jump in and hold our own with Scandinavia, Newfoundland, Great Britain, America and Japan in the world's markets? The war gave us a chance to do some missionary work in foreign markets while the Scandinavians were out of it, but the Department which should have been getting that work lined up — namely, the Department of Trade and Commerce — was messing around with other things and generally doing nothing at all but marking time while their Minister was doing his Cook's tours in Europe.

The war has ended and no policy has been formulated for the development of the fisheries in order that it may take a favorable place in foreign trade and exploit fully a resource which is part of the inherited wealth of the country. This work should have been done two years ago. Germany—a defeated country — has already announced what her intentions are in developing her fisheries, and her programme, compared with pre-war days, is ambitious and efficient. Her trawler fleets will be increased from 250 to 400 vessels; fishing harbors will be constructed; packing and curing of fish standardized; boys instructed in the art of fishing and navigating; Government will insure fishing vessels; a department is to equip fishing vessels with motor engines; new fishing grounds are to be discovered and charted; railways are to provide direct fish trains, refrigerator cars and low rates; an institute for scientific and technical research is to be endowed by the State; there are to be special German fishery consuls in for-

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sign ports, and experts are to devise ways and means for better fish handling.

All these things are what we should be doing now and the planning should have been done two years ago.

The Executive of the Canadian Fisheries Association have the matter of future development policy in hand now, and will expect action from the Government during the coming session of Parliament. An announcement of the recommendations will be made by President Brittain shortly, and all Association members are urged to get behind the effort and see that the policy is carried out. Otherwise, now that the stimulus injected by the demands of war has passed, we shall fall once more into the snail-like development of pre-war years.

NAMES IN THE FISHING INDUSTRY.

Standardization is one of the things which our Canadian fishing industry lacks. Standardization in pack, cure, packages, weights and names. In the naming of our fish we confuse the layman. The pike of the eastern provinces is known as the jack-fish out West. Pickerel masquerades as dore in Quebec and as pike-perch in other localities; mullet is an alias for sucker; cat-fish sometimes presents its card as bullhead; black cod sells as sable-fish; dog-fish as grey-fish; gaspereau as alewife, and so on ad infinitum.

Dr. Huntsman, Professor of Biology at the University of Toronto, and one of the very practical scientists interested in the fisheries, is making an effort, through the Canadian Fisheries Association, of which he is a member, to standardize the names of all marketable Canadian fish. Dr. Huntsman is taking the matter up with the trade and will communicate with U. S. fish men with a view to standardizing the names of all North American commercial fish. On completion of the work, a booklet containing cuts of the fish and the trade name decided upon will be issued under the auspices of the Association's publicity committee.

Apart from fish, the fishing industry is at present suffering from ambiguity in the designation of fishing methods. The method employed by schooner and dory fishing with long lines of baited hooks is known as "trawling." This is confused with the real trawling by which steamers drag a net over the sea bottom and which is known as steam trawling. As the word "trawling" is derived from the French "to drag," the name "trawling" should only be applied to the steamers fishing with the Otter Trawl gear. To distinguish the schooner caught fish from the latter, the names should be "line caught" and "trawl caught," and the vessels should be known as "liners" and "trawlers." Under these names we can have hand-liners, long-liners, dory long-liners, dory hand-liners, and steam trawlers. The hooks and lines used in Bank fishing should be referred to as "a tub of long-line" instead of a "tub of trawl," and the word "line" should be used instead of "trawl" in connection with everything pertaining to this particular fishery.

Another common misnomer on this side of the Atlantic is the continual reference to our steam trawlers as "beam" trawlers. In Canada or the United States, there are no beam trawlers in the Bank fishery. All the trawlers in America use the Otter type in trawl in which no beam is required.

As somebody must lead the way in correctly nam-

ing the matters spoken of here, the CANADIAN FISHERMAN will in future endeavour to designate each class of fisherman as "liner" or "trawler." The fisheries using nets have apparently no such ambiguities as they name themselves gill-netters, pound netters, trap netters and seiners—all of which is readily understood.

THE FISH AND CHIP RESTAURANT WORTH ENCOURAGING.

In Canada, we do not know the fish and chip restaurant as they know it in Great Britain. Overseas, it is quite an institution, and they are ubiquitous. The cheapest and most palatable food in the world is served in the fish and chip shops of England, and no less a person than Admiral Lord Jellicoe has testified to their worth. In a recent speech at Hull, he stated "The fried fish shop has fed very many more of our folk than most people have any idea. To give one example. During the last year, the fried fish shops of one town—Bradford—have supplied eight hundred thousand meals of fish weekly to their patrons!" It has also been said that, during the dark days in England, the fish and chip shops stood between the Government and revolution.

The Canada Food Board recognizes the value of the fish and chip restaurant, and in a recent press release urges that they be more universally patronized and encouraged in Canada. We advocated similarly in the CANADIAN FISHERMAN some years ago, and we believe, with the encouragement of the wholesale trade that this business can be built up into a profitable market for Canadian fish of the cheaper varieties.

The frying of fish and chipped potatoes—or French fried as we know them—is not a difficult trade to learn, and would be a good opening for partially incapacitated returned soldiers who understand something about fish. There are quite a number of these restaurants in Canadian towns, but their patrons are usually people from the Old Country, and Toronto, with its considerable British population, maintains about thirty or forty fish and chip restaurants, and all are doing well.

The fish and chip restaurants deserve encouragement because of the cheapness of their meals, which is a boon to the poorer classes who know them. For twenty cents, one can get a full plate of fish and potatoes and a cup of tea, coffee or cocoa. This constitutes a satisfying meal—palatable and sustaining. These restaurants, if there were more of them here, would afford a splendid market for the commoner grades of fish as in England they fry up almost everything that swims—dogfish, catfish, plaice, skate, cod, pollock, etc. In this country there is no limit to the quantity of these particular varieties.

The wholesale trade throughout Canada are often asked for financial backing by individuals intending to start a retail fish store. The chances for success and the establishment of a good customer might be ensured if the individual were encouraged to maintain a combined fish and chip restaurant with a retail fish store. The one takes care of the other and prevents losses by waste as fish in danger of spoiling can always be fried up.

Keep the fish and chip restaurant in mind and help them along. They can be made into very important consuming markets for our fish and a material factor in reducing the cost of living for the poor.

"CHILLED" Versus "FROZEN."

There is a distinct prejudice on the part of the consumer to "frozen" food products. This has probably arisen owing to the misuse of cold storage by packers and others, and this prejudice exists with regard to frozen fish. There is a great deal in names, and it is just as well to avoid any name which will cause antipathy.

In connection with frozen fish, we would suggest that the name "chilled" fish be used instead. It sounds better, and is quite a common term in England, where huge quantities of Canadian and Newfoundland frozen fish have been marketed under that designation. The word "thawing" might also be changed to "defrosting."

These are little matters, but they mean much, and it is just as well to make the change before the odious terms become too deeply ingrained to be easily removed.

A HUGE COLD STORAGE FOR MONTREAL.

A most important announcement was made by the Hon. Mr. Crerar, Minister of Agriculture, at Toronto recently, when he stated that a million dollar cold storage would be constructed by the Federal Government, at the National Port of Montreal for the purpose of storing meats, fish, butter, etc., while awaiting shipment overseas. The storage will be constructed on the water-front, and will be under the management of the Harbor Commissioners of Montreal.

This news is being received with a good deal of satisfaction by Canadian fish producers, who have felt for some time past that such a storage was a necessity in the building up of the export trade in fresh chilled fish overseas. During the war, we shipped over twenty million pounds of chilled fish overseas, and considerable quantities had to go from the port of Montreal. In hot summer weather, cars of frozen fish stood on the wharf awaiting shipment, and many anxious moments were spent by the shippers, while the problem of timing the shipping and arrival of cars to arrive at the ship's side without undue delay, gave producers a great deal of worry.

The market for Canadian chilled fish in Great Britain and France has passed the experimental stage, and is in a fair way to become a permanent export market, but to properly conduct this business, National Cold Storages at the ports are as much of a necessity as are grain elevators to the exporters of wheat.

The cold storage on the wharf at Montreal will be an important link in the development of our fisheries, and the export trade which we must build up from now on. Fish is a highly perishable commodity and must be kept at low temperatures during shipment. The new storage located handy to the ships will be a boon to fish producers, and Mr. Crerar is to be congratulated on his move, which is both far-sighted and constructive.

BRITISH FISHERMEN ASK FOR MINISTER OF FISHERIES.

Extensive development of the British fisheries is urged in a memorandum prepared by the National Sea Fisheries Protection Association, and generally approved by the leading representatives of the fishing industry.

"Given a Ministry administering an efficient service, the possibilities of the future are very great, says the memorandum. We anticipate a catch of at least double the pre-war maximum within a few years. A very large stock of fish has accumulated in the sea during the war, both bottom fish and surface fish. Our fishermen can catch it. The problem is to see that it is all brought to the consumer without waste, and that problem will occupy the full attention of a special Minister, who will have no time for business other than fisheries. Great Britain catches by herself 47½ per cent. of the total European fish supply; and an industry of this magnitude, capable of immense expansion, is well worthy of the attention of a special staff."

FISHERIES ASSOCIATION HONORS CANADA FOOD BOARD CHIEF.

The Montreal members of the Canadian Fisheries Association showed their appreciation of the Canada Food Board's effort to increase fish consumption by giving a dinner to Mr. H. B. Thomson, Chairman of the Board, in the Windsor Hotel, Montreal, on Saturday, February 15th.

The dinner showed the strongest evidences of the whole-hearted co-operation which has existed between the Association's members and the Food Board, and even while present conditions in the trade were not bright, yet the whole gathering showed a spirit of complete optimism as to the future of the industry at home and abroad.

President Brittain held the chair, and proposed the health of the honored guest. In replying, Mr. Thomson paid a high tribute to the manner in which the fish trade and the Association assisted his efforts to substitute fish for meat in the trying days of war-time conservation. The trade had been licensed and were compelled to render reports and be regulated, but, so whole-hearted had been their co-operation with the spirit of the measures, that it had not been necessary for the Board to enforce any of its regulations upon the members of the trade for violations of the Food Board's laws.

Mr. Thomson emphasized the fact that for the fishing industry, the home trade was the best trade and it should be fostered carefully and energetically. The aim of the Association should be to have a first class retail fish store in every town. The export trade was for our surplus production, and in that, it is necessary that our pack and cure should be standardized and of only one quality—the best. "Our fish products should be so standardized that a foreign buyer can purchase the goods without seeing them, and feel sure that he is getting a first class article. Until that was done, the speaker continued, Canada would have a hard row to hoe in competition with foreign countries. During his remarks, Mr. Thomson convulsed his hearers by racy anecdotes delivered with dry Irish humor, and concluded his speech with high tributes to the work of his Fish Section under Capt. Wallace and Mr. Sawyer.

Speeches were made by President Brittain, Past Presidents S. Y. Wilson and D. J. Byrne, Mr. Guy Toombs, of the C.N.R., and Messrs. Wallace, Harpell, O'Connor, Spooner, Parker, Beer and Short. Songs and musical numbers interspersed the speakers, and Mr. J. A. Paulhus, Vice-President, presented Mr. Thomson with a silver cigarette case, suitably en-

graved, as a little memento of the esteem with which he was regarded by the Association's members.

Among the guests present were Messrs. D. J. Byrne, S. Y. Wilson, H. G. Connor, J. T. O'Connor, H. B. Short, J. J. Harpell, S. A. Christie, J. A. Paulhus, W. R. Spooner, Guy Toombs, J. A. Parker, F. W. Wallace, E. O. Sawyer, F. W. French, S. H. Howard, G. F. Beer, A. B. Hannay, J. Chisholm, A. Fraser, W. Lonergan, Roland Hill.

ARE EXPRESS COMPANIES ESSENTIAL?

The old question as to whether express companies should be permitted to act as common carriers separate from railways is revived with the present application of the Express Traffic Association of Canada to the Board of Railway Commissioners for increased express rates. It is an old question, and was first raised shortly after William F. Harnden's Boston and New York hand-valise express was inaugurated. To quote the American Railroad Journal of 17th March, 1855:

"We recently called attention of railroad companies to the fact that they are farming out their best business to Express companies. The latter simply collect and deliver the parcels forwarded, while nineteen-twentieths of the labor of transportation is performed by the railroad companies, for which we do not believe they get one-quarter of the amount paid to the express companies. These are in fact mere parasites. Railroads can easily assume all the functions performed by the express companies without materially increasing the risks of business or their expenditures. At the same time, by reducing the cost of transportation below that charged by the express companies, which they can well afford to do, they can vastly increase the present movement."

That was the opinion of 1855; but what is everybody's business is nobody's business, and no one bothered his head about the matter. The time has come when we are not living within the confines of our own district, but are in open competition with the world, and, to survive, we must in all things eliminate unessentials.

What was the opinion in Canada in 1911? When the question of express rates was before the Railway Commission in that year, evidence put in by those opposing an increase in rates—and it was not controverted by the express companies, although the knowledge was in possession of their allied companies, the railways—showed that on the Grand Trunk Railway there were:—

	per car	
	per annum	
33,567 freight cars earning an average of ..	\$ 609	
60 mail cars earning an average of ..	\$ 6,411	
900 passenger cars earning an average of	\$10,428	
48 express cars earning an average of ..	\$21,846	

and on the Canadian Pacific Railway there were:—

	per car	
	per annum	
44,430 freight cars earning on an average .	\$ 903	
74 mail cars earning on an average ..	\$ 9,572	
1,461 passenger cars earning on an average	\$13,453	
116 express cars earning on an average ..	\$19,185	

In view of the above comparative statement and other evidence adduced at the hearing, the Chairman said:

"We are impressed with the fact that the earnings of the Railway Companies upon express traffic are upon the whole excessive and should be reduced."

The whole business of express as it is carried on in Canada, could go on just as it now does without the existence of any express companies at all, by simply substituting railway employees for express employees, and making express traffic part of their work, and letting the railway companies take the whole of the express toll in the first instance.

Perhaps no saving could be gained by eliminating express companies as such, and leaving the work now performed by them to be done by the railroad companies; but the question of express rates could better be determined if it were not for the complication that exists by reason of the two companies, the one owned by the other, and the dominant company in the position to say to its subsidiary company: "We will carry your freight (you call it express), but you must pay us what from time to time we ask!"

Now, freight rates and passenger rates are fixed by the Dominion Railway Commissioners, and the express companies ask to have the express rates fixed and in doing so ask the Commissioners to assume that what they pay the railroads is fair and reasonable. There appears to be no power to enquire into this vital question, although it obviously must continue the basis of express rates.

There lies the stumbling block to ever having what the public will believe to be fair and reasonable express rates. The solution lies either in abolishing express companies as unnecessary intermediaries or in making it a condition that the railroads—really the express companies—establish to the satisfaction of the Commissioners that what they receive from the express revenue is only fair and reasonable. Without this you may as well try to determine if a merchant is profiteering without knowing what he pays for his wares.

It seems high time that the express companies were a thing of the past, or their owners—the railroads—made to establish the fairness of their present toll.

PAYMENT OF FISHING BOUNTY FAILED IN ITS PURPOSE.

The payment of fishing bounty was authorized in 1882. Its object was, as stated in the Act authorizing it, to develop the sea fisheries and encourage the building and fitting out of improved fishing vessels, and the improvement of the condition of the fishermen. From 1882 to 1917 inclusive, amounts aggregating \$5,697,077.86, or an average of approximately \$158,000 a year have been paid.

The bounty really had its origin in the payment of \$4,500,000 that was made to Canada, out of the Halifax Award of \$5,500,000, under the Washington Treaty of 1871, for the excess value of Canadian privileges to American fishing vessels on the Atlantic Coast, over those by the United States to Canadian fishing vessels, under the Treaty. This money was paid over in 1879. While at the time it was contended by the Atlantic representatives in Parliament that it belonged to the Atlantic fishermen, this contention was not maintained, and the money was therefore paid into the treasury, as consolidated revenue. Strong agitation was, however, kept up by

the Maritime Province members for some method of sharing in this award by the Atlantic fishermen, and in the last days of the Parliamentary Session of 1882, and, indeed, of that Parliament—on May 13th—a resolution was introduced by the late Sir Leonard Tilley, "to provide for an annual grant of \$150,000 to aid in the development of the sea fisheries, etc." This was followed by the legislation above referred to.

The basis on which the bounty was first paid was found to require over \$150,000 annually, and the shortages from year to year were usually provided by special vote, but in 1892 the Act was amended so as to increase the annual sum to be provided to \$160,000, at which it still stands.

The Treaty did not apply to the Great Lakes, nor the Pacific, and apparently for this reason neither does the bounty.

The bounty payments are now usually about as follows:—

On vessels of ten tons or over, \$1.00 per ton up to 80 tons.

On boats \$1.00 each.

To fishermen on vessels \$6.50 each.

To fishermen on boats \$4.00 each.

That this act has absolutely failed in its stated purposes, is evidenced from the following statement of vessels showing their total tonnage, and men on them receiving bounty.

Year.	No. of Vessels.	Total Tonnage.	Total No. of Men.
1883	904	34,576	7,243
1888	827	31,640	6,631
1893	805	27,979	5,744
1898	784	25,108	5,901
1903	851	26,501	6,361
1908	925	22,206	5,563
1913	910	22,833	6,147
1917	812	19,480	5,276

It will be observed that even when the number of vessels began to increase, the tonnage did not, so that a smaller, instead of an "improved class of fishing vessels" was being built.

Moreover, there is the anomalous fact that while the Act is for the encouragement of the building of an improved class of fishing vessels, steam trawlers, the most modern type of fishing vessels, are not eligible for bounty under the existing regulations. The obvious fact is that the bounty is far too small to have any effect in stimulating the fisheries. But, even if it were large enough to do so, such method does not seem the best one.

It is sometimes urged that the bounty was in compensation of detriment suffered by the Canadian Atlantic fishermen, owing to the competition of United States fishermen under the Washington Treaty.

This contention is not sound, as the fisheries flourished, and the fishermen prospered under the Treaty. But, even if it were admitted for argument's sake that they did suffer, few if any of those then operating, are still fishing.

Again, if the object of the Act is really what it states, it is eminently unfair and unjust that it does not apply to the Pacific Coast, and the lakes.

Difficulty—indeed, far too much difficulty—seems to obtain in procuring parliamentary appropriations to enable work to be carried on which would no doubt result in great benefits to the fishing industry of this whole country.

For instance, adjacent to both the Atlantic and Pacific coast, and in our interior waters, we have what we so readily acclaim as the most extensive fisheries of any country in the world; but up to the moment, very little has been done in the way of scientific investigation, and exploration, with the object of determining the variations in the abundance and distribution of food fish, and the effects of different methods of capture, spawning places, haunts of young fish, migrations of older fish, temperature and salinity of the different water areas and strata, the direction and force of currents, and their influence on the movements of fish and kindred matters. It is true that the Canadian Marine Biological Board is entrusted with such work, but even if it be granted that this Board, as now organized, is best fitted to carry out the work, it has only available to it \$26,000 per year, for the whole of Canada.

Also, there is urgent need for educational work amongst our fishermen. Too few of our schooner skippers hold captain's certificates, and while they are wonderfully skilful in navigating over the areas with which they are familiar, they are not masters of the science of navigation, and the scope of their usefulness is limited accordingly.

Our inshore fishermen are rapidly installing gasoline engines in their boats, which they learn to operate by experience, but this is frequently dearly bought in time and repairs, and few of them are able to effect minor repairs, or even quickly to locate the cause of engine difficulties, so that in addition to large sums in the aggregate, spent in repairs that would not be necessary if the engines were properly understood from the start, the production of fish is curtailed.

Our methods of curing fish do not, as a usual thing, produce the best results, so that under ordinary conditions we cannot compete in the most discriminating markets, and consequently our fish do not, in normal times, command the highest prices.

The methods of handling fish by our inshore fishermen leave much to be desired. Demonstrations in better methods, and the results of such, offer the greatest hope for improvement.

This, and dozens of other related matters, should be receiving the energetic attention of the Government, but there always seems to be the difficulty of procuring requisite funds. It is true that the Department of the Naval Service has been doing something along some of these lines, but not much more than a start has been made.

The fisheries of this country are such a great national asset that there should be no hesitation in providing adequate appropriations for their proper encouragement, but a great deal of work along the above lines could be carried out without any additional demands on the public exchequer, if the money now paid in fishing bounties were made available for such purposes, and while there would be no doubt considerable opposition to the withdrawal of the bounty from those directly interested, as above shown, its continuance is having no effect in the development of the industry.

OPPORTUNITIES IN THE OVERSEAS EXPORT OF CHILLED FISH.

No doubt readers of THE CANADIAN FISHERMAN will be intensely interested in the article appearing on another page dealing with the physical conditions of the European fishing grounds. It will be noted that our contributor, after giving some very interesting statistics, is of the opinion that despite the immense catch of fish landed in the principal countries of the Old World, there is every likelihood that in future years the peoples of Europe will find it necessary to resort to countries on this side of the Atlantic, as well as to those with a Pacific seaboard, for their supplies of fish food. In this connection we have this week received an interesting letter from Mr. Sidney J. Williams, a partner in the old established firm of Peter Forge, agent to His Majesty's Government, Billingsgate, London. Mr. William also being the Official Salesman at Billingsgate, the world's premier fish market. He, too, is of the opinion that it should prove a profitable investment for firms in Canada to develop an export trade in best quality chilled fish with the Old Country. We were greatly interested to hear from Mr. Williams that in his opinion the quality of the recent arrival of Newfoundland chilled fish, or at least the bulk of it, was superior to that of fresh fish often received at Billingsgate from the Icelandic grounds.

TRAWLERS TO HAVE OIL ENGINES.

It was reported in our last issue that the new otter trawlers building for the Lunenburg salt bank fleet were to be equipped with steam propulsion. This is not the case, as we understand that these craft will be equipped with Fairbanks-Morse Crude Oil engines. This means of propulsion is something new in trawling, but has proved successful in the case of the American trawler "Pioneer," which is equipped with Fairbanks-Morse oil engines, and is the first trawling craft to be thus propelled on this side of the Atlantic.

The three Lunenburg trawlers are being equipped with two sets of 200 H.P. Fairbanks-Morse Type C.O. crude oil engines, driving twin screws, and will be in commission for the spring fishing.

Several Lunenburg skippers have sailed on the "Pioneer" out of Boston, to familiarize themselves with the handling of the vessels.

The use of internal combustion engines in trawlers is a most important innovation in the propulsion of fishing craft of the trawler type, and will be watched with great interest by all connected with the industry.

UNITED STATES FISHERIES ASSOCIATION FORMED.

We congratulate our American friends in having successfully formed the United States Fisheries Association on February 14th. On February 15th, 1915, the Canadian Fisheries Association was organized.

Kenneth Fowler, formerly Chief of the Fisheries Division of U. S. Food Administration, was elected President. In Mr. Fowler, the U. S. F. A. have a gentleman well fitted for the office, and if he is accorded the support which he deserves, the future of the Association is assured.

ADDING FUEL TO THE FLAMES.

The Dominion Railway Commission, headed by Sir Henry Drayton, with Dr. Rutherford, the new appointee, sitting with him, has been to Vancouver and listened to the protests of the fish dealers and fruit men against the proposed increase in express rates. Just what that decision will be, no one can say, but one thing is sure, and that is that the people have a real representative to look out for their interests in the person of Sir Henry Drayton.

In opening the hearing the Chairman of the Commission asked for protests against the proposed increase. Mr. Douglas Armour arose to protest on behalf of the Canadian Fishing Company, and the Canadian Fish & Cold Storage Company. Mr. V. F. Johnson entered a written protest on behalf of the British Columbia Wholesale Fish Dealers Association, and a strongly worded protest was also entered by the Vancouver Board of Trade. Mr. F. R. Stewart, one of Vancouver's largest wholesale produce dealers, spoke strongly against the proposed increase as affecting fruit, which comes under the same classification as fish. The Fruit Growers' Association will protest before the Commission either at Vernon, B.C., or Nelson, B.C.

Mr. Armour was the first to be heard, and he simply referred to the large producing companies whom he represented, and then introduced Mr. A. L. Hagar, General Manager of the Canadian Fishing Company. Mr. Hagar's protest was well outlined and put in the very strongest terms possible, backed up by concrete comparisons of service received south of the line, and some of the service rendered in Canada for which the Canadian Express Companies were asking such enormous increases on the present rates. Mr. Hagar referred to the fact that his company was shipping from points all along the Columbia River from Astoria to Portland, also from Seattle, Aberdeen, Bellingham and Everett, Wn., as well as the shipments made from British Columbia. He mentioned the fact that the New England Fish Company, of which the Canadian Fishing Company is a subsidiary, was the pioneer shipper of fresh fish in the Transcontinental trade. He explained that any express shipment with an initial loading point, say at Kalsma, Wn. (a Columbia River point), where they might possibly make up a half car load, a car could then be forwarded to Seattle to finish being loaded, and the rate would be the same as if the car had gone forward direct from the initial loading point, namely, \$3.40 per one hundred pounds. He also mentioned the fact that American fish loaded at Prince Rupert had to be shinned in bond to points in the United States. Mr. Phippen, attorney for the Express Companies, at this point mentioned the fact that the rate from Prince Rupert on American fish was \$3.40. Mr. Hagar immediately put the question as to why, in that case, the Canadian Express Companies were asking for a rate of \$9.25 for shipments of Canadian fish from Prince Rupert or \$9.00 from Vancouver to Montreal. Mr. Hagar also dwelt strongly on the fact that the shippers had for years been paying a double charge. For instance, a car load of fish, shinned from Vancouver, was attached to a passenger train, and the only labor that the express companies had to do in connection with such a shipment was to look out for the billing and the handling of the fish from the car to the consignee at final des-

tion, and returns would amount to from \$700 to \$800. He then brought to the attention of the Commission an instance of where a trip of fish arrived at Prince Rupert during January, was purchased by them at 19c. per lb. This trip equalled two cars of fish. One car was shipped to New York, arriving in due season, and was sold at the market price of 25c. per lb. The other car was headed for Boston, but was held up at Winnipeg for some unexplained reason, which they have been unable to find out up to the present time. This outlay cost them a loss of nearly \$5,000, as the car did not reach Boston until after the price had dropped, and also, on account of delay, the fish naturally would not be of as good quality as if it had reached destination on time. The Chairman, at this point, requested Mr. Hagar to furnish him with full particulars regarding these shipments, as he proposed to investigate conditions in this connection, although the Commission had not contemplated going into anything excepting the proposed increase of express rates. Mr. Hagar believed that the proposed increase by the express companies was preposterous, and could not see any ground whereby they could base claims for such an increase. He stated that it would simply mean that, if such an increase was granted, that the British Columbia fishing industry, as far as producing and wholesale business was concerned, would be wiped out. This applies not only to the car load business, but to the less car load business, which amounted to many millions of pounds per year.

Mr. Hagar, with his record of eighteen years' experience in the fishing business, and presenting his case in such a business-like manner, backed up by concrete facts, without doubt made a strong impression on the Commissioners.

Mr. Phippen, in presenting the case for the Express Companies, called attention to the fact that the companies had made no attempt to raise their rates during the war, and claimed they were forced to do so now on account of the higher cost of labor and commodities. His argument was that, during the period of the war, the trade incidental to the war and the carrying of the bullion helped to sustain the companies, but claimed that, now that the war was over and ordinary trade was being resumed, it was difficult to operate on pre-war rates. He said that if conditions warranted the rates should be reduced. The Board, several years ago, had ordered a reduction, and he contended that the Commissioners should be just as astute in raising the tariff now as in lowering it then. The Chairman suggested that Mr. Phippen was trying to make the people believe the express companies did not want all they were asking for.

The written protest of the B. C. Wholesale Fish Dealers' Association was as follows:

February 14, 1919.

The Dominion Board of Railway Commissioners,
Sitting in Vancouver:—

Dear Sirs:—

We, the B. C. Wholesale Fish Dealers' Association, wish to enter an emphatic protest against any increase whatever in the express rates on fish, as applied for by the Canadian Express Companies.

It seems preposterous that such an application should be made at the present time, especially after all that has been done by the Government to increase the consumption of Pacific Coast fish.

Our Association is composed of the small wholesale fish dealers of Vancouver, and any increase in express rates will mean that their shipping business will be very much curtailed if not entirely wiped out. Thus the result of many years' effort in building up a business will be swept away. Should this application for increased express rates be allowed the Canada Food Board states that it will result in the greater part of the fish business of British Columbia being shifted to the American side, as it will be cheaper to ship from there.

The dealers represented by this Association ship practically no carloads, being mostly L. C. L. shipments. All shipments going to the Provinces of Alberta, Saskatchewan, Manitoba, and to points in British Columbia. The annual shipments amount to approximately 1,450,000 lbs. Of this amount the Government pays a subsidy on approximately 750,000 lbs. A peculiar aspect of this subsidy is that the Government is paying a large share of the express charges on fish, to build up the fisheries of the Pacific Coast, and has by so doing given the Express Companies new business to the extent of many thousands of dollars, for which they have contributed practically no extra effort.

It appears to us that if the large corporations would look a little closer into the present day conditions, they would see that by increasing the cost of living (which this increase in express rates will surely do, if granted), they are simply adding fuel to the flames, and are giving the consumer just so much more reason to complain.

We have purposely refrained from quoting figures on the actual increase of rates, as we have been unable to get them accurately, but, roughly speaking, we find that in certain instances, the increased cost to the consignee will range from one to two cents per pound, or an increase in the rates of from 75 to 90 per cent. In referring to these increases we are speaking of the L. C. L. shipments into the provinces of Alberta, Saskatchewan and Manitoba.

Trusting your honorable body will give our protest your careful consideration, we remain,

Respectfully,

The B. C. Wholesale Fish Dealers' Association.

V. F. JOHNCOX,

Secretary.

From the point of view of the Pacific Coast producers and shippers, it is believed that, as Mr. Hagar expressed it, the application of the Express Companies for an increase such as is asked for is simply preposterous, amounting in some instances to an increase of 200 per cent. Even if the Express Companies do expect some kind of an increase it does not seem reasonable for them to ask for such an enormous increase when, at the present time, the public are clamoring for lower priced foodstuffs and a reduction in the essentials of everyday living. As stated in the protest of the B. C. Wholesale Fish Dealers' Association, such applications for increases, the cost of which ultimately falls upon the consuming public, is simply adding fuel to the flames. It simply means that the consignee on the Prairies will have to pay from one to three cents per lb. more for his fish from the Pacific Coast. This means that not only will the Pacific Coast dealer lose his market, but it means that the American shipper will be able to get into the Canadian market just as the Food Board have stated.

The Government have been the greatest advertisers, not only during the present Food Board campaign, but in the past from the time they allowed the subsidy of two-thirds the express rate on many varieties of fish shipped from the Pacific Coast to the Prairie Provinces. When the Government put this subsidy into force they immediately inaugurated an increase of business for the Express Companies, though the Express Companies expended practically no extra effort or cost. Now the Express Companies are coming forward when conditions should show a lower cost of operation if not at the present moment, at least within a very short time, and asking for an increase, which does not show the best of judgment on their part when the public are clamoring for lower prices, and the Government is doing everything possible to keep the price of fish down.

INVESTIGATION BEING HELD AT PORT ALBERNI, B.C.

The following notice was sent out by the Dominion Fishery Department:

NOTICE.

Take notice that an investigation will be held under the Inquiries Act, cap. 104, R. S. C., to enquire into the following subjects, namely:

(1) The alleged wastage of herring by purse-seine fishing in Barelay Sound; and if so found, was it necessarily on account of the method of fishing allowed?

(2) Is purse-seining for herring depleting the industry there?

(3) Have packers or other dealers created a wastage of herring, and if so, has such been of serious proportions and avoidable?

(4) The investigation to cover information regarding the salmon fisheries of said Barelay Sound district.

(5) Have any of the Federal fishery officers who have jurisdiction, and are responsible for the administration of the fisheries of Barelay Sound district shown partiality, inequality, dishonesty or inefficiency in the administration of the fisheries of this district?

All persons desirous of giving evidence on the above subjects are hereby notified that the investigation will open at Port Alberni on Wednesday the 5th of February, 1919, at 8 p.m.

D. M. EBERTS,
Commissioner.

The investigation called for by the above notice opened on February 7th, and at the present time, February 19th, is still under way. This investigation has occasioned much interest in the fishing industry, and all the large producers interested in the district on the west coast of Vancouver Island attended the investigation, as well as the local fishermen and those interested in the industry in the Port Alberni District.

As soon as the investigation started the Port Alberni Board of Trade and the Fisheries Protective Association of the same district passed a resolution asking that the investigation now being conducted at Port Alberni be extended to take in the Nanaimo district.

SEWAGE AND FISHES.

By DR. A. G. HUNTSMAN.

The fisherman is much concerned, and rightly so, over anything that may be supposed to drive fish away from grounds that have been productive, and he views with suspicion any innovation that tends to upset the time-honoured status quo in the water. He fears that the deafening open exhaust of a motorboat or the use of dynamite will frighten the fishes and leave him without an income. He complains of those fishermen who dump their "gurry" overboard, and of the mills and factories that dispose of sawdust or other waste by running it into river or stream, for these will pollute the water and render it unfit for the fish. But of all harmful factors that force our fishes to change their haunts, none perhaps can compare with the immense volume of sewage that is continuously being discharged from the sewers of a large city.

Shelford has maintained that the failure of the herring industry in the Baltic Sea, which caused a decline in the prosperity of the towns of the Hanseatic League about the middle of the fourteenth century, was probably due to a contamination of the sea by the cities. He has shown that herring are particularly sensitive to the presence in the water of hydrogen sulphide and carbon dioxide, two gases that result from the decomposition of sewage as well as of other organic matter, and that they avoid water containing these substances.

The war has brought to the front the importance of treating the sewage to prevent the loss of the many valuable substances it contains. The Miles Acid Process recovers from the sewage large quantities of fertilizer, ammonia, grease, and glycerine and is, therefore, economically of the greatest value. It is also of benefit in stopping the pollution of valuable feeding grounds for fishes, and it will prevent the contamination of shellfish beds in the proximity of cities with the germs of disease, typhoid fever having been contracted in many instances from shellfish taken from infected beds.

The material that is discharged into the water from the sewage after treatment appears likely to affect fishes in only one way. It contains either sulphurous or sulphuric acid in very small quantities. Shelford has just shown that sulphurous acid is the more desirable acid to use in this process. It is not only a most economical method to bubble this acid, or rather its anhydride, sulphur dioxide, through the sewage, but also this method is very markedly germicidal, reducing the number of bacteria from many thousands to a few hundreds per cubic centimetre, and the gas escapes very rapidly from the water; thus preventing any damage to fish in the water into which the waste is poured. If the waste is aerated by passing air through it or by stirring, it quickly becomes harmless; indeed the probable strength of the acid after the dilution of the waste by mixing with the water is so slight even without aeration that, according to Shelford's experiments it would not injure the sensitive herring or perhaps even be recognized by it, and according to Hall's experiments it does not affect the development of the eggs of certain marine animals.

Who's Who in the Fishing World

At a recent meeting of the Executive of the Canadian Fisheries Association, Mr. Walter Lambert, M.I.N.A., was elected as Honorary Naval Architect to the Association. This is a distinct advantage to the Association, as Mr. Lambert has made a study of fishing vessel designs and requirements both in Canada and Great Britain, and he has generously offered to give the C.F.A. members any information and advice they may ask with reference to vessel design.

Our Who's Who is well known to CANADIAN FISHERMAN readers as a frequent contributor to these columns, and he has been a member of the C. F. A. since its organization. Mr. Lambert is possibly the foremost Naval Architect in Canada to-day,



Mr. Walter Lambert.

as for the past two or three years he has been Naval Architect and Assistant Director of Steel Ship Construction to the Imperial Munitions Board, and under his supervision a large fleet of ships has been built and sent to sea to offset the losses inflicted in British shipping by German submarines.

Mr. Lambert first saw the light in Warwick, England, in 1884, and was educated at the West Ham Technical Institute, London, and the Armstrong College, Newcastle-on-Tyne. He began his business career as an apprentice in the famous Thames Iron Works, London, thence graduated and served as Draftsman in the Londonderry Shipbuilding and Engineering Co., Londonderry, Ireland, and the Armstrong, Whitworth Company, Ltd., Newcastle-on-

Tyne. From Chief Draftsman at J. T. Thornycroft & Co., Southampton, Eng., he came to Canada in 1913 as General Manager to John Reid & Co., Consulting Naval Architects and Marine Engineers, Montreal. In March, 1917, he established a business of his own as Naval Architect and Marine Surveyor at Montreal, when he was called to the Imperial Munitions Board as Naval Architect and Assistant Director of Steel Ship Construction. On the conclusion of his work with the Board, he will take up his own business again.

Mr. Lambert has had twenty years' experience in the designing and building of ships from trawlers to battle-cruisers, and from lake cargo carriers to ocean leviathans. He represented the Bureau Veritas of Paris, and the London Salvage Association, in Montreal prior to joining the Imperial Munitions Board.

Mr. Lambert is a Member of the Institute of Naval Architects, London; the Canadian Fisheries Association, the Laurentian Club, Ottawa, and the Hudson Yacht Club. He has travelled extensively all over Canada and probably has a better knowledge of Canada's shipbuilding possibilities than any other Canadian. Quiet and reserved, of wide experience and excellent judgment, the Association has secured in Mr. Lambert a gentleman who will do much to encourage the designing and building of fishing craft well suited to Canadian conditions, and a member whose opinions will be of value to those consulting him.

Mr. Lambert is married, has one son and one daughter, and lives in Montreal. His hobbies are motoring, fishing and boating.

PRESERVING FISH WITHOUT ICE.

In British Columbia and in England a new method has been adopted for keeping fish. As ice is no longer necessary, the fish can be sold cheaper because the expense incurred through the ice is done away with. The fish keeps its flavor perfectly, and the method may be applied to either fresh or smoked fish, and even to meat.

The whole procedure lasts only three hours. The fish is first placed in a cooling tank containing water at a low temperature. After half an hour the latent heat of the fish has completely disappeared. The fish is then placed in a tank containing sea-water, or fresh water to which salt has been added. To prevent the water from freezing it is stirred with a pump which sends it into a pipe in which it passes through a filter filled with willow charcoal which kills all bacteria, and then passes out again. The extreme temperature of the salt solution closes the pores of the skin of the fish, prevents saturation, and acts on the exterior as a disinfectant. At the end of three hours the fish is taken out and has the appearance of fresh fish. There is no danger of its going bad for ten days, and it may be kept for months in a cold room. A plant has been put up in Portugal for preserving fish by this method. According to the English engineers who installed the plant, the fish keeps fresh and in excellent condition for about fifteen days, even at a variable temperature. The flavor is that of fresh fish. It does not go soft like fish kept in ice, and may be smoked after having been treated. The method is highly recommended by the Inspector of the Dominion fisheries.

Review of 1918 Canned and Salt Fish Trade in New York

The Seaboard Trading Company in their annual review state that:—

The year 1918 in the canned and salt fish trade in the East, and particularly in New York, was full of unusual difficulties and complications due to the war, the same as in every other line.

Due, no doubt, to some error or misunderstanding of the War Trade Board, in December, 1917, the export of salt fish had been practically embargoed. After direct representations and interviews with Mr. Kenneth Fowler, the head of the Fish Division of the Food Administration, these erroneous restrictions were then removed, and we were again permitted to export salt fish to the tropics as customary, and in time for the Lenten demand.

Canned salmon was and continued to be in light supply in New York, but the demand also for the greater part of the year was not up to the volume of former years, due, no doubt, to the high price.

All available salt fish, whether smoked, pickled, or dried, from the catch of 1917, was readily disposed of, and it was a foregone conclusion that the price of 1918 fish would be higher than ever, before even a tail of fish had been produced.

We cannot refrain from saying a word for both the fisherman and the producing dealer, in that in 1918 the actual costs of production were really and materially higher, and the labor question almost insuperably difficult during parts of this year, and every detail that went into the production of fish was so bound up and complicated by governmental restrictions and regulations that it is a wonder that as much was accomplished, even though, and no doubt due in part to a counter current of governmental favor and disposition to encourage the production of fish, which, however, was again hampered by the withdrawal of men needed in the business, by the difficulty of obtaining salt, twines, hooks and other necessities to produce the finished article of our line.

In April came the placing of canned salmon on the conservation list, which effectually stopped civilian export trade in canned salmon. This naturally, caused a depression, somewhat relieved by government requisitions and commandeering of reds and pinks, for example. Other restrictions, such as the limitation of resales between jobbers; and profits, tended to restrain trading and the further advance of prices. In fact, many dealers found out that the authorized government price to packers limited the *top*, but did not put in any *bottom*, and there was absolutely no official or other objection to a dealer buying at the opening price and then taking a solid loss, which was done in many instances. As the season progressed, it became apparent, however, that there were no excessive supplies, and the trade took courage even to hold round lots of chums that had been bought speculatively, or otherwise, for European markets, and which, due to the refusal of the Government to issue export licenses, caused loss to the trade in various ways. The result was beneficial in eliminating numerous mushroom export concerns that had been doing an enormous volume of business on the proverbial shoe-string and foreign Letters of Credit, sometimes real and sometimes imaginary. One or two Food Administration licenses were temporarily revoked, and the trade probably permanently relieved of undesirable and irresponsible inflated plungers. The remainder of

the stock of chums found a ready market in the South and new salmon found a bare market in New York and the East generally, but the trade were very half-hearted in accepting future contracts or new goods in spite of the evident fact that if the Government would take and hold all that were spoken for, the civilian trade would practically receive no salmon whatever. Since the end of the war some salmon has been released and doubtless more will be. The New York market is and will remain lightly stocked. The trade, in view of their experiences, has not bought and will not buy to any great extent. On December 23rd salmon came off the conservation list, but civilian trade and importation remains prohibited in Great Britain and probably other Allied countries, as well as places like Greece, for which it is difficult to obtain any licenses whatever.

In Italy importers and dealers have formed a buyers' combination, or "consortium" as they call it, in order to protect themselves and reduce excessive prices on codfish, etc.: as they claim, and to coerce dealers in the United States, Canada and Newfoundland to sell at a loss, as is claimed here. In the meantime, the export of fish to Italy has practically stopped for the time being: Letters of Credit for previous purchases are being revoked, and doubtless the Italian importers, will before long, realize their error, and furthermore, with Lent at hand (beginning March 5th) will be forced to replenish their greatly diminished stock for that season of specially heavy demand, and besides, there is no such attempt, as they claim, of exacting unwarrantedly high prices, but simply fair and reasonable market values, in accordance with prices paid to the fishermen and actual cost incurred under existing conditions which were, and are not in the control of any one set or clique, and neither will this Italian combination succeed in dictating to the trade here by means of this attempted boycott, as there will be no trouble in disposing of existing supplies to other markets that are willing and able to pay enough to cover actual cost and a reasonable margin of profit to the dealer.

Export trade, generally, since the signing of the armistice, has fallen off, particularly to the tropics, due to importers there anticipating declines, cancelling old orders and limiting and restricting new ones, awaiting developments. This applies principally to dry goods and manufactured articles, but in short order spread to food stuffs as well. Strikes in Brazil and Cuba have materially injured business there. We feel, however, the worst is over in this respect, and with the return of our men and the general release of restrictions, and let us hope a more plentiful supply of mercantile tonnage, will cause civilian commerce to develop rapidly during 1919, such is our belief. Foodstuffs will be wanted everywhere, trade will increase as the facilities grow: an increased supply of labor and a likely lowering of wages, and of all the supplies that are needed and through that a reduction in the cost of fish stuffs to the trade and to our foreign customers wherever situated, will only increase our business, and the prosperity of the fish industry, and its development and future rests absolutely on the earliest possible reduction of cost to a legitimate peace basis, so we can offer our foreign friends good food at reasonable and proper prices. This applies not only to salmon in cans, but to the growing trade in hard salted barrel salmon, and also for the trade in mild cured salmon that will doubtless be re-

sumed when peace treaties are signed with Germany and necessarily law and order there fully established.

The Pacific Coast has benefited very largely by the absence of European fish and the increased demand from Europe. We are shipping Japanese stock fish and California pilehards to the Mediterranean.

Behring Sea codfish caught by American, as well as Canadian fishermen from British Columbia, now also has the competition of the same fish caught and cured by the Japanese, who are not only seeking our Eastern markets, but are actively engaged in learning every detail of the business, and seeking our South American markets, and incidentally seem to have turned a very clever trick on the American people by speculating and to an extent, now controlling so foreign a thing to Japan and the Japanese as the coffee of Brazil intended to supply the United States, the largest coffee consuming country in the world; and due to the restrictions of the Food Administration, and the refusal of the Shipping Board to permit tonnage to be allotted for the coffee trade, has resulted in an artificial and unnecessary scarcity of the article in this country, and creating a situation which our Jap friends were not slow to accept and make their own, and develop to their advantage to the fullest extent. It is true this has nothing to do with the fish business directly, but it is a noteworthy commercial incident and will again show the coast as they know so well the resourcefulness, fertility of mind and disposition and ability to act, so characteristic of the Japanese. Of course, under ordinary circumstances and without the doubtless, unintended, but notwithstanding, real assistance of the Food Administration, and the Shipping Board, they can never again be a factor in the Brazilian coffee market, any more than we believe they will be able to compete with Norwegian stockfish, and they should not, and our Pacific and our Atlantic codfish producers must not, through narrow selfishness, permit our natural markets to be lost to a competitor whose distance from these consumers is so great, that there should be no question that South America be supplied with Atlantic or Pacific codfish of American origin exclusively. In our estimation, and as indicated, trade prospects could not be better or brighter than we foresee them now with the end of the war, freedom restored, freedom from enemy submarines which troubled us on this coast in the fish business not a little, freedom from meddlesome and bureaucratic restrictions and errors for which the merchant must *ever* take the consequences, whether through his fault or as most likely, that of Departmental incompetence, and lack of understanding and desire to learn. Freedom to fish, trade and barter in the best sense, such as has been the practice from the very beginning of this free country and our fish trade on the Atlantic dates back to the beginning of the first settlement of the colonies, and it is our fervent hope that it may grow, develop and prosper as it deserves and has proven itself to be a most needful, beneficial and economic industry conducted by patriotic and worthy merchants and citizens on the Atlantic as well as on the Pacific Coast.

The New York fish trade in the past year has organized the Preserved and Salt Fish Dealers' Association to further the interests of the trade generally, and aid the Government intelligently and patriotically. In this connection, the Association was consulted, and advised the Administration on the question of placing salt fish under special license and control, securing the permis-

sion to import Irish mackerel, Scotch cured herring; also the allocation of tonnage for fishery salt, permission to import Japanese fish and securing transportation facilities for Maritime Provinces; cold storage facilities; and local questions, such as responsibility of steamships for condition of packages; the complete knockout of the impractical, purely theoretical and even corrupt scheme of store door delivery, which would have ruined the wholesale and export trade of New York, and the Association and its members are now protesting to the best of their ability against contemplated advances in freight rates, as advised by the Traffic Division of the Railroad Administration in Portland, Oregon, and coast dealers will co-operate to prevent a new administrative error.

BRITISH FISH MARKETS.

Billingsgate, 25th January, 1919.

This week's markets have not differed materially from those of previous weeks this year. With the exception of one or two voyages from Faroe, landed at Grimsby, and an Icelandic catch at Fleetwood, all the arrivals have been from home waters. Towards the end of the week there were evidences of heavier supplies of herrings, and prospects looked more promising for all kinds of trawled fish. Apart from sprats, and inferior quality fish, prices this week have been very firm at the maximum level. In fact, it has not been a question of arranging prices but merely of rationing out arrivals equitably at the schedule rates. Inquiry has remained very keen for Newfoundland frozen fish, but practically none is now available.

Billingsgate, E. C. 3. 1st February, 1919.

This week's experience has illustrated in a striking manner the vicissitudes of the fish trade in this country. Heavy supplies of herrings commenced to arrive in the distributing markets from North of Scotland on the Monday, and with many of the fish in anything but bright condition, owing to delays in transit, buyers at once began to hang fire, and the market immediately weakened. The result was that a surplus of herrings was carried over from day to day, and this had the effect of weakening the market generally. In addition to this the weather has been exceptionally cold, a condition which is always averse to the sale of fish. Further than this the arrivals of trawled fish have shown a welcome expansion this week, good catches from the Faroe grounds reaching Grimsby and Fleetwood while trawlers arrived at the latter port from Iceland also. Cod has been much in evidence, as have also been small whittings, and salesmen have been compelled to accept prices below the maximum for these two kinds in order to induce sales.

With the increased arrival of fish from home waters there has been no call for frozen fish, even if any had been available. However, except a few cases of the old stock of Canadian frozen fish the market is now quite bare of overseas supplies. Regarding the future of this trade, the opinion previously expressed in this column can only be repeated, i.e., there will be a sale for frozen fish at certain times when fresh fish is scarce, but the war-prices must not be expected to hold good for the future.

PIONEER FEMININE FISH DEALERS

Two Enterprising Women Who Have Established Fish Shops in Toronto and Brantford Awarded Special Certificate of Merit by Canada Food Board.



Mrs. Chalmers, Toronto.



Mrs. Benwell, Brantford.

In awarding certificates of merit to the fish dealers who have shown themselves most punctilious during the past year in complying with its requests, the Food Board takes the greatest pleasure of all in showing this mark of appreciation to Canada's two pioneer feminine fish dealers.

Outside of their immediate localities it is doubtful if many people know that both in Toronto and Brantford, women are successfully operating first-class fish stores and making them pay well. Both are enthusiastic about the work and believe that other women would be well advised to take it up. In Scotland it is no uncommon thing for a woman to be the sole proprietress of a fish store and it was in her girlhood in Greenock that Mrs. Chambers, who started up a fish business on Danforth ave., Toronto, some four years ago, became expert in the handling of fish. Her mother had a fish store and a specialty was made of filleting. Mrs. Chambers grew up with the knowledge of how to carry on a business of this kind and seeing great opportunities for similar work in Canada she opened up shop some four years ago in Toronto.

Pioneer Work.

The way was uphill at first. Filleted fish was practically an unknown quantity. She could get little custom for anything but salmon and halibut. However, she persisted. Her store was always well stocked with different varieties of fish. She kept a good window display, and went on filleting despite the fact that she could only get rid of ten pounds a day of haddock prepared in this fashion. The people in the neighborhood soon saw for themselves that skilful filleting was the most economical way of handling fish, that it saved them a lot of bother and that it unquestionably eliminated the waste usually caused by amateurish cleaning and skinning.

Better Business.

The trade began to grow apace and now Mrs. Chambers has to work until midnight on Thursday nights preparing fish for the Friday rush. Where she used to sell about ten pounds of haddock in a day she now sells two hundred pounds easily, in addition to all the other varieties of fish she handles. She would open up branches did she have any trained helpers, but she is convinced that, as filleting is her specialty, she can employ only the well versed in this line. A young girl has been trained under her direction to filet and she hopes that when her two soldier brothers come back from France to Canada they will enter the fish business and make a big thing of it. Mrs. Chambers has the hearty support of all the wholesale fish dealers; they discouraged her when she first thought of opening up shop, but they are now enthusiastic about her success. She attributes much of her good fortune to the Food Board's efforts to popularize fish and to get it on the market plentifully and in good condition.

Brantford Has One, Too.

No less interesting is the business career of Mrs. Benwell, who opened up a fish shop in Brantford a years ago and all through the summer sold a ton of lake and sea fish every day. Indeed, last November her receipts were three times larger than they were a year ago. To quote Mrs. Benwell herself as to how she came to start this work:

"A year ago I bought an old established fish peddling business in the city of Brantford. I did not really know anything about the fish business, but had had some previous store experience and concluded that customers would sooner buy in a store where they had a variety of fish to choose from, than from a peddler. This proved correct and my business grew rapidly. I

do the buying and the advertising. If the fishermen have a heavy catch and load me up, I advertise a special price and dispose of the extra supply on hand. A certain amount of the increase in business is due to the advertising of sea fish by the Canada Food Board and I look for an even larger demand in the future. I employ women clerks as much as possible, but have a man to lift boxes and deliver the fish. I have every reason to believe that a woman can engage in the fish business with success. The first essentials are to keep the store absolutely clean and tidy, and to dress the cases attractively. It is work that should appeal to women and the demand for fish is increasing so fast that it is undoubtedly profitable if proper methods are used.

SEALING WITH AIRCRAFT.

By DORIS HEMMING.

It is by no means the most populous districts that are the most progressive, nor is it always in the large centres that successful experiments are made. The seal fishers of Newfoundland are about to embark on a new departure and are busy planning all the details of a venture that will mean a radical change in the industry. The observation work that is so important a factor in sealing will henceforth be done by aeroplane, if present projects are brought to a successful conclusion. Although the plane has not yet arrived on the island the Newfoundland seal fishing firms are confident that they will be able to make the experiment in the coming spring, for the season does not commence for some weeks yet. Meanwhile they are busy putting the finishing touches to the scheme, determining the quality of gasoline needed and the brand of weather required of Providence for the occasion.

The advent of aircraft will rob seal fishing of much of its element of sport, for as in all other hunting half the battle is to get sight of the prey. The aeroplane will be the eyes of the sealing steamers, and once the patches of seals have been located it will be a small matter to keep track of their movements, for the chase will be solely a question of the influence of currents and winds, all of which can be calculated fairly accurately.

The aeroplane will go forth to the icefields early in the season and commence observations before the steamers embark. The old seals mount on the ice in the vicinity of Belle Isle between February 25 and March 1, for the young seals are born on the ice at about this time. The harp seal, as one variety is called, herd closely together, generally choosing a large unbroken sheet of smooth ice. A patch of old and young harps would probably number from 250,000 to 350,000 seals and in the early days of March or before they have been scattered by the action of the wind, a patch of this size would be confined to an area of from 70 to 100 square miles. The hood seals, the second variety, do not herd so closely together as the harps, but are invariably to be found towards the outside edge of the icefields some thirty to fifty miles to the northeast of the harps.

Fortunately for the air pilot the seals are easily distinguishable by their color. The old harp is black on the back with grey sides, and the old hood seal has a mottled black and grey back with a black nose. The young hood seal has a black back with blue-black

sides, and only the young harp is white. The patches are therefore visible for quite a considerable distance, their dark color showing up distinctly against the background of white ice.

The icefields upon which the seals herd move slowly southward at the rate of about ten to twelve miles a day, so that the position of the patch is never twice the same. Being subject to strong winds the icefields may at times be driven by easterly storms on to the land where they become jammed and without movement for days. Westerly winds on the contrary drive the icefields off shore and tend to break up the sheets of ice and scatter them over the Atlantic, and northerly gales will likewise increase the rate at which the icefields move towards the south. Clearly the aviator must be an expert in geography and have a rare understanding of winds.

The seal fishers plan to send forth their scout plane about the first of March and follow the movements of the seals until the steamers sail from St. John's on the 13th, continuing their observations until the season ends at the last of the month. At this period of the year the sealing grounds consist of an immense field of ice stretching from the coast for miles into the Atlantic. Here and there are lakes of water of considerable size upon which a hydroplane could land with ease, or if an aeroplane of the usual training type be used the landings could be made on smooth patches of ice. Unfortunately the character of the ice is very uneven and far removed from the level surface of the aerodromes frequented by fastidious flyers. The ice upon which the seals whelp however is usually in large sheets and is fairly smooth until broken up at the end of March when the season is over. In any case there are numerous harbors where the aviator could find shelter unless forced to alight suddenly in distress.

As for the weather, it must be specially ordered from the meteorological office in Toronto, or sent by wireless from Fogo station. Fortunately changes in atmospheric conditions are not particularly rapid at this season and the worst that the airman is likely to encounter will be an occasional snow shower or a semi-occasional fog. The ordinary barometer should be sufficient to give warning of approaching storms.

So the Newfoundland seal fisher is making his plans to the last detail, but whether he will succeed in obtaining the crux of the whole undertaking, the aeroplane in time for use this March is still a matter of profound speculation on the island. At any rate all things being equal he will carry out his scheme next year if fate interferes this spring.

AUSTRALIAN FISHERIES.

The value of the fish, crustaceans, and oysters sold at the metropolitan and country markets during last year was £272,328, and the industry supported 3,126 fishermen with their 1,658 boats. At the end of 1917 there were 3,181 oyster leases in existence, and the total area under operation aggregated 969,883 yards of foreshore, and about 376 acres of deep-water areas. The revenue to the Government from oyster leases was £7,260. The restocking of trout streams has been well attended to; no fewer than 86,700 trout fry were liberated in country centres during the year.

THE SEA FISHERIES OF EUROPE AS A WHOLE

The Physical Conditions of the Fishing-Grounds.

In a general survey of the sea fisheries of Europe, it is necessary to take into consideration the physical conditions prevailing on the fishing-grounds, which have an important influence on the occurrence and movements of the fish and on the practice of fishing. The fishery regions stretch from the sunny Mediterranean into the Arctic seas, comprising some 37 or 38 degrees of latitude and about 75 degrees of longitude. The depths and the nature of the bottom vary greatly. Certain fisheries, as those for pelagic fish by drift-nets and seines are unaffected by depth or nature of bottom, their extension seawards being conditioned by the presence of the shoals of fish and economic considerations. But in the fisheries for bottom or demersal fish, as lining and especially trawling, depth is important and the nature of the bottom may be so also.

Examination of a bathymetrical chart of European seas shows that the steepness of the submarine continental slope varies in different regions. From the Strait of Gibraltar to the southern part of the Bay of Biscay, the 200-metre, or approximately the 100-fathom line, which may be taken as roughly marking off the seaward limit of demersal fishing, runs close to the coast, and the 1,000 metre line is not far from it. The same is true of the whole Norwegian coast from the Christiania Fjord right round to the Russian frontier, though at some places, as the Lofoten Isles, the 200-metre line lies somewhat further out, forming good fishing banks (Havbroen). But from the Bay of Biscay north-west and around the British Isles the line passes at a considerable distance from the coast, and this is also the case in Barents Sea in the extreme north-east. Almost the whole of the North Sea and the greater part of Barents Sea are under 200 metres in depth; most of the North Sea, the English Channel, the Irish Sea, the larger part of the Baltic and Barents Sea are under 100 metres, or 50 fathoms, in depth. At Iceland, especially in the west, north-west and south-east the 200 metre and the 100 metre line extend a fairly considerable distance from the land. The submarine plateau on which the British Isles are situated forms one of the finest fishing areas in the world.

The Currents, Temperatures and Salinities.

Then the physical conditions of the sea water, the currents, temperature, and salinity exercise a profound influence on the fish and the fisheries. The whole of the European fisheries, with the exception of those in the Mediterranean and Baltic, are dominated by the Gulf Stream, or rather by its continuation, the North Atlantic Drift. The Gulf Stream does not extend as a warm current east of about 40 degrees W., but the prevailing winds, aided by the earth's rotation send a great volume of warm and salt Atlantic water to wash the European coasts from the Iberian peninsula to Nova Zemlya. It flows into the Bay of Biscay, along the south and west coasts of the British Isles, sending two branches into the North Sea, a smaller through the Straits of Dover, a larger southwards between the Shetland Isles and Scotland, while the main body goes on between the Faroes and the Shetlands, as the Norwegian Stream which passes along the Norwegian coast to Spitzber-

gen and into Barents Sea. It carries to the European coasts and into the Arctic regions some of the warmth of the tropics, with profound results on the climate, the ice-limit, the growth of vegetation and the fisheries. The currents of Atlantic water vary in volume and in temperature in different years, and also somewhat in salinity, though this is always over 35 per mille (i.e., a thousand pounds weight of water always contains more than 35 pounds of salt).

The Baltic is practically cut off from the influence of the Atlantic drift, with marked consequences on its fisheries. In particular there is a notable deficiency of salt. At the top of the Bothnian Gulf the water is almost fresh, the salinity being about 0.5 per mille; in the Baltic proper it is 7 or 8 per mille; even in the Cattegat the salinity is only about 12 per mille, as contrasted with 32 to over 35 in the North Sea. In consequence of this certain important fishes, as the haddock, are absent from the Baltic, and the others which exist there, as the herring and the cod, never attain the size of those reared in water of high salinity. The Baltic is a region of slow evaporation; it receives a large inflow of fresh water, especially in spring from the melting of ice and snow, and from an area three times larger than that which supplies the North Sea. Owing to these causes there is an outflowing surface current of comparatively fresh water, with an undercurrent of salter water flowing in.

The Mediterranean offers a marked contrast to the Baltic. It is a great evaporating basin, all the rainfall and the waters of the great rivers entering it directly or indirectly, as the Nile, the Danube, Dniester, Dnieper, Don, Rhone, etc., are insufficient to make up for the great evaporation, and thus a strong surface current of Atlantic water pours into the Mediterranean through the Strait of Gibraltar, with the usual compensating current of warm and highly saline water passing out below. It has been calculated that the total quantity of fresh water received by the Mediterranean annually from the rainfall and the rivers amount to about 2,000 cubic kilometres, while the quantity evaporated is about 5,000 cubic kilometres; the deficiency is made up by the excess of Atlantic water entering through the Strait of Gibraltar, computed at 60,000 cubic kilometres, over the Mediterranean water leaving, estimated at some 57,000 cubic kilometres. This outflowing Mediterranean water, with a salinity as high as 37 or 38 per mille, and a temperature of at least 55 degrees F., pours down the continental slope and spreads out westwards and northwards to a depth of 700 or 800 fathoms. It has been detected as far away as the Azores and in the depression between Scotland and Rockall, and has an influence on the fisheries in these localities.

The Influence on the Fish and Fisheries.

The influence of these several physical factors and their variations on the fish and the fish supply has been a subject for many years, as for instance by the International Council for the Scientific Investigation of the Sea. Though a great deal remains obscure and awaits further co-ordinated research, a considerable amount of knowledge has already been

acquired. It has been shown that the distribution and migrations of many species are closely related to the currents in the sea. Thus on the eastern side of the Atlantic the southern boundary of distribution of several species (cod, herring, haddock, etc.), coincides with the Bay of Biscay or the coast of Portugal, that is, with the region where the Atlantic Drift divides, part turning northwards, and part southwards (as the Canary Current) the same thing occurs on the American side in the vicinity of Cape Hatteras, and for similar reasons. Nearly all commercial fishes have pelagic or floating eggs, which are carried by the surface currents, as are also the feeble larvae derived from them or from many demersal eggs (as herring, etc.), the distance they are transported depending on the rate of the current, and the duration of the helpless pelagic stage, which again depends much on the temperature. Thus it has been shown that as a general rule where currents carry the floating eggs and larvae in one direction there is a compensatory migration of the adult fish in the contrary direction, and this movement may be confined to the period before sexual maturity is reached, or spawning. The cod-marking experiments in Norway have proved that when the growing cod in Finmarken waters, in the extreme north, reach sexual maturity they migrate westwards and then southwards, against the "Gulf Stream" current to the Lofotens or adjacent banks, or even as far south as Romsdal, turning northwards after spawning, thus performing a double journey of several hundreds of miles. Some cod marked at Bear Island, midway between Spitzbergen and Norway, have been recaptured as far south as Aalesund, over 1,200 miles distant.

Danish investigations at Iceland have shown that the cod, haddock, and other fish, spawn on the south and west coasts, which are washed by the warm Atlantic Drift, and that the floating eggs and young are carried by the currents almost right round the island, so that the young growing cod are found in enormous numbers later on the north and east coasts. Marking experiments show that the adults migrate in the opposite direction. There is thus a circulation around Iceland correlated with the currents and the temperatures. The fish do not wander off: the Icelandic banks are self-supporting. Marking experiments in the North Sea have shown that such sedentary species as plaice and flounders before the spawning season may make long migrations against the prevailing currents, on the western side passing northwards as far as the Hebrides, to counter-balance the passive drift of the floating eggs and young in the opposite direction. The same conclusions have been reached in regard to the movements of the herring and the sprat on the coast of Norway, and of various species of fish in the eastern Mediterranean in relation to the currents of the Dardanelles and Bosphorus.

Temperature itself may be of prime importance. The existence of the eel and eel fisheries in European waters depends upon the existence of a particular temperature at certain depths in the Atlantic; the eel is not present in the Pacific because the corresponding temperature is absent in that ocean. It is interesting to note that the season of spawning of the cod is practically the same throughout the whole region washed by the Gulf Stream water—from the British Isles to the Murman coast. The growth of fishes again is as dependent on the temperature as

the growth of vegetation, and it acts from the moment of the deposition of the eggs. In the Mediterranean, where the temperature is high, embryonic development may occupy a few days, whereas it may take weeks in northern latitudes. In the eastern parts of Barents Sea the growth of plaice is three or four times slower than in the North Sea, as has been proved by actual experiments, and this is one reason why the exhaustion of the banks in that area (the so-called White Sea) was so rapid.

The North Sea.

It is mainly owing to the favorable physical conditions that the North Sea is, probably, the most productive area for its size in the world. It is a shallow sea, with a mean depth of about 60 fathoms, so that the influence of sunlight is almost everywhere apparent on the growth of vegetable life; it receives an abundance of nitrogenous matter from the numerous rivers, and a large supply of Atlantic water, sufficient to replace the whole of the water within two years, bringing abundance of plankton, salt and warmth. The fishermen of all the neighboring nations carry on fishing in the North Sea — British, Germans, Dutch, Belgians, French, Danes, Swedes and Norwegians. In the years before the war it yielded over 1,150,000 tons of fish annually (or not far short of a half of the produce of the fishing grounds of western Europe) which realized nearly £11,500,000. The area of the North Sea is about 152,500 square miles, so that the annual production per square mile is equal to about $7\frac{1}{2}$ tons of fish. Of the total, about 60 per cent. consists of herring, 11 per cent. of haddock and 9 per cent. of cod, and Great Britain takes some 67 per cent. of the whole. The Baltic offers a contrast to the North Sea. It is also shallow and has an area including the Belts, Cattegat, etc., of about 135,000 square miles, not a great deal less than the North Sea) and the annual produce (including moreover the whole of the Skaggerack) amounts to about 225,000 tons; the catch of the Baltic proper (excluding the Cattegat and Belts), is only about 70,000 tons. The comparatively small catch in the Baltic is mainly due to the very different physical conditions prevailing in it, as above explained.

It would be of interest to give a statement showing the aggregate yield and value of the European fisheries as a whole, but it is not possible to do so with accuracy. Some countries do not publish statistics, and those of some others are not quite reliable or are based on different factors. It is certain, for many reasons, that the totals available are rather an under-statement than an over-statement. With the information at disposal it may be said that the annual yield of the European sea fisheries, including those of the Mediterranean and Black Sea as well as the Caspian, is in the neighborhood of 3,750,000 tons, the value being about £50,000,000, and the number of fishermen employed about 1,000,000.

Notwithstanding the vast yield of the fisheries of Europe and the richness of many of the great fishing grounds, it is questionable whether they will be able in future years to provide for the needs of the rapidly increasing populations. Already the steam fishing fleets have scoured the seas from Morocco to Iceland and the White Sea, and the prospect of opening up new fishing grounds on the eastern side of the Atlantic appears remote. The probability is that in future decades Europe will come to depend more and more on the supplies from the other side of the Atlantic, and from the Pacific.

NEWFOUNDLAND FISHERMEN SAVE \$20,000,000.

Sir Michael Cashin Says Prosperity is Unprecedented.

Sir Michael Cashin, Finance Minister of Newfoundland, and acting Premier of the Colony during the absence of Hon. W. F. Lloyd in England, stated during his recent visit to Montreal that the financial situation could not be better, and that the lowering of money rates would probably be taken advantage of after the House meets in the spring to float another loan, as the money obtained by the colony from the United States, to the amount of five million dollars, would fall due this year, the paying-off process also embracing other sections of the public debt, now placed at \$44,000,000.

The Finance Minister estimates that there is money now in the savings banks to the amount of \$20,000,000, placed there almost exclusively by the fishermen during the past few years, indicating that the country is prosperous and that a loan could also be taken up at home with the same facility as that which characterized the last government transaction, in which two millions were asked for, and five millions were offered. Four million dollars of the public debt of the colony are held in the Dominion, several millions at home and the bulk of the balance in Great Britain.

Surplus of Million.

He said that quite likely the debt would be consolidated one of these days, as the three-year American loan was a five per cent. operation, while the one negotiated in Canada pays six and a half. He estimated the year's surplus at a round million, although the government is still pursuing a policy of progressive economy. Just now, however, he said, the prosperity prevailing in Newfoundland is unprecedented. Fish, which formerly commanded from four to six dollars a quintal, are now sold at from fifteen to sixteen dollars. The increase in freight and passenger receipts on the Reid Newfoundland Railway during ten months was fully two hundred per cent., due in a great measure to the prosperous conditions prevailing in the colony.

He said that while the Newfoundland man does not take kindly to mining, he was forced some years ago to work at the ore deposits of Belle Isle, four thousand men being employed by the Dominion and Nova Scotia companies, but now so prosperous is the fishing industry that the supply of men at the mines is much below the demand.

Home Securities.

As is the case here in the Dominion, Sir Michael said that the taste for investing in home securities is rapidly taking possession of the fishermen of the island, whose industry embraces eighty per cent. at least of the business operations of the country. Never a day passes, he said, that enquiries are not heard in the financial offices of St. John's from people who are looking after investments equalling in profit the recent victory loans, and the Minister was convinced that this optimistic feeling would prevail in greater intensity

as time goes on. The Canadian banks were now doing fine business in Newfoundland and had the entire confidence of the people, while the government savings banks also get a big share. Sir Michael also referred to the crashing of the home banks a good many years since, giving a big scare to the fishermen, and other depositors and being the cause of the Canadian financial invasion bringing so much development to the island's business. All this apprehension has, he said, passed away, and the fishermen are independent of the store-keepers to-day as they were dependent upon them during the dark days of 1894. And well they may, he said, for many of the fishermen make as much as \$1,000 per season while on the dories. A great many vessels are owned outright by the men of Grand Bank and Fortune, he said. The herring fisheries are also unusually lucrative, as much as ten dollars a green barrel having been obtained during the past season, the Newfoundland product taking the place in great measure of the former supplies from Norway.

Referring to military matters, Sir Michael said that they expected a thousand of the boys home this week, and every day brings confirmatory reports of their heroism in the trenches. He thought the casualty list was larger in proportion than that of any other Imperial dependency. Lady Cashin and her sons were with the Finance Minister yesterday at the Windsor Hotel.

INSPECTION FOR B. C. PICKLED HERRING PACK.

Until last year so little herring was pickled in British Columbia it was not found feasible to maintain an inspector of pickled fish for the province. Last year, however, considerable quantities were put up, but as there was no inspector in the province, it was all placed on the markets uninspected. While a good deal of this herring was of first class quality, there is no question that a lot of it was poorly packed, and as a result injury was done to the name of British Columbia herring.

This year, the Department of the Naval Service appointed an inspector of pickled fish, and close attention is being given to the packing operations. While the Inspection Act is not yet compulsory, most of the packers are having their fish inspected and branded.

The winter herring fishery in the province is being prosecuted with success. The catch so far this year is away ahead of that of last year, and the quality of the fish being put up, especially in the Barkley Sound district, is said to be excellent.

Curing in the Scotch style is being carried on energetically by several firms there. The Inspector of Pickled Fish reports that all the curing establishments in the Barkley Sound district are putting up a splendid pack. He has already inspected and branded some thousands of barrels.

The Inspector is an experienced Scotch cooper and curer, and is highly capable of judging as to what packages of fish should be branded, so that those who deal in British Columbia herring this year may rest assured of the high quality, grade, and cure of the fish that have been inspected, and are officially marked.

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A
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S

Sardine

Lobster

Herring

C
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Etc.

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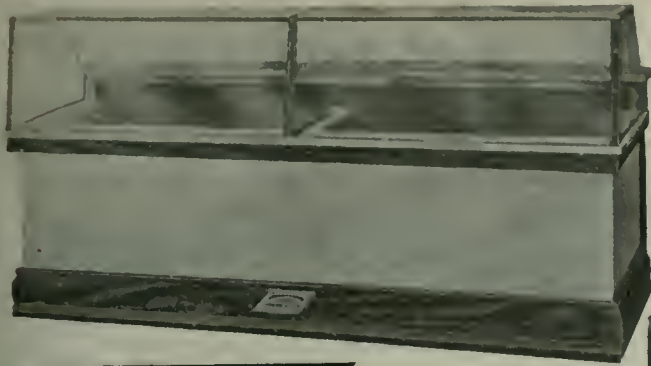
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SHIPPING NEWFOUNDLAND COD TO BRITAIN.

By "THE CHIEF," in The Fish Trades Gazette.)

The strenuous life must always have its moments of relaxation, times when, if the business in hand does not run away from us we must run away from it; indeed, the mark of wisdom is most clearly established when a man decides, ere things press too fiercely, to "cut and run," to take, like Horatius, "one breathing space" that his subsequent movements may be the more effective.

Since Christmas there has been no need to seek a respite by running away, the rest has come because of lack of supplies. Beg, plead, pray, demand, it is all as one; there has not been sufficient to go round.

Fishermen's holidays in the big ports, gales operating around the smaller ones, so that, were it not for the yawlings from the North and the few sprats we should have been hard put to it to find a supply to keep our shops in countenance.

The Newfoundland Frozen Fish.

To these two varieties the Newfoundland cod has made an excellent addition, so that, fitted up thus, if all other sources have failed us, there has been something for all whose tastes were not too exclusive and must have soles or turbot or nothing else.

This Newfoundland fish has been a distinct advance on the Canadian supplies hitherto imported; in fact, if it is cooked as soon as it is thawed out no one need complain of its quality and lack of flavour.

The process of freezing adopted is partly accountable for this; the length of time since it was frozen is also another factor, and these two together give us an article from which all the vital values do not exude with the moisture; it takes also three or four days before the fish assumes the worsted condition, the spongy appearance which has been the drawback to the freezing of white flesh fishes hitherto.

There are one or two items which the fishmonger needs to remember; first clean the fish out as soon as possible and brush the blood away very effectually from the back-bone, else, by the channels from which the thawed moisture of the fish exudes, the thawed-out blood will enter and leave the bone discoloured with that dirty brown colouring always accounted the mark of a deteriorated quality.

Secondly, endeavor to retain the fish in a semi-thawed state so that it has not lost all its firmness when sending it out. This can be done by keeping it in the cold room or placing two or three layers of paper over the fish in the box with a layer of ice and salt over the paper. With care in this matter a box, fresh from cold storage, will last a week, and the fishmonger have a stand-by during these difficult days of winter and spring.

Smaller Cases.

This last shipment was composed of boxes containing some 80 lb. each of haddock and of cod, and some of 200 lb., the former a very handy size for the average fishmonger; but of these there are not many left, so that orders sent forward to the holders of these stocks should be qualified with the alternative, for, if the trader has to take the larger package he can take the necessary care of the fish and save himself any wastage.

There has been a little salmon, but this is already snapped up, and we must await a further shipment. Needless to say the fish was very good indeed.

In connection with the above shipment it might be mentioned that it has all been cleared. In the meantime Canadian exporters who contemplate shipping to the United Kingdom would be well advised to concentrate on 60 lb. and 80 lb. packages. The small extra outlay in freight involved would be more than compensated for by the expedition with which such packages would be cleared, and the consequent storage saved on this side.

Sir Thomas Robinson, of Grimsby, who has acted as agent for the Ministry of Food for this and other frozen cargoes, has reported very favourably upon the extremely promising features of the cargo. He testifies to the fact that the conditions and quality of the fish reveal the best methods and conditions of preparation and despatch, stating that the cod and haddock, which are well-fed fish, should be well received here, while he has never seen finer herrings than the sample of one case sent.

GERMANY'S FISHING PLANS.

With the approach of peace reconstruction problems are in the air. The National Sea Fisheries Protective Association of Great Britain has recently outlined proposals which might, if adopted in time, enable the fishing industry there to face the future with confidence. Meanwhile, the Germans have been busy with schemes for the mitigation of the ruin with which they are faced now that the failure of their aggression is certain and inevitable. The German, with all his shortcomings, is strong on economic construction. We have learnt much from him in the domain of military "staff work." We may learn something from the precision and detail with which he faces his present unpleasant economic situation, for precision and detail are the mainsprings of all good staff work in every kind of activity.

The National Sea Fisheries Protection Association, in a very informative memorandum which was recently submitted to Mr. Prothero, the Minister of Agriculture and Fisheries, concludes with the following interesting particulars of the German situation:—

"For the last two years Britons have been—as Britons love to do—"discussing" reconstruction. Meanwhile Germany—more Germanico—has acted. The outstanding features of her reconstructive policy with regard to Fisheries are these:—

I. She has made the public realize the importance of the resources of the sea. The late Herr Ballin was a director of a new herring fishery company at Cuxhaven. The Berlin Bank is financing a company which is to build trawlers on the Weser. Other great banks in Berlin and Hamburg are behind other new fishery enterprises. When haute finance is convinced an industrial propaganda is complete—it is complete in Germany. In Great Britain—?

II. Financiers, fish producers, dealers, professors, in Germany thus educated, all are agreed that a Central Federal Authority in the shape of a Fisheries Ministry is the sine qua non of fisheries reconstruction. That is their postulate. In Great Britain we are "discussing" the question.

III. The vital works on which reconstruction will depend have been started. Of these the most



DEPARTMENT OF THE NAVAL SERVICE.

SEALED TENDERS, addressed to the undersigned and endorsed on the envelope "Tender for Naval Vessels," will be received up to noon Thursday, the 20th February, 1919, for the purchase of naval vessels lying at Halifax, Sydney and Liverpool, including.

Steam Trawlers—Length 125 ft. B.P. Breadth Moulded, 23 ft. 4 in. Moulded Depth 13 ft. 6 in.

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Several small Steamers—Of various dimensions, and **Motor Launches** of various types.

Full particulars and permission to inspect the vessels may be obtained on application to the undersigned or to the Admiral Superintendent, H.M.C. Dockyard, Halifax, N.S.

G. J. DESBARATS,

Deputy Minister of the Naval Service.

Department of the Naval Service,

Ottawa, January 18, 1919.

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
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important is the improvement of fishing harbours. £350,000 are being spent at Cuxhaven, and large sums at Hamburg, Altona and Geestemünde. Grimsby, Hull, Aberdeen, North Shields and Hartlepool are still "discussing" with railway and municipal authorities improvements which are vital to the future of the industry.

REPUBLICAN GERMANY'S FISHERY PROGRAMME.

By COLIN McKAY.

In the midst of political upheaval the Germans characteristically are proceeding with plans for the reconstruction of their fishing industry. These plans are of an ambitious and comprehensive character. The key feature is the institution of a Federal Ministry of Fisheries. In the past each of the Federated States administered their fisheries, just as England, Scotland and Ireland does; though a Federal Minister—the Minister of Interior—exercised a certain authority over the fisheries as a whole, and the semi-official Sea Fisheries Association was financed by the Federal Treasury to the amount of \$100,000 a year.

According to a memorandum drawn up by the National Sea Fisheries Protective Association of Great Britain, the Germans have decided that this bond of union was insufficient. They propose to appoint—if indeed they have not already appointed—a Federal Fisheries Minister who will devote himself exclusively to fisheries. He is to administer a Central Board composed of persons equipped with knowledge and experience of the various phases of sea fishing. There are to be harbor experts, shipbuilding experts, industrial experts, traders, statisticians, research workers, North Sea fishermen, Baltic fishermen, and so on. They are to concentrate immediately on the following points:—

- 1.—Shipbuilding. The pre-war fleet of 250 trawlers is to be increased for instance to 400. Hoffman and Co. of Hamburg are known to be building 20 new vessels. A company, on the Weser at Dordendam, financed by the Bank of Berlin has a capital of £250,000. Other new companies, capitalized at £250,000, £300,000, and £400,000 respectively, have been started at Rostock (on the Baltic), Hamburg, and Cuxhaven.
- Each of these trawlers is to make 30 voyages in the year, and to bring in 2,140 stone of fish per voyage—which is not at all an extravagant estimate. So the trawler fleet should produce 160,700 tons of fish in the year.
- II.—Fishing harbors, are as we have said being extended, and new fishing harbors built. Cuxhaven fish port will be 1,072 yards long. Harbor improvements are to precede (not follow) fishery expansion.
 - III.—Government is to give facilities for the insurance of fishing vessels.
 - IV.—Fishing crews are to be made available at once on Demobilization.
 - V.—Boys are to be trained in navigation and fishery.
 - VI.—Railways are to provide:—
 - (a) Direct fish trains.
 - (b) Refrigerator cars.
 - (c) Low rates for fish freights.
 - VII.—Net factories are to be started.
 - VIII.—The already active propaganda for educating public opinion is to be extended.

IX.—Questions of territoriality are to be treated internationally at the Peace Conference.

X.—There are to be special German Fishery Consuls in foreign fishing ports.

XI.—The Industrial experts are to devise—

- (a) Methods for the hygienic handling of fish.
- (b) Improved designs for fishing vessels.
- (c) Packing, tinning, and preservation of fish.

XII.—A department is to equip fishing vessels with motor engines.

XIII.—New fishing grounds are to be discovered and charted.

XIV.—Fishery statistics are to be improved.

XV.—A central institute for scientific and technical research is to be endowed by the State.

The German programme, as set forth by Economic Union of German Deep-Sea Fishermen, envisages the possibility of making the country self sustaining in so far as its consumption of fish is concerned. In 1913 the German catch amounted to 120,000 tons. This was only a small proportion of the consumption. In 1913 the Germans, who have been trained to liking a fish diet, consumed 370,000 tons of herrings alone, or about half the total herring catch of all Europe. In that year Germany imported 207,000 tons of fish from England, besides heavy imports from Holland, Denmark, and Norway and Sweden.

In 1913 Germany had 317 steam fishing vessels, 115 motor fishing vessels, and 405 sailing craft engaged in fishing. This fleet of 837 vessels carried 5,762 fishermen. The United Kingdom then had 22,462 fishing craft, manned by 98,552 fishermen.

Although comparatively insignificant the German fishing industry was growing rapidly in the years before the war. From 1907 to 1913 the German catch increased about 40 per cent; the United Kingdom's 13 per cent.

APPRECIATION FROM ONE OF CANADA'S LARGEST FISHING COMPANIES.

Prince Rupert, Jan. 24th, 1919.

Editor,

"Canadian Fisherman,"
St. Anne de Bellevue, Que.

Dear Sir:—

We have decided to forward you a list of one hundred and fifty names to whom we wish you to send a copy of the "Canadian Fisherman" for the year 1919 as a New Year's gift from this Company. We will take care of the subscriptions for one year.

We are of the opinion that the "Canadian Fisherman" is worthy of all the support it can get from those actively engaged in the industry, as well as from those who are interested in the future progress of Canada.

Yours very truly,

CANADIAN FISH & COLD STORAGE CO., Ltd.

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Science and the Industries

By A. BROOKER KLUGH.

The formation of the first Canadian trade guild for scientific and industrial research by the Maritime Province Canner's Association marks a great step forward in Canadian industry. Such guilds are being formed in Great Britain and the United States, in fact more than thirty have already been formed in Great Britain. We cannot say that industry has in the past been slow to avail itself of the results of scientific research, but in future the industries are going a step farther and are going to support and encourage research.

How is it that there has not been in the past a closer union between science and the industries? Why did it require the lesson in the need of efficiency which the war has taught to bring it about? The answer is to be found in the difference in the attitude of mind of those engaged in scientific pursuits and those who follow industrial occupations. Let us consider some of the phases of the scientific attitude which are often but poorly understood, or misunderstood, by the business man.

The keynote of science is accuracy, and the degree of accuracy which is demanded in scientific work is far greater than that attained in the ordinary everyday affairs of the world. Science is a search after truth, and the scientific man seeks the truth and states his conclusions without any consideration as to how these conclusions may meet with the approval or the disapprobation of individuals, sects or political parties. This earns for him the title of "the cold, calculating man of science," and the title is deserved if by "cold, calculating" we mean free from prejudices and preconceived notions, for prejudice ever stands in the way of search for truth, and consequently must be entirely eliminated from the mind of the scientist. But mark what this "cold, calculating" man does. He works, often for long years, on some problem, frequently with very little encouragement and no financial backing, and then when his work reaches a successful conclusion he hands over his results to the world at large—free to all who can make use of them. He seeks no pecuniary return, no favor of any kind—his reward is in the knowledge of work well done, in the feeling that he has added one little brick to the grand edifice of truth.

The scientist is frequently asked, with a half-pitying smile, why "he is fiddling round with these things that are of no earthly use." He usually replies that he finds them interesting—and keeps on fiddling. If we go back to the birth of all the greatest inventions we find that they have had their origin in the "fiddling" of scientists. The telegraph and telephone came from "fiddling" with electricity, the whole of our manifold synthetic processes used in the manufacture of dyes, drugs, and other things of immense importance to humanity came from "fiddling" with chemicals, the methods of inoculation and the safeguarding of health came from "fiddling" with bacteria. An eminent jeweller of Paris once remarked as Niepce left his shop, "There goes another fool who thinks he can make pictures by means of a lens and box"—yet Niepce was one of the inventors of photography. Now, at last, in this year of grace it is beginning to be faintly realized that these experiments this "fiddling"—which seems

of no earthly use to-day may be the great discoveries and inventions of the future.

The charge is often brought against the scientist that his language is full of technicalities and that he delights in long words. Is not the language of any specialized profession full of technicalities? Are the terms "starb'd," "gun'nl," "beam," "galley," "binnacle," "aft," "painter," and hundreds of others understood by anyone but a sailor? Or the terms "otter-board," "weir," "dory," "red-feed," "chums," "spat," "kelts," "fry," etc., by anyone but a fisherman? Are the terms "rondo," "intermezzo," "pizzicato," "adagio," "andante," "obligato," intelligible to anyone but a musician, or "tertiary colour," "cross-hatching," "stippling," "gamboge," "burnt-sienna," "chiaroscuro," to anyone but an artist? So we might go on through all the various professions and find that when a member of one of them "talks shop" to one of another profession he uses terms which are not understood. "Yes, but why does the scientist use so many Latin and Greek names. Why does the zoologist call the Winter Flounder '*Pseudopleuronectes americanus*,' the Shrimp '*Cragon vulgaris*,' the Mussel '*Mytilis edulis*' and so on?" The zoologist does not use these names for "effect," or in order to render himself incomprehensible to other people and thus appear extremely learned, but because these names are an absolute necessity. In the first place scientific names are necessary because many, yes thousands, of animals and plants have no common names. In the second place the same common name is used for entirely different species in different parts of the country; thus the Cockle of the New Brunswick coast is not the Cockle of the British Columbia coast, the Herring of the Atlantic is not the Herring of the Pacific, the Oyster of the Maritime Provinces is not the Oyster of British Columbia, and neither of them are the European Oyster, and so on ad infinitum. In the third place a species often has several, sometimes as many as forty-five, common names, one name being used in one country, another in another country, or even in different parts of the same country, and consequently in order to be understood the zoologist would have to use all the common names whenever he spoke of this species. For these reasons every species is given one scientific name, which is standard the world over, and this name is derived from Latin or Greek, because these dead languages are international languages. There is another aspect of scientific names which is not usually appreciated, and that is that they usually tell us something about the species which bears them when they are translated.

Now these are, I think, the main aspects of science which have in the past led those engaged in commerce and industry to invest the scientific worker with an aloofness which he is far from desiring, and the scientist welcomes the formation of the Guilds as a sign that his work is beginning to be understood and appreciated.

The scientist, on his side, realizes more and more that he has a wider audience than that composed of other scientific men if he will put his reports in such a form that they will be intelligible to the general reader, and I fancy that in the future we shall see two reports written on important pieces of scientific work—one for his co-workers and one for the general public.

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The Sea Fisheries of Holland

The sea fisheries of the Netherlands are the oldest organized sea fisheries in Europe; the most important of them are carried on on the same grounds and by essentially the same methods as they were centuries ago. They used to be of much greater value, both relatively and absolutely, than they are now, Holland for some hundreds of years having been the chief purveyor of fish to Catholic Europe, and the demand for fish in Lent and on the numerous fasting days was very great. After the Reformation the fisheries somewhat declined, and they suffered severely in the frequent maritime wars of the seventeenth and eighteenth centuries, particularly in the Napoleonic period, when the British fleets did their best to drive Dutch shipping and fishermen from the sea. The chief fishery was, and is, that for the herring; it has always been called the "Great Fishery," and in the olden times, their "gold mine." Dutch shipping and commerce was built up on the fisheries.

The Dutch fisheries are classified in three divisions, the sea fisheries, the coast fisheries, and the freshwater

fisheries, and a great amount of information is available about each. Since the re-organization of the administration seven or eight years ago, very elaborate reports have been published annually, the reports for each of the three classes being separate, and forming the fullest fishery reports published in the world, especially strong on the statistical side. That for 1913 contains no fewer than 1059 pages, with numerous tables, charts, etc.

First of all, a general picture may be given of the fisheries as a whole, and then the more important considered in detail. In 1913 the quantity of fish and shellfish landed amounted to 209,006 metric tons of 1,000 kilogrammes, or 205,693 English tons, the value being 27,879,000 florins, or £2,323,250. The Dutch fisheries comes fifth or sixth in point of quantity and fourth in point of value among the fisheries of north-western Europe. The following table gives the particulars with the percentages of the value to the aggregate value for 1913 and 1912.

	Tons. (1000 KG.)	Value £	% of Value.	Tons (1000 KG.)	Value £
I.—Sea Fisheries:					
Trawl	31,508	498,083	21.4	35,292	533,333
Line	1,531	45,000	1.9	2,049	50,417
Drift	100,549	1,270,167	54.7	66,214	894,417
	133,588	1,813,250	78	103,555	1,478,167
II.—Coast Fisheries:					
(1) Fish	13,479	182,000	7.8	13,378	211,916
(2) Crustacea	5,816	47,083	2.0	5,609	39,667
(3) Molluses	50,951	200,917	8.7	47,511	185,500
	70,246	430,000	18.5	66,498	437,083
III.—Freshwater:					
Fisheries	5,172	(80,000)	3.4	6,197	(85,000)
Grand total	209,006	2,323,250		176,250	2,000,250

Very nearly a half of the total quantity was the product of the drift-net fishery (herrings, with a relatively small proportion of mackerel), and 54.7 of the total value. The percentage furnished by the coast fisheries

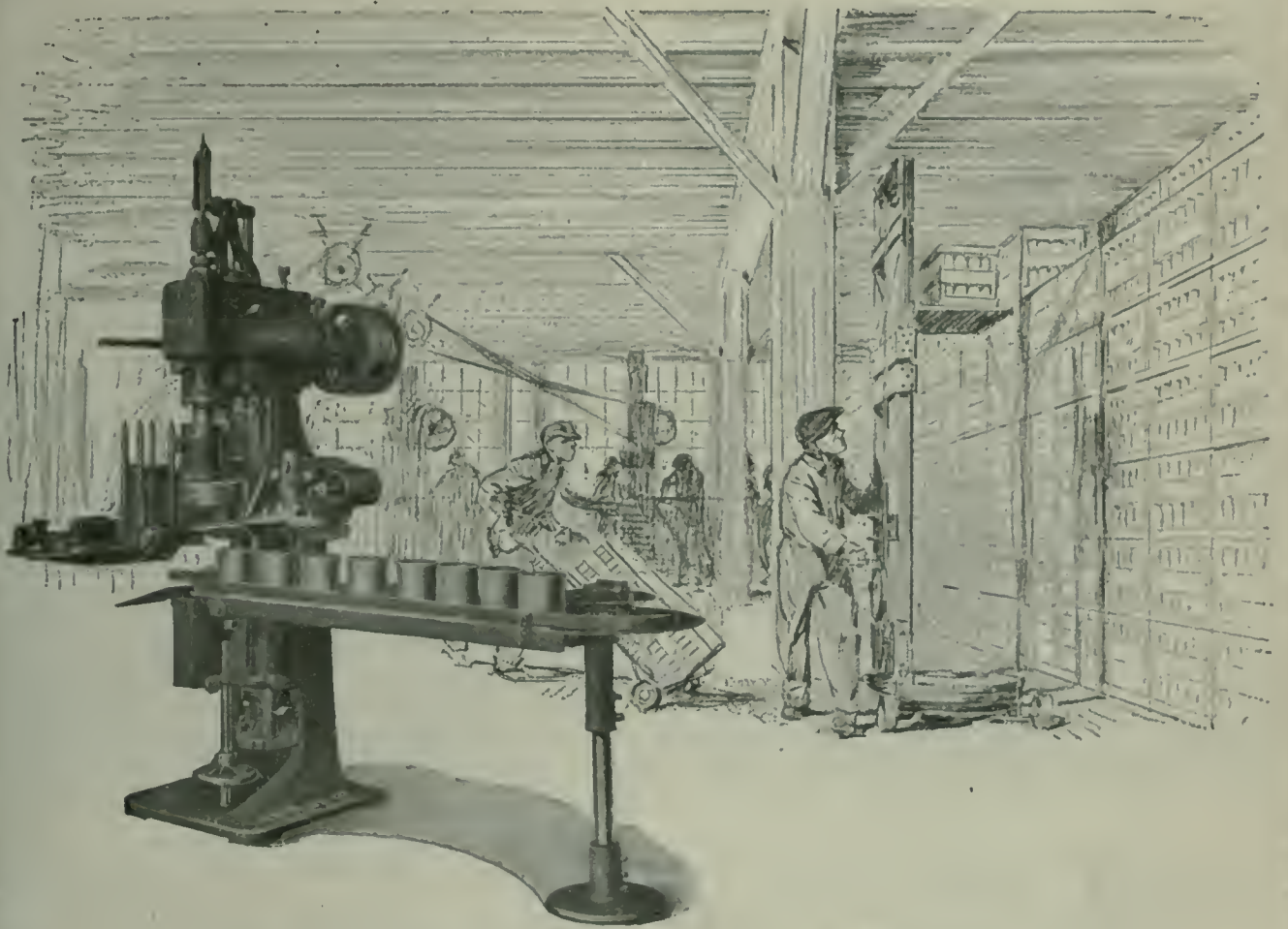
is large, larger than in any other country of western Europe, with the exception of France. The fishing fleet in 1913, with the fishermen employed, was as follows:—

	Steam.	Motor.	Wholly Deeked.	Half Deeked.	Total Sail.	Total.	Tonnage (M ³)	Men.
Sea Fisheries	199	18	713	393	1,106	1,323	297,880	11,927
Coast Fisheries	14	35		4703		4,752	148,794	10,478
	213	53				6,075	446,674	22,405

In the coast fisheries, 4,703 of the boats are described as rowing and sailing boats, without reference to the deck. In the sea fishing fleet, 560 were engaged in trawling, viz., 158 steamers, 6 motor vessels, 396 sailing vessels, 3 wholly deeked and 393 partly deeked; 12 sailing vessels, wholly deeked, were engaged in line fishing; 41 steamers, 12 motor vessels, 579 keeled sail and 119 flat-bottomed sail (*Bommen*), or 751 altogether were employed in drifting. Of the men, 2,743 were engaged in trawling (1,590 on steamers, 21 on motor vessels, 1,132 on sailors); 156 in lining, and 9,028 in drifting (671 on steamers, 161 on motor vessels, and 8,196 on sail vessels). Of the crews, 3,291 men belonged to Scheveningen, 2,423 to Vlaardingen, 1,789 to IJmuiden.

The Sea Fisheries. The "Great" Herring Fishery.

By us these would be called deep-sea fisheries. The most important is the deep-sea herring fishery, which has been prosecuted on the same grounds and in the same way for centuries. The herring shoals are found off the east coasts of Great Britain, and not near the Dutch shores, and hence it is necessary for the Dutch to fish with comparatively large vessels and to salt and pack their herrings on board. For centuries every detail of the "great" fishery was regulated most minutely—the dates, the places, the curing, the brands, the nets, the trade, the salt, the barrels, etc., but in 1857 all restrictions were swept away, and the fishery was made "free." The vessels carrying on the deep-sea



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herring fishery were chiefly "busses" (Buizen), also known as "hookers" (*Hoekers*), strongly-built ships, with broad rounded bows, high prows and sterns, and roomy decks, but also, in the English fishing, smaller flat-bottom vessels (*Bommen*). The nets were made of hemp, about 32 fathoms in length, 8 fathoms in depth, with 740 meshes in the length and 68 in the depth, and from 40 to 60 of these were carried by a buss. In the years between 1857 and 1866 two great improvements were made, both by Mr. A. E. Maas, of Scheveningen (hence the "father" of the herring fishery). One was the introduction of the French lugger, and the other the use of cotton nets. The two things went together, because the cotton nets being much lighter than the hemp nets were insufficient, even with a larger "fleet" of them, to steady the large unwieldy vessels, especially in hauling them in, lighter and more speedy vessels were necessary. Mr. Maas' experimental lugger ("Scheveningen") made a profit of 37 per cent in the first year, and the herring fleet began to change rapidly from hookers and sloops to luggers and cutters; in 1867 there were 85 of the former and four of the latter, in 1881 there were only 11, as against 127. The last of the old busses or hookers went out of the fishery in 1886; the last of the bum-boats (*Bommen*) probably disappeared this year.

The fishery is carried on from the latter part of May to the middle of December, beginning to the north of the Shetland Isles, progressing southwards as the season advances, and finishing opposite the mouth of the Thames and in the eastern parts of the English Channel. Down to about the level of Flamborough Head the fishing is carried on from about ten or fifteen to fifty or sixty miles from shore. On being brought on board the herrings are immediately gutted, salted and packed in barrels, assorted as "fulls" (*volle*) full of milt and roes; matties (*maatjes*), with the milt or roe very small; and shotten or spent (*ijle*); they are re-packed on shore. The salt is imported from Spain and Portugal; the quantity imported in 1913 for the fisheries amounted to 41,021 metric tons. The herring fishery is carried on by numerous small undertakings or companies, of which there were 287 in 1913, but many have only one vessel. The drift-net fishery yielded in 1913, the following: Salted herrings, 992,216 "kantjes" (sea-packed barrels) or 99,222 metric tons; valued at £1,258,770; 241 metric tons of fresh herrings, valued at £1,631; 10,866 kantjes of salted mackerel, or 1,087 metric tons, valued at £8,973, the total being 100,549 tons, valued at £1,269,374, to which has to be added £793 for surplus bait (*Kolharing*). Besides the pickled herrings (*Pekelharing* or *Gezoutenharing*), a comparatively small quantity is landed sprinkled with salt (*Sturkharing*), mostly for smoking into reds (*Bokking*); they are included above, but not now separately distinguished in the statistics.

The Dutch eat very little of their herrings, the great bulk being exported, chiefly to Germany. The quantity of pickled herrings exported in 1913 was 725,759 barrels, or 108,707 metric tons, of which 78,046 tons, or 72 per cent, went to Germany; 14,247 tons, or 13 per cent, to the United States; 8,098 tons, or 7.4 per cent to Belgium, and 3,789 tons, or 3.5 per cent, to Sweden. On the other hand, the imports of pickled herrings amounted to 15,617 tons, of which 9,462 tons came from Great Britain and 5,533 tons from Norway. Values are not given. Russia used to take a large quantity of Dutch herrings, but the Scotch fish have ousted them, the chief reason, the Dutch say, being the superiority of the

Scotch barrel, which, hooped with iron, is better able to stand the long and hard journey. In 1913 Russia took 9,785 barrels; in 1912 only 1,883 barrels.

The Trawl Fishery.

Trawling of various types has long been practised in the Netherlands in coastal waters. Deep-sea trawling on the English model is concentrated at Ymuiden, and has undergone marked development in recent years. The net results for 1913 are stated in one of the above tables. The catch of the steam trawlers amounted to 26,809 tons, valued at £421,990; of the motor trawlers, to 72 tons, valued at £1,053; of the sailing trawlers, 4,627 tons, valued at £75,040. The quantity landed at Ymuiden (the Dutch Grimsby) was 28,849 tons, or 91 per cent of all the trawled fish, viz., 26,793 tons by steamers and 2,056 tons by sailers. The other ports where trawled fish are landed are chiefly Scheveningen, Vlaardingen, den Helder and Rotterdam. Of the total, 30,148 tons were obtained in the North Sea, 1,217 tons at Iceland and 144 tons at the Faroes and Rockall; none were taken in the "White Sea" (Barents Sea) in 1913, though in 1912 and previous year fair quantities were got there. Only about half of the fresh sea fish landed is consumed in Holland; the rest is exported, chiefly to Germany and Belgium. In 1913 the quantity exported was 23,094 tons, of which Germany got 11,740 tons (51 per cent), Belgium 11,250 tons, Great Britain 98 tons and all other countries together (chiefly Switzerland, France and Austria) 6 tons.

The Coast Fisheries.

These are carried on by a great many different methods in the territorial waters, the Zuiderzee, Waddenzee, the estuaries, etc. The fish taken are chiefly herring, anchovies (true anchovies), eels, flounders and smelts; in 1913 the value of the anchovies was £69,208; herrings (5,377 tons) £39,985; eels, £26,620; flounders, £26,515; smelts, £9,730. The crustacea consists mostly of shrimps, of which in 1913 5,710 tons (98.2 per cent of the whole) were taken, valued at £45,168; 12½ tons of lobsters, valued at £1,640 were also caught and a smaller quantity of crabs. Of the molluscs, the oyster and the mussel are cultivated to a very large extent and most successfully; 3,404 tons of oysters (49,618,000 oysters) valued at £129,938, and 44,231 tons of mussels, of a value of £59,657, were also obtained. The other shellfish comprise periwinkles (value £8,144), cockles and whelks. Most of the products of the coast fisheries are also exported, mostly to Belgium, Germany and Great Britain, the total in 1913 being 51,954 tons, comprising 1,103 tons of red herrings (1,089 tons to Germany); 2,192 tons of anchovies (2,126 tons to Germany); 2,522 tons of shrimps (1,846 tons to Great Britain; 671 tons to Belgium); 2,203 tons of oysters (1,024 tons to Germany, 609 to Belgium, 569 to Great Britain); 43,934 tons of mussels (38,166 tons to Belgium 4,598 to Great Britain).

The war has naturally had a great influence on the Dutch fisheries. During the first few years, owing to the great demand and enormous prices in Germany, they were extremely prosperous. In 1915 the total output was 186,000 metric tons, and the value £4,621,000. In 1916 the yield amounted to 234,500 tons and the value to £7,012,000. But the "barred zones" in the North Sea, mines and submarines have worked a change, and the figures for last year showed a great decrease, the quantity being 102,265 tons and the value £1,803,000. The present year will show considerably worse results.

It may be added that the Dutch in their fisheries and fishing industry, with the exception of trawling, have



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The Fisheries of Denmark and Sweden

ARTICLE IX.

Denmark.

The sea fisheries of Denmark are of a somewhat different character from those previously described. On all parts of the coast, except to a limited degree in the north, and for long distances from the coast, the water is comparatively shallow and the bottom sandy, and the Danish fisheries are essentially inshore fisheries, in which a considerable variety of gear is employed. There is no true deep-sea fisheries, as in most of the other countries, the utmost range of the fishing vessels being about seventy miles into the North Sea, though since the war, at least in the early years, the fishing was carried on somewhat farther. Owing to the physical conditions, the chief fisheries are for flatfishes and eels, and a feature of the Danish fisheries is the extent to which set-nets or ground-nets and traps are used. In 1913 the total value of the fish and shellfish landed amounted to 17,515,179 kroner, or £973,000; in 1903, the value was £9,950,287 and in 1893 £5,272,517, so that the fisheries have developed with considerable rapidity, thanks principally to the motor-boat. The Danish fisheries come sixth in value and seventh in quantity of fish amongst the countries of western Europe, but the position is much higher if the fisheries of the dependencies, Iceland and the Faroes are included, the value of the Icelandic fisheries being £403,000, the Faroese £137,000, and to them may be added the value of the fishery at Greenland, £8,000, making a total for the Danish Kingdom of £1,521,000 in 1913. Unfortunately the aggregate quantity cannot be stated, as weight, number and measure are used in different cases. The following gives the values and where possible the quantities of the chief fish taken in Danish waters in 1913:

	Metric Tons. (1,000 Kg.)	£	Percentage. Value.
Plaice	17,060	307,750	31.63
Soles	137	10,122	1.04
Other flatfishes . .	2,986	31,430	3.23
Haddock	993	23,221	2.39
Cod	10,030	116,056	11.92
Mackerel	405,915-score	21,156	2.17
Herring	3,730,713-"OI"	138,996	14.28
Eels	4,721	259,236	26.64
Lobsters	80	10,520	1.09
Shrimps	102	9,473	0.98
All others . . . . .	.....	45,000	
		973,000	

The "other flatfish" comprise flounders, dabs, witches, turbot, brill; and the others not specified are mostly garfish, coalfish, whiting, skates and rays, salmon, trout, lumpsuckers (*Cyclopterus*).

The number of fishermen was 17,697, of which 11,233 were regularly employed and 6,464 occasionally—usually combining agriculture with fishing. The fishing fleet consisted of 15,189 boats and vessels, of which 6 were steamers, mostly employed in the carriage of fish; 383 were of 15 tons or over; 908 between 15 and 5 tons, and the rest under 5 tons; 3,181 were equipped with motor-engines. The fisheries on the eastern coast,

on the Baltic side, are more valuable than those on the North Sea coast, viz., in 1913, 11,268,500 kroner, as against 3,871,100 kroner, while the fjord fisheries realised 2,375,600 kroner.

The fishery most nearly resembling the deep-sea fishery of other countries is an extension of the coast fishery in the North Sea, carried on with cutters (up to 45 tons) provided with motor and sails, mostly from Esbjerg, Frederikshavn, Swaken and the Thyboron Canal. The fish caught are plaice and other flatfishes, since the war also haddocks in large quantity. The apparatus of fishing is the peculiar Danish plaice-seine, or Snurrevaad, with wings from 80 to over 200 feet in length, a deep pocket in the middle, 20 to 25 feet in length, and very long hauling ropes. The cutter, which is provided with two of these nets, lies at anchor; the net is put into a small attendant motor boat which sails off to the fishing ground, paying out one of the hauling lines as it goes, heaves the net overboard, perhaps a mile or more away, and then comes back with the end of the other hauling line, when it again starts off with the second *snurrevaad*, to shoot it on the other side of the cutter in the same way. The hauling lines are hauled in (and ingeniously coiled) by a motor winch and the catch brought on board. It is really a form of trawling. The plaice are put into the well, and in port transferred alive into floating boxes, and despatched alive to Danish markets, as Copenhagen, or exported to Germany and England, as required. Plaice are also taken in fixed bottom nets ("garn"). Cod are taken by hooks, traps and purse-seines, mostly in the Belts and the Cattegat. Haddocks are taken by hook-and-line, about 90 per cent on the North Sea coast, and recently also by the *snurrevaad*, the use of ice, newly adopted, enabling this fishery for haddocks to be prosecuted throughout the summer. The eel fishery is carried on by seines, hooks, and spears, and these methods account for rather more than a half of the total catch, the other moiety being captured in weels and pound-nets; the former are almost wholly "yellow" or growing eels, the latter practically all "silver" or migrating eels. Scarcely any eels are taken on the North Sea coast (total in 1913, 1,150 kilogrammes, valued at £64); 40 per cent are caught in the Belt Sea, 26 per cent in the Limfjord, 14 per cent in the Sound, 7.5 per cent in the western Baltic, 10.4 per cent in the Cattegat and about 3 per cent in certain fjords. The herring is captured chiefly in the Belts, the Baltic and the Cattegat, more than a half in pound-nets and fixed nets, less than a half with drift-nets and purse-seines, the drift-net being chiefly used at the island of Bornholm. Mackerel are caught in drift-nets and pound-nets, mostly in the Belts and the Cattegat; garfish in the herring pound nets; salmon mainly in the Baltic with hoops and nets, up to about 50 miles from the coast. There is an important oyster fishery in the Limfjord, the yield being about 4,000,000 per annum; the oyster fishery is a royal prerogative and is leased to a company.

The Danish fish trade is almost entirely in fresh fish, very little being cured—some herrings, eels, mackerel and salmon are smoked, and a little salted. About one-third was exported before the war, principally to Germany and England, but also to Sweden, etc. In 1913 Germany received about 33,000 tons of Danish fish, including 12,300 tons of fresh herrings, 16,600 tons of other sea fish, chiefly plaice and haddocks, 1,410 tons of fresh eels, 1,170 tons of smoked eels and smoked herring, etc. The export to England was 10,500 tons,

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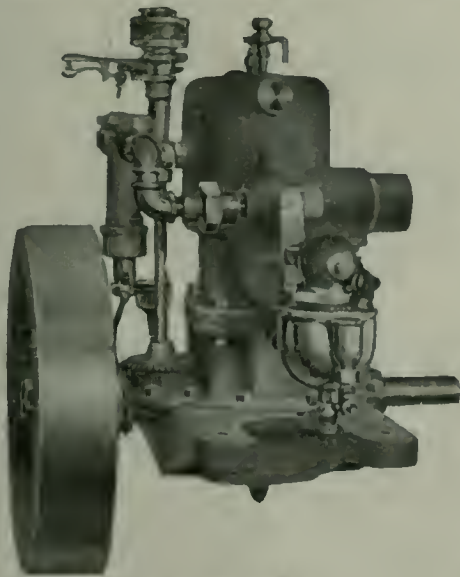
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mostly plaice and eels. In 1914 the total value of the fish landed was 17,293,000 kroner, a little less than in 1913; in 1915 it was 26,525,000 kroner; in 1916 about 60,000,000 kroner (£3,333,000), and in 1917 about a half of that. In 1916, between 3rd September and 31st October, Denmark despatched by a single route to Germany 34,000 tons of fish. Last year there was a great decline, owing to the barred zones in the North Sea and other dangers, the severe restriction of exportation, and above all, perhaps, the scarcity of petroleum for the motor fishing craft.

Sweden.

The Swedish fisheries resemble those of Norway rather than of Denmark, as might be surmised from the physical conditions of the coast and waters, and modified by the existence of a large sea, the Baltic, with water of low salinity. Thus it is on the west coast, that fronting the Skagerrack and North Sea, open to the influence of the Atlantic, we find the chief fisheries and the best fishermen. The following table gives the particulars of the total catch in 1912, showing also the percentages of the principal fishes:

	Cwts.	%	£	%
Herring	1,846,317	77.8	399,858	51.4
Mackerel	149,662	6.3	109,230	14.0
Haddock	167,343	7.0	47,226	6.1
Cod	49,832	2.1	36,785	4.7
Ling	47,243	2.0	20,000	2.6
Plaice	8,104	.3	7,545	1.0
Sprat	6,738	.3	9,217	1.2
Eel	22,643	.9	63,498	8.2
Flounder	16,918	.7	12,154	1.5
Salmon and trout . .	2,291	.1	11,317	1.4
Other fish	55,795	2.4	61,537	7.9
Total	2,372,886		778,367	
Shellfish			34,072	
			812,439	

The "other fish" comprise turbot, brill, soles, garfish, lumpfnckers, rays and skates, etc.; the shellfish were 501,500 lobsters, 18,000 oysters, 137,800 crabs, and 115 tons of deep-water prawns. About 70 per cent of the fish are caught in the Skagerrack (chiefly herrings, but also haddock, mackerel, sprats, etc.), 19 per cent in the Baltic (herrings, eels, cod, salmon and trout); 7 per cent in the Cattegat (herrings, mackerel, plaice, eels, cod, salmon); 5 per cent in the North Sea (ling, cod, haddock, mackerel, herring), and 1 per cent at Iceland (herring).

The fishing fleet consisted of 41 steam trawlers, 1,288 motor vessels over ten tons, of which 103 were engaged chiefly in trawling, and the remainder mostly in drifting, seining and lining, 320 sailing vessels, 1,345 decked sail boats and a large, but unspecified number of open boats. Over 30,000 men were engaged in fishing, by far the larger proportion being, however, only occasionally engaged; the professional fishermen are practically confined to the west coast, and they comprise some of the most enterprising fishermen in Europe.

The chief fisheries are the following:—(1) for herrings, by drift-nets from August to November or later in the Sound and Cattegat, by bottom setnets; and by purse-seines, in the great winter fishery, by far the most important which is carried on in the Cattegat, the Skagerrack and the adjacent part of the North Sea from October or November to March. The purse-seine was introduced from America in 1882; the large nets now

cost up to about £500, measure 250 fathoms long and from 45 to 50 fathoms deep in the bunt; they are used from motor boats, a large one without mast or sails, and having a crew of 15 or 16 men, and a smaller one with sails which takes the herrings to port. (2) For mackerel, by drift-nets, near the coast, in May and June, and by trolling or whiffing (*Dorjfisket*) in the North Sea from June to September; the mackerel taken in this fishery are split and salted on board and nearly all exported to the United States. (3) Trawling, which was started by a Gothenburg company in 1901 by the purchase of a Grimsby trawler; in 1914 there were 50 steam-trawlers; the larger motor boats began to trawl in 1908 (going to the mackerel fishing in summer). The steamers fish on many grounds, distant and near; the motor-boats in the Cattegat and Skagerrack. Herring-trawling has been specialised by both classes of vessel, and often large catches are obtained. (4) Deep-sea lining (*Storsjofisket*) in the North Sea, Skagerrack, off the west coast of Norway and near the Shetland Isles in summer employs about 200 vessels, largely old English trawling smaeks, of late also motor boats, the catch being cod, ling, torsk, coalfish, halibut, rays and skates. In the Baltic and the Gulf of Bothnia a considerable variety of fish is caught, as the small herring (*Clupea harengus*, var *membras*, L.), flounder, eel, salmon, sprat, and (as the water may be quite brackish, especially in the northern parts of the Gulf of Bothnia), a variety of freshwater fish, as pike, perch, roach, ide, whitefish (*Coregoni*), bream, etc. Owing to the large number of lakes and streams the inland freshwater fisheries are very valuable, yielding in 1914, 4,774 tons of fish, mostly pike (953 tons), perch, salmon, etc. The export of fish to Germany is large, especially fresh herrings. Sweden salts little for itself and imports, mostly from Norway, over 20,000 tons of pickled herrings, the Swedes being fully as fond of salted herrings as are the Germans and the Russians.

LAKE ERIE FISHERMEN'S ASSOCIATION CONVENTION.

The Annual Convention of the Lake Erie Fishermen's Association will be held at St. Thomas, Ont., on March 4th, 5th and 6th. A splendid programme has been drawn up, and it is expected that the gathering will greatly exceed that of former years.

CANADIAN FISHERIES ASSOCIATION CONVENTION POSTPONED.

At a recent meeting of the Executive Council of the C. F. A., the question of holding the Annual Convention this summer in Vancouver was discussed. Conditions in the trade and the desire of almost all members to keep close to business during the reconstruction period, resulted in a postponement of the Convention until May, 1920. Vancouver was unanimously decided upon as the place for the Convention at that time.

It is expected that a delegation from the Association's members throughout Canada, will be called east shortly for a conference to lay before the Government a comprehensive policy of development and reconstruction with regard to Canada's fisheries.

THE CANADIAN FISHERMAN

A MONTHLY JOURNAL DEVOTED TO THE COMMERCIAL FISHERIES OF CANADA AND NEWFOUNDLAND THE SCIENCE OF THE FISH CULTURE AND THE USE AND VALUE OF FISH PRODUCTS

F. WILLIAM WALLACE
EDITOR

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No. 3

FISHERIES ASSOCIATION FRAMES NEW FISHERIES POLICY.

Reconstruction and Development of Canadian Fishing Industry Being Advocated.

Following a meeting of the Executive Council of the Canadian Fisheries Association in Montreal on February 19th, a policy for the development and reconstruction of the Canadian Fisheries was drafted and sent to all members. In a letter accompanying the suggested recommendations, President Brittain stated: "We are facing a reconstruction period after years of war and we must take stock, as it were, and prepare ourselves for an aggressive policy of fishery development, not alone for the home trade, but that we may make a strenuous bid for overseas business and be able to face the competition of other countries who are exerting every effort to capture as much export business as they possibly can."

Owing to unsettled conditions in the industry at present, the Annual Convention at Vancouver was postponed until May 1920, but it is hoped that a delegation of those interested in the fisheries will be able to go to Ottawa while the House is in session and meet the House of Commons Standing Committee on Fisheries and through them present the recommended Fisheries policy to the Government.

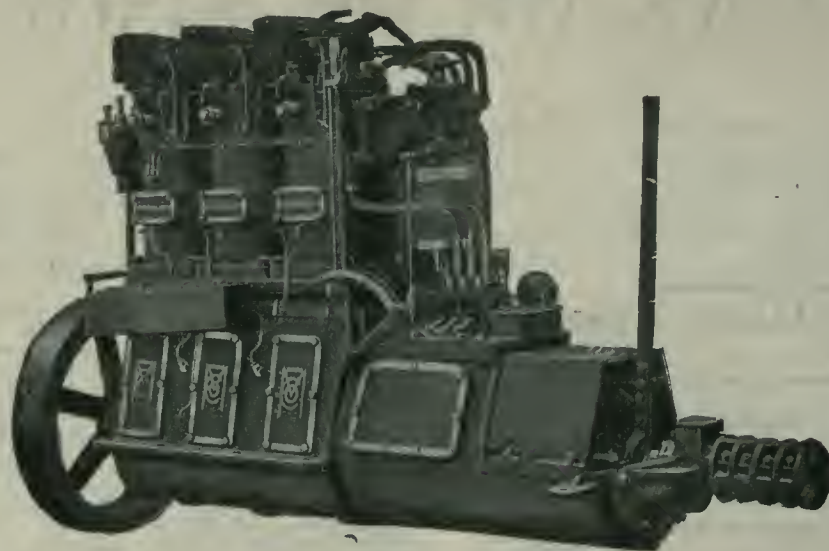
The recommendations, as drafted, are subject to revision and it is expected that after the members of the Association throughout Canada have examined them, a comprehensive policy will be framed for presentation to the Government. In many ways, the recommendations will stand as a permanent policy for the

future administration and development of our fishing industry.

President Brittain further states:—"We need hardly impress upon you the importance of this matter, and we know that those of you who have been giving thought to what is required to put our fishing industry on the plane to which it is entitled by virtue of our enormous fishery possibilities, will get behind this movement for the necessary action to make our recommendations an accomplished fact."

The recommendations, seventeen in number, are as follows:—

1. The appointment of a Deputy Minister of Fisheries with a thorough knowledge of the Industry and its requirements.
2. The appointment of practical and influential men in the fishing industry to Advisory Boards. Three Boards, representing the Pacific, Atlantic and Great Lakes Fisheries are suggested. These Boards will make recommendations and advise the Deputy Minister on all fishery matters in their particular spheres of industry, and these Boards should have a certain measure of jurisdiction and control.
3. The standardization of fish weights in cans, pack, cure, and cull, and the inspection or branding or certification of such packs and cure by the Government Inspectors. Same to be embodied in Fishery Acts and made compulsory.
4. The utilization of the Atlantic fishing bounty of \$160,000 per annum for the purpose of assisting Atlantic fishermen to equip their boats with engines on a long time payment basis or in such



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- other manner as the Atlantic Fishery Board may recommend for the benefit of the Atlantic fishermen who are at present drawing the bounty in small and negligible amounts.
5. The Dominion Hydrographic Survey to produce charts for fishermen — surveying the banks and grounds and accurately plotting the soundings, the character of the bottom and tidal currents in a more comprehensive manner than on the charts now in use which are designed primarily for the use of merchant ship navigators who do not require more than occasional soundings, etc., offshore and who are not interested in the character of the bottom as are liners and trawler fishermen.
 6. A comprehensive scheme of re-stocking and artificial propagation of commercial fish in inland lakes, waters and rivers; hatcheries to be located in convenient locations; hatchery officials to be qualified fish culturists and appointed on qualifications and not through political influence; transportation facilities for transferring fry and spawn from hatcheries to distant waters. The Federal Government to subsidize the training of men in fish culture, sending them abroad to become acquainted with the best method of pisciculture, and placing them, when qualified, in charge of hatcheries and field work.
 7. Fishery Inspectors to be qualified and appointed on qualifications. Should be given special training for the districts in which they have jurisdiction.
 8. A scheme of apprenticeship whereby boys of 16 can be sent to sea on fishing vessels and placed in charge of owner or skipper and trained in fishery, seamanship and navigation. Such lads to be given an annual period of Naval Reserve training and instructed in navigation at the expense of the Government.
 9. Harbors adjacent to prolific fishing grounds to be protected by adequate breakwaters; equipped with lights, buoys and aids to navigation, facilities to be provided for the landing of fish.
 10. A vessel to be fitted up for fishery investigations — preferably a steam vessel equipped with trawl, driftnet and line gear. This craft to survey and try out new fishing grounds and to survey both Atlantic and Pacific, and later on, Hudson's Bay.
 11. A publicity department to build up the home markets in fish and carry out propaganda similar to the Fish Section of the Canada Food Board.
 12. The publication of text-books compiled by practical men on such subjects as FISH CURING, THE CANNING OF FISH, NAVIGATION FOR FISHERMEN, STEAM TRAWLING, DRIFT NET FISHING, THE USE AND REPAIR OF MOTOR ENGINES, FISH REFRIGERATION, FISH LIFE, etc. Same to be distributed to all interested.
 13. A Bureau of Fisheries Information to be established in connection with the Canadian Trade Commission which will inform the trade of foreign markets, new methods of fishing, latest designs of fishing vessels, handling and keeping of fish, etc., etc. This Bureau should devote its energies to building up foreign markets and should be in close touch with Canadian representatives abroad who will collect and forward everything likely to be of interest to the Canadian fishing industry, and who will work in close co-operation with the Bureau to find markets for Canadian fish.
 14. The appointment of a Fish Transportation official who will devote his attention to the securing of fair and just rates for the transportation of fish by rail or water at home and abroad. This Official will investigate complaints re fish transportation, advocate improved facilities with railroads and steamship companies; equalize rates on fish to outlying points, and work for the general improvement of fish transportation.
 15. A scientific and commercial investigation to be made with regard to the utilization of fish waste and encouragement to be given the establishment of plants for the rendering of same into commercial products.
 16. Clearing of rivers and waterways of obstructions for the purpose of opening up the natural spawning beds—particularly the salmon areas of the Pacific.
 17. The rehabilitation of oyster beds and the natural or artificial propagation of the lobster.

A MINISTER OF FISHERIES WANTED.

The recommendations of the Canadian Fisheries Association ask for the appointment of a Deputy Minister of Fisheries who understands the requirements of the fishing industry and who will devote his whole time to the work. While this is highly desirable, we would go further and strongly urge for the appointment of a Minister of Fisheries with an efficient Deputy.

The fishing industry of Canada will never be properly developed until we have a Minister of Fisheries representing the fisheries entirely. The present Minister, while no doubt an able man, is saddled with the administration of three departments — Naval Service, Marine and Fisheries. These three are of great importance—any one of which would call for the whole time of a Minister, but the Fisheries are the most important of all.

The Fisheries of Canada can be developed to rank with Agriculture as one of the great revenue producing resources, and never in Canada's history are the natural resources and their development more important than at the present time. They can be developed to an unlimited extent under the auspices of a Minister who will study the problems connected with the industry and who will work for the solution of these problems and who do all in his power to put Canada's fishing industry before all others.

A Minister is necessary to represent the interest of the fisheries before Parliament and the Cabinet Council. Only a Minister with the welfare of the industry at heart can secure adequate appropriations for development work and introduce acts for better administration. The best trained Deputy in the world is powerless unless he is working under a Minister who is devoting his whole time to fisheries administration and development.

There is always an objection to creating new portfolios, but in this case it is not necessary to create another addition to the Cabinet. A re-arrangement of the present Cabinet could very well be made and a Minister appointed to administer the Fisheries and the Fisheries only.

In Great Britain, a strong agitation is being made at present for a Ministry of Fisheries. This is a sign of the times and indicates that the conservative Britisher realizes the necessity for a separate Minister and the

uselessness of an administration linked up with other departments.

We strongly advise the Canadian Fisheries Association to follow the lead of their British brethren and urge the appointment of an individual Minister of Fisheries along with an efficient Deputy.

THE LENTEN SEASON.

Lent opened on March 5th and most of the wholesalers report large stocks of fish on hand. The unusually mild winter has upset conditions in the Canadian fish trade and supplies of fresh stock were always available to the detriment of the chilled stocks which usually move freely in winter. Owing to the mildness of the weather, the demand for chilled fish was very slow—few retailers earring to handle much while unseasonable weather prevailed. Conditions in the western provinces have been bad—the unusual weather causing great difficulties in the marketing of the winter caught lake fish. Large quantities are still on the ice and there is little or no market for them either in Canada or the United States.

The closing down of overseas shipments of chilled fish has probably had something to do with the piling up of fish stocks in Canada, but it is hoped that the necessary shipping space will be obtained in the near future. The sudden ending of the war has caused retailers and others to go slow in buying in the hope that there would be a drop in prices. The drop has come and wholesalers are quoting low prices for Lent trade with abundant supply and variety.

With the coming of Lent, wholesalers report brisker sales and are looking for a big enough demand to clear out the large stocks on hand. The same conditions are reported in the United States and all dealers are looking to the Lenten business to help reduce heavy stocks.

There are eighteen calendar fish days in Lent, and it is hoped, in addition to these that the Tuesday fish day will also help to absorb stocks. Advertising and aggressive salesmanship will be necessary to clean up stocks and it is to be hoped that wholesalers and retailers will do their utmost to clean up in order that we may make a fresh start and adjust ourselves to the new conditions following the conclusion of hostilities.

LABELS.

Canadian fish canners very often kill a good product by cheap labels and poor trade marks. Too often the label becomes a libel, and yet the label is one of the most important things in selling goods. We have compared the labels of certain Canadian canned fish with those of other countries and the Canadians are far behind. True, there are some canners in Canada who use labels of the best class in printing and design, but there are many who look upon the label as purely a minor consideration and decorate their products with a cheap, ill designed lithograph and consider it fills the bill.

It must be remembered that fifty per cent. of goods are sold on sight and the other fifty on known quality. Many a poor product has been sold by the attractiveness of its package and many a good one has been thrown into the discard because of its cheap and poorly designed covering.

It is essential at the present time that all canners of fish products overhaul their packages, trade marks and labels. The Canadian Trade Commission is endeavouring to build up a market for our goods in competition with foreign packers who neglect nothing and

who pay particular attention to labels. A good label costs more but it pays in the end, and we would call the attention of our canners to the famous slogan of an American soap firm. "We couldn't improve the soap, but we can improve the package!"

A hundred dollars paid to an artist to design an attractive and well drawn label, and the printing of same by a experienced lithographing or engraving firm, is money well spent and the best form of silent salesman.

ENDORSE FROZEN FISH.

There is no doubt about it that in this country of vast distances, cold storage and frozen, or as we prefer to call it, "chilled" fish must play a prominent part in the trade. The public prejudice has been strongly against chilled food products, but this is a prejudice which is not well founded insofar as fish is concerned. In this connection, we call the attention of the trade to a letter received by a Boston fish concern from the Dr. H. F. Moore, Deputy Commissioner of the U.S. Bureau of Fisheries.

"Gentlemen:—I received your letter of January 23rd and am pleased to learn of your proposed campaign to stimulate the consumption of frozen fish.

"One of the great difficulties encountered by those who are endeavouring to increase the use of fish is the seasonal character of most of the fisheries, resulting in a surplus at some times and a dearth at others. Canning, salting and smoking furnish partial solutions of the difficulties, but the fisheries will never attain their proper balance and economic development until it shall become possible to place the peak of the annual fish supply in cold storage, to be used in filling the valley of the winter months.

"Fish placed in the freezer in good condition, and not thawed until they are used, are as wholesome and nutritious and practically as good in flavor as if fresh, and there is no reason for the prejudice against them. If the housewife can be taught to buy these fish still frozen and thaw them immediately before use, both the consumer and the fisheries will greatly benefit."

The Dominion Commissioner of Fisheries, Dr. Prince, also advocates the use of chilled fish and has reported as follows:—

"Frozen fish are certain to be one of the great food commodities of the future. There has long existed a prejudice in the mind of the public against frozen fish, but this prejudice has no just basis, and fish as well as other cold storage commodities are becoming recognized as practically as good for the table as are fresh fish. In countries like England frozen fish were almost unknown until very recently. Since the war began there has been a vast change, and in the great fish markets of Britain frozen fish are now figuring, and will figure on an enormous scale in future years, while in Canada, the United States and other countries, the demand for frozen fish, which has been very great in the past, will be enormously increased.

"How can frozen fish be supplied to the public in the best possible condition? There is no doubt that frozen fish have often been badly handled by fishermen and fish merchants, by express and freight employees, and even by retail dealers, who have done many things which injured the frozen fish and spoiled the product. In the home the cook has usually not known how to handle frozen fish, and frequently spoiled it before it reached the table. All this can be put right, and everything which spoils frozen fish

must be avoided in the future, for it has been proved that refrigeration preserves all the best qualities present in fresh fish, and affords many advantages in preservation and in shipping which are not possessed by fresh fish. Frozen fish are superior to salted or cured or smoked fish, excellent as these are for food. Two eminent scientists recently stated that they could not tell which were fresh and which were frozen fish, when both were cooked and placed on the table at the same time as a test. In taste and texture of the flesh they were declared hardly distinguishable from each other."

MONTREAL RETAIL FISH DEALERS AND FISH FRIERS FORM ORGANIZATION.

A number of the retail dealers and fish friers of Montreal who handle "just fish" got together on the evening of March 3rd, at the St. James Hotel, for the purpose of sociability, boosting fish and organization. The meeting was arranged by Mr. S. Mason, of the Mount Royal Fish Market, and Mr. H. Marshall acted as chairman. An excellent dinner was provided and speeches were made by the guests which included Mr. W. R. Spooner, Montreal; Mr. Love, Montreal; Mr. J. T. O'Connor, Montreal; Mr. Arthur Boutilier, Halifax—representing the wholesale trade and the Canadian Fisheries Association—while Capt. F. W. Wallace, Ottawa, represented the Canada Food Board.

Mr. Mason in a forcible speech pointed out the advantages of organization in other trades and strongly urged the retail fish dealers and fish friers of Montreal to do likewise. He advocated consistent advertising of fish to the public through the press on a co-operative basis—each member being assessed for the expense; the elimination of cut-throat competition and a more general pulling together. The meeting very cordially endorsed the speaker's sentiments and agreed to form an association. Among those present were Messrs. Geo. Birse, A. Rose, W. Allehureh, A. Goodu, H. Rayment, W. J. Smith, W. J. Kelsall, H. F. Rayment, H. Marshall, H. Woolmer, G. Williams, A. Sols, S. C. Stannard, H. Gilbert, F. Hammond, M. Dupont.

DECREASE IN U. S. CHILLED FISH STOCKS.

The Fish Section of the Canada Food Board is advised that the quantity of fish in cold storage in the United States, February 15th, was 86,940,397 pounds, showing a marked decrease since January 15th, when there was over one hundred and three million pounds.

EXPORTING CHILLED FISH TO GREAT BRITAIN.

Some Good Advice to Canadian Producers.

The Aberdeen Fishing News of January 25th, publishes an interesting article on the importation of Canadian frozen fish into Great Britain during the war and the prospects for the future.

Evidently the first lots imported were not favorably received, though food scarcity compelled their use. Canadian frozen hake gave the business a hard knock and did a great deal of harm—not that the fish was bad but owing to the fact that hake will not freeze well and be fit for eating after defrosting. Under the cap-

tion: "Its reception on the Home Markets," the News says with regard to the Canadian frozen fish.

"All things considered this fish met with a favorable reception, especially on scarce markets, but many faults were revealed and these did not tend to inspire confidence in buyers, particularly when fish from home waters was, comparatively speaking, abundant. In the first place, the size of the packages was too large; the bulk was supposed to contain 200 lbs. of fish. When it is borne in mind that large numbers of fishmongers and scarcely any fish-friers seldom purchase as much as 14 stones of any particular kind (even the most popular variety) on any given day, it will readily be seen that those retailers who were willing to purchase such a large quantity of a comparatively unknown article were few and far between. Then again the weight of fish in the packages was far from uniform, in fact unreliable, the usual experience being that the full 200lbs. to the box was the exception rather than the rule. Further than this the quality of the fish left much to be desired; the best was really excellent, but the greater part was more or less inferior, and different grades of quality were often found in a single case. Probably the indifferent condition of much of the fish was due to the fact that it had perished by prolonged storage, as it is believed that the whole of the fish offered for sale during 1918 had been landed in the United Kingdom the previous year. On the other hand, the fact that fish, in the one case consisted of good, bad, and indifferent quality, rather points to the fact that some of it was in anything but prime condition when frozen and packed. There is little doubt that had the food supply of this country not been abnormal last year, much of this frozen fish would not even have been looked at; as it was both the trade and the public were only too willing to purchase anything eatable which was not actually unfit for human consumption.

The valuable experience which had been gained by handling this fish was put to good service by the principal firm acting as distributing Agent to the Ministry of Food, by pointing out the faults and suggesting improvements to exporters in Canada by means of special reports in the Dominion Press and through Government channels. Apparently this advice has been accepted by firms on the other side, if the recent arrival of frozen fish from Newfoundland can be taken as any criterion. As has been stated in recent issues of the "Fishing News," this fish has been marketed in really prime condition, and tends to prove that provided the fish is frozen in prime condition and that ordinary care is exercised in transit it can be marketed in this country in good condition. In short, the condition of this last consignment is infinitely superior to any previous supplies received through trade channels. During the scarcity since this year opened, the avidity with which all sections of the trade, wholesale and retail, have purchased this fish has been really remarkable."

The "News" concludes by stating: "It cannot be too strongly impressed upon exporters on the other side that to establish their position on the markets of the United Kingdom, they must adopt a standard package—60 lbs. to 80 lbs. is an ideal weight—and the quality of the fish must be beyond suspicion. The great secret in marketing frozen produce is to be in a position to place the goods ex the cold store on the reputation of the brand under which they are packed."

The Canadian Fisheries Association's Recommendations

An Analysis of Some of the Recommendations and
Why They Should be Adopted by the
Government.

1.—The appointment of a Deputy Minister of fisheries with a thorough knowledge of the Industry and its requirements.

In our opinion this recommendation should be revised to read "a Minister of Fisheries" as well as a Deputy Minister. Elsewhere in this issue, the reason for this is explained.

2.—The appointment of practical and influential men in the fishing industry to Advisory Boards. Three Boards, representing the Pacific, Atlantic and Great Lakes fisheries are suggested. These Boards will make recommendations and advise the Deputy Minister on all fishery matters in their particular spheres of industry, and these Boards should have a certain measure of jurisdiction and control.

It is impossible for a Department located in Ottawa to properly administer the fisheries without advice from men who have a thorough knowledge of the conditions obtaining in their particular localities. These Boards should be formed of men who have been engaged in the fishing industry and who have the men only should be appointed—not politicians—and necessary time to study the problems incidental to the business as conducted in their section. Practical fish each Board should have a permanent secretary to conduct correspondence and look after the work of the Board, which may be given a certain measure of jurisdiction in issuing certificates of inspection on goods shipped for export, investigating waste, poor packing, violations of local fishery laws, etc.

3.—The standardization of fish weights in cans, pack, cure, and eull, and the inspection and branding or certification of such packs and cure by Government Inspectors. Same to be embodied in Fishery Acts and made compulsory.

This recommendation needs no comment, save that it is vitally necessary if we are going to build up a large export market.

4.—The utilization of the Atlantic fishing bounty of \$160,000 per annum for the purpose of assisting Atlantic fishermen to equip their boats with engines on a long time payment basis or in such other manner as the Atlantic Fishery Board may recommend for the benefit of the Atlantic fishermen who are at present drawing the bounty in small and negligible amounts.

An article in the last issue of the CANADIAN FISHERMAN showed how the Atlantic fishing bounty had utterly failed in its purpose. The bounty was primarily intended to encourage the building of larger and better fishing vessels and to induce men to engage in the fisheries. In 1883, 904 vessels of 34,576 tons and manned by 7,243 men drew the bounty; in 1917, 812 vessels of 19,480 tons and manned by 5,276 men

received the small amounts of the bounty. For the past twenty years, the tonnage of the fleet and the numbers of men engaged and drawing the bounty have steadily decreased. Steam trawlers—the most modern and up-to-date type of fishing craft—have been debarred from drawing a bounty as well as fishermen operating outside of the Atlantic Coast.

8.—A scheme of apprenticeship whereby boys of 16 can be sent to sea on fishing vessels and placed in charge of owner or skipper and trained in fishery, seamanship and navigation. Such lads to be given an annual period of Naval Reserve training and instructed in navigation at the expense of the Government.

To improve the personnel of our fishing fleets and breed an intelligent class of fishermen to take charge of the steam trawling and drifting fleets of future years; to afford a good occupation to Canadian lads with a liking for a sea life; to make our fisheries a nursery and training school for the Mercantile Marine; to replace with Canadians the aliens at present largely manning the British Columbia fishing vessels, and to make our fishermen the best in the world.

9.—Harbors adjacent to prolific fishing grounds to be protected by adequate breakwaters; equipped with lights, buoys and aids to navigation, facilities to be provided for the landing of fish.

An encouragement to shore boat fishing and the bringing of prosperity to stretches of coasts where residents are unable to fish owing to lack of harbors and navigation facilities.

1.—A publicity department to build up the home markets in fish and carry out propaganda similar to the Fish Section of the Canada Food Board.

Much remains to be done in Canada in the way of educating the public to the use and value of fish as a food. The trade throughout Canada are unanimous in recommending that the publicity work done by the Food Board during the war be carried on.

12.—The publication of text-books compiled by practical men on such subjects as Fish Curing, the Canning of Fish, Navigation for Fishermen, Steam Trawling, Drift Net Fishing, the Use and Repair of Motor Engines, Fish Refrigeration, Fish Life, etc. Same to be distributed free to all interested.

In Canada, we have no text-books of any kind for the technical education of the fisherman and the worker in the fishing industry. A series of simply written and well illustrated text-books on the subjects enumerated in the recommendation will do much to bring the intelligent Canadian fisherman into line with modern ideas. The books should be written by men with a thorough knowledge of the subjects dealt with,

13.—A Bureau of Fisheries Information to be established in connection with the Canadian Trade Commission which will inform the trade of foreign markets, new methods of fishing, latest designs of fishing vessels, handling and keeping of fish, etc. This Bureau should devote its energies to building up foreign markets and should be in close touch with Canadian representatives abroad who will collect and forward everything likely to be of interest to the Canadian fishing industry, and who will work in close co-operation with the Bureau to find markets for Canadian fish.

A most important recommendation at the present time when Canada is endeavoring to build up world trade from the products of her natural resources.

14.—The appointment of a Fish Transportation official who will devote his attention to the securing of fair and just rates for the transportation of fish by rail or water at home and abroad. This official will investigate complaints re fish transportation; advocate improved facilities with railroads and steamship companies; equalize rates on fish to outlying points, and work for the general improvement of fish transportation.

An appointment which will be most heartily endorsed by every wholesale and retail fish man in Canada, as it will help to solve one of the worst difficulties the trade have to contend with.

15.—A scientific and commercial investigation to be made with regard to the utilization of fish waste and encouragement to be given the establishment of plants for the rendering of same into commercial products.

This is a matter which requires immediate attention. By the utilization of waste and the manufacture of by-products our fish can be produced cheaper and the fullest amount of revenue be derived from our fishery resources.

Several recommendations have been left out in this article as they practically explain themselves and require no comment. The CANADIAN FISHERMAN would urge everyone interested in the development of the Fishing Industry in Canada to study these recommendations and wire or write Mr. A. H. Brittain, President, Canadian Fisheries Association, 30B, Board of Trade Building, Montreal, giving their criticism, endorsement or suggestions. It is only by the wholehearted support of the industry, whether they are members of the C. F. A. or not, that these recommendations can be placed before the Government and recommended as being the unanimous opinion of those engaged in developing our fishery resources.

TO RECOVER FISH WASTE.

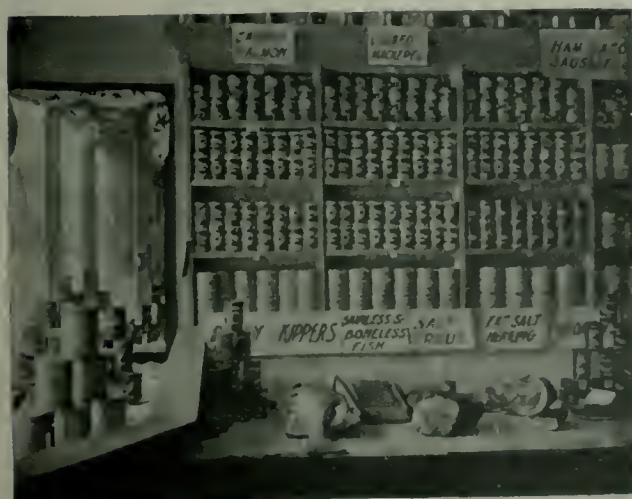
The problem of securing the commercial utilization of the enormous quantities of fish waste on both the Atlantic and the Pacific coasts has been engaging the attention of the Council for Scientific and Industrial Research for some months past, and, as a result of investigations conducted under the auspices of a committee headed by Dr. R. F. Ruttan, of McGill University, indications now point to the creation this year of important new industries for the recovery of fish waste on both coasts.

The data secured by the research council as to the extent of this fish waste would indicate that at present there are annually about 240,000 tons of fish offal and non-marketed fish allowed to go to waste on the Atlantic coast, and about 60,000 tons on the Pacific coast. The fish oil thus wasted is estimated to be worth about six million dollars at current market prices, while the value of the other potential by-products of the fishing industry, such as fertilizer and stock and poultry foods amounts to hundreds of thousands of dollars more.

CHARLOTTETOWN FISH STORE IS AWARDED CERTIFICATE.

We illustrate herewith two views of the interior of the Charlottetown Fish Supply Co., 173 Grafton St., Charlottetown, P.E.I. For the sanitary handling of fish and the general attractiveness of display, this

company has been awarded the Canada Food Board's certificate of commendation. The proprietors of the store keep a varied stock of all kinds of fresh, frozen, smoked and cured fish, and unusually large varieties of canned fish.



The Scottish Fishery Board

Its Personnel, Functions and History.

For the information of those in the Canadian fishery industry who are interested in fisheries administration abroad, we publish the following particulars regarding the Scottish Fishery Board: The Board's offices are located at 101 George Street, Edinburgh, and "Whitaker's Almanac" for 1919 gives the following as members:

Angus Sutherland, C.B., Chairman.
W. Lyon Mackenzie, K.C. (Sheriff of Ayrshire),
Deputy Chairman.

Prof. D'Arcy W. Thompson, C.B., F.R.S.;
The Marquis of Breadalbane, K.G.;
Ex-Provost Malcolm Smith;
Ex-Provost Archibald;
Sir John Irvin, K.B.E.;
Staff Paymaster David T. Jones, R.N.R., Secretary;

Chief Clerk, Geo. Hogarth;
Inspector of Salmon Fisheries, Wm. Leadbetter
Calderwood, F.R.S.E.;
Scientific Supt., T. Wemyss Fulton, M.D., F.R.S.E.;
General Inspector of Sea Fisheries, William Jeffrey (Edinburgh);
Asst. Inspector of Sea Fisheries, Walter Duff (Aberdeen)
Marine Supt., Lt. Com. J. R. McEwan, R.N.R.;
Consulting Engineer, R. Gordon Nicol, M. Inst. C. E., Aberdeen.

In the report of Commissioners No. 21, The Fisheries of Ireland and Scotland in 1914, reference is made to the immediate acts of Parliament, from which the Fishery Board for Scotland derives its power. This act is Chapter 78 of 45 and 46 Victoria, and is as follows:

An Act to establish a Fishery Board for Scotland, 18th August, 1882.

Be it enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

1.—This Act may be cited as the Fishery Board (Scotland) Act, 1882.

2.—In this Act: The expression "Herring Fisheries Acts" shall mean the acts mentioned in the First Schedule. The expression "Salmon Fisheries Act" shall mean the acts mentioned in the Second Schedule.

3.—On the 16th day of October, 1882, the Board of British White Herring Fishery shall be dissolved, and the present Commissioners shall be discharged of their duties.

4.—A Fishery Board shall be established for Scotland.

- (1) The Board shall consist of the following members: The Sheriffs of three Sherriffdoms, who shall be appointed by Her Majesty, and shall hold office during their tenure of the office of sheriff.

Six members, to be appointed by Her Majesty, and shall hold office for five years, and may be reappointed.

- (2) It shall be lawful to Her Majesty to nominate one member of the Board to be chairman and another to be deputy chairman. The

chairman shall receive such salary as the Commissioners of Her Majesty's Treasury may assign. Three members shall be a quorum.

- (3) There shall be a secretary to the Board, who shall be appointed by Her Majesty, and shall receive such salary as the Commissioners of Her Majesty's Treasury may assign.
(4) The office of the Board shall be in Edinburgh, and the Board shall appoint such clerks and officers, and at such salaries, as may be sanctioned by the Commissioners of Her Majesty's Treasury.

- (5) The first meeting of the Board shall be on the 16th day of October, 1882.

5. (1) The Fishery Board shall have all the powers and duties conferred upon the present Board of British White Herring Fishery by the Herring Fisheries Acts and the Sea Fishery Acts, 1868 and 1875, and any Order in Council following thereon, except the duty of making an annual report to the Board of Trustees for Manufactures, and the power of appointing a Secretary; and shall take cognizance of everything relating to the coast and deep sea fisheries of Scotland, and take such measures for their improvement as the funds under their administration and not otherwise appropriated may admit of, but without interfering with any existing public authority or private right.

- (2) The Fishery Board shall have the general superintendence of the Salmon Fisheries of Scotland, and shall have the powers and duties of Commissioners under the Salmon Fishery Acts, but without prejudice to or interference with the powers of district boards.

- (3) The Fishery Board shall comply with any instructions which may be issued by Her Majesty's Principal Secretary of State for the Home Department, and shall make an annual report to him containing a statistical account of the fisheries, and suggestions for their regulation and improvement, which report shall be presented to Parliament.

6.—It shall be lawful to Her Majesty's Principal Secretary of State for the Home Department to appoint an inspector of the salmon fisheries of Scotland, who shall hold office during pleasure, and to pay him such salary as may be determined by the Commissioners of Her Majesty's Treasury.

The inspector shall, under the directions of the Fishery Board, inspect all the salmon fisheries of Scotland, and inquire into the operation of the Salmon Fishery Acts, and report thereon from time to time to the Board, and shall attend the meetings of the Board when summoned by the chairman.

7.—This Act shall not apply to the Tweed as defined by the Tweed Fisheries Amendment Act, 1859.

8.—All salaries and expenses of the Fishery Board shall be defrayed from moneys to be provided by Parliament.

SCHEDULE 1.

Herring Fishery Acts.

11 Geo. III. C. 31, S. S. 11, 12, 13.—An Act for the encouragement of the White Herring Fishery.

48 Geo. III. C. 110.—An Act for the further encouragement and better regulation of the British White Herring Fishery until the 1st day of June,

1813, and from thence to the end of the then next session of Parliament.

55 Geo. III, C. 94.—An Act to continue and amend several Acts relating to the British White Herring Fishery.

1 & 2, Geo. IV, C. 79.—An Act to repeal certain bounties granted for the encouragement of the Deep Sea British White Herring Fishery, and to make further regulations relating to the said Fishery.

5 Geo. IV, C. 64.—An Act to amend the several Acts for the encouragement and improvement of the British and Irish Fisheries.

I. William IV, C. 54.—An Act to revive, continue and amend several Acts relating to the Fisheries.

14 & 15 Victoria, C. 26.—An Act to amend the Acts relating to the British White Herring Fishery.

23, 24 Victoria, C. 92.—An Act to amend the law relating to the Scottish Herring Fisheries.

21, 22 Victoria, C. 69.—An Act to impose fees on the branding of barrels under the Acts concerning the Herring Fisheries in Scotland.

24, 25, Victoria C. 72.—An Act to make further provision for the regulations of the British White Herring Fishery in Scotland.

28, 29 Victoria C. 22.—An Act to amend the Acts relating to the Scottish Herring Fisheries.

30, 31 Victoria C. 52.—An Act to alter and amend the Acts relating to the British White Herring Fisheries.

37, 38 Victoria C. 25.—An Act to remove the restrictions contained in the British White Herring Fishery Acts in regard to the use of fir wood for herring barrels.

SCHEDULE II.

Salmon Fishery Acts.

25, 26 Victoria C. 97.—An Act to regulate and amend the law respecting the Salmon Fisheries of Scotland.

26, 27 Victoria C. 50.—An Act to continue the powers of the Commissioners under the Salmon Fisheries (Scotland) Act until 1st January, 1865, and to amend the said Act.

27, 28 Victoria C. 118.—An Act to amend the Acts relating to Salmon Fisheries in Scotland.

31, 32 Victoria, C. 123.—An Act to amend the law relating to Salmon Fisheries in Scotland.

As will be seen from the above schedules, the regulations of fisheries in Great Britain date back to the time of Henry VII., in the fourth year of whose reign, an act was passed as is stated to be "An Act for Ye Presvacion of the Frye of Fyshe," followed in 13 and 14 Charles II, by "An Act for the regulation of Pilehard Fishing in the Counties of Devon and Cornwall," and in 10 and 11 William III, by "An Act for making Billingsgate a free market for the Sale of Fish." Not much was done further than making regulations for the marketing of fish and making provision for the enforcement of the regulations.

On the 25th June, 1808, in the 48th year of the reign of George III, Parliament passed an act, being Chapter 110, which in effect recites:

That whereas the improvement in the British White Herring Fisheries is an object of most essential importance to the wealth and commercial prosperity, as well as to the naval strength of this Kingdom for the attainment of which it is expedient, that more effectual regulations should be made in order to secure a due and proper attention to the curing, sorting and

packing of White Herrings, that the credit of the British fisheries in our colonies and in foreign parts may be maintained, etc.

The following is a digest of the enactments:—

V.—That it shall be lawful for His Majesty to nominate and appoint any number of trustees or commissioners not exceeding seven (afterwards increased by subsequent legislation in reign of Victoria) to be commissioners especially for overseeing, directing and better improving the white herring fishery, with power to execute provisions of this Act, to appoint a secretary and such clerks and other officers under them (to be approved by Lords Commissioners of the Treasury)—provision made for salaries, etc.

VI.—Take oath before entering upon duties to well and honestly, etc.

VII.—Make annual report.

VIII.—Empowers Commissioners to appoint a Commissioned officer of the Navy as Supt. of Deep Sea Fishery to cause regulations to be carried out, preserve order among persons employed in fishery, protect them and vessels against enemies, to remain with vessels employed in fishing during season and report from time to time list of vessels employed in fishing, number and ages of men employed, etc.

IX.—Officer shall take the oath that he will not engage in fishery directly or indirectly.

X.—Power to Commissioners to appoint persons at respective places on the Coast where herrings caught or cured and where vessels fitted out or discharge cargo and ports of exportation to:—overlook curing, take account of and clear out all salt, nets, barrels and other stores shipped or put on board any vessels and inspect and take account of all herrings landed or exported and certify that same are properly pined, cured and packed.

XII.—No net shall be used having a mesh less than 1 inch.

XIII., XIV., XV.—Regulations refitting our vessels, voyage, clearing out vessels at port of outfit. Then grant license to boat owner, etc., to proceed on voyage.

XVI.—Exhibit license to Supt. at Rendezvous, i.e., Brassey Sound.

XVII.—Herrings taken, cured and packed on each day shall be distinguished by marks on barrel or package.

XVIII.—Powers and duties of Supt. of Deep Sea Fisheries.

XIX.—Shipment of fish from Rendezvous to port. Balance of Act regulates packing and shipment of fish.

55 Geo. II, Chapter 94.—Makes further regulations to insure better preservation and marketing of the fish.

10 & 11 Victoria, Chapter 91.—Provides for appointment of additional commissioners and directing disposition of funds.

23 & 24 Victoria, Chapter 92, 1860.—The Herring Fishers (Scotland) Commissioners Act provides for the appointment of superintendents of the Fishery; empowers the Commissioners to fix periods during which herring fishing may be carried on, and to make further regulations for more effectual Government management of herring fisheries and for the preservation of order among the fishermen. The Commissioners may prohibit the use of trawl, beam and drag nets, and may rescind regulations, but all regulations must be approved by the Lords of Treasury.

The Act also provides for penalties and that nets and implements found are to be delivered to the Commissioners.

That fishing boats and implements are to be numbered and the names of the owners painted on boats.

Nets other than drag nets are to be laid aside during fishery.

Then follows procedure for enforcement, appeal, forfeiture, sale, imprisonment, limitation of action, and requiring of regulations to be placed before Parliament at the first session following.

The various regulations made by the Fishery Board for Scotland are not available here, but from their last report for 1914, a report comprising about 350 pages, their functions can fairly well be gathered.

It may be observed that the first efforts of Government control of fisheries in the United Kingdom were directed to the preservation, curing, packing and marketing of fish. The results are apparent in the enviable reputation the Scotch fish have in the markets of the world.

But other matters called for attention and investigation, and upon complaints made from fishermen and others in many parts of the United Kingdom that there was serious diminution in the number of fish off the coast, due, as was alleged, to the great increase of late years in the number of trawlers, who were accused of raking up and disturbing the spawning beds of herring and other fish, of capturing and destroying vast numbers of the fry, and of immature fish of all species; of frightening away shoals of fish from the bays and estuaries, and of doing damage to the nets and long lines of other fishermen, a royal commission was appointed consisting of Sir James Caird, Prof. Huxley and Lord Eversley, details of which enquiry are found in reminiscences of the Sea Fisheries, 1863-65, written by Lord Eversley, and appearing in the December number of the Cornhill Magazine.

While the result of their findings negatived the allegations of the fishermen, the report is interesting in showing the then estimation of the value of the coast fisheries, and the Commission advised that regulations as to sea fisheries should be restricted to those for the preservation of order among fishermen and to prevent injury to their boats and nets by rival fishermen.

Lord Eversley in his article, however, expresses the opinion that it would be very desirable when the present war is over, that the whole subject be enquired into by some scientific expert.

NOT SO DUSTY!

Grimsby Trawler's Shot Realizes \$23,462.

The record shot of the Grimsby trawler Ensign amounting to \$23,462, while a record in earnings for her owners, also puts up a record for her sharemen—the skipper and the mate.

According to the official settling table, the skipper of the Ensign received \$2,262, while the mate had to be content with a little less, namely \$1,850. For three weeks' work this is not bad.

There is every indication that fish will be more plentiful in a very short time. Important developments are under way in Scotland for the prosecution of the Icelandic fishing, which, prior to the war, was solely in the hands of the Germans, and North Sea boats are being fitted out very smartly.—Fishing News.

THE WHALING SEASON OPENS.

The whaling season for 1919 is being started a little earlier than usual, says Mr. S. C. Ruek, Manager of the Consolidated Whaling Corporation. By the first week in April it is hoped a fleet of steam whalers will start on the annual hunt for the big mammals.

Whale meat will most likely be packed at the Akutan plant in a greater quantity this year to meet the increased demand for this variety of food. At the Kynuquot Cannery whale meat will be packed to the full capacity of the cannery all through the entire season.

There has been a greatly increased demand for canned whale meat, as the market has developed very rapidly.

There will be three steam whalers operating from the station at Bay City; supplies for the north bound trips in cargoes of whale oil and whale meat being brought south will be handled on the tenders Grey and Elihu Thomson.

BRITISH FISH MARKETS.

Billingsgate, E.C., 7th February, 1919.

The markets have been much more generously supplied this week, fairly liberal consignments coming in from the principal trawling ports. On the other hand, however, the exceptionally cold weather has seriously checked the retail trade, with the result that demand at the distributing markets has been at a very low ebb throughout, and it has not been possible to effect a complete clearance on any day. This state of affairs has been reflected in the prices, some kinds which have been particularly abundant, such as cod, some selections of haddocks, coalfish, small whittings, kippers, etc., falling considerably below control rates. As, however, until the past day or two values at the coast, i.e., the rates paid ex the vessel, have not fallen in sympathy, the result is that business has been conducted on unremunerative lines. Although the weather has been against trade, it has favored the successful prosecution of fishing operations, being fine and bright, although unusually cold.

Both steam trawlers and steam drifters are being released by the Admiralty in fair numbers, and as soon as the vessels can be refitted they are proceeding to sea for fishing operations. A trawler has this week reached the principal Scotch trawling port, viz., Aberdeen, with her maiden voyage, after release by the Admiralty, which it is reported grossed the exceptionally large sum of upwards of £3,600 for about a fortnight's work. This constitutes a record for Aberdeen. The catch comprised large and extra large haddocks, cod, sprags, etc.

Herrings have not been quite so much in excess of requirements this week, and prices for bright quality fish have recovered somewhat. Very heavy consignments of kippers have been marketed, and although it is said that the greater part of 50,000 boxes has been placed in cold store in London alone, figures have dropped fully 50% below the Government maximum. Altogether the week's trading has been flat and unprofitable.

Packing Sea Beef

Herds of the Ocean Rivals the Herds of the Plains.

Have you ever eaten sea beef? If you haven't, a new excursion into the epicurean fields await you when car-loads of prime whale steak, canned in sanitary containers, reach the distributing markets of Toronto, Montreal, Ottawa and St. John.

Sea beef is a good name for Pacific whale meat. It looks and tastes like beef. The illusion is further enhanced by the fact that the male whale is known as a "bull," the female as a "cow," and the progeny are called "calves." When milk began to sky-rocket in price,

whaler-men out of Nantucket and New Bedford regaled themselves on tasty whale scraps while they were "trying out" the carcass for oil. The Eskimo of the frozen North felt that he was singularly blessed by the Great Spirit when a dead whale stranded on the beach, and usually moved his whole family alongside the find—there to remain until the bones were picked clean. The Japanese have appreciated whale-meat for years and nowadays it is a staple article of diet with them, and the Scandinavians, also, relish the flesh of the



The Whaler's Gun showing Harpoon.



Cutting up a Whale.

some West Coast genius advanced a plan for corralling cow whales and milking them. Just how the milking was to be done was left to other minds to solve. Having given some good reasons for the name "sea beef," we will depart from the baptismal font and say something about whales and whale meat.

The use of whale meat for human consumption is by no means a new institution. The old-time American

mighty ocean mammal. On the Pacific Coast, whale-meat has long been used by cheap restaurants in making Hamburger steaks and stews and its similarity to beef aided in the deception.

The catching and canning of whale-meat is now a recognized Canadian industry on the Pacific Coast and two stations and canneries are located upon Vancouver Island, and shipments of canned whale-meat are being



A Steam Whaler.

sent to the Canadian markets in increasing quantities. The whale is a warm-blooded mammal—not a fish, and its flesh is exactly similar to beef with but a slightly coarser texture. The canned product has no oily taste whatever, and it is cheap, palatable and easily digested. An analysis of canned whale-meat shows that its food value may be compared with that of the best quality of round steak.

In the old days, whales were hunted for their bone and oil. They were killed by harpoon from small boats launched from the parent ship and the work was hazardous in the extreme. The captured whale was hauled alongside the ship and stripped of its blubber and then cast adrift for the gulls and sharks to make a meal of. Nowadays, modern whale hunting is done from small and powerfully engined steel steamers equipped with special gear. When a whale is sighted from the crew's nest on the foremast, the steamer steers at full speed for the mammal. A special harpoon gun, known as Sven Foyn Whaling Gun, is mounted on the bows of the steamer. This gun fires a harpoon fitted with a bomb inside the barbs, and to the shank of the harpoon a length of stout line is attached. When the steamer reaches shooting distance, the gun is fired and the harpoon is driven into the whale's vitals. The bomb explodes inside the whale and kills it almost instantly and the barbs of the harpoon spread out like the ribs of an umbrella, thus preventing it from drawing out when the whale is hauled alongside the steamer by the winch. When alongside, a sharp pointed pipe perforated with holes, is driven into the carcass and air is pumped into the mammal to keep it from sinking while being towed to the whaling station. At the station a powerful winch on shore hauls the huge cetacean up on a platform, where it is rapidly stripped of blubber and meat by expert "flensers". The meat is either frozen or canned for market.

The whale commonly marketed in Canada is known as the Sei whale, and it attains a length of fifty feet and an average weight of from twenty-five to thirty tons. The edible meat from such a whale is at least ten tons.

Whale meat has passed all culinary tests. It has been served in the best New York restaurants for some time past, and Canadians who have eaten the canned article now procurable in our markets pronounce it excellent.

NOTES ON SEA FISHING RESULTS FOR JANUARY.

Unusually mild weather prevailed on the Atlantic Coast throughout the month of January, but fishing operations were conducted on the usual limited mid-winter scale; except from a few of the fishing ports, such as Canso, Halifax, Liverpool, Lockeport, and Digby. Little or no deep sea fishing takes place during the winter months.

The total catch of cod and haddock for the month was 30,944 cwts., against 30,260 cwts. for the corresponding month last year. Guysboro and Shelburne counties gave increases, but Halifax, Queens and Digby show diminished landings. The work of salvaging the cargo of a large steamer which stranded at Brier Island claimed the attention of many of the Digby county fishermen during the month.

The smelt fishery was prosecuted with success, notwithstanding a lack of ice on the rivers and bays. The quantity taken amounted to 28,606 cwts., against 22,216 cwts. The increase is mainly due to an abundance of smelts of good quality in the Miramichi river.

There were 2,392 barrels of scallops taken in Chester Bay, N.S., against 750 barrels for January last year.

Lobster fishing has been in progress in the counties of Charlotte and St. John, N.B., since the 15th of November, and in other Bay of Fundy counties from Albert, N.B., to Annapolis, N.S., inclusive, since the 15th of January. The total quantity landed up to the end of January was 3,271 cwts., against 2,694 cwts. landed during the same period last year. The whole catch was consumed fresh.

In spite of rather adverse weather conditions on the Pacific Coast, fishing results were quite satisfactory. The herring catch for the month was 31,000 cwts., greater than that for January last year. These were taken in the southern and Vancouver Island districts. Herring were also abundant at Bella Bella in the northern district; but being full of "red feed," they were unfit for canning or curing. Consequently, none was taken.

The total value of sea fish at the point of landing, on both coasts, was \$606,556. For the same month last year the value amounted to \$830,677. Owing, probably, to the mildness of the weather, which made it difficult to keep fish in good condition for any length of time, the price paid on the coast, taking it over all, was about three-fourths of a cent less for cod and haddock, and 1 $\frac{3}{4}$ c. less for herring, and about 3 $\frac{1}{4}$ c. less for smelts, compared with that paid during January last year.

One Atlantic coast fisherman was drowned in the course of the month.

DEVELOPING NEWFOUNDLAND FISH TRADE.

St. John's, Newfoundland.—With a view to developing further Newfoundland's trade in codfish with Italy, Portugal, and Spain, the Hon. W. F. Coaker, a member of the Dominion's government and head of the Fishermen's Protective Union, has sailed for Europe. Mr. Coaker will study the conditions and methods of the fish trade in the Latin countries, and it is expected that on his return an agent of the Fishermen's Protective Union will be sent to Italy and remain there to supervise the sale and distribution of Newfoundland fish in that country, Spain, Portugal and Greece. During the past few weeks there has been considerable improvement in European fish market conditions, and it is believed that Newfoundland, which has already built up a fish trade of importance with Spain and Portugal, will be able in the future to extend that trade.

GREECE AFFORDS GOOD MARKET.

There is a good chance for Canadians to do business with Greece just as soon as the control over Mediterranean shipping is relaxed. There is plenty of money in Greece which has not been impoverished through the war. Canadian dealers may find a market for dried and canned fish in all of the Balkan States.

Fishy Recollections of a Canuck in Blighty

By CECIL BOYD.

Before donning the khaki, the writer used to enjoy the privilege and pleasure of contributing articles and random rimes, with more or less frequency, to the CANADIAN FISHERMAN. Perhaps a few rambling remarks, relative to my acquaintance with fish, while in the Army and stationed in "The Old Country" might be of sufficient interest to justify a small section of space.

My acquaintance with fish on the menu of the Canadian Army on this side of the water was very slight, only being in barracks at Windsor, N.S., a little over a fortnight before proceeding overseas. Going over on the "S.S. Canada" I did not find fish favored greatly as an article of diet, though once in a while we had a meal that would go down with a relish. The fish meals that were served, outside of finnan haddies and smoked herrings, were very few, and no one seemed to be greatly put out on that account, as the quality of the frozen fish on board for the consumption of His Majesty's forces was not all that one, as an exponent and champion of fish-eating, would wish to see. One meal on that boat however stands out in bright relief. It was after a rather rough spell, and personally I had been feeling somewhat rotten, with a poor appetite for some days previous, when good large herrings, nicely smoked, done to a turn, were brought on for dinner. They seemed to tickle everybody's palate, and that meal shone out among its fellows, like a red-headed boy among a squad of coons. I forget how many of the finny tribe the writer was personally responsible for doing away with, but it was certainly an enviable achievement, worthy of note.

Arrived in England, the writer was among those sent to a camp on the Thames-side, some 17 miles or so from the heart of London, or "The Big Smoke" as some of the boys called it; where the grub we found to be nothing to get excited over or write home about. It varied considerably during my stay there, and at rare intervals reached a fairly good standard, considering war conditions, only to suffer a relapse in short order. Salmon was our chief and favorite fish-food there, one can among four, some packed in B. C. I noticed, and some in the U. S. A., but all good stuff. Digby chickens turned up quite frequently for breakfast during the early part of my stay there, but later on became very infrequent visitors, a fact which the writer regretted, being very partial to the little fellows, as compared with "da macarone," a superfluity of half-stewed beans, and some other items of the camp bill-of-fare. Finnan haddies reached us at rare intervals, and the appearance of cod, etc., resembled angels visits, few and far between, only more so. I recall one dinner of salt cod, which the "cooks" (so-called but much mis-called), were too ignorant or tired to soak properly. The fish, in this instance, was of very fine quality, but when dished up was certainly salt cod, with all the emphasis on the salt. It is possible that someone interested in the wet canteen may have had a finger in the pie and bribed the cooks, as the thirst created proved a champion drawing-card for the beer department.

Perhaps the most interesting fish meal put on in our camp was the result, it was said, of a brilliant inspiration on the part of the Messing Officer, the first occupant of a newly created office. The new system

effected an improvement in our eating arrangements alright, but this particular inspiration of Mr. Messing Officer was doomed to miserable failure. The big idea consisted in a meal of shrimps, with bread and tea. These little pink shellfish, mostly less than an inch long, were an entire novelty to most of the fellows. Shelling each one before eating was a terribly tedious business, and the contents, though tasty was so tiny, that the recompense hardly seemed worth the time required. Some, claiming superior knowledge, declared shelling altogether unnecessary, and devoured shells and all. Feeling incompetent to decide one way or the other, the writer compromised by shelling the larger ones and grinding up the tiniest without. The 'spread' struck one as somewhat insufficient for men going through the daily grind of a drill-square. In our messroom there was some fun-making and grumbling, mostly good-natured, but in the others a near-riot developed. When the Orderly Officer on his rounds enquired, "Any Complaints?" he got more than enough. The experiment was never repeated. The shrimp supper became one of the standing jokes of the camp, and a sore subject with its originator.

Happening to be in Hastings, on the South Coast, with a friend for a few days, the writer improved the shining hours (the shining hours, by the way, were scarce as it was very wet and showery at that time) by visiting the many places of historic and other interest centered there. Hastings, the historian will tell you, is famous as the spot, where William the Conqueror (no relation to Big or Little Willie) landed and defeated Harold the Saxon, in the bloody battle of that name, and thus paved the way for the Norman Conquest of England. To me one of the most interesting sights proved to be the Fish Market, which possessed an interesting present, in addition to, I dare say, a picturesque past.

The Market was situated at the further end of the town from my stopping-place, but, wandering around, I found my way over the long stretch of stone walk, bordering the beach, and reached the place about six o'clock. A long wooden building, ancient and mossy-looking, stood near the upper edge of the beach, with a wide entrance in the middle of the side facing the sea. The opposite side, or what should have been the opposite side, facing the town was all entrance, there being only one side with two ends to the building. All along the beach and in the surf, bathers, mostly of the fair sex, were already busy, while in the offing, a number of drifters and smaeks lay anchored, with the fishermen landing their catches in flats, sloops and small craft. The most of the fish were herring, sole and plaice. A tall fat man, with a face like a full moon and a mighty voice, did most of the auctioning off as the fares came in. The larger lots were disposed of first at so many "hob" a stone or "stun," and then the small quantities. He would start at a high price and gradually come down, until some buyer spoke up. There was a good demand as one would expect under the circumstances, and everything sold off quickly, with many buyers evidently unsatisfied.

Some who had bought were local retailers, who plied their trade on stands set up for the purpose on the area in front of the Market building. Here they sold

herring, plaice, sole, etc., with much noise and haranguing of the crowd, among whom would be many visitors and outsiders, there merely through accident or for amusement. The writer was soon attracted by a wordy warfare going on between two of these fish sellers, whose stands stood directly facing each other. Judging by appearances, a long-standing quarrel, a sort of fish-hawking feud had greatly embittered their relationships. It was not so much that each cried the numerous virtues of his own stock, and loudly warned against the purchase or having anything to do with that of his opponent, the vice of whose layout were legion; but they went a great deal further, launched into personalities, derided each other's personal appearance, and foretold disgraceful endings to each other's earthly career.

One was a fat brown beery faced man, middle-aged or more, the other a younger, sharper faced fellow, with earrings. One of the former's favorite lines was to earnestly remind his audience of potential customers of his keen interest in their behalf, in reference to the purchase of fish. "I've bin comin' 'ere fer years," he would declare, "to look after y'or intrusts an' perfect y' from bein' robbed by that sharper," which would bring from the younger man a strong declaration of honest dealing, and ironic admiration of the other's ability as a liar.

Whenever a lull in trade showed, "Ole Bill" as his opponent called him, would waddle hurriedly up a bye-street, to return in a few minutes, wiping his moustache. His rival never failed to impressively point out the disreputable object of these frequent flittings. "Look 'ut 'im," he would say, "Can't go five minutes without 'is drink. Spends all 'is earnin's on booze. 'E'll drink 'isselt to the grave, 'e will. Shame on you, y' ole reprobate."

The earringed chap seemed to possess a quicker wit and command of a larger vocabulary than the older

man, and was fond of comparing the latter to the Kaiser. "'E's the Kaiser," he would shout, indicating him with his knife. "'E's the bloke wot started the war. 'E'll 'ang yet. Wouldn't I like t' chop yer 'ead off, you ole Kaiser," and, suiting the action to the word, would bring down the knife with a manner expressive of the keen pleasure to be derived from this bloodthirsty act, even in anticipation. Ole Bill would retort with taunting enquiries as to why he wasn't "fightin' the Kaiser," to which the other would come back with a heavy barrage of good and sufficient reasons, not the least among them being the necessity of his being on hand to serve his customers, and save them from the terrible clutches of his rival.

At times these two fire-eaters talked so loudly, threw such dire threats back and forth, and menaced each other so fiercely in pantomime, especially the younger man, that one could almost imagine them flying at each others' throats at any minute and having it out. But nothing dangerous happened. I noticed, however, that every newcomer passing by would be attracted by the high voices and interested faces of the crowd around, and be drawn to swell the number of spectators, so that the two stands in question always held the bulk of the crowd, and did the most thriving trade, for the verbal battle was never permitted to interfere with the regular business of supplying customers, and seemed to be a sort of sideline. After a time I became suspicious of the genuineness of this feud, and on making enquiries found my suspicions confirmed. I found that these two, seemingly so much at loggerheads, were really partners or at least, working together, and that this appearance of antagonism, this wordy warfare was really a put-up affair, an advertising stunt to attract and amuse the crowd and incidentally boost business. The writer went away reflecting on the truth of the old adage, "There are tricks in all trades."

Report of Canada Food Board's Fish Section

A Resume of the Commendable Work Which Developed the Home Market.

The Report of the Canada Food Board for 1918 has come to hand, and we take pleasure in publishing the activities of the Fish Section.

In June, 1917, the Fish Committee of the Food Controller's Office was formed to stimulate the consumption of fish within Canada as a substitute for meats urgently required overseas. The following members, constituting the Committee, immediately set to work to stimulate consumption, organize supplies, prevent profiteering and facilitate transportation of fish to inland markets:—Mr. G. Frank Beer, Toronto (chairman), Mr. R. Y. Eaton, Toronto and Mr. W. S. Wiley, Port Arthur. The Committee found their task an arduous one in spite of the fact that Canada possessed enormous fishery resources. Scattered over an area 4,000 miles wide, the industry represented a huge unorganized activity where striking variations were met with in every ten degrees of longitude traversed. The public was apathetic with regard to fish as a food. Transportation facilities were inadequate and the care of fish in most of the retail stores received but scant attention. The public was repelled by unsani-

tary methods of handling and displaying. For this and other reasons the ready market and good prices offered in the United States drew the bulk of our fresh fish, and huge quantities were salted and dried for export to the Latin countries.

After much negotiation, a fast freight train known as the "Sea Food Special" was placed in service by the Canadian Government Railways to transport fish from Maritime Province points to Montreal and Toronto—the trip from Mulgrave to Montreal being made in 48 hours. This train was of enormous benefit in bringing fresh fish in good condition to the Quebec and Ontario markets. Better retail handling was encouraged. The Committee successfully carried out the distribution of 300 sanitary fish display cases to the retail fish trade for the nominal sum of \$10 apiece—half the cost of the case being borne by the Government. A fish recipe book was compiled and 100,000 copies and 50,000 copies in French were distributed. Advertising and publicity were carried out with such good effect that by the end of 1917 the fish consumption throughout Canada has increased on an average



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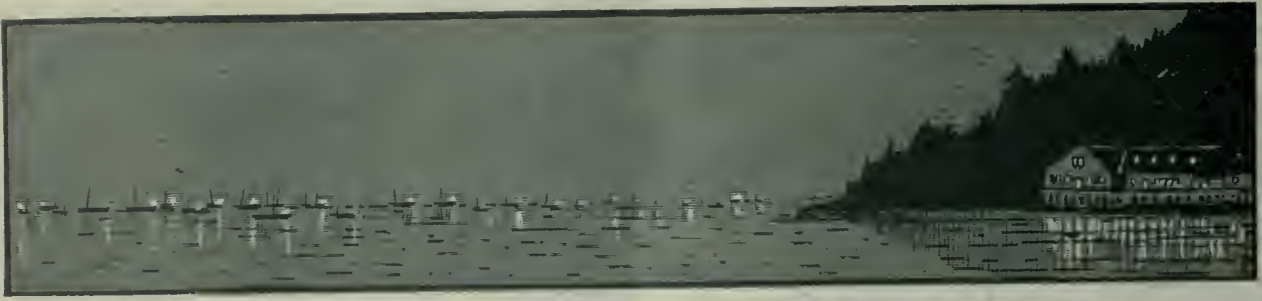
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PACIFIC COAST SECTION

"The Canadian Fisherman," Pacific Coast Branch, will be glad to have inquiries from any one who wishes information in any way connected with the fishing industry.

Now don't be afraid to write a letter. You will receive a prompt and full answer to any inquiry you may make. Help the "Canadian Fisherman" to make this a real live, up-to-date Section. We shall be glad to hear from you.

Address communications to F. E. Payson, Pacific Coast Manager, Industrial & Educational Press, Ltd., 507 Board of Trade Building, Vancouver, B.C., Canada.

B. C. PACKERS ASSOCIATION.

Mr. Barker, President and General Manager of this well known corporation, states that preliminary arrangements are being made for the 1919 pack in the usual manner, but that no extensive improvements are being made.

On the Fraser River they are not looking for any extensive run of any particular variety of salmon. In the north their canneries are being prepared to take care of any conditions which may arise, and, like all other firms operating on the Fraser and in the north, they look to their northern canneries for the majority of their output.

The B. C. Packers' Association have a regular market for their annual output, which absorbs practically every kind of salmon that they can produce.

Under the able management of Mr. Barker this company is in the most enviable position as regards the salmon industry.

GOSSE-MILLERD PACKING CO., LTD.

Preparations for the 1919 operations are rapidly going forward, so reports Mr. Francis Millerd, Secretary Treasurer of this live and progressive firm.

All preliminary crews have gone north to their Sunnyside Cannery on the Skeena River, and the East Bella Bella Cannery at East Bella Bella. This firm has also started making cans at the Vancouver Cannery, near the mouth of the Fraser River, at which plant they manufacture for all their canneries.

They do not look for any extensive pack on the Fraser River this season, although they will operate as usual. At the San Mateo Cannery at San Mateo Bay, Barclay Sound, Vancouver Island, they have

been operating all the past winter canning herring and pilehards. This cannery is their newest acquisition, and all power is generated from a lake lying close by, which has 100 acres of water, and the water is piped to the plant through a twenty inch pipe.

This firm is very progressive, and it is their idea to operate as many of their canneries as it is possible to do all the year round. In the past, after the salmon season was over, cannery owners simply closed down for the balance of the year until the next salmon season came round, but this idea is fast disappearing.

The Gosse-Millerd Company are going after the foreign trade vigorously, and already have built up a valuable clientele among foreign consignees. The expansion of this firm during the past few years shows what energy and brains may attain by using these gifts to the very best advantage.

BUY YOUR CANNING MACHINERY IN VANCOUVER.

In a conversation the writer has had with Mr. McIntosh, General Manager of Letson & Burpee, Ltd., Vancouver, B.C. the point was brought up that the B.C. Canners would be surprised if they found out that much of the canning machinery they are buying in the States can be had right here at home, and that Letson & Burpee are manufacturing a can filling machine for half pound flat and pound flat can that is proving a great success. They have orders for several of these machines already for this season, and others are considering placing their orders very shortly. This is the most recent of the machines that they are manufacturing, and besides this machine their retorts, exhausters and other varieties of cannery machines are worthy of the favorable consideration of cannery owners.

At the time when B. C. is being boosted by every one it is well to consider home industries, and one of the great needs in this period of reconstruction is the placing of every order for the manufacturing of machinery with firms right here at home. Every order placed with a Vancouver firm or a B. C. firm means employment to just so many more men.

Cannery owners, you are not only doing a patriotic duty, but, if you will investigate, you will be surprised at the low figures your machinery will cost you right here in Vancouver.

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The Song of the Crew.

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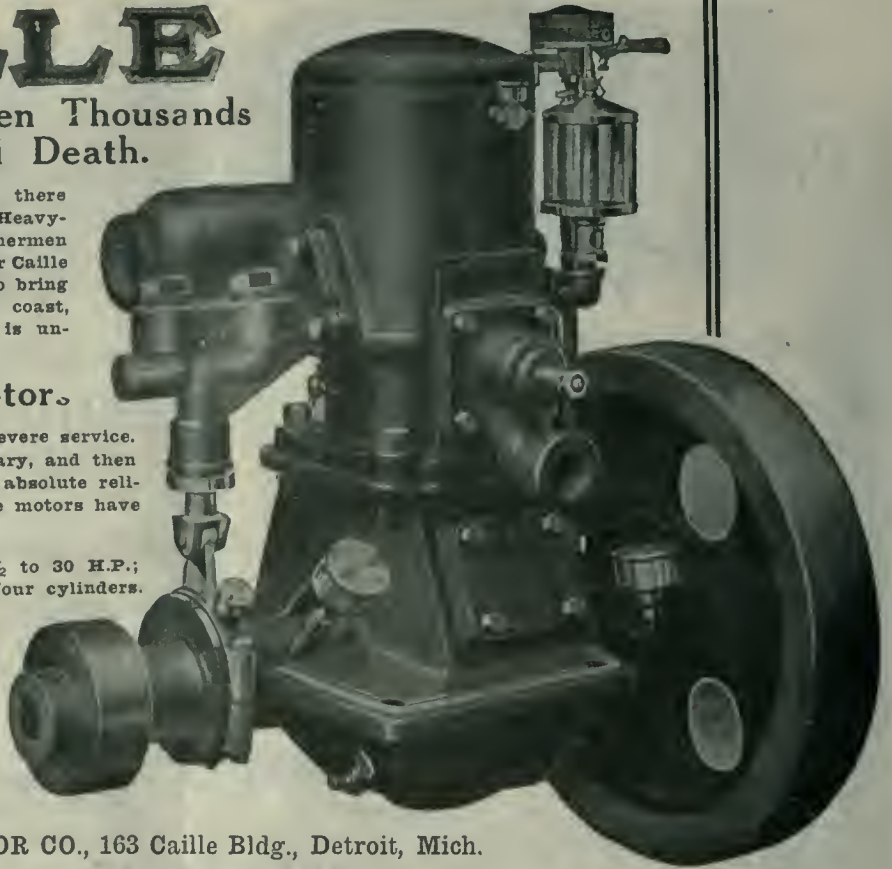
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The Caille line includes sizes from $2\frac{1}{2}$ to 30 H.P.; heavy-duty and standard types; one to four cylinders.

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Perfection Motor Co., 380 St. James St., Montreal, Canada.

The conditions of the frozen fish market are worse than at any time since 1913-14. All over the Pacific Coast there are large quantities of high priced fish which have been accumulating in the cold storages, and which have not been moving and which are not moving at the present time, although the Lenten season may start things to some extent.

FROZEN FISH MARKET.

These conditions are due to two causes. An open winter, which has been exceptionally mild on the Pacific Coast, and the attitude of the buying public. The public are clamoring for low-priced food, and the Government have done everything possible to assist in giving them fish at really low prices. The result is that large quantities of salmon and halibut cannot be marketed at the present time, as the public will not pay the price based on the cost of these varieties. As a matter of fact, fish have cost more to produce right up to the end of last season's fishing than ever before, and with the stock accumulating, which is all high cost stock, it is impossible to put this on the market at prices any lower than at those prices at which it has been offered, unless it should be sold at an enormous loss. This does not apply to Vancouver alone, but to other points on the Coast.

An unusual condition which has an influence on the market is the fact that large quantities of fresh water fish have been taken from the Great Lakes during the winter when, as a usual thing, the Lakes are full of ice and fishing is an impossibility. On the Atlantic Coast the same conditions prevail as, with a mild winter, fish have been landed in large quantities at the Eastern ports.

SALT HERRING FOR THE ORIENTAL MARKET.

There has been an estimated pack of 4,000 tons of salt herring put up for the Oriental market during the past season, and over two-thirds of this quantity has already been shipped. The prevailing price ranges from \$27.50 to \$33.50 per ton f.o.b. Vancouver. During the past month there have been very few fish caught in the Nanaimo District and, as it is getting near the end of the season, the fish are not as good in quality as those caught previous to January.

There is some talk of trying to have the season extended, but there is a great question as to whether this will be done.

The putting up of salt herring for the Oriental market (principally China), is done almost exclusively by Japanese fishermen, and without doubt at the present time the majority of the fishing gear used is of Japanese manufacture, the boats used are built by Japanese boat-builders, the lumber for the boxes in which the herring are shipped after being salted, is bought in the rough, and Japanese laborers make up the boxes. Shipments are made to Japan in most cases by Japanese steamers. This fact is little known, but nevertheless it shows how close the Japanese work for the Japanese, and it is a known fact that practically all the Japanese savings are sent to Japan.

The method used in preparing herring for the Oriental market is as follows: After the fish are caught by large purse-seines the fish are transferred to a scow, thence to the saltery, where they are



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placed in large wooden, or in some cases, canvas tanks—a layer of herring then a layer of salt being placed alternately in the tank. The fish are then left about five days, then they are placed in boxes, using the same method of salting, first a layer of herring then a layer of salt alternately, and the fish are stamped down by packers, so that the boxes will hold as many as possible. When well packed there should be, approximately, 420 to 430 lbs. of fish and salt in each box, the boxes in most cases being of uniform size, usually about 2 ft. wide by 12 in. deep and 44 in. long, inside measurement. These figures are approximate, but very close. The net weight, when sold by the consignee in China, after being transferred from Vancouver Island, and, in many cases, lying on the dock for some days, and possibly a week or more waiting for shipment by steamer to Japan, will show a shrinkage of approximately 15 per cent. The net weight is taken after shaking the salt from the fish and throwing out all broken fish and heads, which may have broken off while in transit.

Sales of fish are usually made on the basis of a long ton of 2,200 lbs., and when sales are made on a basis of net weight it means net weight of contents of each box, the net weight arrived at, as noted above, after consignee receives it, then he sells to his customers after salt and breakage are removed. His price, of course, allows for this shrinkage. It will be noted that the labor in packing this fish is brought to a minimum and the result is the Oriental market is given a cheap food fish.

The Nanaimo herring do not have the same amount of meat as the Pender Harbor and Alberni herring, although the length is practically the same. There are several theories which account for this, any one of which may be correct.

Some contend that the fish are caught in such large quantities they are not given time to fatten up, and others that the fish are caught when they are younger, which does not allow them to mature. Other theories are also brought forward too numerous to mention.

Without going into statistics it might be well to note that the shipment of Oriental herring has fallen off during the last few years.

This, in brief, is the story of the Oriental salt herring pack.

EVINRUDE MOTORS USED BY B. C. GOVERNMENT.

The Minister of Lands from the Province of British Columbia in his report for the year 1917, tells of the following interesting experience.

"We were engaged in traversing the coast-line of many of the islands, and as the shores are very rocky and precipitous, we as a rule had hard work to make a landing if the water was at all rough. When even a moderate sea was running it was unsafe to attempt to make a landing at many points; at such time we would select the most favorable spot and carefully pull the boat on the crest of a breaker, when at the proper instant one man would make a jump for the shore. Then the operation would be repeated until the whole party was landed. As all these traverses were chained, the chaining frequently required all our ingenuity in coping with the cliffs and with the heavy swell with its shifting load of kelp and seaweed. At one point we were working in a heavy swell which finally caught our 5 chain tape and carried away all

but a few links at one end. All winter long these shores are exposed to the fury of the winter gales, driving the vegetation back, so that we very seldom had to do any cutting on the shore traverses.

We use an 18 ft. rowboat equipped with an Evinrude engine, which was a very satisfactory combination, as in many places there was no shelter for a boat and we had to pull it up on the rocks, which would have been impossible with a launch. Then, again, we had to cope with the tides running as high as 4½ knots, which would have been out of the question had we to depend on oars."

B. C. CANNERS WILL PACK HIGH GRADES ONLY.

Cannery operations in British Columbia this year are expected to be much more limited than when patriotism propelled the canning of every edible variety of fish. Only the most necessary equipment is being installed or replaced and only in a few instances are canneries putting in any new boats or gear.

The difficulty in marketing the lower grades of fish canned during the war have made the canners wary of stocking any this year, with the result that only the most marketable salmon will be put into cans during the 1919 season.

At the present time the prospects are that only three or four canneries will be in operation on the Fraser River, as the old fishing grounds have become depleted.

Although operating costs on tin plate supplies will be considerably reduced this year, net and gear expenses will be higher.

It is regarded as almost a certainty that the Allied Food Board will not be in the market for all the sock-eye and pinks this year and the operators are endeavoring to work back into the pre-war channels by re-establishing their old markets. In some instances this is not proving difficult, but in others the wholesalers report the market already covered by some substitute that is finding favor.

Many of the cannerymen are finding it difficult to dispose of their 1918 stocks of chums, which appear to have become a drug on the market. The Italian food commission in New York has made several purchases of this class of salmon and the B. C. canners are hoping to make further sales. The market price of chums is \$6.75 a case, but large purchases have been made at a much lower rate. The reduction in shipping rates is expected to assist in marketing this cheaper grade of B. C. fish.—Montreal Gazette.

INCREASE IN RATES DEMANDED BY PACIFIC FISHERMEN.

Conditions at this date (February 20), stand just the same as they did when referred to in the item published in the January issue of the Canadian Fisherman.

Some of the fishermen went from Vancouver to Prince Rupert to start fishing independent boats, and, at the present time, it is reported that they have been fishing at a loss owing to the present condition of the market.

There is no doubt that the people will not stand for advances in food prices, and this applies to fish perhaps more particularly than any other food.

The steamers of all the big companies are still tied up to the docks, and without doubt will remain so for some time to come under the present conditions, unless the fishermen are willing to go out on the old basis.

**WE DESIGN & INSTALL
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Halifax,
N.S.



The Fisheries of the North of Atlantic

By WM. MEEHAN.

CHAPTER VIII.

THE MACKEREL FAMILY.

"One of the first families of the Atlantic" is a rating that has been given the Mackerel family. Of old ancestry, of cosmopolitan habits, of great importance as a food product, the honor is justifiable. It is not a large family when compared with some others, for there are only about 25 genera and some 60 species known, of which less than half the tribes and only about one-fourth the species ever appear on the Atlantic coast, and less than half a dozen species in north Atlantic waters. Indeed, with the exception of the common mackerel, the chub mackerel and the horse mackerel or tuna, all may be said to confine themselves, with rare exceptions, to the temperate or warmer seas.

The Mackerels are pronouncedly pelagic in their habits, and do not approach the shore excepting for the purpose of spawning or in search of food. One species indeed, it is said, hibernates in the mud near shore, but this is probably not true hibernation, but accidental action.

Like most pelagic fishes, the mackerels are built for great speed and long sustained movements. The profile forward is sharp, the tail slender with the attached caudal widely forked. The scales are usually smooth, small and thin, offering the least possible amount of friction while the fish is in motion. The skeleton is light and strong, and the muscular system of great strength. The vertebrae are numerous and small, giving great flexibility to the body. Some of the family are without air bladders and in those that do have them they are small. The dorsals, of which there are two, are widely separated, and the spines are feeble.

In addition to the common mackerel and the tuna that are common in North American waters, in favourable weather, Spanish mackerel makes its way northward, and occasionally the frigate and the chub mackerels pay visits in numbers. Now and then the famous southern bonito ventures into the cool water along with the blue fish. While the family does not contain many genera or species, most of them are of fair size and one ranks among the largest and heaviest fishes known, as well as one of the greatest game fishes within the knowledge of sportsman anglers.

Common Mackerel.

In many human families in all parts of the United States there is a rule almost as inviolate as the laws of the Medes and Persians that the chief dish for Sunday breakfast must be salt mackerel. It is a good old custom handed down from old colonial days, when Joselyn in 1675 wrote enthusiastically that "the mackerell is good, salted, for store against the winter, as well as freshe, and to be accounted a good commodity, and gathered in greate quantities all along the coaste."

If a close scrutiny were made into human food products, it would probably be found that mackerel in one form or another is there in astonishingly large proportion, and that the salted form is but a small item of the mackerel eaten. It has been declared that nine-tenth of the so-called table "appetizers" are composed of young mackerel, to say nothing of the baby mackerel that legally masquerade as sardines.

Practically all of this great food product is taken from the ocean between Cape Hatteras and the Gulf of St. Lawrence, and the largest percentage is off the New England coast.

As the mackerel is a pelagic fish, it is naturally a nomad. Although in common with other wanderers its movements are uncertain, it is more pronouncedly in volume and time than direction. Indeed, the common mackerel has been called a shore loving fish that rarely fails to put in an appearance yearly, but whether in paying quantities can never be foretold.

The mackerel has not caused as much political trouble in the world as the cod and herring, yet it has figured prominently in international troubles, and once, the United States had to pay a good round sum for many years as compensation for fishing privileges in neighboring waters.

It is emphatically a mysterious fish; if anything, less is known of its habits than the herring. There have probably been more disputes between students of fish life over its movements and mode of living than any other important aquatic food life. For example, doubt was expressed that the mackerel is a truly pelagic fish; that it was on the contrary of the shore type that hibernated in the mud or soft sand at points not remote from Newfoundland, Nova Scotia and New England. It was claimed and clearly proved that mackerel had so disposed of themselves for the winter. This was met by the argument that these fish were overtaken by cold weather and numbed and buried themselves in the mud or sand to save their lives.

From among the great mass of literature that has been published on the mackerel a few things seem clear with respect to the annual migration of the fish. One is that there are two distinct groups, that move each over its own route yearly without mingling. One of the groups appears in the neighbourhood of Cape Hatteras about the last of March or the beginning of April and moves northward to Block Island which is reached about the first of June. There, it is said, they "may move eastward to Georges Bank or turn northward to appear along the New England coast; or they may disappear without leave or notice for the remainder of the summer."

The other group appears off the coast of Nova Scotia about the first week in June "advances along shore, follows up the Cape Breton shore as far as the north eastern coast of Newfoundland and rarely to Labrador."

These movements may be depended upon, but while they may be in vast schools that tax the resources of the fishing boats to the utmost, sometimes for two or more trips, they may on the other hand be in such small schools that their capture hardly pays expenses.

Fond of cold water, that is to say, a temperature of about 45 degrees F. or less, the mackerel is nevertheless a surface swimming fish and the schools can therefore be easily followed and captured with nets as well as hooks and lines.

The mackerel is not choicé in its foods. Almost anything living that can be taken into its mouth is acceptable. The chief foods, however, are small crustaceans, spawn of other fishes and of lobsters, shrimps, the centres of jelly fishes, and incidentally at the same time baby cod, and small fish of all kinds, including their

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own young. While all of these foods are taken eagerly and apparently are healthful to the fish, some seem to have a bad effect on the keeping quality of the flesh when caught. One of these foods is a small invertebrate commonly called "cheyenne." It is hot to the hands, and the flesh of a mackerel that has eaten heartily of it, it is said, spoils quickly. Another small crustacean known as "red seed" while it is troublesome to the men cleaning the fish, making their hands sore, does not appear to have the same deleterious effect on the flesh of the fish, and moreover the presence of "red seed" is sure indication of the proximity of mackerel and an assurance that they will remain as long as the little crustaceans are around.

One of the objects of mackerel in approaching the shores yearly is to deposit spawn. This function starts soon after their arrival and about a month is required to complete it. For a fish averaging not much over fifteen or sixteen inches, the female is provided with a prodigious number of eggs. While 40,000 is said to be the average number, between 300,000 and 400,000 to a single female is not uncommon. The eggs are minute, non-adhesive and buoyant. Under normal water conditions incubation is complete in about five days, and in six more the sac is entirely absorbed.

The mackerel is a handsome fish, not only in its outlines, but in its coloring and markings. It is dark blue on the back and upper part of the sides, shading into a silvery color below the lateral line. The back and upper sides are marked by numerous distinct dark wavy stripes that extend to the lateral line. Through both the blue and the silver are strong metallic tints.

Tuna or Horse Mackerel.

The largest member of the mackerel family as well as one of the largest fishes of either sea or fresh water, is the tuna, otherwise horse mackerel and great albacore. It may rightfully be termed a monstrous fish, for it grows to a length of at least fifteen feet and a weight of over 1,500 pounds. One was captured in 1838 of that length and weight off Cape Ann. One thousand pounds seems to be a fair average weight for fully mature tuna in the Atlantic along the coast of North America. Captain Henry Webb, a Gloucester fisherman, harpooned and killed 30 in 1878 that weighed in the aggregate over 30,000 pounds. One of 1,080 pounds and twelve feet long was taken with a harpoon off Anglesea, N.J., in 1916, and one weighing over 800 pounds, according to a newspaper, was caught with rod and line off the Nova Scotia coast, near Halifax the same year.

Although the same species as the famous tuna so eagerly sought for by big game anglers about the Cataline Islands off California, those in the Pacific and also those in the Mediterranean do not grow nearly as large as those in the western Atlantic.

The tuna, horse mackerel or great albacore is a truly pelagic fish found in all the warm seas and a pronounced liking for the colder waters of the north. They travel every summer northwardly along the coast keeping in deep water, at least as far as Labrador, and they are found numerously in the Gulf of Mexico, especially, according to the Canadian Fishery Report for 1863, in the Bay of Chaleur and of Gaspé, and also in the Straits of Belle Isle and Blanco Sablon Bay.

But while the tuna seems to have no objection to cool water and remains off the coast of Newfoundland as late as October, it is not a downright cold water fish like the cod. Hence its presence in the Pacific is somewhat perplexing. It would be interesting to know how the journey was accomplished.

It is possible that the passage was made years ago, when the extreme northern portion of the world was as temperate in climate at least as New England, as evidenced by fossil remains of large trees found in Greenland and arctic America. There is also another possibility, namely, that the journey was accomplished when there was a water connection between the two oceans in Central America. This seems the more likely hypothesis, for the tuna is not found in the Pacific much above Cataline Islands.

Samaritanism is not conspicuous among fishes. Predaciousness is the rule, and among many families downright ruthlessness prevails. The tuna is to be found in the worst of the last named class. It might be termed an Ishmael among fish were it not for the fact that, on account of its huge size and tremendous muscular power, very few aquatic animals can successfully turn against it. The "Killer" is one, and when that ferocious animal appears, the tuna flees in disorder.

The tuna is an omnivorous carnivorous feeder and will attack and devour almost anything from a three or four foot shark to a young herring; but its favorite food is the menhaden. A school of huge tuna will follow a large school of these oily fish for days, and only desist when the school is exterminated or hopelessly scattered, or driven away by the relentless enemy the "killer."

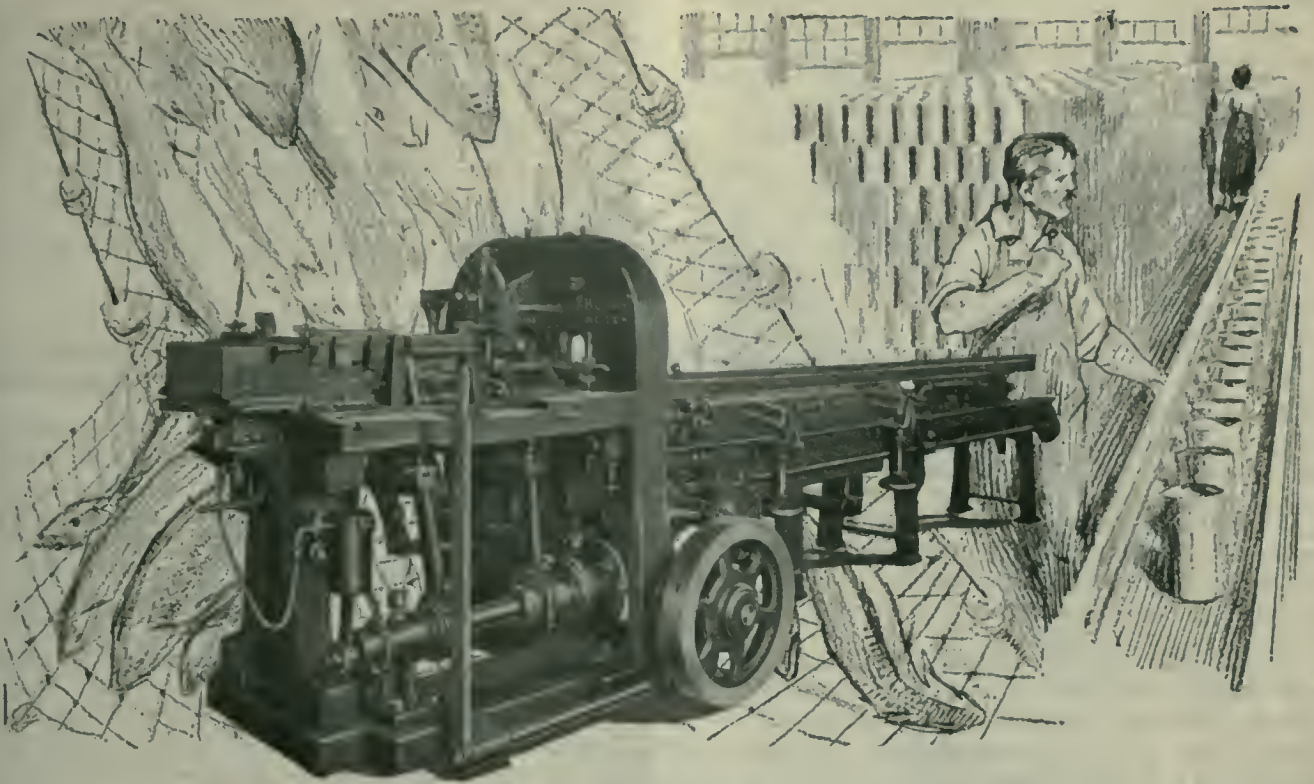
Some years ago an anonymous writer gave the following graphic description of a raid by tuna on a school of menhaden, and their ignominious rout by ferocious killers:

"The ocean seemed alive with the enormous fish. Wherever one looked ahead, the huge fish were darting with great velocity, spreading terror and death among the bunkers. Hundreds of the latter were jumping above the water in all directions, in their efforts to escape their relentless pursuers, often in vain, for frequently the big mackerel would leap after, and sometimes seize them before they struck the water. The slaughter was tremendous; fragments of bunkers floated thick on the surface, and on these thousands of screaming gulls feasted.

"In the midst of the butchery three high pointed black fins suddenly appeared, converging from different points, and approached with incredible rapidity. The Oreas, the deadly foe of the horse mackerel, had appeared on the scene. Disregarding the bunkers, they darted after the butcher mackerel with the utmost ferocity, and before them the latter fled in unceasing terror. In a few minutes there was not a mackerel to be seen, they had dived for the depths, but they did not all escape. One of the oreas presently arose near the ship with a big chunk of flesh in its mouth. This it tossed in the air, caught and swallowed it as it fell."

A school of tuna is not welcome to the owners of most nets not specially designed for their capture; but the fish do not cause either as much dread or devastation as sharks. When one of the latter finds itself enmeshed it often rolls and flounders about tearing many fathoms; but a tuna simply goes at the net head on and tears itself through making a clean hole that is easily and quickly mended. The chief cause of its unwelcome is not the extent of the damage done, but the fact that the hole, however cleanly made, is big enough to let all the smaller food fish out.

Until a very few years ago the tuna had no food value whatever in the United States. It was classed along with many other fishes, including the sturgeon, blue fish and porgies, as too inferior for eating; but with-



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in the last few years there has been a decided change with respect to the tuna, just as there was with the other fishes mentioned, and now the canned tuna of the Pacific is regarded as a great delicacy. Curiously enough, however, outside of the Dominion of Canada, scarcely anything is done towards catching and preparing the "horse mackerel" for the market, possibly because it has not yet become generally known that it is identical with the celebrated food and game fish of the Pacific. In the Dominion the tuna has always been considered a valuable food product, and it is used there and in the United States also as an oil producing fish. In September, when the tuna is in the best of condition, as much as twenty gallons of fine oil can be extracted from the head and belly of the larger fish.

For several years, the tuna has been one of the two big game fish favorites of the sportsmen anglers on the Pacific coast, and eastern anglers travelled across the continent yearly to grapple with the tremendous fighting ocean monsters, ignorant of the fact that the same fish of even mightier size skirted the Atlantic shores, masquerading under the name of horse mackerel. But a tuna club is now organized in Rhode Island, and sportsmen pursue the fish off the northern coast of New Jersey and Nova Scotia. Already they have broken by more than double the number of pounds the best records of the Pacific coast anglers.

The body of the tuna is oblong and robust, with a very slender tail. Its caudal is wide but narrow and strongly incurved. Its balancing fins are all small. The general color is dark blue on the back and sides to the lateral line and below dusky with obscure paler spots. On a portion of the back posteriorly are the mackerel markings, but not as clear and well defined as in some of the other genera.

Chub Mackerel.

In studying the life histories of ocean fishes one cannot but be struck by the number of species that appear abundantly for several years and then suddenly disappear so completely for many seasons as to give the impression that they have either become exterminated or have left permanently for some other waters. The chub mackerel is one of these erratic fishes. In the early days of North American settlement this fish was almost as abundant, according to records, as the common mackerel. One early writer says that about the close of the Revolution, they came along the New England and New York coasts in prodigious numbers, and that at times the bays, creeks and coves were literally alive with them and the markets were full of them. This abundance continued unabated in annual visitations until about 1840 when the fish failed to appear and for nearly 40 years the scientific collectors failed to secure a single fish along the whole coast from Texas to Nova Scotia. All hope of seeing the fish was abandoned, and many people in fact forgot there ever was such a fish.

During the latter part of 1879 a school of considerable size suddenly appeared off Massachusetts, but for that year only, and nothing more was seen of them for about ten years, when they again put in an appearance, but not in their old abundance. Since then, although not as numerous as in colonial days, the chub mackerel have made yearly visitations as far north as the Gulf of St. Lawrence.

The chub mackerel, sometimes called the tinker mackerel, little mackerel, Easter mackerel, thimble mackerel, thimble-eye, big eyed mackerel and bull mackerel belong to the same genus as the common mackerel, but

is much smaller, as it seldom exceeds a length of fourteen inches. As a food fish it is highly esteemed by a large element, who regard it as quite equal if not superior to the common mackerel. Others, however, while conceding it a place among the palatable fishes consider it distinctly inferior in quality to the better known species.

The chub mackerel bears a resemblance to the common in outline; but the reticulations on the back and sides are not as distinct, and below the lateral line are many dim irregular shaped spots. The front dorsal is high in front, but dips sharply in the rear, and the last spine is only just long enough to hold the membrane intact.

FISH ITEMS FROM "CHEMICAL ABSTRACTS".

The nutritive value of certain fish. J. C. Drummond. *J. Physiol.* 52, 95-109 (1918). The coagulable proteins of fish muscle (cod, herring and canned salmon) are equal in nutritive value to those of beef. Fatty fish may also serve as a valuable source of fat-soluble vitamins. Water-soluble vitamins was not detected in appreciable amounts in the muscle tissues of the fish examined.

Some observations on fish poisoning in the British Virgin Islands. T. L. E. Clarke. *West Ind. Bull.* 17, No. 1, 56-67 (1918), — Data are submitted from which C. concludes that poisoning from eating certain fish is due to toxins present in the living and not due to ptomaines.

Very few of his many friends in the fishing industry would recognize in the accompanying illustration Mr. W. F. C. Hamilton, Secretary Treasurer of the Consumers' Cordage Co., Ltd., manufacturers of Lion Brand Cordage.

After spending some weeks calling on his friends on the Western coast, Mr. Hamilton decided to return home by way of San Francisco, but unfortunately



arrived there when the influenza epidemic was at its height, and the snapshot which is reproduced here with shows Mr. and Mrs. Hamilton wearing the masks, which, by law, everyone was compelled to wear in the city.

THE CANADIAN FISHERMAN

A MONTHLY JOURNAL DEVOTED TO THE COMMERCIAL FISHERIES OF CANADA AND NEWFOUNDLAND THE SCIENCE OF THE FISH CULTURE AND THE USE AND VALUE - OF FISH PRODUCTS -

F. WILLIAM WALLACE
EDITOR

The Industrial & Educational Press, Limited

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FISHERIES ASSOCIATION RECOMMENDATIONS.

It is to be hoped that the fish trade throughout Canada will take an active interest in the recommendations of the Canadian Fisheries Association for the better administration and development of our fisheries. President Brittain reports many interesting replies to his circular letter and those already received commend the Association's move and have signified their intention of acting as delegates when the recommendations are presented to the Government at Ottawa.

At the recent Convention of the Lake Erie Fishermen's Association at St. Thomas on March 4th, 5th and 6th, the C. F. A. recommendations were unanimously endorsed and a delegation will co-operate with the Canadian Fisheries Association in presenting the suggestions.

It is expected that the delegation will be ready to meet the Select Standing Committee on Fisheries of the House of Commons some time in May when the matters recommended will be discussed and finally drafted. All members will be notified of the date of the meeting and every member of the Association should make a special effort to attend.

FISHERIES FOR RETURNED SOLDIERS.

In providing opportunities for returned soldiers, the fisheries should not be neglected. Mr. J. A. Paulhus, Chief of the Publicity Committee of the Canadian Fisheries Association, has made several suggestions along

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that line and has written a number of articles on the subject. Mr. Paulhus points out that there are large areas of Government land on the Gulf of St. Lawrence which could be given to returned soldiers for farming and lumbering purposes, and during the fishing seasons these men could add considerable ready money to their incomes by catching fish. As many of these areas are remote from rapid railroad transportation, the fish caught would necessarily have to be split and salted, and the Government would have to give the men instruction in the work and possibly assistance in fitting out boats.

To our mind, this is a good scheme and worthy of consideration. During bad weather on the water, the settlers could be clearing their farms, and in winter, the cutting of timber would provide remunerative employment. With fishing and lumbering to fall back on, the soldier-settler would have a better chance of making good and the routine work of farming would be spiced with variety.

The same scheme would apply to the west, where there are available farming areas adjacent to lakes. In these, fishing could be carried on in the winter months, and afford good employment to the settlers. To these areas, the Government should build roads and arrange to outfit the settlers with the necessary nets and fishing gear and ice-houses.

In British Columbia and in the Maritime Provinces, where there is open water all year, there are undoubtedly Government lands adjacent to the sea and suitable for farming, fishing and lumbering. We would like to see this scheme considered by the Repatriation Commission.

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A CANADIAN MINISTER OF FISHERIES.

It is to be hoped that the fish trade throughout Canada will advocate the appointment of a Minister of Fisheries when the C.F.A. recommendations are presented. Until this portfolio is created, the development of our fisheries is not likely to be rapid. Our particular resource requires the whole attention of an aggressive Minister who will represent the industry on the floor of the House and command the attention of the Cabinet Council. The importance of the post depends upon the man appointed. The opportunities for development are great, and an aggressive, intelligent Minister can put both himself and the industry on a commanding plane.

In Great Britain, the various fishery interests are agitating for a Ministry of Fisheries. They too have suffered by having their fisheries administered by the Department of Agriculture. In Canada, our fisheries have been submerged by the Naval Service, which has called for practically all the attention of our present Minister and his Deputy.

With a Carvell, McLean, Rowell or other similarly aggressive Minister at the head of a distinct Fisheries Department and an able and well-informed Deputy, the fisheries would flourish. Let us hope that something can be done and done quickly.

EXPRESS RATE INCREASE HEARINGS.

The Board of Railway Commissioners have held sessions in Moncton, Montreal, Toronto, Winnipeg, Port Arthur, Vancouver and Victoria, and at all these cities, representatives of the fish trade have presented strong cases against the granting of the increases applied for by the Allied Express Companies.

A meeting was held in Ottawa on March 19th and 20th, at which President Brittain and Mr. W. R. Spooner of the Canadian Fisheries Association were in attendance. Mr. Walsh, Traffic Expert of the Canadian Manufacturers' Association, appeared for the Canadian Fisheries Association, while Mr. J. Parker represented the Fish Section of the Canada Food Board.

At the various sittings, the following members of the Canadian Fisheries Association appeared and gave evidence against the proposed increase: Vancouver, A. L. Hager, J. Armour (representing Can. Fish & Cold Storage, Prince Rupert), V. F. Johncox, B.C., Wholesale Fish Dealers' Association; Winnipeg, W. Douglas, Guest Fish Co.; Port Arthur, J. Bowman and J. A. Craigie.

BRITISH FISH PRICE CONTROL SUSPENDED.

The British Control prices on most varieties of fish were relaxed on March 1st, with the proviso that should prices rise unduly, the Control would be enforced again. Control prices obtain only on mackerel and herrings. Reports from Great Britain indicate that supplies are coming in freely—the weekly landings becoming greater as the demobilized trawlers get into action again.

Just where Canadian chilled fish will fit in from now on is difficult to forecast. Our British correspondents state that Canadian fish will only feature during periods of scarcity in the home catch and seem to think that the storage of Canadian fish for marketing during such periods will be unremunerative.

However, Major Hugh Green is convinced that a bright future exists for all varieties of Canadian frozen fish in the European markets and he is now in England arranging for the marketing of huge quantities of Canadian chilled fish just as soon as the necessary shipping space can be arranged. The Major left Canada early in March with 22 earloads of chilled fish which will be disposed of by his London concern—The North Atlantic Fisheries, 155 Upper Thames Street, London.

Canada could not possibly find a better salesman for her fish products than the former "Fishmonger General." If Major Green cannot create a market, nobody else can, and it is to be hoped that his efforts meet with success as in Canada our production, at present, is limited by our markets.

OVERSEAS TRADE IN CANADIAN CHILLED FISH.

A recent number of the British "Fishing News" discusses at length the prospects for Canadian chilled fish in the British markets. While the "News" does not regard the idea of a market as impossible, yet it raises some questions which call for consideration by Canadian exporters. In so far as Canadian halibut and salmon are concerned, there will be no difficulty in finding customers, but will cod, haddock, whiting, herring and other like fish in a chilled state command a market? We give the "News" paragraph herewith:—

"What are prospects for a regular trade in imported frozen fish in the future? The first fact to bear in mind is that the level at which all kinds of fish are now selling is really a false value, and is entirely due to war conditions. It is the general expectation that once the vessels now on Admiralty service are returned to their erstwhile peaceful occupation of fishing, and the restrictions on several of the most popular fishing areas are removed, that supplies from home waters will once more be more or less sufficient for ordinary trade requirements. One result of this will be that prices for fresh fish will once more revert to a more reasonable figure, although it is problematical whether they will ever be as low consistently as in pre-war days. This will have a two-fold effect; in the first place retailers are scarcely likely to purchase frozen fish when they can obtain freshly landed and, even if they are, they will not be prepared to pay anything like the price at which fish from home waters can be obtained. On the other hand, the fishing industry in the future, as in the past, will be characterised by periods of scarcity. The question is, will it be practicable, from a commercial point of view, for exporters in Canada to pay the expense of freezing fish, provide boxes and bear the cost of freight, in addition to the storage on this side to wait the few occasions when a demand will set in for the frozen fish, especially as prices are unlikely to rule as high as they do at present?"

FISH IMPORTS IN THE WEST INDIES.

The following statistics are the latest available reports of fish imports into various West India islands, from all sources:

Fish imports into Barbados for 1918 were:—

Dry salted cod (quintals)	63,279
Pickled trout and salmon (barrels)	392
Pickled fish other than trout & salmon (brls.)	3,039
Canned fish to the value of	£4,645

Fish imports into Jamaica for 1918 (Canada only):

Dry salted (lbs.)	3,411,718
Pickled alewives (brls.)	12,533

Pickled herring (brls.)	19,192
Pickled mackerel (brls.)	835
Pickled salmon (brls.)	311
Smoked all varieties (brls.)	232
Canned fish to the value of	£2,007

Fish imports into the Republic of Santo Domingo, first half 1917:

Smoked herring (kilos = 2.2 lbs.)	370,268
Cod and other dry salted fish (kilos)	804,959
Pickled fish—all varieties (kilos)	51,559
Salmon, canned (kilos)	65,054
Sardines, canned	75,955

Fish imports into Trinidad—1917:

Canned fish (Lbs.)	384,744
Value	£17,043
Salmon dried, salted, smoked or pickled (Lbs.)	88,700
Value	£1,792
All varieties of fish dried, salted, smoked or pickled (Lbs.)	5,138,801
Value	£98,719

Fish imports into Bahamas for 1917:

All varieties (Lbs.)	15,310
Value	£427

Fish imports into Grenada for 1918:

Canned fish (Lbs.)	18,948
Smoked and dry salted (Lbs.)	1,009,688
Pickled (Lbs.)	14,800

Fish imports into British Guiana for 1918:

Canned salmon, sardines, lobster and herring (Lbs.)	335,351
Cod, hake, Albacore, ling and herrings (Lbs.)	2,859,700
Pickled salmon and mackerel (Brls.)	1,067
Other sorts (Brls.)	2,157

PISCATORIAL PARAGRAPHS.

Supplies of fish held by the Army Service Corps for use in England is now moving Overseas after considerable delay owing to lack of refrigerator space. Early in March the Corps had in storage about 800,000 pounds of fish, including 600,000 pounds of frozen herring.

Advices from Havana, Cuba, indicate that the market there is at present over-stocked with sardines both in olive oil and tomato sauce.

The article fully describing Canada's fisheries and fish resources, prepared by Capt. F. W. Wallace, of the Canada Food Board for the "Journal of Commerce," which was recently published in three installments has been mailed to the Canadian Trade Commissioners throughout the world.

The first fresh halibut from the Atlantic for the 1919 Spring season arrived on the Ottawa market March 12th, a month ahead of the average time.

The Department of Fisheries has been advised that Alberta winter caught fish, for which no storage could be found previously, are now being taken care of, and there will be no waste.

Producers of fish have been advised by the Canadian Trade Commission to make offers of goods for export together with quotations direct to the Canadian Mission in London, who will advise foreign buyers and importers. The Commission, however, does not guarantee sale.

**LAKE SUPERIOR FISHERMEN PROTEST ON-
TARIO GOVERNMENT'S ACTIONS.**

At a meeting of the Head of the Lakes Branch of the Canadian Fisheries Association held at Port Arthur, on February 18th, the following resolution was passed and forwarded to Premier Hearst, and Mr. C. W. Jarvis, M.P.P.

"Resolved, that the present fisheries policy of the Ontario Government in commandeering 20 per cent. of a fisherman's catch at an arbitrary price below cost, and competing against the fisherman with the proceeds of said commandeering, is an injustice. This was pointed out last season, and now, after a year's trial and the evidence we hold as to how it has worked out in our district compels us to again protest against it for the following reasons:

In every case where the 20 per cent. was taken on the North Shore of Lake Superior the fishermen lost two cents per pound. All that the consumer benefited was one cent, showing that under Government supervision the benefits accruing to consumer came directly out of the fisherman's pocket. It has affected the catch of trout and whitefish detrimentally for the following reasons:

A number of producers curtailed their operations and this coming season a number are not fitting out for trout or whitefish.

We also find that this 20 per cent draft has not been uniform in its operation. Some operators in our district not having any call made on them, while others had to deliver almost their full quota the same applies to other districts on the Great Lakes.

We claim this is class legislation, and to find a comparison we have to go back to the Crofters of Scotland, who were compelled to sell to their landlords at said landlords' own price, or be evicted, and its worst feature is that it is not even aimed at a rich section of our community, but at the poorest.

It is further resolved that a copy of this resolution be sent to Premier Hearst and C. W. Jarvis, M.P.P., and that a deputation wait on Mr. Jarvis to present our views on the matter."

We publish herewith the business statement of the Lake Superior tug "Nipigon," which operated out of Fort William during 1918. This statement is based on the price paid by the Ontario Government to the fishermen, which was 9c. boxed and iced, meaning 8c. to the fishermen at the dock. This tug, which was the most efficient and economically managed, shows a loss of \$59.42 for operating, and a total loss of \$1,009.42.

Capital Invested.

Tug value	\$3,000.00
Nets and gear	3,500.00
	<u>\$6,500.00</u>

Operating Account.

Operating expense (including new twine)	\$2,605.83
Total wages	4,333.59
Total catch 43 tons (86,000 lbs at 8c.)	\$6,880.00
Loss on operating	\$ 59.42
	<u>\$6,939.42</u>

Loss and Gain.

Depreciation on tug	\$ 300.00
Interest on Capital Account	\$ 650.00
Loss as per operating account	\$ 59.42
Total Loss	<u>\$1,009.42</u>

PUBLISHERS ANNOUNCEMENT.

We are pleased to announce that Capt. F. William Wallace will resume the active Editorship of the CANADIAN FISHERMAN in April as well as the Secretaryship of the Canadian Fisheries Association. Mr. Wallace has been absent from both these offices since May, 1917, when he left to become Master of a Patrol vessel on special service. In the Fall of that year, he was transferred to Ottawa as Secretary to the Fish Committee of the Food Controller's Office. When the Canada Food Board took over the work of Food Control in January, 1918, Mr. Wallace took charge of the Board's Fish Section and under his direction the wonderful stimulus given to the home consumption of fish was accomplished and many benefits came to the fishing industry through his intimate knowledge of conditions therein.

It can be safely stated that no one in Canada has given so much of his time and abilities to better the fishing industry than has Mr. Wallace. An author of merit, an artist, a practical fisherman and sailor, he has, for the past ten years made the development of Canada's fisheries his life-work. Prior to his taking up the editorship and establishment of the CANADIAN FISHERMAN, Mr. Wallace had gained a reputation on this continent and Great Britain as a novelist and short story writer and his tales of the Bank fishermen—"Blue Water" and "The Shack Locker"—are regarded by literary critics as masterpieces of sea literature. As a novelist, Mr. Wallace could have won a high place for himself, but he felt that Canada's fisheries called for someone to bring them to the light and develop them, and he gave up the writing of sea literature to establish and edit the CANADIAN FISHERMAN. Largely through his efforts, the Canadian Fisheries Association was formed and became a power for good in the industry, and for the past six years his writings on fishery subjects in Canadian periodicals have done much to popularize and disseminate a knowledge of this great natural resource at home and abroad.

Captain Wallace is no "desk editor." He has sailed and worked with the fishermen in every type of craft, and on every ground in the Atlantic and Pacific, and also on the Lakes. Practical experience at sea in his younger days fitted him for voyaging with the fishermen at all times of the year. His adventures at sea would make an interesting story and range from taking moving pictures in rough winter trips to actually commanding a vessel. Under his auspices, steam trawling was successfully inaugurated on the Pacific Coast and a market found for the fish caught. His knowledge of steam trawling on both oceans was recognized by the United States Food Administration in 1918 when he was called to Washington to advise the U. S. Shipping Board in designing a fleet of trawlers for naval and fishing purposes.

A man who knows the Canadian fishing industry from the ground up; an able writer with a supreme faith in the possibilities of our fisheries and eager to assist in bringing them to the fore. Mr. Wallace returns to the editorial chair with enhanced knowledge and the satisfaction of feeling that his work in Ottawa was well done.

Samples of California sardines packed in apricot kernel oil and eastern sardines packed in corn oil Eastport have been received by the Fish Section, Canadian Trade Commission for comparison with Canadian goods. These oils were used as a substitute for olive oil last year owing to the high price of the latter and are both more palatable than cotton seed oil.

NOTES ON SEA FISHING RESULTS FOR FEBRUARY.

Notwithstanding fine mild weather, the usual slackness which occurs between seasons, was in evidence on the Atlantic coast during February. Lobster fishermen, in the western part of Nova Scotia, were busy putting their boats and gear in order for the opening of the new season on the 1st of March; while line fishermen, both shore and banks, were engaged in preparations for the approaching spring and summer fishery.

The total landings of cod, haddock, hake and pollock on the Atlantic coast, amounted to 24,292 cwts., against 22,045 cwts. last year. The quantity of smelts taken from the 1st to the 15th of the month, when the season for net fishing closed, was 8,897 cwts., against 15,377 cwts. for the same period last year. The falling off is mainly due to mild weather, which is always detrimental to the smelt fishery. Lobster fishing has been in progress, in the counties of Charlotte and St. John, N.B., since the 15th of November, and in the other Bay of Fundy counties from Albert, N.B., to Annapolis, N.S., inclusive, since the 15th of January. The quantity landed up to the end of February was 3,506 cwts., against 2,878 cwts. to the end of February last year, in the same counties. The catch of scallops in Chester Bay, N.S., amounted to 2,310 barrels, against 500 barrels for the preceding February.

The winter herring fishery in the Nanaimo and Barclay Sound districts of British Columbia ended about the 25th. The catch for the month amounted to 175,853 cwts., against 245,379 cwts. last year, and 46,650 cwts. in the year before last. The catch of pilchards for the month of February this year amounted to 30 cwts. against 5,724 cwts. for the same period last year.

In northern British Columbia, the weather was cold, but fine, and the total quantity of halibut landed by Canadian and American boats, together, was 2,914 cwts. greater than that for February last year.

The total value of sea fish at the point of landing on both coasts, was \$487,664. For the same month last year, the value amounted to \$937,986. To the smaller catch of herring and smelts, and a slight decrease in the price per pound of all kinds, is due the decreased total value.

One fisherman, belonging to Yarmouth county, N.S., was drowned in the course of the month.

CANADIAN PATROL BOATS SOLD FOR PORGY FLEET.

The former U. S. porgy fishing boats—seven in all—which were purchased by the Canadian Government in 1917 and since fitted up for naval purposes and mine-sweeping, have been re-purchased again by Messrs. Hayes & Anderton, New York, and will be used in porgy or menhaden fishing.

AIRPLANES AS MACKEREL SCOUTS.

United States fishing interests are advocating the use of airplanes for the purpose of locating mackerel schools. The planes would operate from shore stations and patrol with the seining fleet 25 to 35 miles offshore. The scheme has been endorsed by the U.S. Bureau of Fisheries, and seems feasible.

Fourth Annual Convention—Lake Erie Fishermen's Association

The fourth annual convention of the Lake Erie Fishermen's Association was held at St. Thomas on March 4, 5 and 6. Although a large number of the Western Lake delegates were unable to attend on account of the late ice-harvest requiring their attention, the whole of Lake Erie was splendidly represented, and, in addition, a number of the leading men connected with the fishing industry of Canada and the United States. The Convention headquarters were at the Grand Central Hotel, while the City Hall was placed at the disposal of the Convention for their different sessions.

The Convention was opened officially on the afternoon of the 4th inst. by an address of welcome from Mayor E. Horton, who turned over to the Association the keys of the city. His Worship spoke of the fame that Lake Erie whitefish had attained throughout the continent. He instanced how he had been dining at one of the largest restaurants in New York, and had noticed Lake Erie whitefish on the menu at \$1.50 a plate. He had refrained from indulging, as he was informed this fish was considered one of the luxuries on the big city dining tables. He considered it a great credit to the Association and its members, and felt confident that the demand for Lake Erie fish products would soon exceed the supply.

President Ponsford Retires.

In opening the business of the Convention the President welcomed the delegates in well chosen words. He outlined the progress the Association had made since its inception three years ago, and the aim at that time of getting the pound and gill net men together to discuss their grievances in an amicable manner, which grievances previous to that time had resulted in considerable difference of opinion, and, in some instances, bitterness. He stated that during the past year the Association had not been called upon to settle any complaints, which showed the unanimity of the whole membership. He felt it his duty to hand over the reins of power, and had decided to retire with this session.

On a motion of N. S. Cornell, seconded by W. E. Goodehild, a hearty vote of thanks was tendered Mr. Ponsford for the splendid services he had rendered the Association. Mr. Cornell declared Mr. Ponsford deserved praise for the good offices he had performed in steering the Association during the years of infancy. He believed Mr. Ponsford had fulfilled the undertaking better than any other man could, for, not being connected with the fishing industry in any way, he had taken an unbiassed view of all matters, and had been able to solve problems that a president actively interested in the business could not have solved.

Election of Officers.

The reading of the minutes and communications were next attended to, followed by the election of officers, which resulted as follows:

Hon. President—F. G. Maediarmid, Minister of Public Works, Toronto.



A. E. PONSFORD, St. Thomas.
Retiring President, Lake Erie Fishermen's Assoc.

Hon. Vice-Pres.—A. E. Ponsford, St. Thomas.
President—A. S. Brown, Kingsville.
Vice-President—A. E. Crewe, Merlin.
Secy.-Treas.—H. A. Short, Port Stanley.

Executive Committee.

A. E. Crewe, Merlin.
H. Dromgole, Rodney.
W. Goodehild, Amherstburg.
J. E. Pastorius, Kingsville.
W. D. Bates, Ridgetown.

H. Goodison, Cedar Springs.
 Ed. Koehler, Wallacetown.
 B. Westcott, Kingsville.
 H. Hales, Dutton.
 A. H. Hoover, Nanticoke.
 Capt. P. C. Robinson, Port Dover.
 F. Harris, Point Pelee.
 A. S. Brown, Kingsville.
 E. Moss, Port Maitland.
 George Van Order, Port Burwell.
 W. H. McPherson, Port Stanley.
 N. S. Cornell, Port Stanley.
 B. Clay, Wallacetown.
 E. Olmstead, Wheatley.
 Milton Campbell, Leamington.
 N. McAuley, Erieau.
 W. F. Kolbe, Port Dover.



A. S. BROWN, Kingsville.

Elected President, Lake Erie Fishermen's Assoc., 1919.

Hon. F. B. Macdiarmid Speaks.

The new president, Mr. A. S. Brown, assuming the chair, he called on the Hon. F. G. Macdiarmid.

Mr. Macdiarmid in his opening remarks spoke of the great work accomplished by the Lake Erie Association in bringing about amicable relations between the pound net and gill net fishermen, a condition that had not existed previous to the formation of the association. Three or four years ago, he remarked, the two factions of fishermen considered that their interests conflicted and that there was not room enough in Lake Erie for both parties. He was pleased that that feeling of animosity had almost entirely disappeared.

The country he stated was coming to realize daily, more and more, the great possibilities of the fishing industry and he described it as growing into a wonderful, permanent asset, which, by proper propagation

and scientific handling will go on in perpetuity.

Lake Erie, he declared, was now the best fish producer of all the Great Lakes, producing almost half of the entire catch of fish in Ontario with no sign of depletion. The question of hatcheries, however, was a paramount one to consider carefully, he said, and the Provincial government were realizing the necessity of their supplementing the work of the Dominion government in establishing hatcheries and other spawning places.

The Increased Revenue.

Dealing briefly with the operations of the government fish and game department, Mr. Macdiarmid spoke of the general administration of the fish and game laws of Ontario and the means taken whereby the revenue had been greatly increased during the past three years by the opening up and tapping new sources of revenue without increasing the fees paid by the commercial fishermen. Three years ago, he stated, the net revenue had amounted to \$15,000 after all the expenses had been paid. During that time it had been increased to \$100,000 a year through the largely increased royalties imposed on fur trappers. This, he stated, was a revenue producing branch and one that would very materially increase as years go by.

The Sales Branch.

The second branch of the department, which affected the fishermen vitally, the sales branch, Mr. Macdiarmid also explained in more detail from its inception up to the present time, touching on the problem that had confronted the government along with governments of other countries of providing imperishable food-stuffs for the armies in Europe. It had led them to realize the necessity of cultivating a home market for fish products and the opening of certain lakes in the north under contract and also the imposition of the 20 per cent. rider on the 1918 commercial licenses, which had caused so much dissatisfaction among fishermen last year.

"I will admit that the government's option on twenty per cent. of your catch as imposed last year did seem drastic and severe legislation," stated the speaker, "but we were face to face with unusual conditions and were forced to do something. We knew we were not going to meet with your approval or applause, but I believe conditions justified our action. We were more concerned for the general welfare of the country and the successful continuation and termination of the war."

Mr. Macdiarmid expressed a firm belief that the government's action would render the fishermen a great service in the end by having created a home market; something, he stated that the fishermen had never tried to create. He did not think that the government could be charged with any political intrigues or policies in creating the demand in the province. The government, he said, had not asked regarding the policies of the municipal dealers appointed to handle the fish. He also pointed out that the price paid was steady and not subject to the fluctuations that had occurred previously, when, many times, he declared, the fishermen had been forced to sell at low prices, on account of the pressure used by the big wholesalers.

"The government tried to stabilize the market," he stated. "The fishermen faced the conditions courageously and I do not think any real hardships were imposed on any man engaged in the fishing industry.

"The fishermen must remember that they are operating their business under a franchise, a natural

heritage. They get their fishing rights from the State and the State is justified in making any demands it may deem necessary. The government has met with fair success in its work, and I believe the people of Ontario realize that a real service was performed—a serious, practical coping with the high cost of living.”

The fishermen who had worked for the government under contract in Lake Nipigon, had been quite satisfied with their earnings, he stated, having been paid five and three-quarter cents a pound for their white fish, the government furnishing the boxes.

Mr. Macdiarmid touched on a complaint that he had heard recently and one that he considered should be discussed by the association, the question of the proper amount of twine to use in the Fall. He had heard that there were excessive amounts of twine used by some of the fishermen with the result that they were unable to attend to all their nets in proper time for the fish were left in the water too long. On account of too much yardage having made use of, large amounts of fish had had to be used in the incinerator at Port Stanley last year, he stated. If fish were to be brought in in the proper condition these matters would have to be rectified, he declared, and it was a condition of affairs that should be stopped by legislature and regulations.

Respecting the proper size of herring that might be taken from the water and marketed, Mr. Macdiarmid stated was another matter for the discussion of the association. For many years there had been no regulations governing the size with the result that many fish unfit for human consumption were sold, he stated. Regulations were recently passed by the Dominion Government, he explained, making it illegal to catch herring under six ounces in weight. Last year, he said, there were many herring caught at Port Stanley that were immature and undersize. He considered it the duty of all the fishermen to observe the law as it would be advantageous to them in the long run.

Regarding the privileges of allowing fishermen to operate in the lake at this time of the year, Mr. Macdiarmid replied to a questioner, that the law making the fishing season March 15th to September 15th was a Dominion regulation, which was being taken up at the present time by the local legislature in Toronto, and he believed amendments would be passed.

DISCUSSION ON MR. MACDIARMID'S SPEECH.

Agreed With Mr. Macdiarmid.

Mr. Cornell, referring to Mr. Macdiarmid's address, stated that he had never heard the honorable minister speak along the same channels of thought as he, Mr. Cornell held, as Tuesday afternoon. He agreed with the minister in his contentions that the fishermen in the fall of the year grew a little careless and a little too covetous in taking fish and using too much yardage. He also considered the habit of taking immature fish a matter that should be regulated.

“Both the pound net and gill net fishermen are making mistakes,” said Mr. Cornell. “The greatest loss in gill net fishing is attributable to over fishing. There are so many nets lost in the storms, I think it is to the interest of every fisherman to sacrifice a little quantity for quality. We should make all the Lake Erie fish on the same level as “Billy” Bate's fish of Ridgetown.

A short controversy ensued between President Brown and Mr. Cornell in respect to the signing of the licenses

with the 20 per cent. rider attached last year. President Brown stated that he had considered that when he accepted the terms he should be satisfied and not object afterwards. Mr. Cornell did not view it in this light and considered the fishermen had a perfect right to protest against what they considered an inevitable injustice imposed on them.

Mr. Cornell Opposes Statement.

Mr. Cornell took exception to Mr. Macdiarmid's remarks that the fishermen were in something of a class by themselves through getting their franchise from the State. He did not think the fishermen were any different from any other business and asked how much different the fishing industry was from the lumbering industry.

“I used to be a lumberman and I know what I am talking about,” declared Mr. Cornell. “The lumbermen had a timber limit granted them and pay a royalty on so much a thousand feet of lumber. Does the government tell the lumbermen not to sell twenty per cent. of their lumber because they want it for building tugs

“The positions are alike. Lumbering and fishing are almost identical things. I have a perfect right to go to the government and demand lumber at the same price they paid me for my fish.”

Address on Oysters.

At the evening session, Dr. A. D. Robertson, Professor of Biology, Western University, London, gave a very interesting address on oysters. Dr. Robertson dealt with the life and mode of living of the oyster from the larva stage until it is fully grown. He also very clearly illustrated the great number of oysters that are destroyed, as well as the number of eggs that never mature. The oyster, he said, is limited to brackish waters. It is found upon the shores of all the continents, except Africa, and is found on both the western and eastern coasts of the North American Continent. The native oyster of the Pacific Coast is somewhat smaller than the oyster on the eastern coast, but it has been supplanted by the oyster on the Atlantic coast, which does equally well on the western coast.

He described at length the formation of the body of the oyster, its growth, etc., and went on to say that in a single season a female oyster lays from 16 to 60 millions of eggs. The male oyster provides several thousand as many times the number of spawns as the female does eggs. Few of these eggs fertilize, and even then are devoured by the smaller fishes while in the larva stage, so that comparatively few ever grow into oysters. The oysters on the Pacific coast differ from those on the eastern coast in that they are not classed as males and females, both organs being found in the body of that species. One scientist had figured it out, he stated, that if the female laid but 16 million of eggs, and that for one season, in five generations, providing all these eggs matured, there would be enough oysters to form a mass 8 times the size of the earth.

When the oyster changes from the larva stage, and finally becomes surrounded with the hard shell-like substance, it perishes. All those that drop in soft beds are unable to affix themselves to anything, and thus perish. The chief enemies of the oyster are the sword fish and a small creature that very much resembles a small snail.

Mr. S. L. Squires, Manager Sales Dept. Ontario Government Fisheries, addressed the evening session.

Tuesday evening's session was devoted to an address by Mr. S. L. Squire, Manager Sales Department, Ontario Government Fisheries.

Mr. Squire, in dealing with the Fish Policy of the Ontario Government, stated that a Government making laws which would apply to a territory as vast as the Province of Ontario would naturally find it difficult to meet all conditions. In dealing with the comparative area of Ontario he stated that Ontario embraced a territory as large as the combined area of the New England, Middle Atlantic, East North Central States from Maine to Wisconsin; that the water area of Ontario comprises one-half of the fresh water of the Dominion of Canada, if the North West Territories are not included. The fishermen operating in this vast water area have a wide variety of problems to overcome, but the fishermen succeed in producing 60 per cent. of the fresh water fish taken in the Dominion of Canada, the average amount for the past five years being 36,000,000 lbs., which is but little less than one-half of the annual yield which might be obtained, providing the laws which are made to protect the fish are lived up to by all engaged in the fishing industry, and a sane system of re-stocking is followed by the Government.

The Federal Government, as far as the fisheries are concerned, appear to be more interested in the sea fisheries than the fresh water fisheries. This may be due to the fact that relatively and actually the sea fisheries are the more important, having an annual value of from eight to ten times as much as the fisheries of the Great Lakes. The Federal Government has bonused the deep sea fisheries since 1912. This bonus is given to encourage the fishermen, and amounts to \$160,000 per year. In addition to this bonus the Federal Government have been assisting the sea fisheries to establish inland markets, and have been paying one-third of the transportation charges on Atlantic fish shipped to points east of the Manitoba boundary, and two-thirds of the express charges on certain fish shipped from the Pacific to points west of the same boundary. The work of the Canada Food Board has been greatly appreciated by all fishermen, but their efforts have been largely directed to the distribution and sale of sea fish. The last evidence of this is demonstrated in a certificate which has been issued upon the recommendation of a representative of the Canada Food Board, and is signed by the Chairman of the Canada Food Board and the President of the Canadian Fisheries Association; the Lake Erie Fishermen's Association, or the fresh water fishermen, are not recognized in any specific manner in this certificate.

While the Federal Government and Canada Food Board have directed their efforts particularly towards increasing the demand for salt water fish, the Ontario Government have endeavoured to create a larger market for fresh water fish. The policy of the Ontario Government has been one which had for its object the popularizing of the eating of fish, and has used the better known varieties as a basis. That a greater amount of fish was consumed by the people of the Province of Ontario during 1918 is acknowledged, and though some interests are not willing to give the Government credit for this larger distribution, nevertheless the fact remains that the Government of Ontario in co-operation with the municipalities has opened up

fish stores in many municipalities which had hitherto been without fish.

The press of the Province appreciating the economic advantages of the scheme supported same loyally. The Government carried on demonstrations, encouraged exhibitions, and have given the people of the Province generally an idea of the importance of the fisheries. This has resulted in the Sales Branch distributing between May 1st and Dec. 1st, 1918, three million pounds of fresh water fish, while the fishermen themselves have had an increased local demand for their product. It is expected by the Government



S. L. SQUIRE,
Sales Branch, Ontario Government Fisheries.

that the fishermen will profit by this effort to a greater degree than any other class in the community, but a fair share of the profits must be claimed for the people, and that the people generally throughout the Province may profit by the fishing industry, the Government ask that 20 per cent. of the fishermen's catch may be taken for distribution among the people at prices which are fair and equitable.

During the Government operation no less than sixteen kinds of fresh water fish have been disposed of, and though some soft fish have been exported at times when the market in the Province could not absorb same, not one pound of whitefish or trout has been exported from the Province by the Government.

In carrying on the operation of the Sales Branch certain valuable information has been obtained, and one surprising feature has been the wide range of prices at which various fishermen sold their product. It may be admitted that there is a difference in quality, but how are you able to excuse the fact that there has been a difference of 8c. per lb. in the selling price of whitefish which have been procured within twenty miles of each other in the same lake.

The advantages of co-operation were enlarged upon,

and it was stated that while some fishermen might possess greater wealth than others, might have gained a richer experience, or obtained a better market, or had learned how best to market their product, yet it is undeniable that the combined wealth of all, and the added experience of all the members of the Association must be greater than the wealth or the

The C. F. A. Delegates' Report.

The report of the delegates, Messrs. Crewe and Cornell, to the 1918 convention of the Canadian Fisheries Association in Halifax, N.S., was received on the first day. Mr. Crewe, in speaking, said:—

Mr. Cornell and I were on hand Tuesday morning at the first session, and our interest increased as the convention progressed, so that we did not miss even a part of one session, Mr. Cornell taking active part in many of the discussions, but my modesty kept me more quiet amid such an imposing and noted assembly.

With so many subjects before the convention and the heated discussions they brought out, the sittings were only too short, the reports handed in by the different committees, the addresses given, and the papers read, brought out discussion that only had an ending by time overlapping other subjects.

Many of these, though interesting to us, were vital to your interests, only in an interwoven way, but such as Transportation, together with Express and Freight Rates, standards of marketing, both in weights and style and size of packages, International fishery regulations, especially where they pertain to the Great Lakes, and fishery regulations from the separate Departments which the fisheries are under in the various Provinces, are very vital to our interests, and the report of the discussions on each are very well set forth in the August number of the Canadian Fisherman.

Among a number of resolutions that were discussed and passed by the Association there are three I would mention here, they are all of interest to us individually, and as an association.

(1) Whereas fishermen in the lake districts in Canada and dealers in the United States have, during the present season, suffered great loss owing to delays in transit and careless handling of fish by the common carriers handling lake fish shipments from Canadian points to American points, and whereas considerable loss of food fish has resulted,

Be it therefore resolved that the Canadian Fisheries Association in Annual Convention assembled, request that the officials of the Dominion and American Express Companies, take special care in the handling and transferring of fish shipments from Canada to the United States, giving preference in forwarding same, and, if the Canada Food Board and the American Food Administration, deem it necessary, call a joint conference with the Express Companies, to provide special service for these shipments.

(2) Whereas there have been several instances of hasty and ill advised legislation, and changes in administrative regulations that have not been in the interests of the commercial fisheries of Canada, which have, in some cases, entailed losses to those engaged in them.

Be it therefore resolved that the Canadian Fisheries Association, in Annual Convention assembled, request that the Federal and Provincial Departments advise our secretary of all proposed legislation and intended changes in the administrative regulations, and allow a reasonable time for our association to communicate with our branches and affiliated organizations in the districts affected and report the result of these communications to the Department.

(3) Whereas the Government of Ontario is engaged in



One of Lake Erie's Fish Products.

knowledge of the individual, and that the Association would not have performed its function until all were able to obtain the maximum benefit.

In conclusion it was stated that there is every evidence that lower prices will rule during the coming season. The present tendency of all commodities is downward, and the fishermen must not expect prices which are higher than the prices which obtained last year, but rather be prepared to take lower prices for their fish. If a loss is not to be made, costs must be reduced, and a central selling organization might well be considered. Only by using the most approved methods, packing your fish in a more desirable and sanitary way, taking the fish from the nets in as fresh condition as possible, marketing same in the most approved manner, will you be able to eliminate wastes which you have hitherto known in operation, and the net profits for the season's operations will not be materially affected.

the production and distribution of fish from waters closed to the licensed commercial fishermen.

And whereas the said Government is also taking from such licensed commercial fishermen a portion of their catch from the licensed Ontario waters at arbitrary prices.

And whereas unprecedented interference has resulted in loss to the fishermen and confusion to distributors, and dragged the industry into political interference and unfair preference and disorganized this established industry.

And whereas the Ontario Government has refused to appoint a commission or otherwise publicly consider the loss and hardships which their policy has entailed.

Be it therefore resolved that the Canadian Fisheries Association in Annual Convention assembled, protests against the above mentioned injustices which are so detrimentally affecting the fish interests of that Province.

Another of importance to Canada's fishing industry, and in keeping with progress, was a resolution that the Federal Department of Fisheries should be reorganized, by at least appointing a Minister of Natural Resources, containing Fisheries, Forests, and Mines, with a Deputy Minister over each, we all feel that the fisheries as now sandwiched in with the Marine and Naval Departments, are not getting proper consideration, a Deputy Minister, understanding the work — for instance, Mr. Found—would make for benefit, and the same could well apply in our Province.

Among other things we have here under discussion, I think, these should not be overlooked, also many changes were made in their by-laws and constitution, that means much to our Association. The Canadian Fisheries Association are more than anxious to have us affiliate with them, in fact as well as name, for the advantage of us all. This will necessitate a small individual outlay. Before rejecting anything let us discuss it well, remembering that in union there is strength, and that if our industry ever needed union it is at this present unsettled period. In the appointment of officers for the present year Mr. Cornell and I were both remembered, he being put on the directorate for Ontario, and both having appointments on committees.

Of the several officials of the Association that drew my admiration to their executive ability in that body, I wish to mention Mr. J. J. Harpell; he was very much alive to the smooth working of each session, and the successful carrying out of the interests of the Association, his advice here would tend much to progress in our own interests.

I am sure Mr. Cornell will join me in thanks to the C. F. A. executive, the Board of Trade officials, and the people of Halifax, for the many favors shown us during our pleasant visit with them.

Mr. Cornell coincided in the remarks made by Mr. Crewe. He thought, however, in which President Brown concurred, that the affiliation fee of two dollars for every member of the Lake Erie Association was prohibitive, from their standpoint. He objected to the commercialism in evidence at the Canadian Fisheries Association meeting, and not enough actual production representation shown. He regretted that the lobster industry was not better represented at the convention, from a membership standpoint.

Wednesday's Session.

One of the most interesting and educative features of the Association programme was the moving picture exhibit put on Wednesday morning in the Star Theatre, under the superintendence of Mr. Norrish of the Exhibits and Publicity Branch of the Department of Trade and Commerce, Ottawa. Three sets of films were shown: "Fish Culture," "Building Wooden Ships in Canada," and a picture of Canada's National Ports. The fish culture film showed in detail the taking of the spawn from 9,000 whitefish in the water near Belleville and the various stages the eggs go through in the Thurlow Hatchery until they are deposited again



Canadian Fisheries Cruiser "Vigilant" on Lake Erie.

in the various waters of the lakes. It is a film that could be shown to advantage in every fishing centre in Canada, and the Trade and Commerce Department are to be congratulated on the splendid reproduction secured.

The afternoon session was taken up with addresses by H. Hinrichs, Jr., President of the Fresh Fish Producers' Association of Erie, Pa., and J. A. Rodd, Dominion Superintendent of Hatcheries, Ottawa.

Address by H. Hinrichs, Jr., President Fresh Fish Producers' Association, Erie, Pa.

It is a great pleasure for me to be with you again and enjoy with you listening to those who have a message of interest to us engaged in commercial fishing. The degree of my pleasure is materially lessened through my inability to stay with you until the end of the convention. Matters of great importance have been brought



Port Dover Harbor.

to the attention of the recently formed United States Fisheries Association and require immediate action. Added to this I find in the inability of my good friend Commissioner Buller of Pennsylvania to be present, a further detracting factor from the anticipated pleasure. While I am not commissioned to convey to you his reasons for not being able to attend, I nevertheless am quite sanguine that the pressing demands upon

him from the legislators for his advice and judgment on pending fish legislation makes him feel that it is his duty to stay in Harrisburg.

When I was with you a year ago we were confronted with war conditions and the ensuing perplexing problem. Now we must give consideration to the still more abnormal conditions to Reconstruction. These latter, if anything are more serious than the former, at least, all indications point in such a direction.

The most unseasonable kind of weather during the entire winter months has added most materially towards making conditions in the fishing industry so far from normal. The U.S. Department of Agriculture through its Bureau of Markets gathers and disseminates statistical data on the available holdings of frozen fish. The latest report issued by this Department under date of February 15th discloses the fact that 86,000,000 pounds of frozen fish of all kinds still remain in the cold storages in the United States. After two months of winter passed the then holdings represent an aggregate nearly as large as that recorded for the beginning of the winter season during the year previous. These vast holdings at the threshold of the spring fishing season will naturally add to the manifold perplexities before us. There would be justification for an off-hand conclusion that but little, if any, good prospects remain in store for the commercial fisheries during the season about to begin. I believe, however, that with closest co-operation these almost unsurmountable obstacles will be overcome. It may possibly develop that these most unsatisfactory conditions will be the means of bringing about more advanced methods in the general conduct of our affairs. While some of those engaged in this industry have kept step with the general progress developed in other lines, it is nevertheless, unfortunately the fact that many have been satisfied to continue along the old lines with the result of not being able and ready to meet any abnormal and unusual conditions that may arise from time to time.

I desire to discuss with you some phases of the work our new United States Fisheries Association is endeavoring to take up. Foremost is the matter of transportation. The railroads as well as the Express System of the United States are under direct control of our federal government. Whatever I may undertake to say concerning these transportation conditions, I do not wish to have it understood as being made in the spirit of disloyalty, but merely to point out how most impractical they are in connection with the service rendered to the perishable industries, where fish take such a leading part. In addition to decided increased cost of freight rates, the railroads desire to relieve themselves of all responsibility from losses incurred through delays. These revolutionary plans will, as can be readily seen, curtail materially the free distribution of fish. We hope to succeed in our efforts to prevent these radical changes from going into effect. The Association further contemplates to organize its forces so that claims for losses in transit can be systematically handled by it.

One of the crying needs of the fishing industry as a whole, is the establishing of certain grades of all kinds of fish into sizes as well as quality. This, it is also contemplated, would be brought about by the new national Association. In order that this may be universally applied, the co-operation of all members of the Association must be obtained. To make membership in the same as great an asset as possible, the members will be urged to use on all of their stationery a certain trade-mark

now being planned. This in turn will necessitate guarding jealously the reputation of the Association, as a whole.

So many occasions arise from time to time which result in dispute between shipper and consignee relating to size or quality of the goods shipped. The U.S. Department of Agriculture is now empowered to appoint Inspectors in the several larger markets, to be impartial judges as to the merits of probable complaints. So far only perishable fruits and vegetables have been in mind in creating these additional offices, but the need of added responsibility to cover shipments of fish and other perishable flesh products, is clearly evident, and without a doubt a request will be made upon the lawmakers to broaden out the duties of these inspectors so that they may also be called upon to settle the possible disputes arising from the shipments of fish.

It is also contemplated to have the Association become the medium through which data on production and market conditions be gathered and disseminated among its members at more or less frequent intervals.

Inasmuch as the conditions surrounding the industry in the various localities are so vastly different, a central organization will necessarily find its sphere of operation not of fullest benefit to all concerned. To overcome this it is planned that the country be divided into several districts, with local affiliated organizations to handle the strictly local matters. ALL, however, to be under direct supervision of the parent office. This situation will be found particularly pronounced when the campaign of educating the general public to a greater use of fish as a food, is undertaken.

It has been realized by a great many for some years past, that an effort should be made in the direction of standardizing packages used for shipments of fish, particularly in the fresh-caught state. The Association can undertake the handling of this problem without great effort, I believe.

I have observed the recommendation of the committee of the Canadian Fisheries Association for an extra charge on packages used for fish shipments, instead of including the cost of such packages in the prices quoted on fish. I believe, that the time is not far distant when the general practice will be to include the cost of the packages in the fish prices. The spaces on the sides and ends of packages furnish an admirable medium for advertising the shipper. If this is resorted to, then it would be fair not to charge our customer extra for these packages which cannot be reasonably used by him. I would most earnestly suggest that before final action is taken on this matter, that the same receive further thought and consideration.

Our local Association on the American side was privileged to enjoy splendid co-operation from several members of your Association to the extent of furnishing daily reports on their production. This information, added to the information furnished by the producers on the American side resulted in very valuable data as a whole. We, on our side, at least have found it to be so, and I am quite certain that the result has been of like nature to you on this side. It is our hope that we may again be able to furnish these reports.

Realizing the great benefit to be obtained through co-operation we believe that it would be to our mutual benefit and interest to meet one another more frequently in the future than has been the case in the past. We stand ready at any time to be of service to you whenever possible, and I trust, and I know I am expressing the sentiment of my colleagues when I say

that we may have the privilege of being at your service quite often from now on. This is prompted by a desire on our part for an opportunity to reciprocate the many favors so kindly extended to use heretofore.

“CO-OPERATION.”

Address by J. A. Rodd, Dominion Supt. of Hatcheries, Ottawa delivered to Lake Erie Fishermen's Association.

I have been informed by several members, since I arrived about an hour ago, that the season of 1918 was a most successful one for the Lake Erie Fishermen's Association from the standpoint of co-operation, good prices and the amount of fish produced.

I am pleased to be able to tell you, and you no doubt will be pleased to hear, that the season of 1918 was also a successful one for the Dominion Fish Cultural Service, from the standpoint of the number of eggs collected, and the number of the fish hatched and returned to the rivers and lakes of the country in compensation for the fish that were taken therefrom by the commercial fishermen.

This success was all the more gratifying when the condition of the labour market and the epidemic of Spanish influenza that occurred during the height of the spawning season is taken into consideration. Trained spawn takers were not available so that most of the eggs were taken by men who had no previous experience in the work.

The outcome was in no small measure due to greater co-operation between the staffs of the different hatcheries and the different Governments interested in fish cultural work. The co-operation between the United States and Canada in fish cultural work in boundary waters and between the Dominion and the Province of Ontario was more intimate than ever before.

Arrangements were made in the early part of October last by the Governments interested to exploit all available sources of egg supply in the Great Lakes and an understanding was arrived at as to the districts in which each government should operate, which prevented any overlapping and gave most satisfactory results. The staff of the Thurlow Hatchery, owing to the scarcity of experienced help, was unable to effectively cover all the spawning grounds of the eastern part of Lake Ontario and a portion of these grounds was therefore thrown open to the spawn takers from the Cape Vincent Hatchery, New York, who in the area allotted to them collected over 90,000,000 whitefish eggs. After the Cape Vincent Hatchery was filled 9,000,000 whitefish eggs and 25,500,000 herrings eggs were turned over to Canadian hatcheries. The Superintendent of the Ohio State Hatchery at Put-in-Bay obtained a considerable quantity of whitefish eggs from Pelee Island, Lake Erie.

The United States and Canadian Fisheries Departments have, in co-operation, begun experiments with a view to establishing the spring salmon of the Pacific Coast in Lake Ontario and the St. Lawrence River and shipments of eyed-spring salmon eggs from the Columbia and Fraser Rivers have been laid down in the Cape Vincent and Thurlow Hatcheries, respectively.

On the Pacific Coast the two Governments have combined in an effort to re-establish the sockeye fishery in the Fraser River and the United States Bureau of Fisheries supplied 20,700,000 Alaska sockeye salmon eggs from Alaska which were placed in the Harrison Lake Hatchery from which the resulting fry will be distributed in the Fraser River to the benefit of both countries.

The east and west are also co-operating in other ways.

The east is supplying whitefish eggs for stocking the larger lakes in British Columbia and the eggs of Rainbow trout, a species indigenous to the west and now established in many eastern waters, are this year being supplied from the east to stock the waters in the Banff National Park on the eastern slope of the Rocky Mountains.

As I have already told you, the fish cultural work of the Dominion Government was on the whole most satisfactory, and the previous season's collection of the eggs of several species was increased. The largest increase was in the number of whitefish eggs collected which was nearly 129,000,000 greater than the number collected in 1917. The collection of whitefish eggs was increased in all areas except Lake Erie; the total collection of such eggs being 804,930,000.

The collection of whitefish eggs in the different areas was:

	1917.	1918.
Lake Ontario, Bay of Quinte	148,990,000	171,800,000
Lake Erie	62,240,000	45,920,000
Georgian Bay	45,280,000	83,360,000
Lake Superior	2,370,000	.....
Lake of the Woods	30,400,000	49,450,000
Lake Winnipeg	336,700,000	363,000,000
Lake Winnipegosis	50,000,000	92,400,000

The western portion of Lake Erie from Amherstburg to Port Stanley is the only area in which there was not a satisfactory increase in the number of whitefish eggs collected, and instead of an increase there was a decrease of 25 per cent. The collection last year in this area compares in an even worse degree with earlier collections, as it was less than 50 per cent of the average collection of the five years from 1900 to 1904 inclusive which was 93,400,000 whitefish eggs.

As the fishermen in the various divisions of this district encountered practically the same conditions it would seem that there is a greater difference than there is any good reason for in the quantities of eggs collected by them.

I am quite well aware that unusual conditions obtained last season, and that a very small percentage of the commercial catch was taken in a spawning condition. Notwithstanding these conditions the vital fact remains that insufficient eggs were collected by the fishermen on the Canadian side in the western part of Lake Erie to compensate for the fish that were taken in their nets. This condition tends to only one result and that is a gradually decreasing fishery and in time an exhausted one.

The conditions in this part of the lake are not favourable to the government engaging in fishing for hatchery purposes as it does in other districts and it is, therefore, necessary to look to the commercial catch to fill the hatcheries.

The Department was asked by your Association, at its convention last year, to take such steps as would assure the collection of all suitable eggs for hatchery purposes, and it could refuse or cancel the licenses of those who are not doing as they should in this connection. Such drastic action should obviously be a course of last resort.

The Department has always met with the heartiest co-operation in its fish cultural work from this Association as a body and from many of its members as individuals. This co-operation is deeply appreciated and on behalf of the Department I have much pleasure in acknowledging and thanking you most heartily for it.

To those who have been indifferent, I would point out that their indifference is not only detrimental to their own interests but that they are not dealing fairly with their associates and are not living up to the spirit of co-operation on which this Association is founded, and I would urge upon you all in the strongest possible manner, particularly those who have been indifferent, to continue and extend your co-operation and to take such steps as will assure the saving of every good egg and the putting back into the lake of sufficient fry to more than make up for the harvest of fish taken in your nets. If you will do this there need be little fear for the continued prosperity of the fisheries of Lake Erie.

In the evening Dr. E. E. Prince, Dominion Commissioner of Fisheries, Ottawa, whose addresses on Canadian Fisheries are always followed closely by the fishermen, gave an illustrated lecture.

THURSDAY'S SESSION.

Thursday morning the members of the association were the guests of the St. Thomas Board of Trade, who conducted them on an inspection tour of schools and manufacturing plants in the city.

In the afternoon Dr. A. G. Huntsman, Professor of Biology, University of Toronto, gave a most interesting illustrated lecture on "Lakes and Fishes," which was closely followed by the whole association. This will be published in the next issue of the "Canadian Fisherman."



Lake Erie Fish Tug Iced Up.

Following this was an address by J. A. Ruddick, Dairy and Cold Storage Commissioner, Ottawa, on "Cold Storage." Owing to the ice shortage in Lake Erie this season, this address was followed with close interest.

The Cold Storage of Fish.

By J. A. RUDDICK, Dairy & Cold Storage Commissioner.

The cold storage industry has had to contend with much misunderstanding and misrepresentation. It has been the football of the demagogue, the self-seeking city councillor and others who pander to popular prejudices. The general public, getting its information largely from the newspapers, has been misinformed as to the proper functions and uses of cold storage. There has been much confusion of mind even in certain official circles, and very often the term "Cold Storage" is used when the reference is to something which is purely a matter of trading, and has really nothing to do with cold storage.

A short time ago we had a somewhat celebrated inquiry into the profits made in the handling of bacon. It had nothing whatever to do with cold storage, and yet the papers referred to it day after day in glaring headlines as "the cold storage inquiry." There is need for clearer thinking along these lines in order that the people generally may have a better understanding of the relation of the cold storage industry to the trade in food products, and its effect on food supply and prices.

The prejudice against cold storage comes under two heads. First, that which is based on the belief that the cold storage warehouse is responsible, in some degree at least, for the increased cost of living. Why cold storage should have been chosen as the scapegoat in connection with excitement arising out of the increased cost of living is not very easy to understand, but it seems to be a fact. Then there is the conviction, firmly implanted in the minds of many people, that the cold storage of food products inevitably results in deterioration of quality.

Regarding the relation between cold storage and the cost of food products, there is possibly some room for argument, but the broad fact remains that the facilities afforded by cold storage for the holding of goods of seasonal production is practically the only means which we have of preserving the surplus in many foods from the period of flush production to the period when the production is not equal to the consumptive demand. The real effect of cold storage on prices is to stabilize; to prevent gluts in the market which depress the price to the point where production becomes unremunerative and ceases, by absorbing the surplus and carrying it forward to the period of scarce production, and thus preventing prices from going as high as they otherwise would. It would be impossible to provide the large centres of population with certain foods during the slack season of production without cold storage facilities. After all there is no difference in principle between preserving food products in cold storage or preserving them in the form of canned goods, or in using elevators to store surplus grain at the time of its being harvested until such time as it is required for consumption.

With regard to the effect of cold storage on the quality of food products, I can only say that the very common belief that the quality is inevitably injured is not justified by the facts of the case. It is undoubtedly true that foods coming out of cold storage are frequently of inferior quality, but that only proves that the quality was inferior when they were put into cold storage. Cold storage will not restore the quality, and at the best it can only be expected to preserve foods in the same condition as received, providing they are held under a proper temperature. In a general way it is true that the preservative effect of cold storage diminishes in proportion to the extent that deterioration has taken place before the goods are stored. It very often happens that goods are placed in cold storage only when the owner has reason to believe that they are in immediate danger of spoiling. This is, of course, very unfair to cold storage, and such goods should be refused admission.

It is quite the fashion with many people when offered any article of food which is out of condition to attribute the condition to cold storage, and they

blame cold storage for a great deal of poor food which has never been in cold storage. I sometimes think it would be a good thing for the cold storage industry if all cold storage goods were plainly marked as such, and to make it punishable to misrepresent any goods as cold stored which have never been in cold storage. Then, too, the cold stored goods suffer through the prejudice against them which induces retailers to have frozen foods thawed out before being offered to the customer. It should be compulsory to have all frozen goods delivered to the consumer in that state. Such a practice would soon lead to more confidence in the quality of cold storage goods.

Of course the cold storage of fish is governed by much the same principles as the storage of any other food product, except that it seems to be essential in the case of fish that the cooling or freezing should be delayed as little as possible, and that the freezing should be done quickly at a very low temperature. It is claimed that if fish is ever allowed to get warm after being taken out of the water that the quality is never as good as if it had been cooled or frozen immediately. It is a well known fact that fish which are caught through the ice in the winter, and which freeze naturally in a few minutes, are invariably of good quality, and if properly handled cannot be distinguished easily from fish just out of the water. It is also a well known fact that a very large proportion of the frozen fish which are offered to the public in this country are not as good as fresh fish. Personally, I am very fond of fish. I have eaten it in different parts of the world, where it is obtained in finest condition, from fillet of sole in England to fried flounder in New Zealand, and fried cod in Prince Edward Island. I have eaten some of the finest fish in the tropics, including the wonderful flying fish, which is probably the finest eating of any fish in the sea. I think I know when fish is in good condition, but I must admit that it is a good deal of a lottery to order fish at hotels and other places very far away from the point where the fish are caught. Sometimes the quality is excellent, but oftener it is not, and one gets discouraged and doesn't order fish again for a long time. It should not be so. It is possible, and I hope will some day be practicable, to serve fish at any point on this continent in good condition. At the celebrated banquet held in Chicago on the 23rd of September, 1913, in connection with the International Congress of Refrigeration, practically all the dishes were out of cold storage, and the fish was a so-called steelhead salmon caught in the Columbia River, Oregon, on July 16, 1913. It was universally acknowledged to be in perfect condition, and could not be distinguished from fresh fish. I never tasted better fish.

The consumption of fish would be enormously increased in this country if one could always be sure of getting it in good condition.

Having said so much on the general question of cold storage, you will probably expect me to have something to say on the practical application of cold storage to the fishing industry. My friend, Dr. Mary Pennington, Chief of the Food Research Laboratory, U. S. Dept. of Agriculture, is probably one of the best authorities we have on this question of frozen fish. Without quoting her exact words I may say that she has, as a result of much investigation and experience, laid it down as a fundamental that in order to produce frozen fish which after several months of storage will be practically equal to fresh-

ly caught fish in food value and flavor, it is essential that they be placed in the freezing rooms as soon as possible after they leave the water. That they should be handled as little as possible, to avoid bruises, breaking of the skin or damage to fins, which lessens their keeping quality and lowers the attractiveness of the fish at the market. Dr. Pennington also lays down this dictum, that "under no circumstances should a fish be allowed to become warm from the time it is caught until it is frozen. Very slight exposure to warmth causes changes in the flesh, which no amount of freezing will remove." She gives no explanation as to why fish is injured by being warmed. Probably it is because fish are cold blooded animals, and in this respect differ from the warm blooded mammals or birds from which we obtain our flesh foods. It follows, therefore, that the freezing plants should be located as near as possible to the fishing grounds, so that there shall be as little delay and as little handling as possible before the fish reach the freezer, and that where delay is unavoidable, the fish should be kept cool with ice during the interval.

It is recommended that the fish, as they are received at the freezer, should be washed free from all dirt and slime in clean, cold, running water. The prac-



Tug "Margaret L.," built and owned by Thos. Low, Pt. Dover.

tice in freezing fish varies according to the kind of fish, their size, etc. At some establishments the fish are packed in pans about 4 inches deep, and these pans are laid on the ammonia coils in the freezing room, where the temperature will run from 5 degrees to 15 degrees below zero F. The pipes are arranged so that they make a series of shelves, far enough apart to allow the pans to be placed between them. This method of freezing takes from 12 to 30 hours, according to the size of the fish, and the temperature of the freezing room. When freezing is complete the pan is loosened from the block by pouring cold water over it.

The glazing of the fish is the next, and a very important part of the process of preservation. After the block of frozen fish is removed from the pan it is immersed several times in cold water, with the result that the fish is covered with a thin glaze of ice which protects it from drying up and discoloring. If the fish is stored for any length of time it is necessary to re-glaze it, as the ice evaporates and gets broken off in the handling. The glazing prevents the evaporation of moisture, and presents a surface on which molds and fungi cannot grow. The glazed fish are then placed in cold storage to be kept until they are required for the market.

There are two points to be considered in the temperature of the storage room for frozen fish. First, the keeping of the fish, and second the economical operation of the cold storage. It is a distinct loss to maintain a lower temperature than is necessary. The best opinion seems to fix the range of temperature for the storage of frozen fish at from a minimum of 5 degrees below zero to a maximum of 5 degrees above. Fish properly frozen immediately after being taken from the water, and kept well glazed in a good storage temperature, should show no deterioration whatever for a period of at least nine months.

We now come to a very important matter in the marketing and consumption of frozen fish, and that is the manner of defrosting. As I have already said, it too often happens that the fish monger thaws the frozen fish and exposes them for sale in a defrosted condition to deceive the customer. No fish should be thawed until it is taken home by the consumer to be eaten, and then it should be placed in a pan of ice cold water to be thawed out gradually. This is a very important precaution to take in the handling of frozen fish.



Unloading Fish at Port Dover.

Some attention has been given recently to methods for the brine freezing of fish. For some months past a committee of the Department of Scientific and Industrial Research in England has been carrying on demonstrations at Billingsgate market of freezing by the brine immersion system, and they appear to have secured some very good results. In this system the fish are frozen in a brine which is made by adding to water from 30 to 32 per cent of salt by weight, which permits of the temperature being lowered to practically zero before the formation of ice occurs. The fish are immersed in this brine, and are completely frozen in half an hour, as against 12 to 30 hours by the ordinary process where air is the refrigerating medium. In a recent report on this subject the committee says:

"The importance of this rapid freezing is due to the fact that the water in the flesh, forming about 80 per cent of the weight of the fish, freezes in very small crystals without disrupting the muscular tissues, and after defrosting, the structure of these tissues is found to be practically unimpaired; consequently there is no loss of essential juices. With the slower air-freezing large crystals are formed, which in defrosting are found to have seriously ruptured the tissues and consequently there is a considerable loss of the juices and weight and of market appear-

ance. Moreover, the keeping qualities of the fish so treated are greatly deteriorated."

After you have frozen your fish and kept it in storage until it is required for the market, you still have to deal with railway refrigeration if the fish is to be shipped in warm weather. The ordinary refrigerator car with ice bunkers at either end will not maintain a temperature much, if any, below 50 degrees. Of course, if a car were to be loaded with frozen fish the temperature would be below 50 until such time as the fish warmed up, but if you were to load a car with unfrozen fish, 50 degrees is about as low as you can depend upon with ice only in the bunkers. In order to obtain lower temperatures it is necessary to use either what is known as the brine tank cars, or cars fitted with wire basket bunkers in which crushed ice and salt can be used. These are the cars which are used for the shipment of meats, and instead of an open bunker in which ice is placed, the bunkers contain tanks or baskets which are filled with crushed ice and salt. If the car is well built and the doors are made tight it is possible to maintain freezing temperatures in brine tank cars by using from 10 to 25 per cent of salt with the ice. When loading refrigerator cars in warm weather the effectiveness of the average car is increased very much by having the doors covered outside with a good, tough, building paper. It is seldom that the doors are perfectly air tight, and any leakage results in a very considerable loss of refrigeration. If there is the slightest crack at the bottom of the door the cold air filters out and warm air will come in around the hatches or at the top of the door to take its place.

Before closing I would say a word or two on the subject of advertising. I think that those who are interested in frozen foods in different countries should devote more attention to educating the people as to the real function and value of cold storage, and to counteracting the prejudice which many people have against all kinds of cold storage foods. It is a curious thing that many householders who declaim against anything which has been in cold storage think they are doing the proper thing by buying up fowl and meats of various kinds in the fall and holding them in a frozen condition throughout the greater part of the winter. There is no difference between this practice and cold storage. The chances are that the foods will be better taken care of in cold storage than they will under this plan of natural freezing. Every householder who uses an ordinary ice box has adopted the principle of cold storage, very often without realizing it.

One of the best lines of advertising which I have seen for some time is that carried on by the New England Fish Exchange, Boston. Every few days the Exchange sends out a bulletin which goes to the press, to dealers, and others throughout the country. I have in my hand a copy of one of these bulletins, which reads as follows:

"Bulletin 104. New England Fish Exchange. 'Oh dear! The paper says fish are high,' sighed Mrs. Youngwife.

"Some kinds of fish are always high, but that doesn't mean you can't get good fish cheap," said Mrs. Longmarried. "There is always some kind of fish cheap, only most folks don't know enough to ask for it. Of course if you will insist on varieties that are scarce, or varieties out of season, you will spend a lot of money."

"Ever try whiting? Well, that is inexpensive. Why not try some. If your dealer doesn't carry it tell him you want some, and he'll get it. If it is frozen, tell him you want to thaw it yourself. Don't put it in the oven, but place it in cold water a few hours and let it thaw naturally."

"But John doesn't like frozen fish," objected Mrs. Youngwife.

"John probably couldn't tell the difference between a frozen fish and one right out of the water. You try it and see. Make him a chowder out of the whiting."

"Scale, clean and cut the fish into chunks. Tie it up in cheese-cloth, put in a kettle and cover with water. Let it come to a boil on a slow fire. Then remove the skin and bones. Put some fried-out salt pork in the kettle with the fish and the water you cooked in it, some sliced potatoes and onions and cook until done. Then season with butter, salt and pepper. Add an equal quantity of milk as you have water, being sure it doesn't boil, and a few crackers."

"I tried it!" exclaimed Mrs. Youngwife next day, "and John said he never ate anything better, and here I've been paying fancy prices for fish."

IMPORTANCE OF OUR FISHERY RESOURCES.

By Professor E. E. Prince, LL.D., D.Sc., etc., Dominion Commissioner of Fisheries, Ottawa.

Professor Prince in commencing his address, stated that the fishery resources of the Dominion might be viewed from two standpoints (1) as a national food resource, and (2) as a national industry or business. From both points of view the fisheries are entitled to be given greater prominence than has usually been accorded to them. Even a prominent leader of industry like Mr. Carruthers, in recently reviewing the great grain business, the pulp industry, the timber trade, and other Canadian industries, omitted altogether any reference to the great fishing industry, which takes such prominent rank in Nova Scotia and in other provinces of the Dominion.

In like manner, the United States Council of National Defence emphasised the vital importance of the principal industries of the continent, but apparently forgot all about fish and fisheries; and in the Food Bill presented to the New York Legislature by the Committee on War, it is to be noted also that no mention was made of fish, yet, from every point of view, fish are entitled to a high place in the industries and natural resources of the country. It is for the fishermen to realize the important place they occupy as contributing most essentially to the international welfare.

Our Fish Unexcelled as Food.

Amongst the reasons why our fish and fisheries rank amongst our greatest resources, it may be claimed that fish are unexcelled as food, because they are rich in proteins which build up the human body and supply energy for active life. It has been shown that while lean beef has 18.9 per cent protein in its composition, salmon has over 21 per cent, and fresh cod 20.9 per cent, while mackerel, halibut, and other fish, have a percentage of protein of 18.1 per cent. It is true there is a less proportion of fat which is the main source of warmth to the human body, but just as bricks are important in building up the structure of a house, while

the furnace and radiators supply the warmth, so the protein constituents of fish build up the body, while the fats supply the heat.

Containing little fat, fish are really more digestible than meat or vegetables, and it must be interesting to fishermen to know that the fish which they catch for food purposes can be digested by the consumer in from 1½ to 2½ hours, while beef takes 3 to 4 hours, and pork as much as five hours. In these days of strain and stress an easily digested food like fish must take the first place. Many Pacific Indians and northern tribes live upon fish the larger part of the year, and they are healthy and energetic.



Tug "Robert K" of the Kolbe Fish Co., Pt. Dover.

Fish Our Most Widespread Food Resource.

In the next place, fish are more universally distributed than any other natural food. Fruit areas are limited, wheat fields and grazing lands occur only over definite regions, while timber is confined to certain geographical boundaries, but north, south, east and west, rivers and lakes occur, and three oceans—the Atlantic, Pacific and Arctic—on the sea board, all of which abound in fish. Further, it is often forgotten that fish produce more human food per acre than land. "Once in the year," said a famous British authority, 50 years ago, "an acre of good land would produce a ton of wheat, but the same area on the bottom of the sea yields a greater amount of food, on the prolific fishing grounds, every week in the year to the persevering fisherman."

No Food Resource More Readily Available.

Our waters, in the opinion of authorities, are far more productive of food than land. It must be remembered also that while the fishermen's labours are arduous and often perilous, and require a great amount of sacrifice and skill, yet the harvest of our waters is self-seeded, self-tilled, and, it must be said, self-matured, and is ready to be harvested and marketed; whereas the land must be ploughed, seeded and cared for with great labour and expense before the crop can be produced. It is true to say that while many of the products of the land require to be treated by expensive modes of preparation, fish are practically a food ready for use. Threshing machinery, grain elevators, flour mills and other costly means of preparing grain for human consumption have no parallel in the fish industries, because fish can be used immediately after capture, and require simply cleaning and cooking. It is true that the processes of canning and curing fish involves costly factories and gear; but, as a matter of fact, fish after capture may be said to be ready for consumption, and some races like the Eskimo and some European nations even

eat fish just as they come from the water, practically without cooking.

Our Fishery Resources Most Reliable and Lasting.

While the fish harvest is a most reliable one, there are of course fluctuations, and times of plenty and scarcity; but as the fish beneath the waters are free from the storms and destructive influences which so devastate fields, forests, and fruit lands, it may be justly claimed that the fish harvest is one of the most reliable and though local storms, ice, and other hindrances may interfere with fisheries, the failures and losses are not to be compared with the waste and ruin which often occurs on land. The immunity of the fisheries from land calamities has been prominently seen during recent years when many of the most fertile countries of Europe have been devastated by war, and by destruction of

over six hundred years, yet they remain amongst the most productive areas in existence.

Why Fish are Produced More Cheaply Than Other Food.

The fisheries yield a food that is cheap as well as nutritious. The cost of labour of nets and fishing gear and of boats may rise but the fish themselves, the raw material, are just as available in hard times as at other times. Nature produces the harvest, and it is mainly the cost of harvesting which may increase or decrease. The increase in price of fish must be, therefore, due to the fishing operations and to the marketing methods. These are but a percentage of the total cost and should not seriously affect the prices of staple fish in the markets. Consequently, fish should be the cheapest of all foods. To most people fish are a welcome and palatable food, and there are few persons with digestions so deli-



Lake Erie Fishermen's Convention, City Hall, St. Thomas, Ont.

the most criminal and barbarous character, but the fish in the adjacent seas, rivers and lakes have remained unharmed and abundant, and though submarines and explosive mines may destroy a certain amount of fish in the sea, the general supply has not been permanently affected. The fisheries, it may also be asserted, are capable of withstanding extensive exploitation, and are among the most lasting of our supplies of food.

Some authorities like the late Professor Huxley and Professor McIntosh, the Scottish authority, have claimed that the principal food fishes cannot be exterminated, and the late Professor Hind once pointed out that though our Atlantic cod banks have furnished during the last half century probably over two hundred millions of cod to the bank fishermen, and they have been exploited for

cate that they cannot easily digest fish. Many persons dislike certain meats, such as pork or veal, others object to potatoes or green vegetables, but anyone with a normal digestion must find fish a desirable and digestible form of nutriment. Nothing can be more appetizing than oysters or broiled lobsters, cod, or haddock with anchovy sauce, and to most people these form a most delightful food.

Our Fishermen Merit Greater National Encouragement.

No class in the community are entitled to greater encouragement and support in their work than the fishermen, and Governments in the past have recognized this, but it may be doubted whether farmers and fruit growers and miners have not been helped in a more substantial way than the fishermen. The French Government

has given an example of what can be done to help the fishermen and the fisheries in arranging, recently, to have cold-storage plants installed on some of the small islands in the St. Lawrence Gulf, whence fish can be transported and put on the markets in France by the best possible methods. It would help the Canadian fishing industries if the Government were to operate capacious receiving houses where the fishermen's catches could be received, stored and distributed all over the country. Fishermen would know that they had reliable places for receiving and distributing their products, and some such organization and stabilization of the fishing industry is most urgent and should receive attention without delay. A system of concentration of catches at central points, storage in transit and cheap distribution merits the attention of the Federal Government.

Canadian Fish are the Best Kinds.

Our Dominion waters extend from the 45th and 49th parallels of north latitude to the Arctic Circle, and are, therefore, of a northern character. This character implies that the fish are of the most esteemed kinds, chiefly species of the great family of Salmonidae. The lake whitefishes, the ciscoes or lake herring, like the salmon-trout and grayling, belong to the salmon family, while the haddock, cod, halibut, herring and mackerel, lobsters and oysters, are also northern types of fish, and all abound in our inshore and offshore waters on the sea coast.

Vast Extent and Value of our Fisheries.

The vast extent of these fishery resources corresponds to the immense area of the waters of the Dominion. Canada embraces an area equal to about 230 Switzerlands and is larger than eight times the area of France and Germany combined, and in every part of this extensive territory lakes and rivers occur embracing half the fresh water on our globe, while on the east and west coasts the most productive seas occur. The growth of these fisheries in recent years has been most remarkable.

In 1872	their value was	\$10,788,000
" 1882	" "	\$16,825,000
" 1902	" "	\$21,960,000
" 1912	" "	\$34,670,000
" 1915-16	" "	\$35,860,708

while the last returns for 1917 show the value to have arisen to \$52,312,000.

The address of Professor Prince was illustrated by a large series of splendid views of fishing grounds on the seas and on lakes and rivers, fishing ports, food of fishes, and the various methods of fishing, and included also fine pictures of important food-fishes. Many of these pictures were beautifully coloured and formed a most interesting feature in the address.

ADDRESS BY S. W. DOWNING,

Supt. of Hatcheries Put-in-Bay, Ohio.
Put-in-Bay, Ohio.

Mr. President, Hon. Secretary, and Fishermen:

I feel highly honored by having been asked to attend this meeting of representative men who are engaged in fishing, marketing, and the production of fish; feeling that as no less a personage than our Savior when upon earth, sought out the fishermen for his associates, that when I am invited to meet

with fishermen, I think that a great compliment and privilege has been conferred upon me. In fact, I think that the people of this earth, should be, or naturally are, divided into six classes. There is the bad, very bad and d—d bad; the good, the very good, and fishermen.

Now while it gives me great pleasure to be with you again, I can not see why I was asked to talk to you. Surely your memories are not so short that you can not recall my having been with you when this society was first formed three years ago, and why any one having had to listen to me once, should deliberately invite a second infliction, is beyond my comprehension. Not but that I would like to talk, if I could only overcome the natural diffidence with which I was unfortunately born, and which all these years I have been trying to overcome but have failed. In this respect, I am somewhat in the same boat with a large man that I once saw in Detroit on a street car; it was early morning, and with the laborers, clerks, stenographers, etc., going to work the car was somewhat crowded, and as we approached the down-town section, I noticed a man get aboard who had evidently been out with the boys, as it was very noticeable that he had a jag on, but he made his way up the aisle and came to a halt just beside a very large man who was sitting in a seat and appeared to be very much interested in his morning paper. At the next crossing a lady also got on and walked up the aisle, and stood near the man with the jag, who immediately leaned over toward the large man and said: "Shay mister, give lady sheat!" No attention was paid to the appeal, and again he repeated the request, with no better result, and apparently becoming desperate, he leaned over and placing his hand on the shoulder of the large man he exclaimed, "Shay, d'you hear me? Get up, give lady sheat!" The large-man could no longer ignore the interruption, and jerking his paper down he exclaimed: "You are drunk, sir! You are drunk!" "Well," says the man with the jag, "Sphose I am drunk, I'll get over that, but you're a d—d hog, and you'll never get over it!" And so it is with my bashfulness, I'll never get over it, so as to be able to speak before an audience readily. I have therefore written a few thoughts that perhaps may be of some interest to you, provided you can put up with poor reading long enough to hear them, and I will give as a title to these thoughts—

The Production, and the Destruction of the Fishes of Lake Erie.

First you will probably be interested in hearing of what we are doing on our side of the Lake in the way of propagation for the purpose of re-stocking Lake Erie with food fish of all the varieties of the greatest value that are caught for market, and therefore of direct interest to all those engaged in the taking, marketing and producing them, and also to all other citizens who are in any way affected by the increase or decrease of this particular food supply.

During the past seventeen years, the federal station at Put-in-Bay, Ohio, of which I have been in charge, has produced two billions, five hundred and fifty-seven millions whitefish; one billion, seven hundred and sixty millions pike-perch; two hundred and ten million herrings; seven million lake trout, and thirteen million yellow perch fry, making a total of over

four and a half millions of fry for the seventeen years. And the Ohio State hatchery, situated but a stone's throw away from us, has during the same period produced a total of over two and a half billions of fry of the same varieties. The greatest number of their production being herring, while our greatest number was of whitefish. The total output of the two stations was in round numbers, something over seven billions, and sixty-six millions of fry; or about 270 millions for each of the seventeen years, at the federal station, and about 147 millions each year from the Ohio hatchery.

But of course we make no claim that all these fry reach the age of maturity, neither can we give an approximate estimate of the number that reach maturity anywhere in the Great Lakes, but judging from the percentage known to have reached the age of reproduction after having been liberated at the fingerling stage, we think that it is safe to estimate that at least 10 per cent of all the fry liberated reach maturity, if not destroyed by other than natural causes, and if so, then there were produced each year by the federal hatchery alone approximately twenty-seven millions of fish, and averaging them at two pounds each, we have a production of 2,700 tons a year, and as the kinds most propagated are of the best varieties and sell for the highest prices in market, perhaps an average of 15c. a pound to the consumers would be a fair estimate, then we have a production of \$810,000 worth of fish each year. And to digress a little we will say that the total cost of this production, including salaries, pay for eggs, temporary labor both at the station and in the yield, the upkeep of the station, together with the cost of maintaining and operating the Str. Shearwater which is used in collecting the eggs from the different fields, and in distributing the fry from the station, has averaged less than \$15,000 a year, leaving a clear profit to the Government of \$796,000 a year, which we think is a far greater profit than is derived from any other of the Bureaus engaged in the conservation of our natural products, and is almost equal to the percentage of profit that some of our people during the war has made by profiteering. But to return to our subject, we will now turn from the production to the destruction of fish, and consider some of the conditions which cause it.

The natural destruction, beginning with the loss of the fertilized eggs deposited by the parent fish on the spawning grounds, which are eaten by the bottom feeding fishes, such as suckers, mullets, red-horse, water lizzards and in fact all the aquatic life that feeds on the lake bottom, also those eggs which become covered with mud and silt and are smothered. The young fish eaten by minnows during the early fry stage, and the fingerlings and yearlings eaten by the larger fish cannot be estimated, neither can it be controlled. But the greatest source of destruction, and one that can be controlled is that which is carried on by mankind, and we think that this destruction should be divided into two classes: "The economic and legitimate," and "the unnecessary, wanton and criminal." By the economic and legitimate, we refer to the taking of those fish which have reached the age of maturity, and the taking of which is, or should be, legalized by the State or Government laws, for as soon as fish of any species have reached the age of maturity and have been given a chance to produce, the sooner they are removed from the water in

which they grew, the better it is for their own species, for if they are left in these waters they but consume the food that it were better to be left for the consumption and growth of the young fish, and therefore we have no quarrel with the fishermen who remove them, the dealers who by purchasing them encourage the taking, nor the laws of the State and Governments which make such fishing legal. But we cannot too strongly condemn the wanton destruction of undersized fish such as are annually being taken from the waters of the Great Lakes and placed upon the markets. And, although the present prices that are being paid for all kinds of fish are very tempting, and make it profitable just for the present for the fishermen to bring them in just as small as they will be accepted, it is suicidal to his own business to do so, if he expects to remain in the business only for a period of two or more years, as we will show later. Most of the States and countries bordering upon Lake Erie, have laws regulating to some extent at least, the size of the fish that may be legally taken, and as a rule the size limit on the fish so protected is large enough, provided the regulations are rigidly enforced, or conscientiously lived up to. But again, some of the most valuable species are not mentioned in the statutes of some of the States. For instance, of the four States bordering upon Lake Erie, Ohio has more coast line than has the other three combined, and a far greater area of breeding grounds than all the others; this is especially true of two of the best and highest priced fish that are being produced, namely, the whitefish and the pike-perch, and also they are the two species that are being propagated to the greatest extent, as a glance of the output of fry produced at the hatcheries will show, and for this reason we think that the State of Ohio should have the most judicious and stringent laws possible for the protection of the young of these fish, yet one of these, one of the very best and highest priced food fishes taken in the Ohio waters, has no protection whatever by the laws regulating the size of fish that may legally be taken, and in consequence, tons of these undersized fish that would require from three to eight to weigh a pound, can be seen on the floors of the fish houses, both during the spring and the fall seasons. However we would not be understood as censuring the fishermen, or even the dealers too strongly for this great destruction of immature fish, as the very great demand and the high price offered makes the temptation to offer anything that will be accepted on the market very strong, and it is but natural to get all we can to-day without due thought of the future, and so long as there is no legal restraint placed upon them, we must expect both the fishermen and the dealers to follow the present custom.

As to the whitefish, one of the other best and highest priced of the fresh water fishes, it is fully protected as regards the size limit in the States of Ohio, New York and Michigan, the legal weight being two pounds in New York and Michigan, and one and three quarter pounds in Ohio, and from an experiment conducted by the writer it was found that whitefish of this weight in the round, were fully matured. In this experiment, 200 males and 200 females were measured and weighed, with the result that we found of the males, 34 weighed $1\frac{3}{4}$ pounds, 78 weighed 2 pounds, 8 weighed $1\frac{1}{4}$ pounds, 78 weighed $2\frac{1}{2}$ pounds, and 2 weighed 1 pound each. And the fe-

males, 120 weighed 2 pounds, 56 weighed $2\frac{1}{4}$ pounds, 10 weighed $1\frac{3}{4}$ pounds, 8 weighed $2\frac{1}{2}$ pounds, and 6 weighed $1\frac{1}{2}$ each, making an average weight of 1.7-10 pounds for the males, and a fraction over two pounds for the females, and as these fish were selected from about six thousand that were being held in pens for spawning, and as the smallest fish were selected for the test, and all the males were found to be ripe, yielding milt freely, and all the females were heavy with eggs, it was evident that all were mature fish, which shows that if the size limit of these several States are not violated, the whitefish in so far as the size limit is concerned, are amply protected.

But unfortunately this is not always the case, as the following incident will show: A fish dealer of Sandusky, Ohio, accosted the writer one day, saying that he had some fish that he would like to be advised as to what kinds they were, and upon examination they were found to be the common lake herring and young whitefish. Fifteen of these whitefish were placed upon the scales, and they together weighed just five pounds, or an average of three fish to the pound, and although the herring being fully matured, were in a fair state of preservation, the whitefish were soft and mushy, and absolutely worthless as food, and the dealer told me afterward that they were all sorted out and sent to the reduction plant to be used for fertilizer, and that just one-third of this fifty barrel shipment were of these undersized whitefish, and this is but the record of one instance and but one shipment.

Now let us consider the destruction: The whitefish as they are taken from Lake Erie, run about $2\frac{1}{2}$ pounds to the fish, so that it requires 800 of them to weigh a ton, but if the undersized fish are taken, those weighing a half or a third of a pound each, then it takes from four to six thousand of them to weigh a ton, or for every ton of them placed upon the market there is an absolute destruction of from three thousand two hundred to five thousand two hundred fish in actual count, which in from one to two more years would have weighed from four to six and a quarter tons, and in many cases these undersized fish reach the market in a worthless condition as cited above, and if not they must be sold as herring and at herring prices. Nor does the destruction resulting from the taking of these undersized fish end here. It is but fair to assume that one half of them were females, and as they were all taken while immature, they have had no chance to reproduce, and the destruction of eggs correspond to the destruction of fish, and as the average number of eggs to the fish can be placed at twenty-five thousand, then for every ton of fish there has been destroyed from 40 to 65 millions of eggs. And in the case of pike-perch we have still a greater destruction in numbers of both fish and eggs for the reason that the fish are placed upon the market smaller in size, requiring a greater number to the ton, and the average number of eggs to the fish is four times as great, so that even though the fish are taken the same size, the destruction of pike-perch eggs reaches the enormous number of from 160 to 260 millions for every ton of these undersized fish placed upon the market. Then there is the financial loss, and this should interest every man in this audience. If we place the price at ten cents a pound, the fishermen who catches the fish is losing from 320

to 520 dollars in weight alone for every ton placed upon the market, and considering the difference in price between the small and the full sized fish, his loss is still larger, and the loss to the dealer is correspondingly large, as is also the loss in food to the public. And although we, the Ohio hatchery people and ourselves, have produced during the last seventeen years over seven times the number of fish as there have minutes elapsed since the beginning of the Christian era, we cannot hope to keep pace with the natural, the legal and the economical, and this wanton and criminal destruction. Now this being the case, and at a time when it behooves every one to conserve to the fullest extent every article of food, and when every department of all the Governments, and all State officials are urging economy in the use of all kinds of food stuffs, and also urging every effort be put forth for the greater production of the same, surely some action should be taken by all those interested, and especially by those in authority, to prevent this great waste of one of the most wholesome foods that nature has given us. And to this end we believe that the most efficient means would be the enactment of a universal law of all the States bordering upon the Great Lakes, and Canada as well, fixing a size limit on all fish of whatever species that are taken for market, and making that size limit large enough so that every fish would have reached maturity and have had a chance to reproduce at least once, before it could legally be taken and placed upon the market. But whether this or some other means be adopted, something should be done, and that speedily, or many of our best food fishes will become so nearly extinct that it will no longer be profitable to follow fishing as an industry.

Some further, miscellaneous thoughts and facts regarding "Production and Destruction" of the fishes of the Great Lakes.

Small Herring.

A great many of the herring taken during the season of 1917 were very small: this was true of those taken on both sides of the lake, as I was informed by one of the Canadian Fishery officials, that as late as July 30th, he saw herring that had been caught in Canadian waters and shipped to the States, and purchased by the dealers there, that were so small that it would require from four to ten of them to weigh a pound.

Length of Whitefish.

The average length of two hundred female whitefish measured at Monroe, Mich., was 17 and a fraction inches, while the average length of 200 males was $16\frac{3}{4}$ inches, and were the smallest of a lot of about 6,000 fish.

Comparative Waste or Destruction.

During the fall of 1911, in the vicinity of the hatcheries, there was taken 945,000 pounds of whitefish averaging about $2\frac{1}{2}$ pounds each, or a total of 378,004 fish in count. Had the same number of pounds of the undersized fish running three fish to the pound, been taken, it would have required 2,835,030 fish, or a destruction of 2,457,026 fish. And if one half of these were females, as we have a right to suppose they would be, then there would have been a destruction of 6,087,575,000 eggs, and a financial loss of \$614,265.50 on a basis of 10c. a pound for the fish.

Benefit to the Fishing Industry.

We believe that it would be a great and lasting benefit to the fishing industry of Lake Erie to have a summer closed season, say from July 1st to August 31st. This would prevent the taking of large numbers of undersized whitefish, and stop fishing during the period that it is the most difficult to get the fish to market in prime condition.

I thank you.

THE NEW PRESIDENT, LAKE ERIE FISHERMEN'S ASSOCIATION.

A. S. Brown, the newly elected president of the Lake Erie Fishermen's Association, is one of the best known and most successful fishermen on Lake Erie. Mr. Brown is still a young man, having been born in Leamington, not far from where he now resides, in 1870, and his genial personality has made fast friends for him, not only in his own district, but in every section of Canada and the United States. In his earlier years he was imbued with the spirit of adventure known so well to many "toilers of the deep," and in 1886 went out to the Western States, where he thought the life of a cowboy had fishing beaten a mile. The lure of the water, however, was too much for him, and in 1900 he came back to Kingsville, starting the fishing firm of Brown & Pastorius. Several years later the personnel of the firm was changed to Brown Bros., and from that the present firm, The Northern Fish Company, of which Mr. Brown is the proprietor. Mr. Brown is an enthusiastic motorist, and, when the fish are not running, he is liable to be found in any part of Canada or the United States, accompanied by his good wife, hitting the trail in his six-cylinder. We feel assured the Lake Erie Fishermen's Association will enjoy an era of expansion and success under the guidance of A. S. Brown.

The Port Dover Fish Company, Limited, incorporated under a Provincial Charter in February. The firm comprises Mr. C. W. Barwell and Capt. P. C. Robinson. Both are well known men around Lake Erie. Captain Robinson was for some time commander of the "Vigilant." This firm formerly took over the plant of H. W. Ansley, and operated as the Port Dover Fish Company until they incorporated. During the past year or two they added considerable equipment to their plant, modernizing it in every way. They now operate 4 tugs of a capacity of 500 nets to the tug, and are exclusively gill net operators. The "Canadian Fisherman" wishes good luck to both the genial Captain Robinson and Mr. Barwell in this season's fishing.

Everyone voted Brock McAulay, of Southampton, the "life of the party." He is famed as the champion curler of Canada. He now adds to his list of conquests that of champion entertainer. In Scotch songs he excels.

The many friends of Mr. John McAulay, Sales Manager for John Leckie, Limited, Toronto, will be glad to learn that he is convalescing from a severe attack of Spanish influenza.

RESOLUTIONS PASSED AT THE ANNUAL CONVENTION OF THE LAKE ERIE FISHERMEN'S ASSOCIATION.

Moved by N. McAulay, seconded by W. D. Bates—That the Provincial Government be asked for the annual grant of \$500.

Moved by W. D. Bates, seconded by N. McAulay—That a Grievance Committee be appointed for the year 1919 to consist of one member from each county, as follows: Essex, B. G. Westcott; Kent, A. E. Crewe; Elgin, N. S. Cornell; Norfolk, Geo. Van Order; Haldimand, A. B. Hoover; and that A. E. Crewe be Chairman of the Committee.

Moved by Wm. Goodehild, seconded by Capt. Robinson—That B. G. Westcott and N. S. Cornell be appointed a Committee to go to Toronto and lay before the Department the feeling of this Association that the Government discontinue taking 20 per cent of the catch on Lake Erie, which we are given to understand was done in the past purely as a war measure.

Moved by Geo. Van Order, seconded by Capt. Robinson—That the Federal Government be asked to put on a tug, similar to the fishing tugs now used on Lake Erie, to work in conjunction with the "Vigilant" in protecting international waters.

Moved by W. D. Bates, seconded by B. G. Westcott—That the recommendations of the Canadian Fisheries' Association, accompanying their letter of February 21st, be adopted, and that the Secretary be instructed to acknowledge receipt of this letter and notify them that the Association do not feel that they can affiliate with the C. F. A. in a financial way, but are in accord with them, and are anxious and willing to co-operate with them in any way.

Moved by N. S. Cornell, seconded by B. G. Westcott—That the matter of arranging for next year's Convention be left in the hands of the President and Secretary, with the understanding that the Convention will not take up more than 2½ days for Executive and General Sessions.

Moved by N. S. Cornell, seconded by Geo. Van Order—That, inasmuch as the State of Ohio is not prohibiting the taking and sale of sturgeon during the year 1919, and the fact that our own Government is not prohibiting the taking of sturgeon from other waters in Ontario, this Association protest against the action of the Government in prohibiting the taking of sturgeon from Lake Erie.

Moved by N. S. Cornell, seconded by B. G. Westcott—That A. B. Hoover, W. D. Bates and B. G. Westcott be authorized to send to Dr. Huntsman samples of small herring for the purpose of determining their age and species.

Moved by A. E. Crewe, seconded by N. McAulay—That B. G. Westcott, A. S. Brown, J. Harris, E. Olmstead, A. E. Crewe, N. McAulay, W. D. Bates, H. Dromgole, N. S. Cornell, H. Hales, G. Van Order, Capt. Robinson and A. B. Hoover be appointed a Membership Committee.

St. Thomas is privileged in having such a modern hotel as the Grand Central, at which the Association made their Convention headquarters. Mine host, John McCoy, did all in his power to make the "boys" feel at home, and his efforts toward that end were heartily appreciated.

CONVENTION NOTES.

P. J. Patton, of St. Thomas, has bought out the fishing firm of Irvine & Sons, Port Stanley, and will operate the coming season on a much more extensive scale than the old firm has previously done. He has a ten-net equipment ready for the water.

A. S. Brown, of Kingsville, is this year operating on Lake Erie. He has a gasoline tug on the Lake.

Will somebody please tell us where C. W. Barlow acquired his mastery of the piano. Paderewski had nothing on him when it came to supplying the entertainment for the executive sessions.

As a host, the fishermen of Lake Erie say their past president, A. E. Ponsford, is par excellence. We proved it to our thorough satisfaction during the convention.

The popular song of the Convention—"A Wee Doch and Doris"—was sung feelingly and often by our good friend, Broek McAulay, of Southampton. He had a good backing for the chorus in a galaxy of youthful Lake Erie fishermen.

Thirteen is usually considered an unlucky number. The delegate, however, who secured admission from the Inner Guard to Room 13 at the Grand Central Hotel on the night of March 5th considered himself a fisherman in luck.

BRITISH MONITORS EQUIPPED WITH BOLINDER CRUDE OIL ENGINES.

No better proof can be presented in favor of Crude Oil Engines, than the fact that the British Admiralty has, of late, been installing engines of this type as motive power in a number of Monitors.

The engine selected for this purpose is the world-known Bolinder Engine, which for a number of years has been extensively used by the Admiralty in vessels of different types.

A result of the experience gained was their installation, during the war, into Monitors M-19, 20, 23, 25 and 28, each equipped with two 320 B.H.P. engines.

The fact that the Admiralty is installing crude oil engines into Monitors, where the height of efficiency is required, should be of interest to the Canadian fishing trade in connection with the question of equipping trawlers with crude oil engines, which matter is to-day attracting a good deal of attention.

Bolinder engines are sold in Canada by the Swedish Steel & Importing Co., Ltd., Montreal.

The amount of fish in cold storage in the United States, February 15th, was 86,940,397 pounds, showing a marked decrease since January 15th, when there was over 103,000,000 pounds.



"THE COCK O' THE NORTH."

A Welcome Guest at the Lake Erie Fishermen's Association Convention.

N. B. SARDINE FISHERMEN FIX MINIMUM PRICE.

At a meeting of the representatives of the Weir Owners' Association of St. John and Charlotte Counties and of the State of Maine, in February the following resolution was passed:—

Be it resolved that we, the representatives of the St. John and Charlotte County fishermen, and the Maine Fishing Association, have this day agreed that the price of sardines (string herring) for the season of 1919 shall not be less than \$20 per hogshead, and we pledge ourselves that we will use our utmost endeavors to have our associations endorse and stand steadfastly by this agreement.

The New Brunswick representatives were Geo. E. Franley, Harry A. Belyea, and Alonzo A. Stuart; Maine representatives were O. W. Look, L. B. McFadden and Edward P. Thomas. This resolution will be submitted to the annual meeting of the N. B. Weir Owners' Association, to be held in St. George, March 28.

A short preparatory course on foreign trade for business men and students has been suggested to every Dominion university by the Canadian Trade Commission.

Obituary

MR. WM. P. CONNORS.

We have to record in this issue the death of the well known junior partner in the firm of Connors Brothers, Limited, Black's Harbor, N.B., only son of P. W. Connors, vice-president. Though only a young man, twenty-four years, Mr. Connors had taken a



very active part in the firm's affairs, and had endeared himself to all with whom he came in contact. His death was very sudden and entirely unexpected. He is survived by his sorrowing parents, and six sisters. The remains of Mr. Connors were laid to rest on Feb. 16th, in the R. C. Cemetery, and the crowd at his funeral was a mute but telling testimony to the numerous friends who mourn his loss.

THE EDERER FISH NET PLANT AT CHICAGO.

To see fishing nets of all kinds produced from the raw material to the finished product, was the interesting experience of a representative of the "Canadian Fisherman" in Chicago recently, when visiting the modern plant of R. J. Ederer Company of that city.

The new plant built last year comprises a main building of full mill construction, 110 x 175 feet, 4 storeys and basement.

The top floor is given over entirely to the many looms, through which millions of pounds of twine pass yearly. All the looms operating are built by the company in their machine shop on the premises. One of the special features on the floor is the looms operating on double knot salmon gill netting. These are the machines manufacturing their "Royal Chin-

ook" netting, known to so many fishermen on the Pacific Coast. Here is where all nets are manufactured, from the smallest minnow to the largest salmon net.

The third floor is given over to cutting, splicing and inspection of nets. On this floor are found machines in which every fisherman is interested. Many know the difficulties they have had in the slipping of the knots, and the unevenness of the mesh, and the time and labor it has taken to adjust this. Every net, be-



R. J. Ederer Company's Plant.

fore it leaves the factory is put on special machines, which tighten up the knots and even up the mesh, so that no trouble of this kind should occur.

On the second floor the complete nets are finished and rigged. The ground floor contains the shipping department and offices, and in the basement are several tanks, one twelve feet in diameter for tarring and treating of nets to the customers' order.

Besides this building, R. J. Ederer Co. have a branch knitting plant at Baltimore, and also own their own mill for the manufacture of linen thread, located at Philadelphia.

The history of the company has been one of steady growth from the start in 1885, and to-day they are fully equipped to manufacture cotton pound, seine and gill netting, linen netting, in fact, anything from a minnow to the largest salmon nets.

PRINCE RUPERT AND ALASKA COD FISHERIES.

In the opinion of Mr. J. P. Babcock, Assistant Commissioner of Fisheries for B. C., Prince Rupert, is destined to become the base for the Alaska cod fisheries by virtue of its proximity to the cod banks, San Francisco.

CLOSE SEASON FOR BASS IN KENORA DISTRICT.

By an Order-in-Council dated March 12th, 1919, the following amendment was made to the Ontario Fishery Regulations:—

No one shall fish for, catch or kill any small-mouthed black bass in Gunn Lake, Minaki waters, in the District of Kenora, from the first day of May, 1919, until the thirtieth day of April, 1922, both days inclusive.

Canada Must Develop Fisheries

Aggressive Policy Necessary to Build up Home and Export Trade.—Germany Showing us the Way.

By ERNEST B. ROBERTS.

Can one learn from the "under dog"? France in 1871 was an "under dog." Yet she accomplished what was thought incredible at the time. She paid off within three years a staggering indemnity to the Germans, which it had been intended by Bismarck should maim and cripple her industries for three generations. She did it by thrift, by concentrating her domestic buying on things made within her own frontier and by an active propaganda to export all she could make for outside buying nations. She developed her own resources and asked no favors.

It would appear that even now the "under dog" in this war is learning the lesson set her by her adversary in 1871. The peace negotiations are not over; Germany's debt, even without the yet undefined indemnity she will have to pay for reparation to other nations, is 161,000,000,000 marks, or \$40,250,000,000. But Germany seems determined, in one line of industry at least, to make the most of what she has.

German Fish Industry Plans.

The following is her programme in the fishing industry:

(1)—The pre-war fleet of 250 trawlers is to be increased to 400. Each of these trawlers is to make 30 voyages in the year, and to bring in 2,140 stone of fish per voyage. So the trawler fleet should produce 160,700 tons of fish in the year.

(2)—Fishing harbors are being extended and new harbors built. Cuxhaven fish port will be 1,072 yards long. Harbor improvements are to precede (not follow) fishery expansion.

(3)—Government is to give facilities for the insurance of fishing vessels.

(4)—Fishing crews are to be made available at once on demobilization.

(5)—Boys are to be trained in navigation and fishery.

(6)—Railways are to provide: (a) Direct fish trains; (b) refrigerator cars; (c) low rates for fish freights.

(7)—Net factories are to be started.

(8)—The already active propaganda for educating public opinion is to be extended.

(9)—Questions of territoriality are to be treated (it is believed) internationally at the Peace Conference.

(10)—There are to be special German Fishery Consuls in foreign fishing ports.

(11)—Industrial experts are to devise: (a) Methods for the hygienic handling of fish; (b) improved designs for fishing vessels; (c) packing, tinning and preservation of fish.

(12) A department is to equip fishing vessels with motor engines.

(13)—New fishing grounds are to be discovered and charted.

(14)—Fishery statistics are to be improved.

(15)—A central institute for scientific and technical research is to be endowed by the State.

Deep-Sea Fishing Programme.

What lesson has this for Canada? For the example of France in 1871 is enough to prove to the wise that even the "under dog" of to-day must not be despised as a competitor in the world of to-morrow. In 1911 Germany had employed on her deep-sea fishing boats in the North Sea and in the Baltic an aggregate of 6,900 men. In 1914 there were 7,800 men similarly employed sailing out from Canadian ports. (There were, in addition, 51,000 men engaged on small boats, for which the German returns are not given, but in the comparison these may be disregarded).

In 1913, the year for which we have the last German returns, the yield of the North Sea fisheries was valued at about \$8,700,000, and of the Baltic fisheries at about \$2,600,000. This was about the value of one-half of the Canadian sea fish for that year. There are not exact returns available on German inland and inshore-water fisheries, but it is understood that they are relatively as great as those of the Dominion. Since 1913 the value of Canadian fisheries, inland and sea, thanks to the fathering of the industry at the insistence of the Canada Food Board, working partly through the Department of Fisheries, but more particularly through direct propaganda in the natural market for Canadian fisheries, i.e., the million kitchens of the cities and towns in every Province, has gone up to \$50,000,000.

It will thus be seen that, for an industry which is certainly not more than one-tenth of the present value of our Canadian fisheries, the Germans have an elaborate, well thought-out plan of development in the future—a plan which, as we have no reason to doubt from past experience, they will try to carry out with ruthless thoroughness, and which will go a long way to enable Germany in her foodstuffs to do what France did in 1871.

Hint for Canadian Industry.

Canada, if she is wise, can take a lead even from the snarl of the "under dog." The German foreplan shows almost precisely the lines upon which Canadian development in the fish industry could best proceed if one takes as guide the information secured by the Food Board in its eighteen months' activity. It is true that already a system of bounties to Canadian fishermen in force, but it is at best \$160,000. It is spread, proportionately, among the fishing boat owners, large and small, but it is such a small dole that by the time it is sub-divided it is not enough to give a fishing dory a yearly coat of paint.

It is true, too, that some provision has been made for giving Government assistance to the fishing industry by payment of one-third of the ordinary express charges on shipments of fresh fish from the Atlantic and the Pacific, west and east respectively, to a common meeting place on the Manitoba boundary. Cold-

storage cars by fast freight are at the disposal of shippers from the Atlantic seaboard, and some aid is given in building small cold-storage cars for fishermen's bait. Fish breeding, of course, is also carried on. The point, however, is that effort so far has been elementary of the nursery rhyme type; it has not been on a scale commensurate with the enormous possibilities.

Yet the total consumption of fish in Canada does not average three-quarters of a pound per week for each man, woman and child!

Export Markets Needed.

There is, besides, the imperative need of getting more outside money into the Dominion. Our export trade must be developed. This is already well established in our agricultural trade, in lumbering, and, of course, the market for our minerals is almost wholly outside Canada. In the same way we must direct effort to getting a large foreign trade for Canadian fish. During the war, enormous quantities of Newfoundland cod were sent to Europe at the expense, in some cases, of their more distant market in South American countries. Now that both these fields are open, it is for Canada to take its share, while there is no doubt that in the reconstruction of the southeastern European countries, recast according to the lines of their nationalities, there will be a great opening for general trade which might well

include Canadian fish. There should be an added source of revenue in the United States for Canadian produce, which should go some way at least to re-establish our balance of trade.

Make Use of Resources.

The wealth of fish off Canadian shores, both Atlantic and Pacific, need not be multiplied; it is already vast enough to be "beyond the dreams of avarice." The thing to foster is the taste of our eight million people who make up the national markets. Propaganda which would bring the cheapness and the excellence of the food value of Canadian fish before the people would pay a surplus on every charge of every trip of every boat and of every fisherman on both coasts. Let it be repeated and re-emphasized, the German programme—and it is not one which pride in victory or scorn for German war methods should induce us to overlook—gives not merely the key to what our effort in the Dominion should be, but it gives in broad outline an idea of the national attitude of mind toward utilizing our own resources, and in the fish industry almost the exact procedure to be taken if our methods are to become anything better than that of a systematized dole.

Canada may, in this instance, be wise in learning something from the "under dog." She may copy France in 1871-74, develop her own resources by her people's patriotism, and ask no favors.

Fish Curing

By. J. J. COWIE.

V.

Mackerel Curing in Pickle.

Of all the kinds of fish that are cured in pickle, none, in its fresh state, so quickly deteriorates through careless handling and delay in curing as mackerel.

The flesh of a really well cured mackerel should be white, firm and smooth, and it is easy enough to produce fish of that desirable standard by giving careful attention to certain necessary details in the process of curing and packing.

Mackerel intended for curing should be absolutely fresh. Immediately after being taken from the water, especially during warm weather, they should be placed in a shed or some such shelter from the sun, and split, washed and salted as quickly as possible. The less time there is allowed to elapse between the catching and the splitting the more perfect will be the bleeding and consequently the whiter will be the cured fish. The fish should not be allowed to remain at any time in a large heap because of the pressure on those at the bottom.

Splitting.

The good or bad appearance of a cured mackerel depends to a very great extent on whether it has been split carefully or not. The splitter should therefore use a suitable knife and keep it always in the sharpest condition. Beginning at the point of the head the fish should be split down the centre of the back to the tail, keeping the cutting edge of the knife as close to the bone as possible. The gills and entrails should then be taken away and the fish thrown into a tub containing clean water. A short slit is sometimes made in the thick part on each side, of fat fish, in

order that the fatness or thickness of the fish may readily be seen. This also enables the salt to penetrate and cure the thick parts of the fish as speedily as the thin parts.

Washing.

The quantity of blood emitted from a split mackerel is so great that the water into which the fish is first thrown becomes discoloured and foul very quickly. The fish should, therefore, not be left in the first water for more than ten or fifteen minutes; moreover, the water, if not running, should be changed frequently. Before being taken from the first water, however, they should have all the blood and blood stains thoroughly cleaned away, by the use of a small brush but care should be taken to avoid breaking the flesh or giving it a ragged appearance.

If running water is available the fish after the first washing should be thrown into another tub through which clean water should be allowed to flow constantly. If the fish have been well washed and brushed in the first water fifteen or twenty minutes should be sufficient for them in the running water before salting. When running water is not available the fish should be washed in three separate waters, each of which should be changed frequently. They should, however, be left in the second water for about half an hour, and in the third water for a slightly longer time.

Salting.

The best grade of salt should be used in mackerel curing—preferably what is known as second fishery Liverpool salt, or Mediterranean salt such as Trapani and Ivisa.

When the washing has been completed the fish should be laid one by one back down in a shallow box filled with salt, thoroughly covered over with the salt, lifted therefrom and packed in a barrel. The splitting and washing should be carried on at the same time, and if at all possible the salting and packing also.

First packing—The barrel, which must be absolutely tight, should be soaked or rinsed with clean water before packing takes place. This tightens up the barrel and causes pickle to form quickly.

The bottom of the barrel should then be covered with salt, and the first tier of fish laid back down thereon. The tier when completed, should be covered with salt, and the next tier laid thereon, and so on until the barrel will take no more; the last two or top tiers at least should be packed back up. Shortly after packing, the barrel should be filled up with clean pickle of the usual strength, headed up and laid aside for not less than twelve days or until the curing has been completed. Care should be taken to see that the barrels do not leak during this period, as loss of pickle means discoloured rusty fish.

When barrels are not available for the first packing the fish may be packed into tight, clean puncheons or tanks in the manner described above; but they should be suitably covered and protected not only from dust or rain, but from the air as well.

Second Packing.

After twelve or more days the fish should be taken from the barrels, puncheons or tanks and washed in pickle. They should then be graded into large, medium or small sizes, or any other grades that may be desired. Each grade should then be weighed into lots of 210 lbs. or thereby, and each lot packed into a barrel. The number of fish in each lot should be ascertained. The separation of the fish into grades should be done with the utmost care. All ragged or discoloured fish should be removed and packed by themselves.

The second or final packing is performed in exactly the same manner as the first packing, with this exception, that the salting is somewhat lighter. When the weighed lot has been duly packed into a barrel, clean strong pickle may be poured in either before the barrel is headed up or after it is headed up and made tight, in the latter case a bung hole should be bored in the bilge of the barrel through which the pickle should be poured. The number of fish contained in the barrel should be clearly marked with pencil on the head, in addition to the net weight, 200 lbs.

Barrels.

The barrel now being generally used by Canadian packers, is made of ash staves and hooped with six iron hoops—galvanized ones when such are to be had. A hardwood barrel such as this, when properly made, is no doubt the ideal one for marketing salt mackerel in. On some outlying parts of the coast, however, packers may find it difficult to procure such barrels, and in that event well made spruce barrels may be used with satisfactory results. Spruce barrels may be of the same dimensions, and be made in exactly the same manner as Scotch herring barrels, the size and construction of which were described in a previous article on Scotch herring curing. It may be added that the very best spruce only should be used, and that the barrels in addition to being well hammered together, should be worked on with sharp, clean cutting tools.

PRINCE EDWARD ISLAND FISHERIES.

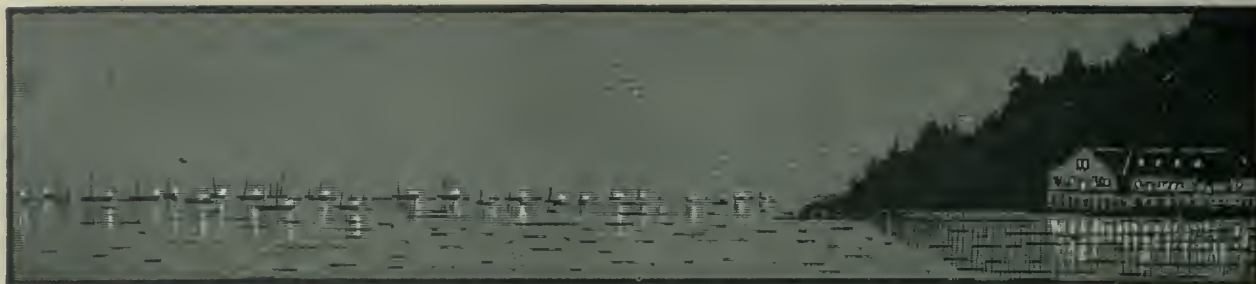
The smelt fishing season which closed on the Island on February 15th, was more successful than last year, the value of the fish shipped being \$42,000. The value of the eel catch was \$5,260.

During the past month a very interesting address on Oysters was given before the Charlottetown Rotary Club by Captain Kemp, the expert, who has had charge of the fishery here for quite a number of years. Captain Kemp referred to the severe set-back which private cultivation in Richmond Bay and adjoining waters has received in the form of a blight which killed practically all the oysters in that locality on both the natural and cultivated beds. On examination it was noticed that the oysters appear to suffer the greatest mortality just after the spawn season was over. A yellow spot was found on the surface of the fish. This, when pierced with a sharp instrument exuded thick liquid resembling pus. The oysters which were caught in the fall were also found to be weak and would not keep, or stand shipment. Captain Kemp said that the only remedy so far advanced, is to let the disease run its course. If an attempt is made to build up the beds it only means fresh material for the ravages of the disease. It was found that the oysters at the heads of the rivers were not affected to the same extent as those in the Bay. This was attributed to the ebb tide being greater or stronger than the flood tide, which kept the disease from reaching the upper waters. It may have been through the difference in the density of the water, but it is hoped that before long conditions in the Bay will become normal again.

Richmond Bay was one of the best breeding grounds for oysters in Canada. It was from there that the far-famed Malpeques were taken. Some years ago artificial cultivation was started on a large scale, and a number of beds were stocked with oysters imported from the United States. These "importations" are said to be responsible for spreading the disease. Of course it is difficult to prove this. Captain Kemp could not assert positively that the disease was so spread, but it is notable that it does not exist in other waters of the Island where the oysters are still fairly plentiful, and where no imported bivalves were introduced. The loss to the private oyster culturists in Richmond Bay and contiguous waters has been very discouraging, and it will be some time before investors will invest capital and labor again. Although a few oysters, as the Captain pointed out, still remain at the heads of Trout River, Bideford River, Shemody Creek and other streams, it is feared that they will share the fate of the others.

On the beds in other parts of the Island the catch has been well maintained because the regulations are being enforced which require the fishermen to dump all the small oysters and shells back on the bed. Formerly they would take these ashore, leaving the young fish to die. As Richmond Bay is a clean body of water with a good tidal movement, and with no sources of pollution, such as industrial plants, etc., near it, it is evident that the germs of the disease must have been brought in from outside.

Captain Kemp also pointed out that many of our Island beds have been lost to us through the clearing away of the forest where the snow would gradually melt or evaporate.



PACIFIC COAST SECTION

BRITISH COLUMBIA SALMON PACKERS HANDICAPPED.

Canners of salmon in British Columbia claim that the Puget Sound and Alaska packers have practically cleaned out their lower grades of fish by reason of credit extended to European countries by the United States Government, while, on the other hand, British Columbia packers are unable to move their lower grades of fish owing to the Canadian Trade Commission, being appointed for a similar purpose, having failed to take action in the matter. This, despite representations which have continually been made since early in December.

It is understood that the Italian Government is in the market for 100,000 cases and, in all probability, the order will go to the United States canners, although the United States have not that amount left of the cheaper grades and the order would have to be filled out with better grades of fish at higher prices.

The American price for chums is \$7.00 per case. There are a quarter of a million cases left in Canada which the canners are willing to sell at \$6.75 per case. The canner, however, is entirely at the mercy of the Trade Commission, as all of such purchases are being made through Government credit.

While confidence is expressed that the Commission will eventually do something the British Columbia canner feels that they should have been made to arrange for the pro-rata disposal of their pack with the American pack. After the British Ministry of Food had commandeered only the better grades of fish the past season, the British Columbia packer was left with a total of 497,000 cases, or one-third of all the salmon canned in the Province, and out of this there are 250,000 cases of this kind left on their hands. On the other hand American firms have sold 875,000 cases of the same kind. This is, as noted above, sold to Italy through credit extended by the United States Government.

THE FISHING INDUSTRY AS A COLLEGE COURSE.

Will Canadians have to go to the States to secure the benefit of an education in the scientific and business management of fisheries?

There should be only one answer to this. No!

As far as British Columbia is concerned, there is a University of the first class in Vancouver, B.C. (the University of British Columbia) that should readily lend itself to such a department which would take care of the Pacific Coast, and then the great Fresh Water Lakes district should be another centre with the Atlantic Coast as a third.

The opportunities for the young men with a scientific and business education covering the fishing industry in any one of the districts before mentioned are unlimited.

The industry is waiting for young men so equipped. The Government should pay salaries in the fishing departments that would be an incentive for young men to take up positions in the different departments, often a college course fitting them for such positions.

This question of educating the young man for the fisheries should be taken up seriously and thoroughly by every branch of the Canadian Fisheries Association, and a programme outlined with but one idea, and that to see that such a college is formed to cover each of the three districts mentioned.

Bring new ideas into the industry and young men looking to a future who will be a credit to their education and the fishing business.

NEW PACIFIC FISHERY REGULATIONS.

By an Order-in-Council dated March 5:—

His Excellency the Governor General in Council, on the recommendation of the Acting Minister of the Naval Service and under the authority of section 45 of The Fisheries Act, chapter 8, of the Statutes of 1914, is pleased to order and it is hereby ordered as follows:—

1.—Section 8 of the Special Fishery Regulations for the Province of British Columbia, adopted by order in council of February 9, 1915, is hereby amended by adding thereto the following paragraph, immediately after paragraph (a) of subsection (1) thereof.

(a) No application for a salmon drag-seine, purse-seine, or trap-net license shall be considered that is received by a Dominion fishery officer in the Province, after the 31st day of March in any year: and after the year 1919 no application for a salmon drift-net or gill-net license shall be con-

sidered that is received by a Dominion fishery officer in the province, after the 31st day of April in any year.

2.—Paragraph (b) of subsection 3 of section 8 of the said regulations is hereby amended so as to provide that the number of salmon fishing boats operating drift-nets or gill-nets that may be licensed in the Huma district shall be increased from twenty-five to forty.

3.—Paragraph (a) of sub-section 2 of section 16 of the said regulations, which paragraph provides that a fee on a salmon drift-net or gill-net license shall be \$5.00, is hereby rescinded and the following substituted in lieu thereof:

(a) The fee for a salmon drift-net or gill-net license shall be ten dollars.

4.—Paragraph (a) of subsection 3 of section 16 of the said regulations, which paragraph provides that the fee for a salmon drag-seine license shall be \$25.00 is hereby rescinded and the following substituted in lieu thereof:

(a) The fee for a salmon drag-seine license shall be \$150, and in addition one-half cent for each salmon, including steelhead, (*salmo rivularis*) taken under the authority of the said license.

The said \$150 shall be paid before the license is issued, and the remainder of the license fee shall be paid as the Minister may from time to time prescribe.

5.—Paragraph (b) of subsection 4 of section 16 of the said regulations, which paragraph provides that the fee for a salmon purse-seine license shall be fifty dollars, is hereby rescinded and the following substituted in lieu thereof:

(b) The fee for a salmon purse-seine license shall be \$300.00, and in addition, one-half cent for each salmon, including steelhead, (*salmo rivularis*), taken under the authority of the said license.

The said \$300.00 shall be paid before the license is issued, and the remainder of the license fee shall be paid as the Minister may from time to time prescribe.

6.—Paragraph (a) of subsection 5 of section 16 of the said regulations, which paragraph provides that the fee for the salmon trap-net license shall be \$75.00 is hereby rescinded and the following substituted in lieu thereof:

(a) The fee for a salmon trap-net, either staked or floating, shall be \$500, and in addition, one-half cent for each salmon, including steelhead (*salmo rivularis*) taken under the authority of the said license.

The said \$500 shall be paid before the license is issued and the remainder of the license fee shall be paid as the Minister may from time to time prescribe.

7.—Paragraph (a) of subsection 6a of section 16 of the said regulations, adopted by Order in Council of the 30th March, 1917, which provides that the fee on a salmon trolling license shall be one dollar, is hereby rescinded and the following substituted in lieu thereof:

(a) The fee for a salmon trolling license shall be five dollars.

8.—Subsection 14 of section 13 of the Special Fishery Regulations for British Columbia, which subsection was adopted by Order in Council of 30th March, 1917, is hereby rescinded.

9.—Section 13 of the Special Fishery Regulations for British Columbia, adopted by Order in Council of 9th February, 1915, is hereby amended by adding thereto the following subsection:—

(21) No salmon shall be fished for, caught or killed otherwise than by angling with hook and line within two hundred yards of any stream or creek up which salmon ascend to areas on which they spawn; provided that this prohibition shall not apply to the Fraser, Skeena nor Nass river.

10.—Subsections (e) and (i) of the said section 21 of the Special Fishery Regulations for the Province of British Columbia, adopted by Order in Council of the 12th September, 1918, are hereby amended so as to each apply to the Cariboo District.

PRINCE RUPERT BOARD OF TRADE FISHERIES RESOLUTIONS.

The following is the resolution passed by the Prince Rupert Board of Trade on February 25, recommending changes in the salmon regulations for District No. 2.

As coming from this great fishing centre these recommendations will be of interest to those connected with the British Columbia fisheries industry.

Prince Rupert, B.C., February 25, 1919.

Lieut.-Col. Peek, M.P.,
Parliament Buildings,
Ottawa, Ontario.

Dear Sir,—We, the undersigned members of the Fishery Committee of the Prince Rupert Board of Trade, wish to lay before you the following recommendations regarding the salmon regulations for District No. 2:—

1.—As District No. 2 is the most important salmon fishing district in British Columbia we recommend that an independent Inspector of Fisheries be appointed for District No. 2, and located at Prince Rupert. This would obviate the necessity of having a sub-inspector here, who has to report everything to the Chief Inspector in New Westminster. Such an independent Chief Inspector would have full knowledge of the local conditions and would be able to deal with the same at Prince Rupert.

2.—That no restrictions be placed upon the issue of Salmon Cannery Licenses to British subjects; the present system has the effect of giving an unreasonable monopoly of this industry to the present salmon canner, which cannot be justified.

3.—That the license fee for the issue of Salmon Cannery Licenses be limited to \$1.00, and that the Government tax the output of the salmon canners by fixing a rate per case; the present system of charging a flat rate of \$1,000 is not equitable, and is not an efficient system of dealing with this matter. The big canner pays no more than the small canner.

4.—That any fisherman be required to take out only one fishing license, which will entitle him to engage in any branch of fishing. This enables the Government to protect the industry for British subjects, and we do not think that a penalty of \$5.00 or any other amount should be imposed upon a fisherman for the privilege of engaging in this business. At the present time there is a license fee of \$75 for purse seining herrings. This, we consider, unreasonable, as the more herring that can be caught in District No. 2 the better, as there has always been an acute shortage of bait for halibut fishing, and the Government should put forth every effort to encourage the tak-

ing of this bait. The shortage of bait at Prince Rupert has forced hundreds of fishermen to go Ketchikan or other Alaskan points to secure their bait and supplies. At the present time the Government charges a license fee of \$5 for trolling. This, we consider, an unjust charge, as the trollers have to work in deep water; they have to put up their own outfits, and we think no further penalty of this sort should be imposed upon them. We contend that these licenses should be issued only for the purpose of conserving the fishing business for British subjects, or those who qualify as settlers, after having taken out a declaration that they intend to become British subjects. The place to tax the product is in the cases.

5.—That the Order-in-Council prohibiting the use of gas boats for gill netting salmon in District No. 2 should be repealed, and the gas boat be permitted.

6.—That the cannery boat ratings be abolished, and that licenses be issued for gill netting salmon, or to fish generally to all British subjects who apply for same, thereby abolishing any monopoly in this industry. There is no reason why any cannery should have an exclusive corner on a specified number of boats any more than the halibut packers should have an exclusive corner on a specified number of boats. We contend the fishing should be independent, and that the fishermen should have the privilege of selling his product in the highest market, the same as is now enjoyed by the halibut fishermen and the trollers.

7.—We recommend that drag seine and purse seine licenses be permitted only in localities where the water is too clear for gill netting, so that the present danger of exterminating the salmon be eliminated.

8.—As the salmon industry is regulated to-day, District No. 2 gets practically no advantages from its own industry. The owners of the canneries reside in Vancouver, Victoria and New Westminster. They purchase their supplies in the South; they place their insurance in the South; they hire their cannery labor in the South; they come North for the fishing season and go South when it is over, bearing away with them all the profits and advantages of this industry, and the Government regulations secure them in this close monopoly. Under these circumstances, we contend that it is impossible to build up Northern British Columbia, but if the industry is thrown open and regulations for the protection of fish only be passed, and not as now, for the exclusive protection of the canneryman, the northern part of British Columbia will be enabled to take a hand in this industry and reap some of the profits. The best class of white fishermen will engage in the salmon industry as they now engage in the halibut and trolling industry. They will make their homes here and the northern part of British Columbia will have some chance of development. Again, we urge upon you the necessity of going into this matter and have the fishing regulations revised so as to protect the fish only, and put the fishing industry on a free for all basis. We cannot see any justification for a system of regulations purely for the purpose of protecting the salmon canners.

Yours very truly,

G. W. NICKERSON,
H. LIPSETT,
W. E. WILLIAMS,

Fisheries Committee of the Prince Rupert Board of Trade.

REPRESENTS AMERICAN CAN CO. IN CANADA.

We take pleasure in publishing a picture of Mr. T. N. Anderson, recently appointed General Manager of the Canadian Branch of the American Can Company, which has offices in Vancouver, B.C., Hamilton, Ont., Chameook, N.B., Niagara Falls, Ont., and Montreal.

The requirements of the Company's Canadian business, its rapid growth, and the need of having someone in charge, having the right and power to decide important questions, has resulted in the ap-



pointment of Mr. Anderson from District Manager to General Manager, with all that the name implies.

"Tom," as he is familiarly known to his intimates, is a genial, forceful fellow, full of dynamic energy and enthusiasm, and earned his position through real ability and without "pull" or "drag." Under his jurisdiction, the American Can Company predict a great advance in their Canadian business, and feel that in Mr. Anderson, they will have a representative who is thoroughly acquainted with Canadian requirements and whose personality is such that all business relationships with the company he represents will be more than usually cordial and friendly. Mr. Anderson will be located in the Hamilton office of the company.

Rehabilitation and Protection of the Sockeye Salmon of the Fraser River System

Report of International Fisheries Commission.

For the purposes of the sockeye salmon fishery, the Fraser River system embraces not only the Fraser River itself, and its estuary, but the southern portion of the Gulf of Georgia, Washington Sound, and Juan de Fuca Strait.

Five species of salmon frequent this system, viz., the sockeye, the chinook or spring, the coho or silver, the pink or humpback, and the chum or dog. There is also the steelhead, which, though not of the same genus, is commercially regarded as salmon.

Of these, the sockeye has always been the most valuable on the market as a canned fish. Its flesh is of a much deeper color, and more oily than that of the other species. Moreover, the Fraser River system sockeye is the choicest of its kind, and brings a higher price than the sockeye of any other region.

All these species are anadromous. That is, they run up from the sea to spawn, and the young are hatched out in the fresh waters of the streams and lakes, from which they descend to the sea while young. The fish remain at sea until they reach maturity, and then return to the fresh waters to spawn. A peculiarity of all the Pacific salmons is that they die after spawning, so that they never reproduce more than once.

The salmon return to the watershed in which they were hatched. Indeed, the theory is now commonly held, and has much to support it that they return not only to the same watershed, but to the identical stream or tributary of a stream in which they were born. Thus each watershed, and possibly each stream, presents its own problem, and so it is that the Fraser River system of salmon fisheries may fail to improve without affecting, one way or the other, the fisheries of the neighboring areas.

While salmon of all five species spawn in the Fraser River basin, and in streams of Washington, Vancouver Island, and the Mainland of British Columbia, the sockeye resorts almost exclusively to the Fraser for spawning purposes; and it is the sockeye and its fishery which at this time constitute the most important international question affecting the fisheries of the Pacific Coast of the two countries.

A small run of sockeye salmon resorts to the Skagit River in Washington, but it is relatively unimportant, and its commercial possibilities, owing to the restricted area of its spawning grounds, are sharply limited. For all practical purposes, it may be said that all the sockeye salmon that enter Juan de Fuca Strait from the ocean originated in the Fraser, and are making their way back to it to reproduce and die.

In coming from the ocean, these fish enter the strait on both sides of the boundary line, but after reaching the vicinity of the southern extremity of Vancouver Island the great majority pass over to the United States Waters and do not emerge therefrom to any noteworthy extent until they have passed through the channels among the United States Islands in Washington Sound. Thus it is that while these fish were hatched in the Fraser River and are proceeding back to it, by far the largest catches have

been made in the United States waters. Usually 66 per cent. or more of the total catch is taken in the State of Washington.

The Fraser River is potentially the greatest sockeye producing stream on the Pacific coast. Its tributary lakes and rivers cover an area larger than that of any other stream on the Pacific slope. Under normal conditions of the fishery, the spawning sockeyes, overcoming what are apparently insurmountable rapids and falls, ascend for hundreds of miles and proceed right to the headwaters of the Fraser, as well as the headwaters of its tributaries.

A curious phenomenon of the Fraser River that has occurred at least since the earliest records—those of its discoverer, Simon Fraser—covering the period from 1806 to 1811 is an extraordinarily heavy run of sockeye every fourth year, followed by three years of small runs, so that the seasons have come to be known as "big years" and "off years" or "lean years."

What the cause of this was no one can say with finality. There are different theories. The most probable is that at some time prior to 1806 there came down from the mountains into the narrow portion of the river at Hell's Gate Canon, or vicinity, a slide which entirely, or at least almost entirely blocked the ascent of the salmon, and that it took three years for the pressure and rush of the water to sufficiently wear away the obstruction to enable the salmon to pass, so that in those three years the only sockeyes that effectively spawned were those that normally resorted to the comparatively small portion of the system below Hell's Gate. This theory is strongly supported by the experiences of 1913, which will be referred to later.

The sockeyes of the Fraser River are predominately four year fish. That is, they reach maturity and return to the river to spawn and die when they are four years old. It has been ascertained by Dr. Charles H. Gilbert, the most eminent authority on the Pacific salmon, that a part of the runs each year consists of three-year and five-year fish, although the percentage of such is small. This being the case it is easily possible to account for the presence of a limited number of fish on the spawning grounds above Hell's Gate during the "off years" without invalidating the theory, for there would be a proportion of these fish that would not return to the upper spawning grounds during the fourth years of the cycle of the obstruction, but would come back in three or five years, and thus begin to build up the "off years."

As commercial fishing did not begin to any extent until 1876, it is a surprising and disconcerting fact that the "off years" which were known to have existed so far back as 1806 were not built up to a greater extent.

The year following the inception of commercial fishing on the Fraser River, the industry began in Washington (1877). For many years, sockeyes were the only species canned; and as the market for them increased, fishing for them was carried on more in-

tensively. While the "big year" runs were so enormous as to be unaffected by the immense catches made during them, the "off years" soon began to show coming exhaustion. As the fishery declined, the demand went up, and greater efforts were made to increase the output. More and more fishing equipment was used, until had it not been for the weekly close time when all fishing was required to cease for a given period to as to give the fish a free run to and up the Fraser, it does not seem that any appreciable number could have escaped. The fish are met as far out to sea as they can be located, with purse seines. Nearly five hundred of these great nets were in use in Juan de Fuca Strait, and among the islands in Washington Sound last year (1917). Then nearly two hundred traps were placed in their path along the shores of Washington, and among the United States Islands in the Sound, as well as a few on the west side of Vancouver Island. Some gill nets ranging up to three thousand feet in length were in use in United States waters, and in the river itself and its estuary over two thousand six hundred gill nets, each nine hundred feet long, and sixty meshes deep, were used.

The Fraser is fished more intensively in proportion to its area and to the supply of sockeye running therein than are the waters of Juan de Fuca Strait and Washington Sound. The combined length of the nets operated on the Fraser in 1917 was over 445 miles, of which about 400 miles were used in the 15 miles of river between its mouth and New Westminster bridge. The degree of this intensity is indicated by the fact that for every square mile of river there were, in the section below the bridge, more than thirty linear miles of nets. In the year 1914 the total number of gill nets in use on the Fraser River was in excess of three thousand.

In the development of the fishery, the comparatively light runs of the "off years" were having a greater and greater proportion taken from them so that fewer and fewer fish were reaching their spawning grounds. The result was inevitable. The fishery is now verging on exhaustion. The depletion of the spawning grounds above Hell's Gate, where during the "off years" the number of fish had always been comparatively small, became so marked as to make it necessary since 1913 to close for want of an egg supply the hatcheries established there by the Canadian Government, and thus the river, during the "off years," was back once more to almost complete reliance on the spawning grounds below Hell's Gate.

For years past, the success of the sockeye industry in this district has depended on the big year runs. Several of the canneries on both sides of the line were idle during some of the "off years," and some of them, more recently, have operated only in big years. In 1913, however, which was a big year, a disaster occurred, which put an end, at least temporarily, to the "big year" runs and reduced them to the dimensions of an average "off year." In Hell's Gate canyon there was a small bay-like indentation just above the "Gate," which, it subsequently transpired, afforded the only available resting place to enable the salmon after rushing through the "Gate" to gather their strength sufficiently to proceed through the remainder of this difficult canyon. Blasting operations in the construction of the Canadian Northern Railway roadbed along the side of the canyon caused this resting place to become so filled by rock slides that the sal-

mon could not resort there, and were carried back below the "gates" by the force of the current. This obstruction was formed shortly before the heavy run of salmon began. As soon as it developed that the salmon were being held back, the best engineers available were sent to the spot to consult on the quickest means of overcoming the difficulty. Work was immediately started to clear the obstruction, and a temporary sluiceway to enable salmon to pass up was constructed. Some fish got through this, others were carried away by hand, and some got up at the time of high water at the beginning of the run, but not more in the aggregate than in a good "off year," so while the removal of the obstruction was pressed along with all possible energy, it could not be completed in time to save the situation. Countless thousands of sockeyes wore themselves to death in repeated fruitless efforts to get beyond the gate, their instinct compelling them to keep on trying instead of falling back and going up the lower tributaries, as is evidenced by the fact that these spawning areas were not more thickly resorted to by sockeyes than in other "big years."

Many of the persons engaged in the salmon business elung to the hope that, after all, sufficient sockeyes had got up to maintain the "big year," and preparations were made by such accordingly for 1917, the returning year of the cycle, but only to find that their hope was vain, and that the "big year" was a thing of the past, unless extraordinary measures are taken to restore it.

The fact that these fish pass through the waters of the two countries makes it impossible to properly protect them by independent action. The fishermen of either side are inclined to operate to the limit when the fish are in their waters, and place the responsibility for untoward results on those of the other country.

How the fishery has declined, will be realized from the following statement of the packs of sockeye salmon for a series of years:

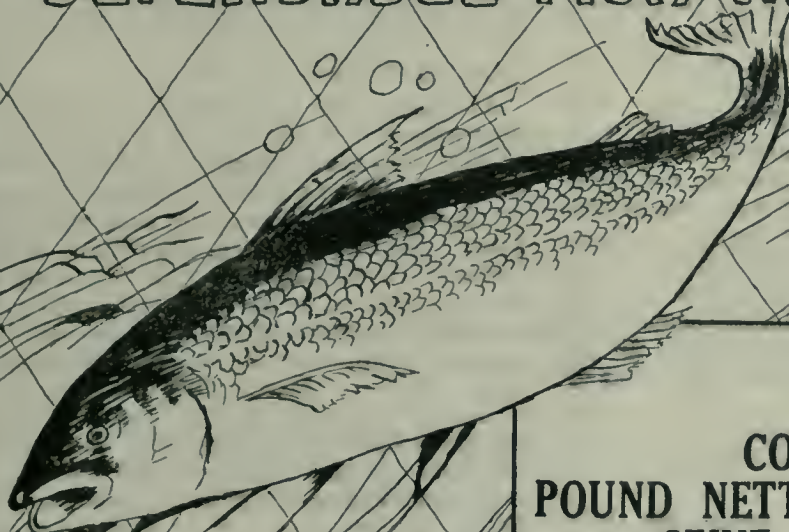
Year.	Fraser River	Puget Sound	Total
	No. cases.	No. cases.	No. cases.
1902	293,477	372,301	665,778
1903	204,809	167,211	372,020
1904	72,688	109,264	181,952
1905	837,489	825,453	1,662,942
1906	183,007	178,748	361,755
1907	59,815	93,122	152,937
1908	63,126	170,951	234,077
1909	542,248	1,097,904	1,640,152
1910	133,045	248,014	381,059
1911	58,487	127,761	186,248
1912	108,724	184,680	293,464
1913	684,596	1,673,099	2,357,695
1914	185,483	335,230	520,713
1915	89,040	64,584	153,624
1916	27,394	84,637	112,031
1917	123,614	411,538	535,152
1918 (estimated).	15,000	50,000	65,000

Two facts are outstanding:

(1) The yearly possibilities of the Fraser River must be measured by the conditions in the "big year." All that is needed to produce the run of a "big year" any season is to have the spawning beds of the whole system seeded as plentifully as in the "big year" of the past. The river is as free from pollution or artificial obstruction as it ever was, and

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all the conditions for successful spawning are as favorable as in early times. The only deficiency is in the spawning fish.

(2) Unless drastic action is taken internationally, to save the situation, the fishery will become commercially exhausted in a few years. The figures for 1918 clearly evidence this.

It would be an international calamity, involving almost criminal neglect, on the part of both countries if the latter condition were allowed to obtain. On the basis of the present prices, the sockeye progeny of this river should be producing, annually, a food worth over \$30,000,000, this figure being based on the actual pack of the last "big year," 1913. As it is, the average value for the four years ending 1918, is about three million dollars.

In the face of the foregoing and in view of the fact that there can be no question but that the river can be restored by the proper procedure, so that it will produce to maximum capacity every year, it is confidently believed that the interests in the two countries will stand behind the authorities of both in procuring the necessary action to bring this about.

Efforts have been made in the past for mutual arrangements to afford adequate protection, but without success. The most important of these was in connection with the treaty of 1908, for the international protection of the fisheries in the contiguous waters along the entire boundary line. This treaty failed, owing to the fact that the United States Congress refrained from approving the regulations drawn up under its provisions, though they have been approved by the Parliament of Canada. But even if the regulations under that treaty had been approved and made effective, they would not have met the present requirements.

The situation is surrounded by outstanding difficulties, and great mutual concessions and forbearance must be exercised by those engaging in the industry on both sides of the line, if the necessary steps to restore the fishery are to be taken.

In British Columbia the fishery interests feel very strongly that they have been in an unfair position all through the past years. They point out that while all the fish are bred in the Fraser River, the fishermen have been sharply restricted in their operations, being allowed to use gill-nets only, in addition to having to submit to a longer weekly close time than is effective in the State of Washington; while their competitors have been permitted to use traps and purse-seines, much more capable and economical fishing appliances than gill-nets; and they urge that while the fish are bred in Canadian waters and must there be properly protected if the fishery is to be saved from depletion, they obtain only one-third or less of the total catch. They contend that they have been called on to do too much of the protecting and are entitled to a more equitable proportion of the fish.

On the other hand, the fishing interests of the State of Washington contend that they have not been taking unreasonable advantages of their more favorable geographical position; that the quantities of fish caught have not been out of proportion to the area of the fishing grounds, the amount of capital invested, and the number of persons dependent on and engaged in the fishery; that the fishing appliances used are suited to their waters, and are not only of a char-

acter that can be efficiently and adequately regulated, but they are so regulated as to admit of a reasonable escapement of fish to the waters beyond.

Both sides, however, fully realize the absolute need for international action, and are prepared to make sacrifices in order to assure relief. While the proper disposition for essential action may have been lacking in the past, it seems now to obtain. The interests on both sides of the line are fully alive to the conditions and they are evidently prepared to co-operate to save the industry.

While the Canadian Government is fully able to cope with the situation in British Columbia, it is recognized by the Commissioners of both countries that a different condition exists in Washington because of the jurisdiction of that State over the fisheries. The American Commissioners have no desire to impair or invade the powers which the State of Washington exercises over the fisheries; they realize that any proposed remedial action, to be effective, should receive the official support of the State and the general approval of the local public opinion.

As regards any particular remedial action that may be proposed, it must be conceded that it is impossible to state with certainty what the full results may be or when they may be achieved because the experience is lacking on which reasonably safe predictions can be based. Therefore, taking cognizance of the best information available, it will be necessary to adopt a tentative course, in the expectation that, after proper trial, new measures or modifications may be required. In fact, in view of the rapidly changing conditions under which the salmon fisheries are now conducted, it would be strange if modifications in laws and regulations were not demanded at comparatively short intervals. Hence, action so drastic as to cause a virtual suspension of the industry would not, in the opinion of the Commissioners, be justified at this time.

The Honorable Commissioner of Fisheries for British Columbia has recommended that the two federal governments take over the fishery and compensate any who might be found entitled to such owing to this action, so that the governments might be free to regulate the fisheries without interference and operate them in the interests of the two countries. This course has much to commend it, but your Commissioners feel that at this time, and under existing conditions it is not feasible. Furthermore, in the case of the United States, there is no way known to the Commissioners by which the federal government can acquire, by purchase or otherwise, fishery rights that are vested in the several States, unless such rights are voluntarily relinquished by the States.

Some of the specialists on the natural history of the salmon recommend that all sockeye fishing be stopped for a term of years, but in the light of the facts (1) that they regard one cycle, or four years, as the minimum of closure, and that two, three, or more cycles would likely be found necessary; (2) that as this course would force the closing of many canneries and render them worthless (the evidence shows that the machinery of a cannery will become scrap in five years if unused); (3) that as it would be impossible to stop all fishing during a sufficiently long period to cover the sockeye run without interfering with the spring salmon fishery each year, and with the pink salmon fishery at least every second year; and (4) that as the fact that the "off years" were not built up



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to anything like "big year" proportions during the long period known to have elapsed since the "off years" have existed and before commercial fishing began, this leaving little ground for hope for speedy results from this course alone, your Commissioners are not prepared to endorse this recommendation, at least until the trial of other methods has failed to yield reasonably effective results.

The stopping of all salmon fishing long enough to allow an escapement of 50 per cent. of the sockeye run in both the State of Washington and British Columbia was favored by most of those engaged in the industry on both sides of the line, as a basis for international action, though it developed that there is considerable

difference of opinion as to how this can best be done. It was suggested in the State of Washington that a closure of all fishing from July 20 to 31 on the United States side, and from July 25 to August 5 in British Columbia, so as to allow for the time that presumably would be taken by the salmon in passing from the Strait to the Fraser River, would achieve the end in view; but this proposition was vigorously opposed in British Columbia, on the ground that the difference in dates is too long and that it is doubtful if any such sliding scale would be justifiable, in view of the lack of positive knowledge regarding the movements and rate of travel of salmon.

Very material progress in the study of the life his-

tory of the sockeye has been made in recent years, but there is yet a great deal to learn. This can only be done by comprehensive and sustained study on the spawning grounds, as well as otherwise.

Salmon hatcheries have been in operation for years, and have turned out tens of millions of active, healthy fry annually, but neither in Canada nor the United States can sufficient results be pointed to so far as the runs of sockeye are concerned. This is not the case with all species. Hatchery work, supported by reasonably provident regulations, must, for instance, be given the credit for restoring the chinook salmon fishery of the Columbia River, but the chinook or spring salmon is a different species with different habits of both adults and young. The young of the chinook salmon can readily be held at the hatcheries until they are several months old, and have reached a size when they are strong, active and fairly capable of protecting themselves against natural enemies. So far, however, efforts that have been made at the Fraser River hatcheries to similarly retain young sockeye have not been successful, but information as to why this should be so and how it can be overcome is lacking.

New methods of hatching by the ingenious use of gravel in a manner that largely reproduces the conditions on the natural spawning grounds are being tried with considerable promise of success by the officer in charge of the Canadian Government Hatchery at Harrison Lake, on the lower Fraser; and it is possible that through these and other such experiments the present methods of sockeye hatchery operation may be revolutionized or at least vastly improved.

The fact that in all the "big years" of the past the spawning areas of the Fraser system, above as well as below Hell's Gate, were abundantly seeded, while in the "off years" the upper areas were very lightly seeded, though normal seeding took place in the lower areas, indicates the necessity through hatchery or other methods of restoring the runs to the upper waters, if this fishery is to be rehabilitated.

Further direct aid to the fisheries may be afforded by the systematic reduction in the numbers of predatory fishes that frequent the spawning grounds. There seems little room for doubt, in the light of the evidence before the Commissioners, that the destruction of the eggs and young of salmon on the natural spawning grounds chiefly by other fishes is appalling. The mutilation and destruction by seals and sea-lions of mature salmon on their way to the Fraser River is likewise large and serious, and its mitigation would have a highly beneficial effect on the supply, especially at this critical stage of the industry.

The foregoing considerations serve to emphasize the urgent need for comprehensive and continuous observation and study by experts, and indicate that in the meantime any action which would put the fishermen and cannerymen entirely out of business would not be justified.

In the light of all the existing conditions, your Commissioners are of the opinion that a treaty or convention for the proper regulation and protection of this fishery should forthwith be entered into by the two countries; that commissioners should be appointed, under this treaty, to thoroughly study the situation and that they should have to assist them, two experts, one appointed by the Government of each country, who should conduct continuous investigations into the life history of the sockeye, hatchery methods, eradication of natural enemies on the spawning

grounds and in salt water and other related subjects; and also that the sockeye hatchery operation on the Fraser should be inspected by the Commissioners so appointed.

Your Commissioners also recommend that the Commission to be appointed cause an examination by competent engineers to be made of the sides of the Fraser River at Hell's Gate, and at other places where slides into the river that might bar the ascent of salmon are probable, such examinations being for the purpose of ascertaining what may be feasible to avert such danger.

It is the judgment of your Commissioners that the hatchery work on the Fraser River system should be extended as rapidly as available supplies of eggs will warrant, by the establishing of new hatcheries on spawning areas now being sparsely seeded, and that to this end eggs of sockeye and possibly other species of salmon be made available from waters of the United States, as well as from other Canadian waters, for the Fraser River hatcheries, to as large an extent as practicable.

It is also important that the two Governments arrange to ascertain accurately how long it takes sockeye salmon from the time they enter Juan de Fuca Strait to reach and enter the Fraser River, and as far as possible to pass from point to point along the said Strait and the Gulf of Georgia.

And also that the two Governments arrange to carry on investigations and experiments with a view to finding some feasible means of overcoming the seal and sea-lion menace to the salmon fisheries in the treaty waters, and if such means be found to put them into operation.

Your Commissioners append a draft of a proposed treaty (Appendix A), and of regulations thereunder for the restoration and protection of this fishery (Appendix B), the adoption of which, subject to such modifications in terms as the responsible officers of the two Governments may consider desirable, is urgently recommended.

These regulations will enable the industry to be conducted on a diminished scale for the next eight years. They will afford a much greater escapement of fish to the spawning grounds than has been the case heretofore and they will enable observation as to the results, which will begin to show themselves in 1923 if, as contemplated, the regulations become effective in 1919, with the information that will then be before them, the Commissioners will be in a position to know whether further restrictions are needed or what modifications in the regulations are desirable.

In connection with these regulations, it may be useful to make the following notes in regard to those that are exceptional in their character.

Section 5 will have the effect of stopping all fishing by Indians above the tidal boundary for commercial fishing. From time immemorial it has been the practice of certain tribes of Indians to provide their winter supply of fish for themselves and their dogs by catching salmon by spearing and otherwise as they are passing through difficult channels in the upper reaches of the river, and even on the spawning grounds themselves. The number of fish so taken has, in the aggregate, been very large, and it was stated in the hearings that the number of salmon eggs consumed by the Indians annually would offset the operations of several hatcheries.

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ceeds in escaping all the appliances of the commercial fishermen and reaching the spawning areas and its importance in maintaining the volume of future runs, this Indian fishing is far from an economical method of supplying their food requirements. There exists prejudice on the part of the Indian to using fish prepared otherwise than in the manner followed by them, but keeping in view the welfare of the salmon fisheries this prejudice should be overcome or should be considered of secondary importance.

Every reasonable facility and encouragement should be given the Indians to catch necessary supplies of salmon for their family uses in the tidal waters, and to transplant them to their homes, but should it be found necessary for the proper authorities to furnish them with certain quantities either in a canned or cured form, it seems reasonable that the canning and fresh-fish interests on both sides of the boundary should co-operate in providing such food.

The annual close season provided for by Section 6 is designed to give the sockeye a free run to their spawning grounds during a portion of the time when the run is heavy. This protection is additional to that afforded by the present weekly close season, and it is anticipated that approximately a number of fish equal to 50 per cent. of the usual pack will thus escape to the spawning grounds.

In the absence of final information as to the speed at which sockeye travel, after entering Juan de Fuca Strait and until they reach the Fraser, your Commissioners do not feel justified in recommending any difference in the time of beginning and ending of this close period in either country. As will be noted in the recommendations forming part of this report, your Commissioners urge, however, that the two Governments take the necessary steps to procure this information. A beginning of this work has been made during the present year (1918). It may be found that if any difference is desirable, it should be provided not only so far as United States and Canadian waters are concerned, but as between different fishing regions in each country. The blanket method is obviously much more desirable from an administrative standpoint, and the fact that the fish are distributed over a large area while active fishing is going on, so that if all nets are lifted at one time fish that are in the river at the time will escape above the fishing limits, may render it uncertain whether in the long run there is any real advantage in a progressive close season.

It was urged by several witnesses that this annual close time should be established in lieu of the weekly close time. It is certain, however, that the good effects of the proposed annual close time would be practically nullified if this were done. Both the proposed annual and weekly close times together cannot be relied upon to permit the escapement of more than 50 per cent. of the fish. This is clearly shown by figures for a series of years furnished for the purpose by the associations acting in behalf of the fishery interests on both sides of the boundary. These figures for British Columbia are complete, for Puget Sound they cover the catch handled by only a portion of the canneries, but are offered by the Washington Fisheries Association as being typical of the entire catch. Assuming that this is correct, the percentage of the total catch taken during the period from July 20 to 31, inclusive, on the two sides was as follows for each of the years indicated:

1914	28.44	per cent.
1915	16.31	“ “
1916	36.99	“ “
1917	40.10	“ “

The total quantity packed during these twelve days in the four years named would be 32.5 per cent. of the total pack for these years.

The weekly close time provided by the proposed regulations, namely, 36 hours, is 21.4 per cent. of each week. Assuming that during these four years there had been no weekly close time, the catch during these 36 hours per week would have added 18.5 per cent. to the pack. Combining this figure with the 32.5 per cent. for the twelve-day periods would give an escapement of 51 per cent. of the packs during both the annual and weekly close times. It is not claimed that these figures represent exact conditions, as there are various unknown factors, but they are a fair deduction from the figures submitted.

There can be no question that the toll taken in the past "off years" has been far too great to maintain the runs, even at their present proportions, and that a much larger escapement of fish to the spawning areas must be assured if the annually declining runs are to be turned into annually increasing runs.

Fishing is now permitted in the Fraser River up to Mission Bridge, about fifty miles from its mouth, although fishing from New Westminster Bridge, twelve miles above its mouth, to Mission Bridge is limited to residents along that portion of the river. The evidence shows that the fishermen in this area make practically their whole catches in the first two or three days following the weekly close time; or, in other words, when the mass of nets below the bridge gets into full operation too few fish escape beyond it to make the fishing above worth while.

On the other hand, the fishermen above the bridge are bona fide residents, who settled there with a view to the fishing, on which they depend to an important degree to enable them to become established on the land. In the circumstances, your Commissioners feel that it would be unfair to deprive these people of all fishing privileges but it is evident that the fish must have more protection. It is therefore, recommended that the weekly close time above the bridge be 24 hours longer than below it, and that other restrictions be thrown around the exercise of the fishing privileges in this region.

The proposed method in Section 7 of arranging the traps during the close time is that required in the Columbia River. The opinion is fairly general that, with jiggers attached to the traps, the mere closing of the entrance for a short time does not assure that salmon will escape, which is the sole object in view, but rather that they will play between the leader and the jigger until the trap is again opened. By opening a portion of the lead, in addition to closing the trap, the fish will be given a much better chance to move onward.

Sections 9 and 10 relate to purse seines. At the present time, purse seines may be operated right up to the entrance to a trap. The purse seiners urge that as the trap is in fishing order during the whole fishing season, both night and day, excepting when it is being lifted and that purse seines can be used only in the day, and when evidence of fish is visible the existing provision of law is fair and should be continued.

Your Commissioners do not so regard the matter. The trap is a stationary appliance, and so can only



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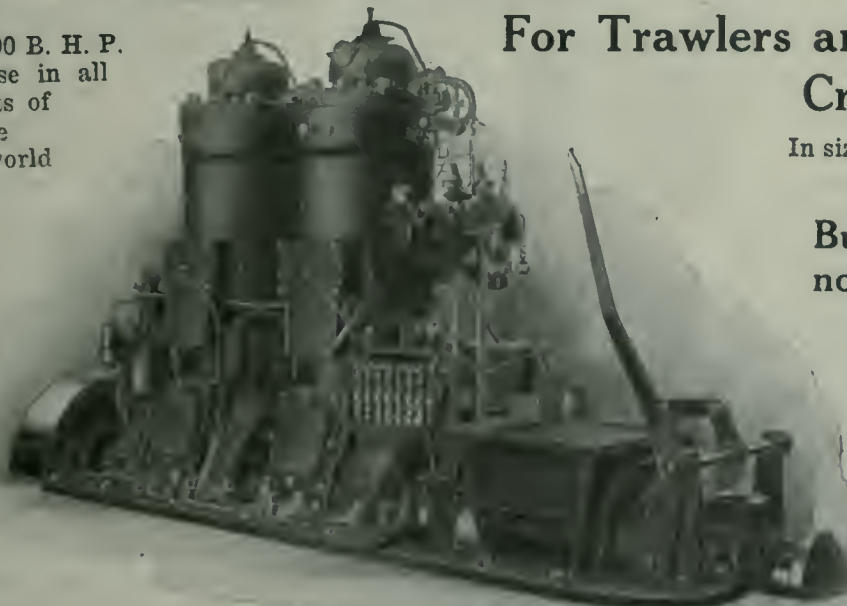
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take the fish that come to it, whereas the purse seiner can follow a school of fish in all portions of the area where fishing is permitted. In the circumstances, to require purse seiners to refrain from easting their nets with 2,400 feet of a stationary fishing appliance is not a hardship.

The use of purse seines in the narrow channels among the islands in Washington Sound and the Gulf of Georgia should not be permitted. Such seines can be so used in these passages as to practically block them and so prevent a reasonable escapement of the run of fish. Their use might as fairly be permitted in the Fraser River itself. The purse seine is an extremely effective fishing device, and from its very nature should be restricted to the open waters.

The other proposed regulations involve no new principles, and therefore need no special comment.

In closing consideration of this matter, your Commissioners again emphasize the vast importance of this fishery to both countries. Every year's delay means added depletion that will require several years longer of sharp retraction to undo, while on the other hand immediate action will assure much more speedy recuperation, as there will be a larger body of fish to work with, and thus hasten the return of the day when the river system will be producing over 2,300,000 cases of sockeye, not only one year in four, but every year, instead of about, one-fifth of that quantity, which, under existing conditions, must rapidly grow less and less.

Your Commissioners gratefully acknowledge the generous and capable assistance afforded by the local fishery authorities, interests and associations, and especially by Commander Miller Freeman, publisher of the "Pacific Fisherman"; Mr. Frank Warren, President of the Association of Pacific Fisheries; Mr. L. H. Darwin, Commissioner of Fisheries for Washington; Lieutenant-Colonel F. H. Cunningham, Chief Inspector of Fisheries in British Columbia for the Federal Government of Canada; Mr. John P. Babcock, Assistant, to the Provincial Commissioner of Fisheries; and Dr. A. McLean Fraser, the representative of the Canadian Biological Board in British Columbia. These gentlemen voluntarily served with the sub-committee of your Commissioners, in considering a proper system of regulations for this fishery, and so greatly facilitated the inquiries and findings of your Commissioners.

A System of International Regulations for the Protection and Preservation of Sockeye Salmon Fisheries of the Fraser River System.

Section 1.—The following regulations shall apply to the waters included within the following boundaries:

Beginning at Carmanagh Lighthouse on the southwest coast of Vancouver Island, thence in a straight line to a point three marine miles due west astronomic from Tatoosh Lighthouse, Washington, thence to said Tatoosh Lighthouse, thence to the nearest point of Cape Flattery, thence following the southerly shore of Juan de Fuca Strait to Point Wilson, on Quimper Peninsula, thence in a straight line to Point Partridge on Whidbey Island, thence following the western shore of the said Whidbey Island, to the entrance to Deception Pass, thence across the said entrance to the southern side of Reservation Bay, on Fidalgo Island, thence following the western and northern shore line of the said Fidalgo Island to

Swinomish Slough, crossing the said Swinomish Slough in line with the track with the Great Northern Railway, thence northerly following the shore line of the mainland to Point Grey at the southern entrance to Burrard Inlet, British Columbia, thence in a straight line to the southern end of Gabriola Island, thence to the southern side of the entrance to Boat Harbor, Vancouver Island, thence following the eastern and southern shore of the said Vancouver Island to the starting point at Carmanagh Lighthouse, as shown on the U. S. Coast Geodetic Survey Chart, No. 6,300, as corrected to July 20th, 1918, and also the Fraser River and its tributaries.

Section 2.—Interpretations.

"Driftnet" shall mean a floating gill net that is neither anchored nor staked, but that floats freely with the tide or current.

"Trapnet" shall include a pound net. "Commission" shall mean the International Fisheries Commission appointed under the Treaty to which these regulations are appended.

"Treaty-Waters" shall mean all waters described in section 1 hereof.

Section 3.—(a) Fishing for sockeye salmon in the treaty waters within the territorial limits of the State of Washington shall not be permissible except under license from such state and in the treaty waters of Canada except under license under the provisions of the Fisheries Act of Canada.

(b) No greater number of licenses for any class of fishing appliance shall be authorized in any year in the treaty waters within the territorial limits of the State of Washington than were issued for such class for the season of 1918, up to August 31st inclusive thereof, and in the treaty waters of British Columbia the number of gill nets that may be licensed in any year shall not exceed 1,800.

(c) No license shall be granted to any person, company or firm in the State of Washington, unless such person is an American citizen, resident in the said State, or to such company or firm, unless it be an American company or firm or is authorized to do business in the said State, and no license shall be granted to any person, company or firm in the Province of British Columbia, unless such person is a British subject resident in the said Province, or such company or firm unless it is a Canadian company or firm, or is licensed to do business in the said province of British Columbia.

(d) No one other than a British subject who owns or leases land on either side of the Fraser River above New Westminster bridge, and who actually permanently resides on and is cultivating such land, shall be eligible for a license to fish for sockeye salmon between New Westminster bridge and Mission bridge, but fishing under such license shall not be carried on below New Westminster bridge.

Section 4.—The use of nets other than drift nets, purse seines and trap-nets shall not be permitted in treaty waters for the capture of sockeye salmon.

Section 5.—No net fishing or fishing of any kind, other than with hook and line, excepting for hatchery purposes or scientific purposes shall be permissible in the Fraser River above the down river side of Mission bridge.

Section 6.—During the years 1919 to 1926, both years, inclusive, none shall fish for, catch or kill any salmon from the twentieth day of July to the thirty-



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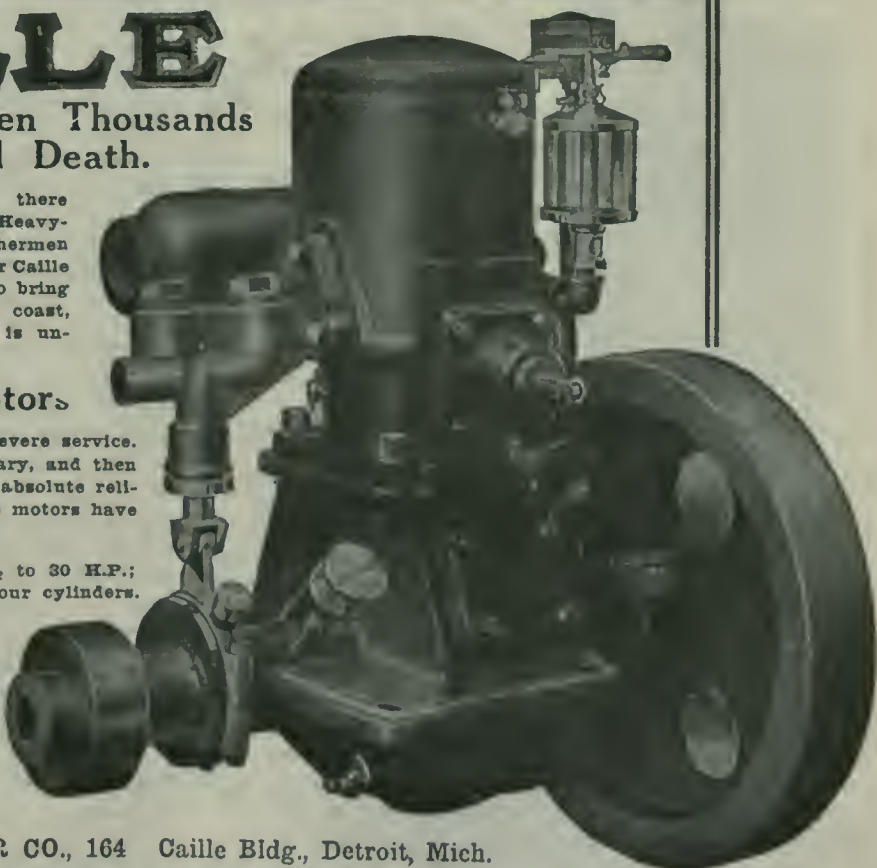
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first day of July in each year, both days inclusive; and during this close time no nets or appliances of any kind that will capture salmon may be used in these treaty waters. Provided, however, that salmon fishing for hatcheries or scientific purposes may be authorized during this period.

Section 7.—The weekly close time for salmon fishing shall be from six o'clock a.m., Saturday, to six o'clock, p.m., Sunday, in Canadian waters, excepting in that portion of the Fraser River between New Westminster bridge and Mission bridge, where the weekly close time shall be from six o'clock a.m., Saturday to six o'clock p.m., on the following Monday, and in the United States waters from Friday at four o'clock p.m., to Sunday, at 4 o'clock a.m., and during this close time no salmon fishing of any kind other than for hatchery or scientific purposes shall be per-

missible, and during the full period of each weekly close time or annual close season each trap-net shall be closed by an apron placed across the outer entrance to the heart of the trap, which apron shall extend from the surface to the bottom of the water and shall be securely connected to the piles on either side of the heart of the trap-net, fastened by rings not more than two feet apart on taut wires stretched from the top to the bottom of the piles, and such apron or the appliance by which it is raised or lowered, shall be provided with a signal or flag, which shall disclose whether the trap-net is closed, and which shall be of the form and character approved by the commission. Provided, that in addition to the foregoing requirements, such trap-net shall be equipped with a V-shaped opening, to the satisfaction of the Commission, in the lead of such trap-net next to the entrance to the heart and immediately adjacent to the apron, of at least ten feet in width at the top and extending below the surface at least four feet below low water, which V-shaped opening shall remain open and unobstructed during the full period of each weekly close time or annual close season.

For the purposes of assuring full compliance with this regulation, the owner or operator of each trap-net shall constantly maintain during the weekly and annual close times, a watchman, whose duty it shall be to cause each trap-net to be kept closed and the lead to be kept open, as above provided.

Section 8.—All salmon trap-nets shall be limited to a total length of twenty-five hundred feet, with an end passageway of at least six hundred feet between one trap-net and the next in linear series, such distances being measured in continuation of the line of

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direction of the leader of such trap-net, but in no instance shall more than two-thirds of the width of any passageway at any point be closed by trap-nets. There shall also be a lateral distance of at least twenty-four hundred feet between one trap-net and the next.

Section 9.—A salmon purse seine shall not exceed nineteen hundred linear feet in length, including the lead and attachment, measured on the cork line when wet.

Section 10.—(a) No purse seine shall be cast or placed in the water for fishing purposes within twenty-four hundred feet of any trap-net.

(b) The use of purse seines for the capture of sockeye salmon shall be confined to the treaty waters southward and westward of a straight line drawn from the lighthouse on Trial Island, British Columbia, to the northwest point of Whidbey Island, State of Washington.

Section 11.—A salmon drift net shall not exceed nine hundred linear feet in length, and the vertical breadth thereof shall not exceed sixty meshes, and the size of the mesh shall not be less than five and three-fourths inches, extension measure, when in use.

Section 12.—Any violation of these regulations in the treaty waters within the territorial limits of the State of Washington or within the treaty waters of Canada shall be punishable by the imposition of appropriate penalties to be provided by legislation in each country.

BRITISH FISH MARKETS.

Billingsgate, E.C., March 1st, 1919.

From to-day the Fish (Prices) No. 3 Order, no longer applies to any variety of fish other than brills, halibut, herrings, mackerel, salmon, soles and slips, trout and turbot. In other words, the official list of maximum prices which may be charged for most varieties of fish is no longer in force. The immediate effect of the removal of the control was extraordinary, fresh haddocks soaring to fabulous figures at some ports. At Grimsby, for instance, gibbed haddocks touched no less than 20/- per stone at the auction sales—more than double the recent control figure ex the ship. However, many other kinds, particularly cod, were comparatively cheap, and no doubt as soon as matters have found their own level and the trade has had time to adjust itself to the new conditions, values for most kinds will rule more in harmony with the intrinsic value of the goods. Of course, some kinds here and there may be expected to command more than the late maximum rates at times, in accordance with the law of supply and demand, but on the other hand other varieties should be more in favour of the buyer. Further than this, values will be largely governed by the size and condition of the fish, whereas, as long as the official control was in force, all kinds, irrespective of grade, tended to sell at a flat rate; we thus had the anomaly of large and small fish, and good, bad and indifferent quality all selling at the one rate.

Billingsgate, E.C., March 8th, 1919.

During the past week deliveries of most kinds of fish have been rather generous, and with many channels of distribution still closed, the arrivals have proved as much as a convenient outlet could be found

under present conditions. Thus, prices for most kinds have been below the maximum rates recently in force. On the other hand, the landings of fresh haddocks have been much short of requirements, with the result that the fabulous figures reported in the previous report as current at Grimsby and other ports were here and there repeated. As, however, the principal salesmen in the leading markets in the distribution centres were disinclined to charge more than the maximum rate recently enforced by the Fish (Prices) Order, there was exhibited the anomaly of coast merchants bidding considerably more for haddocks than could be obtained from wholesalers at the inland markets. Obviously it was impossible for this state of affairs to continue, especially as the main object of the Ministry of Food in de-controlling the price of fish was to cheapen this food to the public. However, it speaks volumes for the disinterested manner in which the fishing industry of the United Kingdom overcame the impasse that it was not found necessary for the Fish Controller to intervene; meetings of the trawler owners were held at Grimsby, when representative buyers were called into conference, and a decision was reached that when the value of any kind touched the previous maximum price competition should not be allowed to drive rates to a fancy figure, but that the fish should be allocated at the recent maximum just as if prices were still officially controlled. Other ports, such as Hull, Fleetwood, Milford Haven, etc., followed the lead of Grimsby and thus, to quote a well known saying, "alls well that ends well."

Mr. S. J. Williams, of the firm of Peter Forge, Billingsgate Market, London, has been approached by the Canadian Military Authorities to assist them in clearing a quantity of Canadian frozen herrings, which were originally imported for the consumption of the Dominion Forces, but now happily will not be wanted for that purpose, owing to the return of the troops home. As the Scotch winter herring fishing is now on the wane, these fish should be very welcome to the trade, and also to the public, and in subsequent reports it will be possible to give some particulars of the reception they meet, and the prices they realize.

Billingsgate, March 15th, 1919.

The landings of many kinds have fallen short of requirements this week, and on several days most kinds have remained firm at the recent maximum level; the trade associations at most of the principal markets, both coast and inland, have decided that prices shall not be allowed to exceed the figures scheduled in the Fish (Prices) Order recently withdrawn. The Scotch winter herring season is now rapidly closing, but fair supplies of herrings are coming in from Norway, and as there is much less delay in transport than was the case last year, the fish on the whole is being marketed in very fair condition. The most marked shortage in trawled fish is found in haddock supply. Trawlers are now arriving regularly at Grimsby, Hull, Fleetwood and Aberdeen from the Icelandic and Faroese grounds. There is still great delay in refitting the fishing vessels being released by the Admiralty, and this, of course, tends to prevent any marked increase in the landings, and the consequent drop in prices which may be expected when deliveries are more ample.

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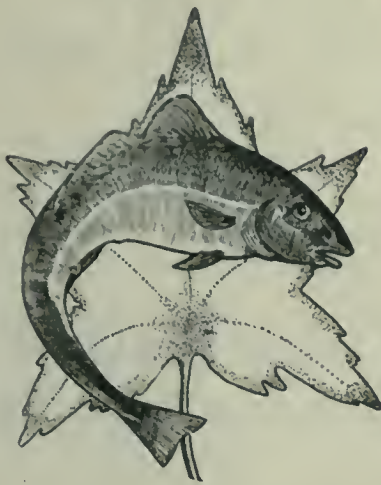
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FREDERICK WILLIAM WALLACE
EDITOR

Official Organ of the Canadian Fisheries Association and Affiliations

Vol. VI.

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No. 5

THE MOTOR ENGINE IN THE FISHING INDUSTRY.

Because it is a mighty factor in the development of Canada's Fishing Industry, the internal combustion engine and its accessories are being featured in this number.

We, in the fishing industry, owe a great deal to the original inventors of the marine motor. The hazards of the fisherman's life has been reduced considerably, while his efficiency and remuneration has increased greatly through the employment of the motor in his craft. Ten years ago, our fishermen were beginning to appreciate the value of the gasolene motor and began installing them in their boats. In 1916, there were 12,828 craft thus equipped: in 1917 the number increased to 14,823.

The motor is becoming universal in our fishing industry. On the Pacific Coast, practically every fishing boat — halibuter, salmon troller, seiner, cannery tender, and shore fishing vessel — is motor propelled. Upon the inland waters they are ubiquitous, and on the Atlantic they are numbered in the thousands.

The motor is being installed in the largest types of fishing craft and this season will see three large oil engined trawlers in operation out of Nova Scotia. If these vessels make good, it is possible that within a few years the Canadian salt fishing fleet of 125 schooners will be replaced by motor driven trawlers. We feel safe in prophesying that the motor trawler will re-

place the schooner and dory anyway, though it may take a little time and experience to evolve a type of vessel which will be economical and remunerative.

The shore fishing fleet — boats which carry from two to six men — is practically all motor propelled and their number is being added to yearly.

THE FISHERMAN AND THE MOTOR ENGINE.

The fisherman is changing in type and vernacular. The searcher of romance and local color who loved to write of the fisherman as a character redolent of the sea and swelling canvas, must seek elsewhere. The bronzed, sea-booted type who braved the hazards of the deep and interlarded his conversation with rare nauticalisms, who spoke of 'beating to wind'ard', 'giving her th' main-sheet' and 'lyin' hove-to on the starb'd tack', is rapidly giving way to the man who carries stains of lubricating oil on his clothes and whose apparel reeks of gasolene instead of the romantic pitch and tar.

The forty fathom lingo of the Banks and the Bankers is going. Our modern fisherman turns more to mechanics rather than rope and canvas seamanship. His conversation is replete with "eyeles", "timers", "magnetos", "lining up the shaft" or "missing on one cylinder". Like the old-timer who knew the name and hailing port of every craft on the coast, our modern piscatorialist knows the virtues and defects of every make of motor engine and can descant with ease and authority on the advantages and disadvantages of lubricants, spark plugs, reverse gears, and gasolene kerosene, distillate or crude oils as fuels.

A New and More Powerful Engine for your Boat

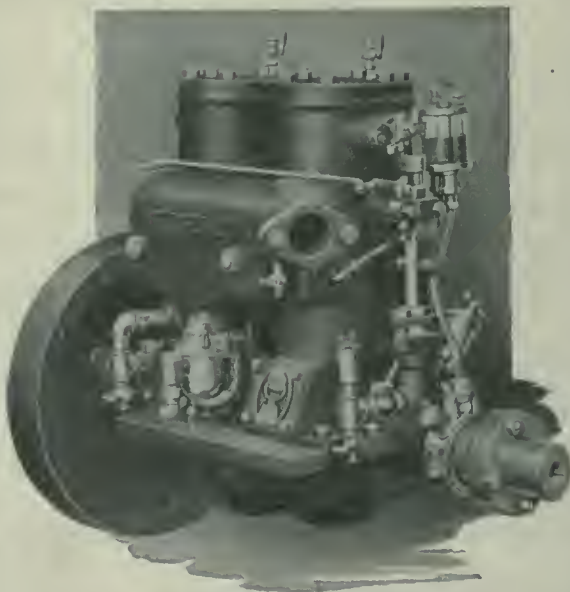
This engine has been developed for you—for the fisherman who wants an economical, but more powerful, engine for his boat.

The Fairbanks-Morse 10 Horse Power Type "M" Engine

has been designed exclusively for use where the 3, 5 and 8 H.P. Type "M" Engines have given satisfaction, but a more powerful engine is required.

The 10 H.P. Type "M" is as simple and sturdy in construction as the smaller models, has the same reliable make-and-break ignition and plunger pump for water circulation and operates on either gasoline or kerosene.

If you want a powerful money-saving engine for your boat, get in touch with our nearest office or your local dealer. Investigate the engine that is backed by experts who will assist you with each detail until you are completely satisfied that the Type "M" is the most satisfactory of fishing boat engines.



Dealers will find unusual opportunities in handling the Type "M" Engine in all models—3, 5, 8 and 10 H.P. Get particulars to-day.



The Canadian Fairbanks-Morse CO., LIMITED

75 Prince William St.,

St. John, N. B.

The fishing fleet no longer creeps out of harbor with sails hoisted and the creak of sheave and slat of canvas forming an early morning reveille. Instead, we are awakened in the early hours by the thunderous roar of unmuffled exhausts — a veritable drum-fire of staccato sound — and the sea breeze carries a whiff of burnt gases. This modern armada is mast-less and sail-less, but there is a suggestion of power in these lean, able craft who go storming out to the fishing grounds at a ten knot clip in the teeth of wind and tide to catch the high or low water "slaeks".

Old customs die hard among fishermen. In the early days of internal combustion engines, your harvester of the sea looked upon these machines with suspicion and scorn. "Ye'll never see me with one o' them stinkin', putterin' things", he would remark. "Sail an' oar is safer". One pioneer would break away from the ranks of the "wind and pull" crowd, and his mates would watch him puttering around with ill-concealed disgust. All kinds of dire happenings would be prophesied. "He'll blow up some o' these days!" or "That noisy engine o' his will scare th' fish!"

It wasn't long before the conservative crowd of the sail and oar adherents noticed that their mate with the engine in his boat was leaving for the grounds later in the morning than they were; he was hauling his trawl, getting his fish, and arriving home before any of the sailing gang. A head wind made but little difference to him; the lack of wind failed to keep him from fishing, and it was noted that the noisy exhaust did not scare the fish nor did the engine blow up. Mr. Motor Fisherman was able to cruise around more. He could remain on the fishing grounds longer when threatening weather forced the others to fly for port, and best of all, he did not have to tug at an oar or bother coaxing a sail.

Then the break came in the ranks of the Stand-Pats. Out came the sailing gear. In went the engines. The Moss-backs stuck to sail as long as they could, but eventually succumbed, and became more enthusiastic than the pioneers. Boats built for sailing were not fast enough for the motor. A new type was evolved. Engine succeeded engine. Speed became an obsession and the rates were raised from a jogging five or six to a racing ten and twelve knots per hour. Single screws and one cylinder heavy duty engines were replaced by twin screws and three cylinder high speed machines. A sportsman in sail and loving a lee rail breeze, our fisherman rapidly became a disciple of mechanical power and delighted in racing to and from port with his mates.

In the off-shore Banking fleet, the transition came later. With them, sail was good enough and big engines were expensive and doubtful investments. But they too fell. An auxiliary engine to aid the sail was mighty handy at times. It saved towing bills. It shoved the vessel along in calm weather and it helped her in and out of harbors and narrow channels. She could set and pick up dories on windless days. She could dodge into harbor and avoid gales. When sail failed, she could always count on getting to the Banks and in making port with her catch of fish. Skippers and owners soon found out that the best fishermen shipped in the auxiliaries, and that the auxiliaries were making bigger trips and more money.

Thus the Moving Finger of Progress writes. Sail is rapidly going into the discard. On the Pacific Coast it has gone and the "gas boat" is supreme. The big Boston and Gloucester Bank fleet are nearly all auxiliaries, but they too, are succumbing to power with the

advent of the steam trawler. Steam, now, is facing an unconquerable rival in the motor driven trawler and within a few years the latter will remain supreme.

"Romance is dead!" wrote Kipling referring to the advent of steam and the disappearance of sail. True, romance enhaled sail, but it meant hardships, danger and scanty remuneration. It meant being a plaything of the winds. It meant anxious hours; hours of strenuous toil fighting wind and canvas and often men's lives paid the price of dependance on the vagaries of the breeze. It meant monotonous days of windless drift or tack and tack until the ship had traversed fifty miles to make twenty towards her destination. Aye! Romance at sea in the sailing days is something for writers to dream over. To the sailor, there was but little romance in it except the memory of strenuous days and nights with shipmates who shared a common peril just as War is romantic to the soldiers who fought together in a common cause. There is no romance in these things while they are happening.

To the motor engine goes our tribute. It may have destroyed romance in the seafaring aspect of the fishing fleets, but it has replaced it by comfort, reliability and power over wind and wave.

CUT DOWN OUR FISH IMPORTS.

In many lines we have an over supply of fish on hand, and an effort must be made to absorb them. Statistics for the year 1917 show that Canada imported fish to the value of \$2,833,392 which included about \$400,000 pickled or salted herrings; \$19,000 of smoked herrings; \$64,000 of halibut; \$134,000 of canned salmon; \$82,000 of pickled and salted salmon; \$40,000 of canned lobsters; \$230,000 of canned sardines, sprats, etc.; \$400,000 of cod, haddock, pollock and ling, dry salted and fresh, and over \$300,000 of oysters.

With the exception of oysters and a few species of fish which we do not produce in Canada, there is absolutely no reason why we should import a single dollar's worth of the other varieties. In canned sardines, canned salmon, canned lobsters, pickled herring, smoked herrings, and cod, haddock, pollock, fresh and dried we have more stocks than we know what to do with at present.

We are now in the reconstruction period and our whole system of trade needs overhauling. To develop our fisheries we must build up export markets and at the same time, the distributors and retailers in the home markets must use Canadian products and refrain from importing from foreign countries the goods we produce ourselves.

In fish products, Canadians must SELL not BUY, and this should be our slogan from now on. While it is desirable that our dealers should oblige their customers by supplying their requirements, yet supplying these requirements to the detriment of our own industry is not good business for Canadians as a whole.

Let all in the trade give this matter serious consideration and buy nothing from abroad if it can be procured in Canada. Even in times of scarcity of our own product, it would be better to let the Canadian consumer go without rather than import merely to cater to an unseasonable demand.

USE CANADIAN SARDINES.

There is a stock of sardines in the hands of Canadian packers valued at \$300,000 which is not moving out as fast as it ought to. This pack was put up last season, and until it is disposed of, the canneries will

not open and some 2,000 persons will be idle.

Sardines, to practically the same amount in value, are imported into Canada from foreign countries yearly. Why not encourage the home industry? Why should we use these foreign packs when we have a large stock of our own?

The fish trade throughout Canada might take this to heart and make an effort to move these canned sardines through the home market. Now is the time when we should help our own industries by purchasing "Made in Canada" goods. We have a huge balance of trade to catch up on and a national debt of \$1,500,000,000 to make good.

FISHERIES ASSOCIATION FOR BETTER MUNICIPAL MARKETS.

The Montreal Executive of the Canadian Fisheries Association recently called a meeting of several local organizations including the Local Council of Women, Housewives League, Peoples Forum, Trades & Labor Council, Societe Co-operative de la Province de Quebec, to discuss ways and means to improve local markets — not for fish alone, but for all other food commodities. It was the unanimous opinion of those present that the public markets in our large centers were not satisfactory as regards convenience to the consumer, accommodations to the retailers, and distributing facilities. With the intention of remedying these deterrent conditions, a Committee was nominated with Mr. J. A. Paulhus as Chairman, and the members were delegated to make careful investigations of the public markets in other cities and report at the later meeting when action would be taken to have improvements made in the Montreal Municipal Markets. Mr. J. J. Harpell undertook to study the markets of Washington, Baltimore and Philadelphia; Mr. F. W. Wallace, those of Boston, and Mr. J. T. O'Connor, those of Cleveland.

FISHERIES ASSOCIATION CO-OPERATES IN HONORING MR. E. W. BEATTY.

The Canadian Fisheries Association was prominently represented at a banquet tendered to Chancellor E. W. Beatty, President of the C.P.R. and Principal Bruce Taylor by the Alumni Association of Queen's University, Kingston. The dinner was given at the Ritz-Carlton, Montreal, on Tuesday, April 8th, and among the guests were Sir Herbert Holt, Sir Mortimer Davis, Professor McNaughten, Rev. Father Hebert, Colonel Leonard, Hon. Walter Mitchell, Mr. W. C. Goode, Mr. J. J. Harpell (Chairman). About a hundred persons prominent in education, banking, industry and labor were present and the speeches delivered were interesting and momentous. Mr. J. A. Paulhus, Mr. W. R. Spooner and Mr. F. W. Wallace represented the fishing industry. In speaking for the fishing industry of Canada, Mr. Paulhus stated:—

"As an officer of the Canadian Fisheries Association I have the honor to represent an industry with an annual value of fifty-three million dollars and which employs about one hundred thousand persons. These figures may seem impressive, but the fishery resources of Canada are of such magnitude—excelling all other nations in variety and abundance of species—that the figures quoted are by no means commensurate with the possibilities of the industry. If we had developed our fisheries as they should have been developed, their annual value should have totalled one hundred millions and at least a quarter of a million persons should be employed in them today.

"We need, perhaps more than any other industry, education. Education of the Canadian public to the value of fish as a food and as a source of inherited wealth to be developed. Education of the fishermen and producers to catch fish by the most modern and economical methods; to pack and cure fish in accordance with the best practice and better than our competitors. Education of the Government and public bodies to the importance of fisheries development in order that we might secure the things so necessary to that development in the way of better railroad transportation; better marketing facilities; improved fisheries administration; research and biological work; the utilization of fish waste, and the creation of foreign markets for our fishery products.

The Canadian Fisheries Association has been working to secure these improvements, but we are in the trade. If other industrial and educational associations would co-operate with us in developing our great fisheries, the benefits would come to all — just as Canada has been enriched by the development of her farming lands, her forests and her mines.

The foundation of this work lies in our educational institutions—in the schools and colleges where young Canada is trained to appreciate our country and what we possess. Educate the child in these matters — teach them the value of our resources—and in later years they will become factors in developing them."

MAJOR GREEN PUTTING CANADIAN FISH ON THE MAP IN GREAT BRITAIN.

Advices and photographs to hand show that the indomitable Fish Monger General — Major Hugh Green — now demobilized, is putting Canadian chilled fish before the British public and is opening retail stores all over London. A photograph received shows one of these stores in the Clerkenwell district of London and Canadian soldier is acting as fish salesman. "If it swims — we sell it!" is the slogan adopted and made famous by Major General Green in these stores. If Canadian frozen fish can be sold in England now that the war is over, it will take a man of the Major's ability and aggressiveness to put it across and we wish him every success.

FISH IMPORTS INTO GREAT BRITAIN, Mar. 17th to April 5th.

LONDON. S.S. "Manhattan" from New York, 20,018 cases salmon; 1,066 cases pilchards. Arrived Mar. 22nd.

LIVERPOOL. S.S. "Melita" from St. John, N.B. 3,837 cases fish; 13,641 packages salmon. Arrived Mar. 17th. S.S. "Graciana" from St. John, N.B., 258 packages fish; 10 brls trout; 1,121 pks eod; 103 brls herring; 61 tierces salmon. Arrived March 17th. S.S. "Seotian" from St. John, N.B., 16,277 pkgs salmon; 1,463 bxs frozen fish. Arrived Mar. 17th. S.S. "Megantic" from Portland, 7,774 pkgs salmon; 1,839 barrels frozen fish. Arrived Mar. 24th. S.S. "Minnedosa" from St. John, N.B., 12,744 pkgs. salmon. Arrived Mar. 31st. S.S. "Carmania" from Halifax, 355 cases frozen fish; 352 cases frozen salmon. Arrived Apr. 3rd. S.S. "Corsican" from St. John, N.B., 17,696 pkgs salmon; 1,279 pkgs frozen fish. Arrived Apr. 5th. 200 pkgs frozen salmon; 666 pkgs frozen fish. Arrived Apr. 8th. MANCHESTER. S.S. "Manchester Brigade", 20,125 cases salmon from St. John, N.B. Arrived Mar. 28th.

CANADIAN SARDINE FISHERS' FLIGHT.

About 2,000 breadwinners in the sardine fishery industry on our Atlantic Coast are faced with unemployment. The fishing season normally opens on May 1st, but owing to the fact that the factories have a large surplus from last year it is not the intention of the managements to open until that is disposed of.

In view of the fact that last year there were imported into Canada \$286,000 worth of foreign fish of the sardine type from France, Spain, Portugal, Norway and California — none of which are of better nutritive quality than the Canadian sardine — the Canadian Trade Commission requests a voluntary campaign on the part of Canadian grocers, restaurants and housewives to give preference for the next few weeks to Canadian-packed sardines.

The enormous stocks of similarly canned fish in Europe and the United States quite prevent even the hope of export of the Canadian Maritime produce, but the Trade Commission is confident that when the facts are brought before the public they will exercise that collective patriotic influence which solved similar temporary difficulties in the vegetable and fruit seasons last summer and fall.

The number of fishermen engaged in catching Canadian sardines is about 1,200, and there are in addition 600 cannery employees, largely women and girls.

BRITISH MARKETS.

Billingsgate, April 19, 1919.

For this week's markets—the most important in the whole year in the fish trade of the United Kingdom—supplies have been on a generous scale. As an indication of the quantities landed it may be mentioned that the daily arrivals at Billingsgate over the first four days of the week averaged well over 700 tons each morning. Trade on the whole has been fairly brisk, but prices have given way right and left. Although most kinds of fish have been obtainable at a much easier level than of late, they cannot yet be considered as cheap, as the prices current during the time of food shortage were unduly high, and, in the opinion of many, much above the intrinsic value of the goods. A break in prices has been expected for some time, and little doubt was felt that, when the fall did come, rates would slump. However, scarcely any one expected that this would happen during Good Friday week, but it is the unexpected which always happens in the fish trade. The landings have included huge catches of deep sea fish, i.e., fish secured at the grounds off Iceland and Faroe. The bulk of this fish has been consigned to the principal commission markets, such as Billingsgate, being mainly despatched loose in railway trucks, and not in packages. Another feature of the markets this week has been the substantial quantities of fish, mainly plaice, which have arrived from Holland, much of this fish coming direct to London by the ordinary cargo steamers. Thus, to sum up this week's markets, heavy supplies have sold fairly well at easy prices. Owing to the big quantities handled business has been prolonged much after the usual hours, sales proceeding at Billingsgate for instance from 5 a.m. to as late as 3 and 4 o'clock in the afternoon.

Every order secured under Canadian credits in Europe must be open to a bid from every Canadian manufacturer in the line who desires it. That is a fixed rule made by the Canadian Trade Commission.

FISHING BOATS SHOULD HAVE MOTOR POWER.

By W. A. FOUND,

Superintendent of Dominion Fisheries.

There should no longer be any doubt as to the eminent advantage to fishermen in having motors installed in their boats. While in many instances they may find some difficulty in financing the payment for engines, there can be no question that it is much more than worth the effort. In an average season, the additional time that can be spent in fishing by having a motor in the boat, on account of indifference to calms and headwinds, and the much shorter time required to go to and come from the fishing grounds, will much more than offset the extra capital and expense of operation involved in having a motor.

A few years ago, an interesting experiment was made at a little fishing village in Devonshire, England, called Beer, which clearly evidences this. A motor was installed in one of the sailing boats there that was being used as a drifter. She was operated from that port, and a record was kept of the results, and comparison made with the fishing done by similar boats operating from Beer that were without motors. The experiment was conducted for six months. During that time, in addition to other advantages, the motor boat went to sea on eighteen days that the sailing boats had to remain in port on account of calms or headwinds. The earnings of the motor boat were 210 per cent. higher than the average earnings of the sailing boats, and the cost of the fuel was only 3.3 per cent. of her gross earnings.

There is also something to be said from the psychological standpoint. The fisherman who is as well equipped as his neighbour is likely to have an enthusiasm in his work that would not otherwise be the case, and a spirit of amiable competition aroused that will enhance his pleasure in his work, and make him an all round better fisherman.

Canada has, and should always have, a great inshore fishery. Her long coast lines dotted with harbours and coves from which small boats can easily and conveniently operate, are particularly favourable for such fishing. In these circumstances, the advent of the steam trawler, with the steam or motor driven drifter in the offing, need bring no alarm to our inshore fishermen. If they generally equip themselves with motor boats, so that they can take full advantage of their opportunities, they can more than successfully stand any competition.

That our fishermen are becoming alive to the advantages of the motor boat is evident from the rapid increase in the number of such boats that are coming into use. In 1910, there were but 2,290 motor boats fishing on the Atlantic coast, and 2,129 in British Columbia. In 1917, the number on the Atlantic coast had risen to 10,761, and on the Pacific coast to 3,172, notwithstanding that motor boats are not permitted in the salmon fishery in Northern British Columbia.

Let the aim of every inshore fisherman be, to have a motor in his boat, to catch as many fish as he can, and to handle them as well as he can. By so doing, he will not only assure larger earnings for himself, but he will help to enrich our country by adding to its food supply and swelling our export trade.

It may also be well to emphasize that few fields offer greater assurance of a good livelihood for such of our returned soldiers who may have a liking for the sea, as our inshore fisheries.

Minister Met C.F.A. Delegates on May 14th



HON. C. C. BALLANTYNE,
Minister of Marine and Fisheries and Naval Service.

On May 14th, Hon. Mr. Ballantyne accorded the Canadian Fisheries Association delegates a most courteous reception, and evinced great interest in the recommendations placed before him. Mr. Ballantyne is a business man, and intends to treat the Fisheries as a business proposition

which must be developed on business lines. He is a man of unusual ability, and could do much to put Canada's fisheries in the forefront of all nations. A full report of the Delegation's recommendations will be found in this issue.



Science and Sea Fisheries

The International Council for the Scientific Exploration of the Sea.

[This article is of special interest at the present time as the recommendations of the Canadian Fisheries Association strongly advocate the prosecution of similar work in the Canadian fishing industry.]

A prominent feature in the administration of the sea fisheries at the present day is the application of science in the study of their problems. Nearly all European countries which possess sea fisheries have now a special department engaged in scientific fishery research—Norway, Denmark, Finland, Russia, Sweden (where all fishery inspectors must have scientific qualifications, with a University degree), Germany, Holland, England, Scotland and Ireland. In Spain the whole administration of the fisheries was recently reconstructed on a scientific basis, and while there is not yet any special department in France, Portugal or Italy, a great deal of scientific research is done by marine laboratories and universities at the instance of the State. In France, the Chief Inspector of Fisheries is always a scientific man. Thus almost all European countries have come to rely more and more on scientific knowledge in the work of administration and regulation. This it need scarcely be pointed out, was formerly not so. It was the custom to manage the fisheries in accordance with the views or interests that happened to be predominant at the time, a policy which had often been futile, and sometimes disastrous, consequences. Although political and class influences have by no means been quite eliminated, it is the fact that as the years pass more and more reliance is placed on the results of scientific observations, and more and more energy is shown in acquiring systematic knowledge as to the life-history of the fish.

The fundamental aim of fishery administration, looked at in the broadest way, is to enable the largest possible supply of edible fish and shell-fish to be taken from the sea in successive years, without endangering the permanence of the supply. This is attempted in most countries by the culture of such forms as can be brought under control, as shell-fish—notably in France, Holland and the United States; or by the rearing of young fish in large enclosures, as in Italy and other parts of the Mediterranean coast; or by the artificial propagation of important food fishes, as cod, pollock, plaice, flounders, etc., a method of fish-culture largely developed in the United States, Canada and Norway. But so far the main function of scientific fishery research has been to guide a rational regulation of the fisheries, and, in particular, of the operations of fishing; to ascertain when a particular fishery shows clear signs of exhaustion, to determine the cause and suggest an appropriate remedy, and to check

hasty and ill-considered legislation. No doubt in future as knowledge accumulates much more than this will be accomplished, such for instance, as forecasting the probable abundance of certain forms anterior to the fishing season, in which direction a good deal of suggestive work has already been done.

History of Scientific Fishery Research.

Such researches were at first sporadic and usually occasioned by some particular problem which had to be tackled. Amongst the earliest were those made in 1861 and 1862 by Professor Allman, of Edinburgh University, at the instance of the Scottish Fishery Board, to determine the nature of herring-spawn and whether beam-trawling was injurious to the spawn. Both objects were accomplished. Another investigation on the initiative of the same body proved that sprats were quite distinct from herrings. A year or two later an epoch-making discovery was made by Mr. G. O. Sars, a Norwegian naturalist (happily still living), who had been requested by the Norwegian government to investigate the natural history of the cod and the cod fisheries at the Lofoten Isles. Sars proved that the eggs of the cod, haddock and mackerel are pelagic, floating near the surface of the sea. This discovery, soon extended to include the flounder and plaice in Europe, and many sea fishes in America (by Professor A. Agassiz), was of the utmost importance in connection with the natural history of fish, in stimulating research and in annihilating the objection to beam-trawling as being destructive to the spawn of fish. In the early 'eighties the researches of several naturalists, notably Professors M'Intosh and Princee (now Dominion Commissioner of Fisheries), and Mr. J. T. Cunningham, proved that a great majority of the food fishes have floating spawn. It became obvious that if this field of investigation concerning the fisheries was to be fruitful of results, it was desirable that the researches should be carried on in a methodical and systematic manner, and that special organization was necessary. The first step was taken in Germany, by the formation in 1870 of the new well-known Kiel Commission for the Scientific Investigation of the German Sea. Organized researches were made in the Baltic and the North Sea, and many important investigations were carried on as to the natural history of the herring and other fishes, on the invertebrate fauna, and on the physics of the sea, the results being published in numerous illustrated reports. In 1871 the United States Commission of Fish and Fisheries was founded. It has accomplished an immense amount of work, both in fish-culture, in hydrography, and concerning the natural history of fishes and shell-fishes. In Great Britain systematic fishery researches

began shortly after the establishment of the new Fishery Board in Scotland in 1882, and they were increased by the foundation of the Marine Biological Association in 1887. A great deal of scientific work has been done, and continues to be done, by these bodies. Later, systematic investigations of the same nature were begun by the Board of Agriculture and Fisheries for England and Wales, and by the fishery department in Ireland. At the present time, or at least before the war, ten or a dozen steamers specially equipped for scientific fishery researches, and some fifty marine laboratories, were busily employed in adding to our knowledge of life in the sea. There was a great impetus given to such researches by the institution in 1902 of the International Council for the Scientific Study of the Sea, about which something must be said.

The International Council.

The general progress of fishery research is indicated above. As it increased and strengthened the idea occurred to several people that the results would be extended and rendered more valuable if the main researches were organized on an international basis. The actual operations of fishing had long before passed from the waters skirting the shores into the deeper waters, and thus from the territorial belt belonging to separate States to the waters common to all, and under no particular jurisdiction. These fisheries are shared in common amongst the fishermen of many countries—those of a region so comparatively small as the North Sea amongst nine or ten. Thus, if it were desirable or necessary to regulate the fisheries outside the three-mile limit, it could be done effectively only by the consent and co-operation of the countries concerned. This was the argument from the immediately practical point of view. But there was also an immense advantage in co-ordinating the researches and investigations of the various States according to a common plan agreed upon between them, instead of each pursuing an independent course without relation to what was being done in other countries. The advantage was perhaps especially great in hydrographical investigation, covering wide areas of the seas and ocean, as for instance in a study of the great Atlantic drift and its variations at different seasons. This could be effectively accomplished only by the co-operation of the research vessels of several countries, working simultaneously on a pre-arranged scheme. The advantages are by no means confined to hydrography, for it is easy to see that simultaneous investigations along great stretches of coast concerning widely distributed fish, as the herring, are much more likely to furnish useful results than sporadic dissimilar investigations carried on here and there without any co-ordination.

The international fishery co-operation in reality took origin in certain Swedish, and Norwegian, researches of a hydrographic nature in the Skagerrack and Cattegat, with reference mainly to the herring fisheries in that region. The leader of these investigations, Professor Otto Pettersson, of Holma, Brastad, Sweden, now President of the International Council, may be looked upon as the father of the international investigations. In conjunction with Dr. Ekman, Dr. Fridtjof Nansen, Sir John Murray of the "Challenger," and others, he succeeded, through the Swedish Government, in convincing the governments of other countries of the advantages of co-operative research. It is exactly twenty years ago since the preliminary meeting of the delegates took place at Stockholm. On the invitation of the Norwegian government a second

conference was held at Christiania in May, 1901, and then in July, 1902, the various governments having decided to participate and provide the funds necessary, the first meeting of the constituted Council was held at Copenhagen, and the work commenced. The countries which participated were Russia, Sweden, Finland, Germany, Denmark, Norway, the Netherlands, Belgium and Great Britain. France has hitherto kept aloof from the international co-operation. In 1912 the United States joined and was represented at Copenhagen by Dr. Hugh M. Smith, the Commissioner of Fisheries, much to the satisfaction of the Council. The inclusion of Canada, which the Council "found of vital importance," was being negotiated when the war broke out. As was natural, the various governments at first were rather chary of giving an undertaking to continue in the work for a long term of years, their participation being dependent on the voting of the necessary funds from year to year by the legislative bodies; but as time passed they became inclined to fix a period of three or five years, instead of one or two years. The Council used to meet in various centres, but in later years almost only at Copenhagen, where the Central Bureau and Central Laboratory are situated. The last meeting of the full Council was in September, 1913. During the war several meetings of the delegates of Sweden, Norway, Denmark and Holland have been held. The first president was expected to be Sir John Murray, the eminent oceanographer, but Dr. Herwig, a German, who may be said to have been the creator of the deep-sea fisheries in that country, was elected; when the war broke out another German, Mr. Rose, was president; in the interval between those two the presidential chair was occupied by the late Mr. Walter Archer, in charge of the English fishery department. At the last meeting in September, 1913, Russia (and Finland) was represented by six scientists, Germany by five, Denmark by five and the general-secretary (Comanwer C. F. Dreehsel), Sweden by three, the United States by one, Holland by three, Norway by two, Belgium by two, and Great Britain by eight, viz., Mr. H. G. Maurice, assistant secretary to the Board of Agriculture and Fisheries, London; Professor D'Arcy W. Thompson, Dundee; Mr. J. O. Borley, chief naturalist, Dr. A. T. Masterman, superintending inspector, and Dr. E. C. Jee, all of the Board of Agriculture and Fisheries, London; Dr. Wemyss Fulton, scientific superintendent of the Fishery Board for Scotland, Aberdeen; Mr. D. T. Jones, secretary for the Fishery Board for Scotland, Edinburgh, and Mr. C. Green, of the Department of Agriculture and Technical Instruction, Dublin.

The cost of the international co-operation is remarkably small. In the financial year 1912-1913 the receipts amounted to £9,216, including the subsidies from the various governments (viz., £6,491) and a balance from the previous year, while the expenditure was £6,488, leaving £2,728 to be carried forward to 1913-1914. The largest item in the expenditure is for printing. The publications of the Council comprise (1) Reports and Process-Verbaux of the meetings; (2) Bulletin of the results of the periodical hydrographic and planktonic cruises of the research vessels; (3) Occasional papers (Publications de Circonstance); (4) Statistical Bulletins. Of the first series 23 volumes were issued up to the end of 1915, the reports of the proceedings in English and German, and many of the scientific reports also in these languages. Many of these reports, prepared by the highest experts, are of extreme im-

portance and copiously illustrated. Not far short of a hundred of the third series have appeared, dealing with a very great variety of subjects.

The Work Accomplished.

It is quite impossible even to summarise the scope and results of the investigations. They embrace almost all conceivable subjects relating to sea fish and fisheries—hydrographical, biological and statistical. A good account of the work will be found in the 16th report, prepared by the general secretary and published in December, 1917. The Council found it desirable at an early period to appoint several committees for special investigations, such as on the alleged over-fishing of the North Sea, Skagerrack and Cattegat; the migrations of the cod, haddock, etc.; the Baltic fisheries, the hydrographical and planktonic researches; the plaice fisheries, etc. In 1913 a committee was appointed to prepare a scheme for an investigation of the herring and herring fisheries in European waters, but the work was interrupted by the war. One of the most interesting results accomplished under the international co-ordination, by the Danish Naturalist, Dr. J. Schmidt, is the elucidation of the remarkable life-history of the freshwater eel. Another was the reorganization of fishery statistics, so that they may be used as a measure of the fluctuations on the fishing-grounds. The only international arrangement of a practical kind that had reached an issue before the outbreak of the war concerned the plaice fisheries of the North Sea. The special committee dealing with this subject, after prolonged investigations, formulated a series of proposals for the protection of under-sized plaice, and these were recommended to the governments concerned for adoption, but their consideration was soon suspended owing to the war. It will be of great interest to see, when the international investigations are resumed, as they soon will be, whether the compulsory closure of the fishing-grounds in the North Sea, which the war has brought about on a scale undreamt of by the keenest protectionist, has resulted in a super-abundance of plaice. It may well be that this immense measure of protection to the fish, both undersized and adult, will obviate any international restrictions on the fishings.

Industrial Scientific Research.

It would be inappropriate to conclude this article without some reference being made to the importance of scientific research on the fish after they are landed. The scientific investigations above alluded to are confined to the fish in the sea, and have for their main object the conservation of the fish supply. But in order that this supply should be utilized to the best advantage for the public good, it has become evident in recent years that much more ought to be done. Fish is perhaps the most perishable of natural foods and rapidly deteriorates; its source is often remote from consuming centres. Hence the importance of methods of preservations as fresh fish and as cured fish. Canadian frozen fish has been only a qualified success on the English market. If the methods were improved, as perhaps by brine-freezing, a great business might be developed. The preservation of fish should be studied from the moment they are caught until they are in the hands of the consumer. Then a great deal remains to be done in improving the methods of cure. In Germany, where the greatest advances have been made under the auspices of the Association of the Fish-Preserving Industry, herring are put up in about a score of ways, the fish being imported from every herring-producing country in Europe. Then there is a great field of research in connection with the chemistry of fish as food, the determination of the food-value of the various species, fresh and cured, and in the utilization of bye-products. These researches are beyond the capacity of individual firms and ought to be the duty of the State in the interests of the fishing industry, just as similar researches are carried on in the interests of agriculture. The war has given a great stimulus to the idea of such State industrial laboratories. One has existed in Norway for many years; in the United States others are being arranged for; in Germany plans are ready for a great central institute to cost from £150,000 to £200,000, with an annual endowment of from £5,000 to £10,000. Those of most experience are of opinion that researches of this nature will be of the utmost value in developing the whole fishing industry.



A Nova Scotia Motor Fishing Boat.

NOVA SCOTIA FISHERIES BACKWARD.

Editor, Canadian Fisherman:

Sir,—According to state papers the value of the Nova Scotia fish products has increased little over ten per cent. in the last thirty years. Anyone examining reports covering that period can easily verify this statement, astonishing as it may seem. He will be disposed to doubt the accuracy of the figures, and they certainly are open to question; but when due allowance is made, the disquieting fact remains that for all its increased activity, that Province has remained almost stationary as regards the worth of its fishery output.

For twelve years or so before the beginning of the above period, the progress had been remarkable,—at a fourfold rate of gain, if I remember correctly. That was the time of reciprocity in fish and fishing privileges with the United States. New London halibut catchers used our shore-grounds for trawling, and Gloucester seiners were allowed to operate in the offing. Those vessels came in often to buy bait, ice, stores and gear, as the ease might be. On the other hand, the Nova Scotia hand-liners, net-men and trappers shipped their large dry-salted and pickle-cured, free of duty, to the States. Individual shipments replaced in a measure the previous collective exports, mostly to the West Indies. It was the flood-tide of prosperity for the fishermen on both sides of the Bay, as all men know.

The turn in the tide came when the treaty was denounced, the duties were re-imposed with an extra turn of the screw, and the protection cruisers went into commission all along the coast. Exactly at that date the Provincial banking fleet, all but that of Lunenburg and a few stragglers, went out of existence. The stand-off policy of George the Third on one side, and the non-intercourse edict of Cleveland, to a less extent, on the other, made the great fishery interests of the two countries, which had flourished when friendly, agree about as well as a cough and a quinsy.

But it is useless to go over the ground, so often traversed of late by politicians and publicists who have been in a better frame of mind for the last twelve-month, at least. Neither will it lead us one inch nearer the mark to follow the trend of after dinner fishery speeches at the conventions of great business. It is all right for one who can be satisfied with glowing metaphors and glittering generalities. The captains of finance may be steering by the eard with a good prospect of reaching the "Fortunate Isles," but the men who string the twine and set the trawls are naturally enquiring where they are to get off at. If they go by the departmental log, they will be dumb-founded at the little headway the Province has made as a whole.

It is strange to reflect on the fact that the other Provinces have all outstripped us, despite our several advantages at the start, or no farther back than the thirty year period under review. Deep-sea and in-shore fisheries were in full swing, a pushful native population pursued the calling, and really wonderful improvements were about to be introduced. The number of fishermen has more than doubled; valuable kinds have been added to the list of food-fish, like albacores, sword-fish and fresh lobster exports, motor power has superseded oar and sail nearly everywhere; railways and steamboat lines, though yet inadequate, have opened up new routes for the marketing of our varied and abundant fish-stuff, prices have

well-nigh quadrupled, and yet as a whole, our Nova Scotia fishery world does not perceptibly move.

Surveying the assistance, or what was intended as such, received from the Federal government by way of protection and promotion, we should expect a far better record. Indeed, judging by appearances alone, all these things had precisely the opposite effect, in every instance. The fishing bountry, allotted for the most part to the vessels, expressly for the encouragement of that branch, has witnessed the steady dwindling of the fleet, notwithstanding the builders' drawback and the bonding privilege, to boot. The ban on inshore purse-seining drove the Nova Scotia mackerel flotilla of early days completely off the seas. The embargo on selling bait to the Yankees was followed by a general shortage in the herring catch, and the fifty or more bait ice-houses that Ottawa helped to instal all around the coast was rendered null and void, in the strictest sense of the term, by the exorbitant trap license fees (now greatly modified), which tended to discourage that method of fishing, while the bait-freezers, big and small, passed into private hands without any visible returns to the community: Lastly a fishery board, as they have it in Scotland, was organized and maintained at no little expense to collate all fish facts in a business-like manner, and direct the disposal of that sea-harvest so that all parties should profit by the application of practical knowledge, as they called it. The board resigned after ten years of untiring effort, and scientists from the interior, who never sniffed the brine, had to be hired to prescribe for the Provincial lobster fishery far gone in a rapid decline!

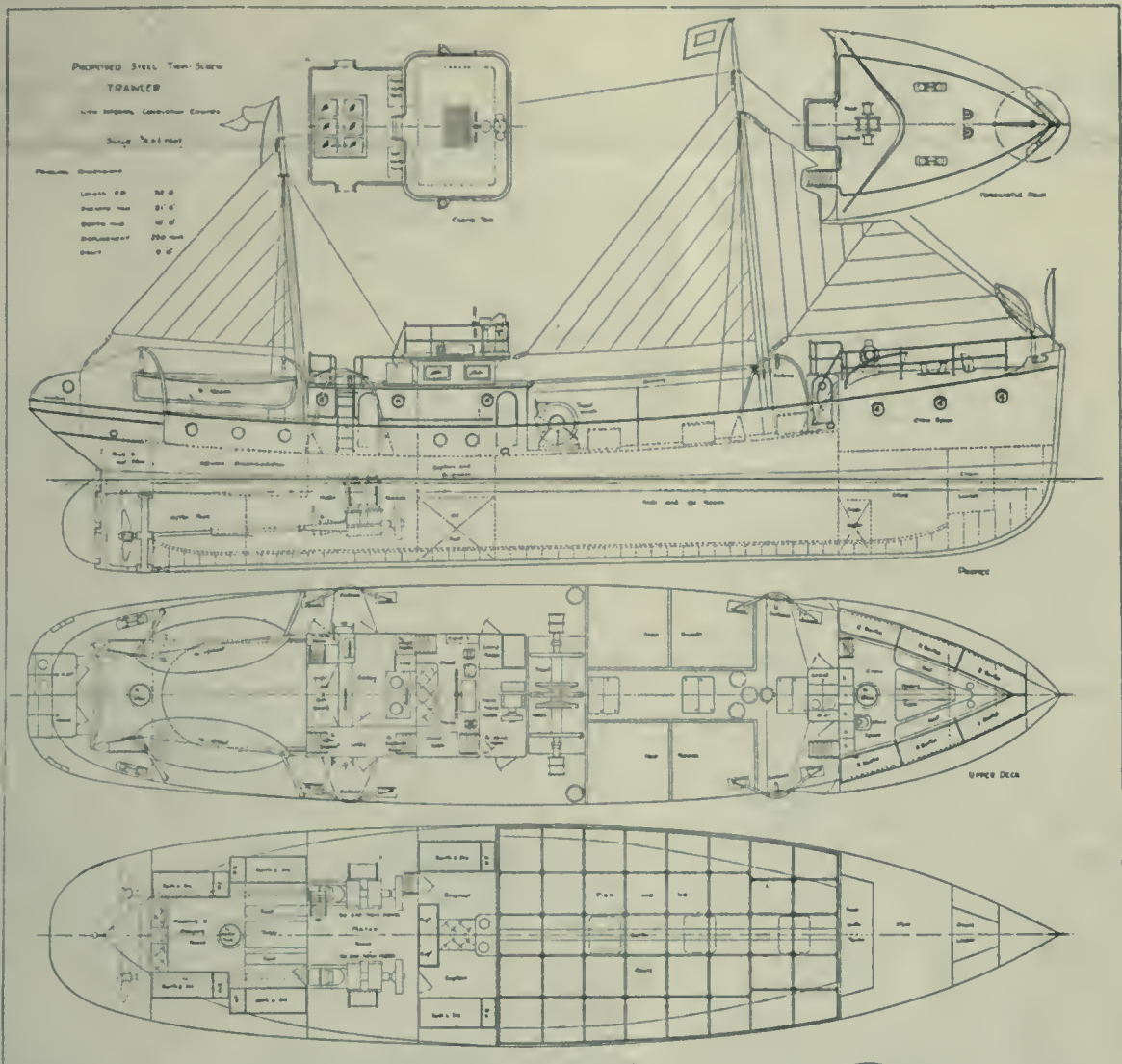
The sole purpose of the present writing is to get at the truth, or to approach it as nearly as possible. Criticism of the foregoing statements is cordially invited and greatly desired. The main points will not be disputed,—the apparent lack of development in Nova Scotia's great marine resource, and the actual inefficiency of state aid up to this stage of her history. It is not clear from the departmental returns whether the dozen millions or so last set down to the credit of Nova Scotia represent the gross amount of sales abroad or the sum distributed among the fishermen. If the former, then the per capita earnings to the producers must be about \$250.00 a year; since half that total must go to meet distributors' expenses and make up dividends; but if the latter, the figures in themselves may seem more reasonable than the unequal share to the producer. Be that as it may, the fishermen should no longer be left in doubt.

The other Provinces stand in marked contrast to the foregoing account by taking a hand, each for itself, in regulating to a large extent its own fishery affairs. It is a matter of common knowledge that British Columbia has thriven under the wise direction of a commissioner and assistant. So of the rest, even to Prince Edward Island, the commission of which sends out a report now before me, a model of its kind and replete with information. But in the Nova Scotia archives, so far as I know, there is not a scrap of paper giving the least notion of the local fisheries, volume or value; yet there is a good working department of industries, which takes no cognizance whatever of such things. The conclusion of the whole matter is, they don't seem to regard fishing as a domestic industry since the days of Uniacke.

M. H. NICKERSON.

Boston, April 10.

Plans of a Motor Driven Twin Screw Steel Trawler, Designed by Walter Lambert, M.I.N.A., Honorary Naval Architect to the Canadian Fisheries Association.



BOSTON FISH RECORDS BROKEN.

Highline Craft Are Auxiliaries.

The 44th annual report of the Boston Fish Bureau, just published, gives a review of the fishing industry for the year 1918 and presents statistics that show that Boston has forged ahead of her only rival, the great fishing port of Grimsby, Eng., which has heretofore been the leader of the world.

Arrivals at Boston during the year numbered 2,830 and the receipts of groundfish aggregated 97,176,034 pounds, while 12,050,987 pounds of other fish, principally mackerel and swordfish, brought the grand total to 109,227,021 pounds. This is the largest amount recorded in 30 years. The nearest approach to this unprecedented quantity of seafood was in 1910 when 102,059,154 pounds of fish were received, but it took 5,060 arrivals to attain that highwater mark.

The schooner Frances S. Grueby, of which Captain Enos Nickerson was master, occupies the leading position in the matter of big earnings for the year. Her gross stock amounted to \$130,000 and the individual earnings of each member of the crew were about \$3,500, or much more than the average share job pays. The

Acushla came second with \$107,000, and the Commonwealth third with \$101,000.

The "Frances Grueby" and "Commonwealth" are equipped with auxiliary gasoline engines, while the "Acushla" has auxiliary oil engines.

STERLING ENGINE CATALOGUE FIRST CLASS PUBLICATION.

Like the manufacturer who advertised that he could not improve the product but he could improve the package, the Sterling Engine Company have followed that axiom in their latest catalogue. They could not improve on quality of paper, letter-press and design, but they have improved the book considerably by making it a loose leaf affair with a patent binder which holds all the various folders issued by the company with regard to engines and boats.

The Sterling catalogue is a most interesting publication apart from the necessary publicity given the Sterling products. There are folders on "How to Select a Marine Engine," and "Heavy Duty Engines" which contain much information of interest to the fishing industry. A copy of the loose leaf catalogue can be had from the Sterling Engine Company, Buffalo, N.Y.



Lakes and Fishes

By DR. A. G. HUNTSMAN, University of Toronto.

(Address before the Lake Erie Fishermen's Association.)

It is our intention to address you on a subject in which you are directly interested and of which you may be considered past masters. When we reluctantly confess that we have never taken a fish from your wonderful lake (Lake Erie), nor even sailed over it, you will be astonished that we dare to speak to you on this subject. We dare do so only because we propose to look at it from a standpoint that will probably seem unusual to you.

You are familiar with Lake Erie in sunshine and in storm, in cold weather and in warm, and you think of it as something to be partly feared, partly admired, but chiefly to be wheedled for the harvest of shining fish it may yield you. Secrets you know it has, and you are constantly striving to find out where it hides the fish and why it doesn't yield more. You have perhaps never considered what is the ultimate source of the food that you take from the waters in the form of fish. To get beef the farmer knows that he must keep his land rich by manuring or fertilizing it. Then with plenty of rain, sunshine, and warm weather the grass will grow that furnishes grazing or hay to his cattle, and from the cattle he gets his beef. He is familiar with all the links in the chain and he can see and repair the weak link and thus insure success. He has a more or less important part to play from start to finish. But how is it with the production of fish? Formerly the fisherman was content to catch what fish the gods provided, say thanks and ask no questions. But failure in fishing led him to seek a remedy and so far he has been content with the simple remedy of putting more fish in the water. If the fisheries are depleted, stock with more fry! This is sound policy so far as it goes, but how long will you be satisfied with going no further? I desire to show you that it is possible to follow the chain of production in the water from ultimate source to the finished product—the fish, although it is not as easy in the case of farming. Also it will be possible in the future to assure to a greater or less extent that all the links in the chain are sound. Much remains to be discovered, but enough is known to give a tolerably clear picture of what is happening in the water, and we crave your indulgence while we give a brief survey of some rather technical facts relating to "Lakes and Fishes." Since Lake Erie is as yet a comparatively unknown body of water, you must pardon us for drawing nearly all our illustrations from other lakes.

You think of lakes as permanent things, that always have been and that always will be, but it is not so.

They are formed by changes in the earth's surface such as occur during volcanic action. After being formed they tend to disappear in various ways. We say that water tends to find its own level, but so does the ground. The rains wash the soil down from the land into the streams and rivers, and then into the lakes. From the muddy water as silt this soil gradually drops to the bottom of the lake and slowly fills it up. (See Fig. 1). In a lake as large as Erie this process is scarcely perceptible. Then, too, this process of wearing away or erosion takes place at the lake's mouth and tends to make it larger, until finally the water runs out more rapidly than it runs in, the level of the lake being lowered and the lake becoming smaller or even being changed to a stream. The

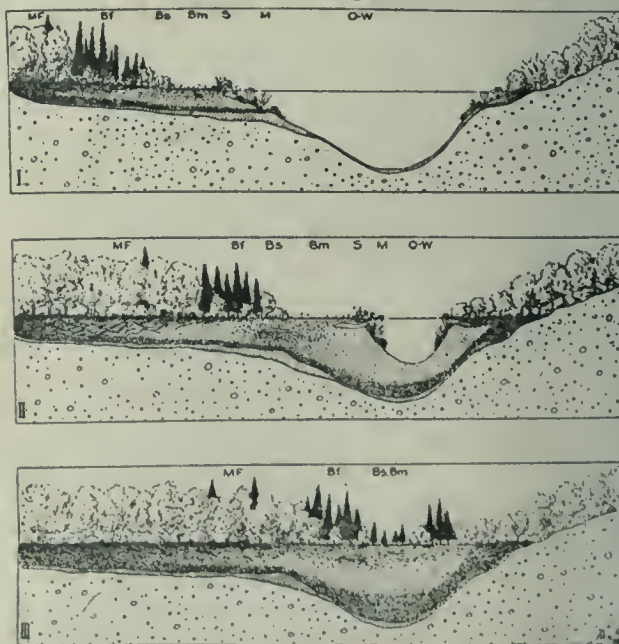


Fig. 1.—Three stages in the filling of a pond with peat and marl.—From Needham and Lloyd.

Niagara river at the Falls is cutting through the limestone rock that holds back the waters of Lake Erie at the rate of about five feet per year, and it has already cut through seventeen miles of the rock. Lake Erie is safe for our time, but it is doomed finally to pass away unless this process be stopped.

Geologists, who are the experts on the structure

and history of the earth, tell us of the beginnings of our lakes as we at present know them. Some 25,000 years ago or somewhat more was the last of a series of periods when a vast ice sheet covered nearly the whole of Canada, as one even to-day covers Greenland. This ice formed immense glaeiers, which, as they still do in the Rocky Mountains, moved slowly, chiefly toward the south, carrying bounders, stones and gravel to be deposited at the melting margins, where they can still be seen. In their movements the immense glaciers swept the rocks in many places bare of overlying soil, polishing or scratching their exposed surfaces and

ed to the Niagara river and the cutting process at the Falls began.

But the amount of water in the lake even under the present stable conditions does not remain the same even from month to month. The levels are constantly changing depending upon the amount of water entering and the amount leaving the lakes. Water leaves them not only through the St. Lawrence river, but also by evaporation. All the water entering comes from the sky as rain or snow, that is, it is precipitated from the atmosphere. In many parts of the west the evaporation is greater than the precipitation and the lakes have no outlets. The salts dissolved out of the ground and carried into the lakes by the streams remain there and increase in amount making the water very alkaline or salt as for example in the Great Salt Lake, of Utah. In eastern North America we are fortunate not to have such conditions.

But if the volume of water pouring over Niagara Falls represents the excess of water that comes down from the atmosphere by precipitation over that going up into the atmosphere by evaporation, where does this excess come from? The general movement of our air is from the southwest and it brings in its bosom the moisture raised by the influence of the sun from the surface waters of the Gulf of Mexico and of the Pacific Ocean. We have, therefore, to thank those distant regions not only for providing us with considerable hydro-electric power, but also for ensuring that the waters of Lake Erie be fresh and suitable for the growth of herring and whitefish.

Some salts are, however, necessary for their life. These are they that make a soil rich and fertile, and that when drained away into the lake, although too small in amount to be tested, yet produce a bountiful supply of living things there, primarily of plants, and, through them as food, of animals also. Then, too,



Fig. 2.—When the ice age began to passaway. The dotted outlines of Lakes Superior, Michigan, Huron and Erie can be seen where the ice sheet still covered them.—(After Taylor & Leverett.)

seouring out deep channels. On Kelly's island at the western end of your lake, the results of such action are particularly distinet.

Water accumulated in the low places along the melting borders of the ice sheet to form lakes, and the beginning of Lake Erie was a body of water, to which the name of Lake Maumee has been given, situated in the north-western corner of the State of Ohio, with a level 185 feet above the present one and with its outlet at Fort Wayne forming the source of the Wabash river and draining into the Mississippi. (See Fig. 2.) The beaches formed around this early lake can still be seen. As warmer conditions returned the ice border retreated, the lake became larger and other lower outlets developed, the first one being through central Michigan along the Grand river into Lake Chicago, which was the beginning of Lake Michigan, and which drained into the Mississippi through a river, whose valley has been utilized to form the Chicago drainage canal connecting Lake Michigan with the Mississippi. A later and lower outlet developed at the eastern end from Buffalo through northern New York State, much along the course of the present Erie canal, into the Hudson river and so to the Atlantic at New York city. With lowering of the outlet the level of the lake fell from time to time, the shallower bottom lands formed of rich silt were uncovered and the margins of the lake shrank. Ultimately the outlet was restrict-

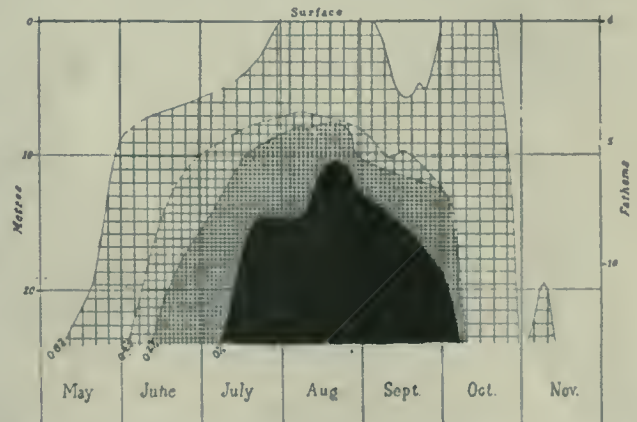


Fig. 3.—Lake Mendota. Change in percentage of dissolved oxygen, 1906.

gases from the atmosphere dissolve in the water and are necessities for most of the living things. Chief among these is oxygen, the gas that is the breath of our life. In the accompanying diagram (see Fig. 3) are shown the changes in the amount of oxygen in Lake Mendota in Wisconsin during 1906. The waters circulate from top to bottom in spring and autumn and carry the oxygen, dissolved at the surface from the air, down to the very bottom. During the summer, however, this circulation is stopped, and the layer at the bottom, shown in black, from which the oxygen

has been exhausted by the animals living in it, becomes thicker and thicker, until finally only a more or less thin layer at the surface, which is kept in motion and so aerated by the action of the wind, is suitable for the fishes to live in.

It is the temperature that plays perhaps the most extraordinary part in making conditions right for our fishes. A very great deal of heat, indeed, is required to warm up a body of water, and just as much heat is given off by the water when it cools. For this reason the temperature changes in our lakes are neither so sudden nor so extreme as those in our air, and our lakes keep our climate cooler in summer and milder in winter than would be the case if they were absent.

Water, like air, expands and lightens on becoming warm and contracts, becoming heavier, on cooling. In the autumn, therefore, when the water is being cooled at the surface by the colder air, the heavier water sinks down and is replaced by the light warm water rising from below, just as the air in a refrigerator circulates when the cooling ice is placed at the top. This circulation not only carries oxygen to the lower layers, but also makes the temperature uniform from surface to bottom. Curiously enough water stops contracting, when a temperature of 39.2° F., a little above the freezing point, is reached, and expands when cooled further. At the same time this circulation stops, and during the winter the water below is warmer than that on top. Were it not for this fact, our lakes might freeze to the bottom and our fish so be destroyed.

In the spring the warming of the water at the surface makes it heavier than that below until the point of 39.2° F. is reached, and during this period a circulation from the top to the bottom again takes place, carrying down oxygen and equalizing the temperature. Above that point, however, the warmer water is the lighter and remains on top, giving the summer stagnation period. Twice each year, in spring and in

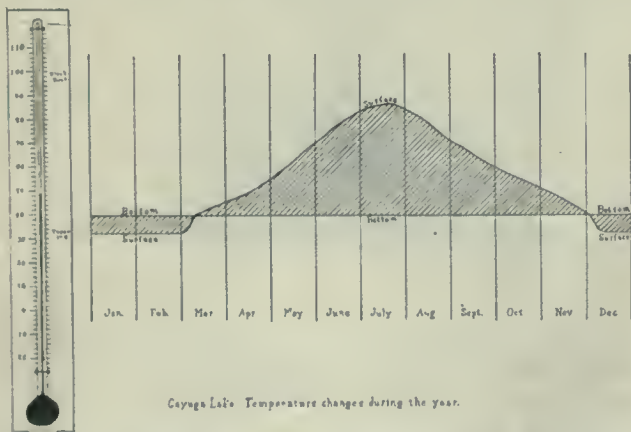


Fig. 4.—Cayuga Lake temperature changes during the year.

autumn, there is a turnover of the water, not only literally by the mixing, but also in temperature as will be seen by the accompanying diagram. (See Fig. 4.) The temperature at the bottom remains the same throughout the year, but toward the surface the water becomes colder in winter, and warmer in summer. The body of the water is turned in temperature twice a year about the point 39.2° F. as a pivot, the surface changing most.

We have already spoken of the part the wind plays in mixing up the surface waters during the summer stagnation period and making at least a considerable layer habitable for the fish, but the circulation it causes is much more than merely the agitation seen in the form of waves. A steady wind from one quarter drives the surface water before it and heaps it up on the windward shore. This unstable condition of having one side of the lake higher than the other is offset by a return current against the wind in the

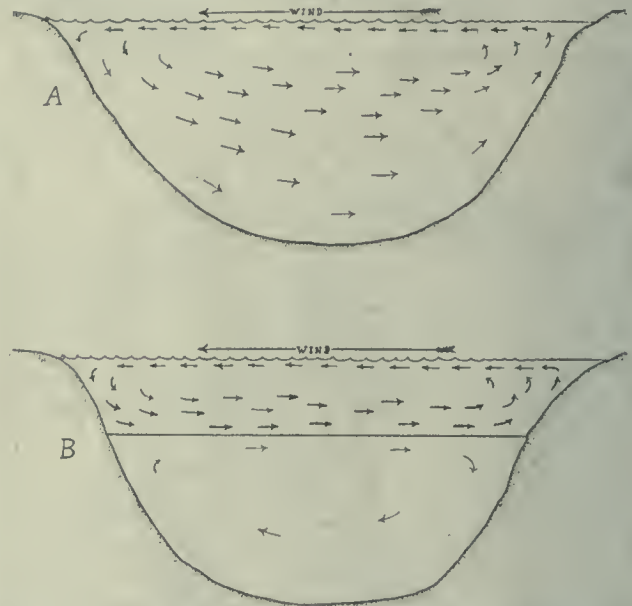


Fig. 5.—Circulation of water in a lake caused by a wind, as seen in section: A—when temperature is uniform; B—when the surface water is lighter than the bottom water.

lower layers of the water. When the water is uniform in temperature in spring and autumn this causes a circulation of the whole lake, but at other times only of a more or less thick surface layer in which conditions are uniform, as in the accompanying diagram. (See Fig. 5.) In Lake Ontario bathers are quite familiar with the effects of this action of the wind. An onshore breeze brings the warm water in and gives good bathing, whereas an offshore breeze drives the warm surface water away and its place is taken by the colder water from below. On abrupt shores these changes may be so sudden as to seriously affect the fish and other life in the water.

With the exception of the general set of the water toward the Niagara river, the currents in Lake Erie are not at all constant, the variable wind being the chief agency in producing them. Being of importance in distributing the young fish and the food materials of the lake, they should be understood. It is somewhat interesting to find that the rotation of the earth, which as you know turns once around each day on an axis running from the north pole to the south, makes an eastward current keep chiefly to the Ohio side, and a westward one chiefly to the Ontario side of the lake. This is a result of the general law that in the northern hemisphere currents tend to turn to the right, which forms a very good basis indeed for our rule of the road. The explanation has to do with the fact that at the equator one travels eastward with the surface of the earth at the rate of more than one thousand miles an hour, and that on going north this rate de-

creases until at the pole one does not travel but merely turns round each twenty-four hours. As the motion is eastward, we in the northern hemisphere are on the left side of the rapidly moving equator. If you have ever tried to get on or off the left side of a moving car and have not allowed for the motion, you will know that you did not step on the place you intended to, but somewhere to the right. In the same way our northern currents start straight, but find themselves turning to the right because all parts of the earth's surface are not moving at the same rate.

We must not forget the sun's influence upon the life in our waters. Many ancient peoples were sun-worshippers, and well they might be, when we consider its great importance to us. We have seen how it evaporates from the Gulf of Mexico the water that is carried by the air currents to our country, and that, when precipitated, leaches the soil and fills your lake with the proper fluid to maintain an abundant harvest of fish. It is the sun, also, that provides the summer's warmth, without which your lake would be continually stagnant and eternally ice-covered and incapable of supporting life. But in still another way, the sun is a most necessary factor in the production of fish. Man is nothing but a vegetarian, either directly or indirectly. If he does not get all his food directly from plants, as for example bread from wheat, but lives to some extent upon flesh, he finds that beef comes from the cow, and the cow cannot live without grass or other plants. With the fish, as with man, the food is ultimately vegetable in nature, and in the water, as on the soil, the plants can grow only when light is present.

Water is not so transparent as air, and, even when quite clear, it prevents the light reaching a depth much greater than fifty fathoms. Only the water near the surface is well enough illuminated to permit the growth of the ordinary water plants. Under the sun's influence they are able to build from water, dissolved salts, and gases, the food substances which make them of importance in the diet of the animals that feed upon them.

The majority of these plants are extremely small, only seen with the microscope, although they may at times be so abundant as to color the water. The floating ones are of the greatest importance, as the space occupied by them over the whole surface of the lake is so much greater than the thin layer on the bottom in shallow water to which the attached ones are limited. The minute and lowly forms consist of: (1) The microscopic diatoms, each plant a single cell with a wall of flint of extremely diverse shape and sculpture in the various species; (2) The blue-green algae, of which some kinds may be so abundant at the surface of still lakes in mid-summer as to produce a frothy green scum or "water-bloom," and (3) The green algae, which are extremely numerous and variable, and range from minute floating forms to comparatively large "weeds" that cover wave-washed rocks or carpet lake bottoms in shallow waters and to depth of many feet. Other higher plants there are, similar to those with which we are familiar on land, but they are confined to shallow water, the shore region. You are familiar with them as weeds of various kinds: pond-weed, duck-weed, wild rice, wild celery, etc. These "weeds," whether low or high, are of the greatest importance to you, as fishermen, for on them live all the animals of the water directly or indirectly, some taking them in the fresh state, others after disintegra-

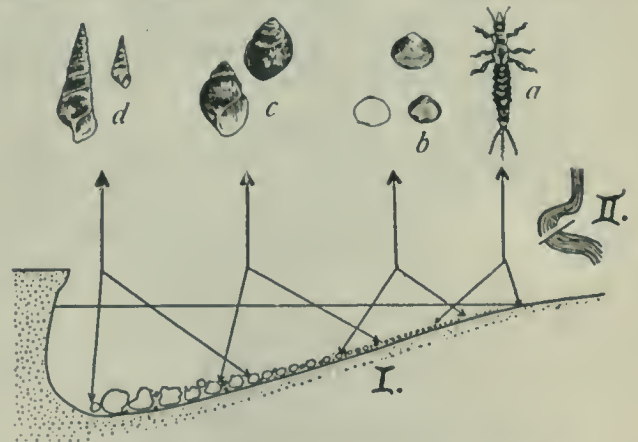
tion and still others indirectly through other animals.

Some plants are harmful, as the molds, that attack and destroy fish eggs, and even living fish, or as the extremely minute bacteria that cause disease in fishes as in man. Some, however, are useful, as they break down the useless remains of plants and animals and set free the salts and other materials to be used in the growth of new organisms. All of these molds and bacteria do not live like ordinary plants, but more like animals, as they are unable to build themselves up from water, salts, etc., by using energy from the sun's rays; but, nevertheless, they have the plant structure.

Other forms of life there are in our waters that are intermediate between plants and animals, both in structure and in mode of life. They are quite minute and can live either like the plant by building themselves up from water, salts and gases under the influence of light or like the animal by taking in bits of food.

From these we pass to the simplest or "first animals," Protozoa, as they are called, which are too small to be seen with the naked eye. The sponges come next, of which only a few forms occur in the fresh waters of our lakes and rivers. They are not useful like the bath sponge, for their skeletons are not flexible, but consist of numerous very small and curiously shaped pieces of flint woven together.

Of worms there are many kinds in our lakes: (1) Little flat worms insignificant in size and importance and found crawling over the bottom or under stones; (2) Other flatworms like the little "flukes," that are harmful, clinging by means of suckers to the skin or gills of fishes or found inside them; (3) Larger segmented flat worms, the so-called "tape-worms," which live inside the fishes as they do in man; (4) Curious minute and active worms, called "Rotifers," since each carries a curious "wheel" of vibrating hairs, by means of which it swims through the water, these worms being of great importance as food for young fishes; (5) Attached worms living together in cylindrical branched colonies or in jelly-like masses on stones or on water plants, and (6) The well-known leeches or blood-suckers, large enough to be noticed by anyone, and living on food of various kinds, such as worms, insects, snails, etc., but best known from



THE TRANSVERSE DISTRIBUTION OF STREAM ANIMALS
 Fig. 7.—I. Section of a stream (north branch of Chicago river) showing the arrangement of bottom materials according to size, and the distribution of certain animals in the bed of the stream, two kinds of snails; a clam and a May-fly larva. II. Part of the stream showing its winding character, and the point where the section was made.— (From Shelford.)

the habit, some of them have, of sucking the blood from fishes, turtles, frogs, and even from man, thereby filling their large distensible crop with enough food to suffice them for a long time.

There are many kinds of snails that are of value in converting vegetable matter into fish food, and the clams or mussels, that are usually larger than the snails, perform a similar office for the microscopic floating forms, on which they feed. But the mussels are most noteworthy for providing in their shells the raw material out of which certain varieties of buttons are made and for this purpose they are fished from the lower stretches of the Grand river. They have a curious relation to certain of our fishes, as their young on escaping from the mother mussel fasten themselves to the skin, fins or gills of a fish and live there parasitically for a time, later dropping off and going to the bottom.

Our waters teem with minute crustaceans—"water-fleas"—of many kinds, which eat the microscopic plants and are in their turn eaten by fishes. Some, the fish lice, are parasitic on the skin or gills of fishes and do considerable damage. Of the larger crustaceans, the beach-fleas or "seeds" are also the intermediaries between plants and fishes in the food chain. Here, too, belong the shrimps, and Lake Erie can boast of being the only part of Canada where a true fresh-water shrimp is to be found, not large enough, perhaps, for human consumption, but valuable as fish food. The crayfish, or "crab" (wrongly so-called), is another well-known crustacean. It should be sold on our markets as it is on those of many of the States of the Union and of Europe, but with us as yet it is only of use as food or bait for fishes.

The young, or larvae, of many kinds of insects, live in the water and have an important part to play, chiefly in furnishing food for the fishes. Such are the stone-flies, may-flies, dragon-flies, damselflies, water-bugs, fish flies, dobsons, caddisflies, certain moths and beetles, blackflies, mosquitoes, and midges; and we have not exhausted the list.

Of the fishes themselves we shall not say much, as you are familiar with the many kinds that are found in your lake. With the higher animals, too, that occur in the water, you are familiar, and the part they play you know to a certain extent. We need only mention the frogs, salamanders, turtles, water-snakes, water-birds, and such aquatic beasts as the muskrat, beaver, mink and otter.



Fig. 7.—Diagram to show usual distribution of certain fishes in Walnut Lake, Michigan, as seen in a section through half of the lake.—(Modified from Needham and Lloyd.)

We have shown you the diversity of the factors that condition life in your lake, as well as the wealth of living forms that it contains, and we have now to indicate the regularity in the distribution of this life. You do not expect to find a mackerel in fresh water, nor a banana tree growing in northern Ontario. But even in one stream or in one lake, each set of conditions favors certain kinds of animals. The swift part of the stream or rapids has its own peculiar plants, insects, and fishes which differ from those of the sluggish part of the same stream. Even in the one part of a stream, each kind of animal keeps somewhat closely to a particular depth or kind of bottom as is shown in the figure. (See Fig. 6.)

In the lake we can distinguish different regions or zones, such as the littoral zone along shore, the abyssal zone near the bottom in deep water, and the limnetic zone in the open water. Characteristic forms of life are found in each. The fishes are no exception to the rule, each species keeping rather closely to a certain range, the pike everywhere near the surface, the whitefish everywhere in deep water, the eat-fish on weedy bottoms at moderate depths, and the mud-minnows only in the shallowest water. (See Fig. 7.)

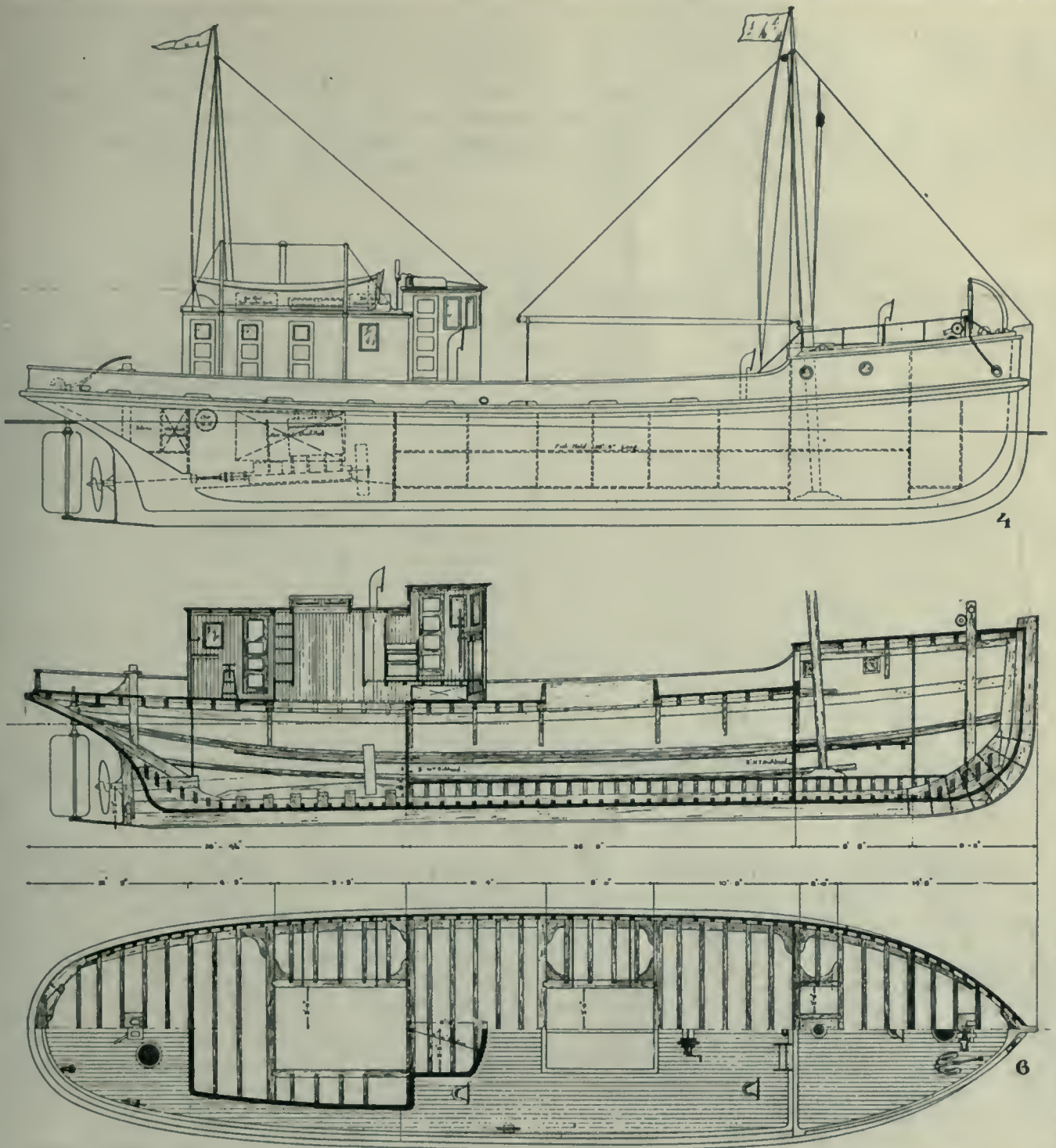
As it is with their range in the water, so is it also with their food. Each kind has its own eating habits, the "pirates" of the lake, the trout and pike, eating other fishes, the herring and whitefish straining out the water-fleas and shrimp from the water, and the catfish and carp "grubbing" up the bottom material.

It is absolutely essential that the habits and life of our valuable fishes be known, if we are to intelligently keep up or increase the supply. Haphazard methods of stocking our lakes or of controlling the fishing, may be but money wasted or annoyance to the fisherman. We must know what fish are most profitable to raise, how the greatest number of them can be produced, and at what size it is best to fish them. The facts are there ready to be found and the methods of discovery have been worked out. It needs only your interest and co-operation and the support of the proper authorities for the work to proceed. The Game and Fisheries Department of the Province of Ontario has become very directly interested in the production of fish in some of our smaller lakes, and it has an unexampled opportunity of determining and applying the facts in relation to the production of fish.

Group-units to secure foreign trade have been formed at the suggestion of the Canadian Trade Commission in several industries. This means they can compete with American and European firms to get the orders and then redistribute them among their own factories.

A large trade on our Atlantic coast is stagnant, and 2,000 people are idle. There is a glut stock of \$300,000 worth of sardines, and canneries will not re-open until this is sold. The amount, the Canadian Commission points out, is almost the exact value of imports of foreign sardines into Canada last year.

The value of the British trade preference to goods from within the Empire, now actually working, means millions of dollars to Canada. "The Canadian public apparently have not grasped the significance of this yet," is one statement made to the Canadian Trade Commission.



A Useful Type of Motor Craft Suitable for Fishing or as a Fish Carrier.

LAHAVE, N.S., OWNS MOTOR TRAWLERS.

Three oil engined otter trawlers will operate in the Salt Bank fishery out of LaHave, N.S., this summer.

Loekeport Cold Storage Company, Loekport, N.S., have a fully equipped machine shop for the repair of motor engines. This fishing concern maintains the shop for the benefit of the fishermen in their locality and are equipped to do any kind of engine repairs and rebuilding.

ACADIA GAS ENGINE CO., MAKE BIG SHIPMENT.

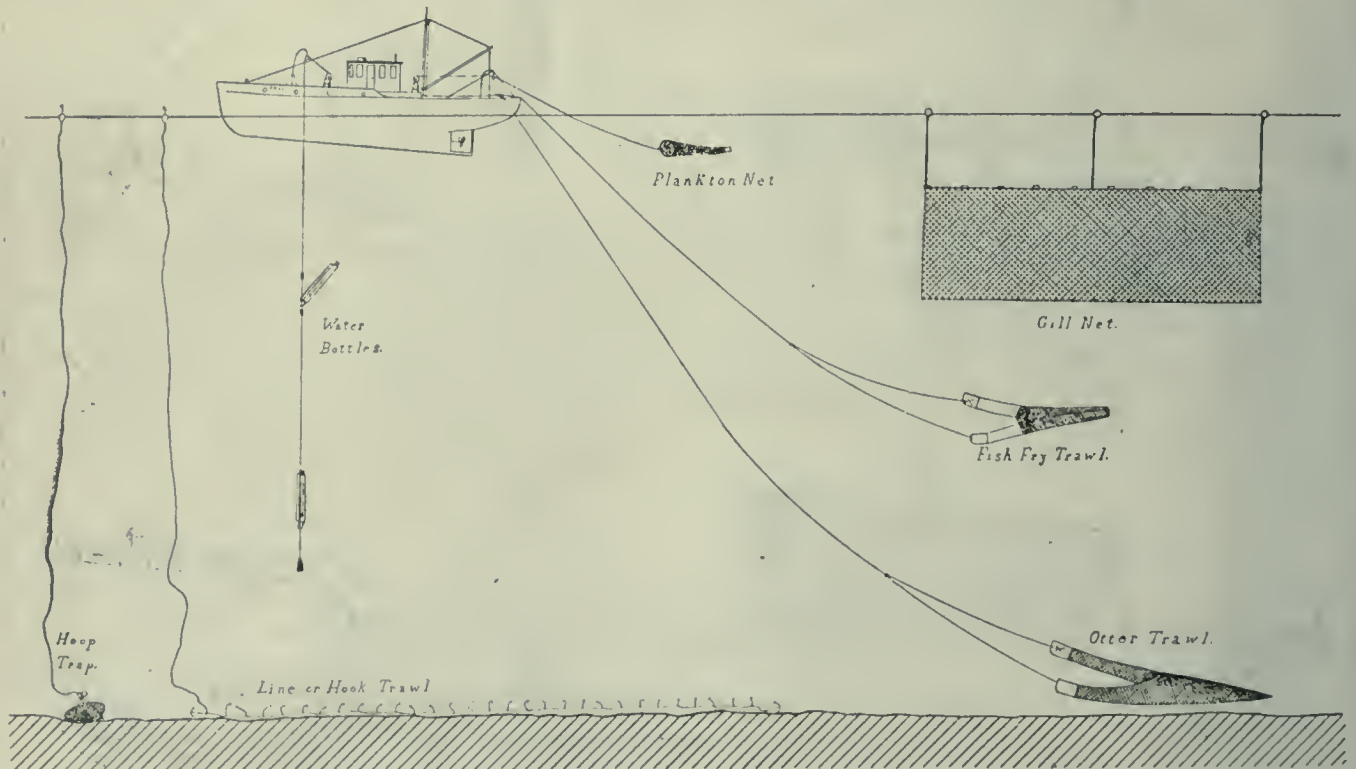
On April 8th, the Acadia Gas Engine Co., of Bridgewater, N.S. made a large shipment of gas engines to Newfoundland. Four box cars were loaded to capacity and the shipment is valued at \$70,000. Most of the engines will be used in the fishing fleet.

MOTOR BOAT SUITABLE FOR ALL FISHERIES.

A good example of the versatility of the motor boat in fishing work is given in an article by Dr. A. G. Huntsman, on "Fisheries Research in the Gulf of St. Lawrence."

For the purpose of conducting experiments, the motor boat "Prince" was used and brought around from the Biological Station at St. Andrew's, N.B., to Eastern Harbor, Cape Breton, N.S. The "Prince" is

only 60 feet overall, but she operated with various types of fishing gear (illustrated in the sketch) from Eastern Harbor to the Magdalen Islands. The trawl net was operated at a depth of 200 fathoms and on occasions brought up 500 lbs. of fish after an hour's drag. Of course, the "Prince" is not equipped for commercial fishing, but the illustration and the experiments show that the motor boat can successfully carry on any of the methods of fishing shown.



BOLINDERS PUBLISH FINE CATALOGUE.

One gets a comprehensive idea of the rapidly increasing use of the crude oil motor in all types of craft by a perusal of the latest Bolinder catalogue. This voluminous publication is a fine example of the Swedish publisher's art and illustrations and letter press are of the highest standard. The international character of Bolinder installations is evident from photos of the vessels using the products of this great Swedish concern. Particularly interesting to the fishing industry are the details of the Bolinder crude oil engine and the fishing craft upon which they are installed. The Canadian agents for the Bolinder are the Swedish Steel and Importing Co., Ltd., Montreal

OBITUARY.

We regret to announce the death of Mr. Murray, of Murray and Fraser, New Glasgow, N.S., manufacturers of the well known Fraser motors. Mr. Murray died on April 14th, but arrangements are now being made to have the business of the firm carried on.

The inspection of millions of dollars' worth of Roumanian goods bought under Canadian credits is being feverishly carried on under the C. T. C. The first shipment goes May 20th.

SURE, ANYBODY CAN BE AN EDITOR.

The great diversity of ideas entertained by many people relating to editorial work are usually expressed in facetious phrases.

Most any man can be an editor. All the editor has to do is to sit at a desk six days a week, four months in a year and edit such stuff as this: "Mr. Jones, cook of the schooner 'Nonsuch,' let a can opener slip last week and cut himself in the hold." "John Atkins fell from the gaff of his vessel recently and struck himself on the stern sheets." "While walking down the wharf on Tuesday, Captain Smith slipped and was injured near the reduction plant." "While Harold Green was escorting Miss Wise from the church social last Saturday night a savage dog attacked them and bit Mr. Green on the public square." "Isiah Trimer, of Running Creek was playing with a cat Friday when it scratched him on the veranda." Sure! There's nothing to it!

FISH BARRELS.

We have to compliment the Chas. Mueller Co., Ltd., barrel makers, of Waterloo, Ont., on the neat little calendar, displaying a portrait of General Sir Arthur Currie, which has just been received. The company are also to be complimented on their illustrated folder, "Increasing Fish Sales," which contains much good advice to packers of fish.

LOCKWOOD-ASH MOTOR CO. DEVELOPING.

Spectacular leaps in the demand for Sterling Spark Plugs and an upward slant of the sales curve representing Lockwood-Ash Marine Engines have resulted in new factory quarters for the Lockwood-Ash Motor Company, of Jackson, Mich.

The Lockwood-Ash Company is one of the oldest and best known makers of marine engines—and more recently the manufacturer of this remarkably successful spark plug.

The present Lockwood-Ash plant is at South Jackson and Douglass Streets, on a four-acre tract located to the very best advantage from a shipping standpoint, with its own railroad siding, and every modern feature contributing to better working conditions and more rapid production. Within the last year the sales of Sterling Plugs have gone sky-rocketing, co-incident with a broad advertising campaign. In fact, sales had run so far ahead of production up to the time the change in location was effected that new business offered could not be accepted.

But with the addition of new batteries of screw machines and other equipment, spark plug production has been more than doubled, with much more room to grow in the present buildings. And there is plenty of space on which to build as the scope of the business widens.

Within the factory buildings the most modern facilities for promoting good workmanship are provided—plenty of light and air, progressive assembly, better stock-room arrangement and improved welfare conditions as relating to employees.

The Lockwood-Ash Motors Company was established nearly 20 years ago. Twelve years ago the company began making spark plugs for their own product.

With the opportunity of watching the development of spark plugs in their own engines, the company was able to go more thoroughly into the fundamentals of spark plug construction. To-day the factory is perhaps the only one which builds spark plugs for its own engines.

Sterling spark plugs were designed for the general automotive field. After several years of successful service in every type of internal combustion engine, they proved their high quality. During the last year this plug has been advertised nationally, with the result that sales have leaped far ahead of the facilities for manufacture, necessitating increased factory space and equipment.

Arthur L. Lockwood is president of the company, W. L. Ash is vice-president, and F. T. Lockwood is secretary and treasurer.

FAIRBANKS-MORSE 10 H.P. TYPE "M" MARINE ENGINE NOW ON THE MARKET.

Latest of Series Made of Two Fives Put Together Like Siamese Twins

The 10 H.P. Type "M" Marine Engine is the latest of the famous Fairbanks-Morse Type M line. It is made of two fives put together. Each cylinder has its own ignition system and pump independently, and yet the ignition is synchronized and controlled by the same lever.

Specifications

Two Cycle.	Bore 5".	Stroke 4 1/2".
Overall Length	32	9-16"
" Width	17"	
" Height	26	11-16"

Diam. Fly Wheel	17"
R.P.M.	500
Weight, 465 lbs.	

This is the first season that these engines have been on the market, and those who have tested them declare that they are the best balanced of the whole line, and splendidly adaptable for marine work.

The Fairbanks-Morse Marine Engine line includes the Type M, two cycle, make-and-break, the Type E two cycle jump spark, and the Type C.O. crude oil, semi-diesel engines.

A catalogue of Fairbanks-Morse Marine Engines is just off the press, and will be sent on request.

NOTES ON SEA FISHING RESULTS FOR MARCH.

The weather conditions on the Atlantic coast throughout the month of March were fairly good, but this month, coming between the ending of the winter fishery and the beginning of the spring fishery, is always one of the poorest fishing months of the year.

Apart from lobsters, very few fish were landed on the Atlantic coast except at such centres as Loekeport, Halifax and Canso. The landings of cod, haddock, hake and pollock amounted to 22,300 cwts. against 33,800 cwts. in March last year.

There was a great increase in the quantity of lobsters taken during the month, as compared with the same month's catch last year. This year it amounted to 13,406 cwts; last year it was 1,874 cwts. Exceedingly stormy weather made fishing in small boats very difficult last year, however. Canning began on March 1st, with the opening of the lobster fishery in Nova Scotia from Digby to Halifax. Up to the end of the month there were canned 3,062 cases. Canning commenced three months earlier last year, and up to the end of March the pack amounted to 3,216 cases. In the year before that, under better weather conditions,



A British Columbia Motor Seiner.

the pack for a similar period was 5,759 cases.

Weather conditions were not very favorable for fishing, on the Pacific coast. The catch of black cod was greater, while that of halibut was slightly less, compared with March last year. There was a considerable drop in the landings of herring.

The total value of sea fish at the point of landing, on both coasts, was \$632,338. For the same month last year, the value amounted to \$671,700. The big increase in the lobster catch was unable to offset the falling-off in herring, haddock, cod, etc.

Two men of Lunenburg country, Nova Scotia, were lost during the month.



British Versus Canadian Fish Names

By DR. A. G. HUNTSMAN.

The old question, — "What's in a name?" requires very careful consideration these days, and an appropriate answer should be found. While it is true that "a rose with any other name would smell as sweet", certain sounds have uneffaceable associations. Try as we may, we cannot dissociate "Baa" from our idea of a sheep, and "Meow" from that of a cat, unless we were to remake these creatures. Any tradition or experience of the past may unite almost as strongly certain names and our ideas of animals. Fortunate we are when common usage in English-speaking countries is uniform, and by that fact confusion of ideas is prevented. We may instance the use of "haddock", "herring" and "halibut" in Great Britain, in Canada and

of our own kinds of flatfish is certain to be incorrect and confusing to those living in the British isles. Should we, therefore, be condemned not to have the use of these names, which are an inheritance to us with the English language? If we have not the English robin, may we have an American or a Canadian robin? We can and do have a robin to the derision of the Englishman in our midst. As long as the American robin stays in America and the English robin in Europe, and the differences between the two are understood, little confusion results. But fishes are articles of trade and those of America are shipped to Europe, and vice versa. When the same name is applied to different species on the two sides of the At-



A Typical Pacific Coast Motor Halibuter.

Newfoundland, and in the United States. So little difference is to be found among the fishes referred to under each of these names that no misunderstanding results.

In many cases, however, a regrettable lack of uniformity in usage of fish names exists. The Canadian Fisheries Association has taken action in a laudable attempt to straighten out the tangle of names that hampers the trade. "How far should we go in this attempt to produce uniformity?" is a question that deserves to be answered. The Editor of the Canadian Fisherman has drawn our attention to a criticism in the Fish Trades Gazette of our attempt in the June (1918) issue of the Canadian Fisherman to fix certain common names for our eastern flat-fishes. From the British standpoint this criticism is entirely justifiable. As there do not exist on the coasts of North America any of the fishes that in England are called "turbot", "plaice" and "sole" our use of these names for any

atlantic confusion is certain to result in cases of inter-shipment unless qualifications are added to the names. We must, therefore, be prepared to qualify the names, "sole", "turbot", "brill", "plaice", "whiting", "mullet", and "sardine", or else abandon their use. If we can make up our minds to it, the latter alternative is preferable. It is doubtful whether any of these names have become so thoroughly established that their change would be very difficult. "Sardine" is perhaps an exception, and yet this very name has been the subject in the English courts of a lawsuit between the French packers and certain importers of Norwegian sprats, labelled sardines. Our small herring cannot legally be sold in England as sardines, the latter term being solely applicable to immature pilchards.

Surely we can stand upon our own legs. Our fish have the quality to attain success in the markets under names of their own and should not need to masquerade under the old names merely for the temporary and

doubtful advantage of ready sale when first introduced. Our small herring should sell as freely under the name of "Fundys", which has been recently suggested for them, as under the old one of "Sardines", and the establishment of such a name would prevent their trade being affected by the use of inferior substitutes.

There are many and attractive words yet to be coined, and no good fish, that we have, need want a short and euphonious name. Nor should we be forced to use a name that has obtained currency in the old land, whenever the same fish occurs in our waters. Duplication of names is certainly to be avoided, but it would be unfortunate indeed if the fine large fish, which we have referred to as the "Canadian plaice" should have to be called the "long rough dab", the name of its small and worthless relative, which lives in British waters. In a new country, new names are

NEW BRUNSWICK NOTES.

A large number of men from Grand Manan have gone to points along the Northumberland Straits and the Magdalen Island to engage in the smoked herring industry. Among the number is Capt. J. L. Guptill, who owns large smoke houses at Point du Chene. Owing to the break up of ice in the harbors the season is opening earlier than usual. About 100 men from Grand Manan are employed in this industry in the north-eastern section of New Brunswick.

The sardine season will open in Charlotte County about April 15. The New Brunswick and Maine weir-men have agreed to ask \$20 per hogshead for sardine herring this season, but the packers consider this price too high in view of the state of the market for the



Motor Boats Around a B. C. Cannery.

sometimes necessary, and if in England they have decided to call a certain flatfish a "witch", we should not necessarily follow their example. In common things we are accustomed to many differences in names. When we cross the Atlantic a "store" becomes a "shop", "druggist" becomes "chemist", "hardware merchant" becomes "ironmonger", "rubbers" become "goloshes", and there are other changes ad libitum.

It is sincerely to be hoped that before any trade names of fish or fish products are adopted, there may be a thorough consideration of the names in other English speaking countries, particularly of those in the United States and England. All those interested should well understand the arguments for and against any name, so that we may avoid in the future such a mistake as the one that occurred during the war,— our shipping to England as "hake" fish that were altogether different from those known in England under that name. In the list of suggested trade names that is being circulated for comments and discussion, there are still a number of names, such as some of those mentioned above, that may give rise to misunderstanding and confusion. We ask for suggestions of entirely new names for these or for any other of our fishes.

canned product. The Maine packers have large surplus stocks from last year.

In the New Brunswick legislature the other day Scott Guptill, of Grand Manan, called attention to the fact that while there were various schemes for helping returned soldiers to resettle themselves in civil life, no consideration had been given to the case of young men from fishing communities who have been serving in the army or navy. Mr. Guptill thought that while provision of farms might be of advantage to various classes of returned soldiers something else was needed for young men returning to the fisheries; something in the way of vocational education and other encouragement towards the development of the fishing industry.

"It has probably been a surprise to many to recognize that the signing of the armistice did not mean the normal resumption of trade in various European countries, and that instead a period of economic transition should set in which would present its own complex problems,"—an apt American statement quoted by the Canadian Trade Commission.

Canadian Fisheries Association Present Recommendations for Better Fisheries Development

Cordial Reception Accorded Delegates and Promise of Action Given.

A delegation comprising representatives of the fishing industry from coast to coast met in Ottawa on May 13th, to present the Canadian Fisheries Association's recommendations to the Government. Among those who journeyed to the Capital were Mr. F. E. Burke, and Mr. A. W. Sterrett, Vancouver, representing the British Columbia Branch of the Association and the Pacific Coast fisheries. Hon. Hugh Armstrong of Portage la Prairie, Man., represented the Manitoba Branch of the C.F.A., and the fisheries of Saskatchewan and Manitoba. Mr. A. S. Brown, Mr. N. S. Cornell and Capt P. C. Robinson, represented the Lake Erie Fishermen. Mr Arthur Boutilier, Halifax; Mr. A. N. Whitman, Halifax; Mr. E. C. Whitman, Canso, and Mr. H. B. Short, Digby, represented Nova Scotia. Mr. W. S. Loggie, M.P., represented New Brunswick. Other prominent fish men were Mr A. H. Brittain, President of the Association; Mr. J. A. Paulhus, Second Vice-President; Mr. W. R. Spooner, Transportation Committee, Chairman; Mr. J. J. Harpell; Mr. F. William Wallace, Secretary, C.F.A.; Mr. T. W. C. Binns, Mr. J. N. McIntosh, Mr. J. B. Fielding, F.Z.S., and Mr. E. Lapointe.

The delegates met in session on the morning of May 13th, and went very carefully over the suggested recommendations. Numerous letters and resolutions from other branches of the Association were read and considered in the drafting of the recommendations. The principal recommendations discussed were (1) the appointment of a Minister of Fisheries and (2) the separation of the Fisheries from the Department of Naval Service. The views of the delegates were given freely and the opinions of the members they represented were put forward. In the end, it was felt that a Minister of Fisheries could not be expected at the present time, but the delegates were unanimous in the desire that the Fisheries Department be disassociated from that of the Naval Service and that a Deputy Minister of Fisheries be appointed to act under the present Minister.

The other recommendations were taken up, one by one, and some were passed unanimously, while others were thrashed out and amended. Three meetings were held during the day, and at 11 p.m., the recommendations were finally drafted and unanimously endorsed.

At 11 a.m. on May 14th, the delegation met the Hon. C. C. Ballantyne, Minister of Naval Service, Marine and Fisheries, in his private office. In addition to the delegates, the Minister was good enough to invite the Standing Committee on Fisheries of the House of Commons, and many of them, including the Hon. W. S. Fielding, Chairman of the Committee, were present.

Mr. A. H. Brittain, President of the Association, explained the objects of the delegation in coming to Ottawa. He pointed out that the fisheries of Canada were in urgent need of development and up-to-date administration. He then called upon Secretary Wallace to read the Association's recommendations. Herewith we publish the recommendations as drafted and presented.

The Recommendations.

Hon C. C. Ballantyne,
Minister of Marine, Naval Service and Fisheries,
Ottawa, Ont.

Sir,—After careful consideration and discussion, the Canadian Fisheries Association and affiliated associations in Convention at Ottawa, May 13th, respectfully recommend the following, which, by resolution unanimously adopted, is in our opinion, absolutely necessary for the development of the Canadian fisheries:

1. The segregation of the Fisheries Department from the Naval Service.
2. The appointment of a Deputy Minister of Fisheries with a thorough knowledge of the industry and its requirements, and who shall act under the present Minister.

Hon C. C. Ballantyne,
Minister of Marine, Naval Service and Fisheries,
Ottawa, Ont.

Sir,—After careful consideration and discussion, the Canadian Fisheries Association and affiliated associations in Convention at Ottawa, May 13th, respectfully recommend the following, which, by resolution unanimously adopted, is in our opinion, absolutely necessary for the development of the Canadian fisheries.

These items form an extension to the former recommendations:

1. The appointment of practical and representative fish men to Advisory Boards. Four Boards, representing the fisheries of the Pacific, Atlantic, Great Lakes and inland waters west of Lake Superior and east of the Rocky Mountains, are suggested. These Boards will make recommendations and advise the Department on all fishery matters in their particular spheres of industry.

2. The standardization of fish weights in cans, pack, cure and cull, also the grading of fish oil and feeds, and the inspection and branding or certification of such packs and cure by Government inspectors. Same to be embodied in Fishery Acts and made compulsory.

3. The Dominion Hydrographic Survey to produce charts for fishermen—surveying the banks and grounds and accurately plotting the soundings, the character of the bottom and tidal currents in a more comprehensive manner than on the charts now in use which are designed primarily for the use of merchant ship navigators who do not require more than occasional soundings, etc., offshore and who are not interested in the character of the bottom as are liners and trawler fishermen.

4. A more comprehensive scheme of re-stocking and artificial propagation of commercial fish in inland lakes, waters and rivers; hatcheries to be located in convenient locations; hatchery officials to be qualified fish culturists and appointed on qualifications.

5. Fishery inspectors to be qualified and appointed on practical qualifications. Should be given special training for the districts in which they have jurisdiction.

6. A scheme of apprenticeship whereby boys of 16

can be sent to sea on fishing vessels and placed in charge of owner or skipper and trained in fishery, seamanship and navigation. Such lads to be given an annual period of Naval Reserve training and instructed in navigation at the expense of the Government.

7. Harbors adjacent to prolific fishing grounds to be protected by adequate breakwaters; equipped with lights, buoys and aids to navigation, facilities to be provided for the landing of fish.

8. A vessel or vessels to be fitted up for fishery investigations—preferably steam vessels, equipped with trawl, drift-net and line gear. These craft to survey the fishery resources and try out new fishing grounds and to survey both Atlantic and Pacific, and later on, Hudson's Bay. These vessels will keep track of the annual migrations of commercial fish.

9. A publicity department to build up the home markets in fish and carry out propaganda similar to the Fish Section of the Canada Food Board.

10. The publication of text-books compiled by practical men on such subjects as Fish Curing, the Canning of Fish, Navigation for Fishermen, Steam Trawling, Drift Net Fishing, The Use and Repair of Motor Engines, Fish Refrigeration, Fish Life, etc. Same to be distributed free to all interested.

11. A Bureau of Fisheries Information to be established in connection with the Department of Trade and Commerce which will inform the trade of foreign markets, new methods of fishing, latest designs of fishing vessels, handling and keeping of fish, etc., etc. This Bureau should devote its energies to building up foreign markets and should be in close touch with Canadian representatives abroad who will collect and forward everything likely to be of interest to the Canadian fishing industry, and who will work in close cooperation with the Bureau to find markets for Canadian fish.

12. The appointment of a Fish Transportation official who will devote his attention to the securing of fair and just rates for the transportation of fish by rail or water at home and abroad. This official will investigate complaints re fish transportation; advocate improved facilities with railroads and steamship companies; equalize rates on fish to outlying points, and work for the general improvement of fish transportation.

13. A scientific and commercial investigation to be made with regard to the utilization of fish waste and encouragement to be given the establishment of plants for the rendering of same into commercial products.

14. Clearing of rivers and waters of obstructions for the purpose of opening up the natural spawning beds—particularly the salmon areas of the Pacific.

15. The rehabilitation of oyster beds and the propagation of the lobster.

After the recommendations were read by the Secretary of the delegation, they were handed to the Minister and Mr. Brittain, Mr. Burke, Mr. Short, Mr. Armstrong, Mr. Cornell, Mr. Brown, and Capt. Robinson gave illustrations of the great necessity for the carrying out of the Association's recommendations.

Hon. Mr. Ballantyne, in replying, stated that he was fully aware of the great possibilities of Canada's fishery resources and he realized the need of an aggressive departmental administration to further their development. He felt that the recommendations presented to him were valuable suggestions for the Fisheries Department to have and endeavour to act upon, and he was extremely pleased to meet the representative men in the fishing industry and to know what they considered was

necessary for the greater development of the fisheries. A Minister, he remarked, was not altogether omnipotent and could not make changes in policy whenever he felt like it, but he thought that something might be done in the near future to accede to the wishes of the Association in many of their suggestions. He would make a start immediately by appointing a practical business man with a knowledge of the fishing industry to take charge of the work of building up the home and foreign markets for Canadian fish, and he asked the Association to recommend the man. He could not at the moment promise the delegation that all their recommendations would be carried out, but he would promise his best efforts in effecting many of the most urgent.

The Minister explained that through pressure of work in the Naval and Marine Departments and enforced absence through illness, he had not been able to give much attention to the Fisheries branch. However, the Naval end was gradually becoming less important now that the war was over, and he would be able to give the fisheries more consideration, and he felt they deserved it. He was particularly pleased to meet the Association's delegation and expressed the hope that they would confer with him at least twice a year.

Mr. J. J. Harpell expressed the thanks of the delegation for the courteous reception accorded them by the Minister and the consideration promised the Association's recommendations.

Further Resolutions Passed.

Other business taken up by the Association delegation while in Ottawa was the passing of a resolution to improve the fisheries patrol on Lake Erie—which patrol was not being adequately performed by the present fishery cruiser "Vigilant." This was presented to the Minister along with the following resolution passed by the Manitoba Branch of the Association:—

"Whereas the season for fishing Sturgeon in Cross Lake and Sipiwick Lake, Man., opens on the fifteenth day of June, and this date for various reasons entails hardship to the fishermen operating therein, therefore the Association requests the Department of Fisheries to consider opening the fishery for Sturgeon on June 1st, and to limit the catch of Sturgeon in these Lakes to 100,000 lbs. per season.

We further recommend that fishing for Sturgeon on Lake Winnipeg also commence on June 1st and that the quantity permitted to be taken from the entire area of Lake Winnipeg be limited to the maximum quantity of 100,000 lbs. annually."

Association Not in Favor of Central Research Bureau.

A resolution is now before the House of Commons which contemplates the establishment at Ottawa of a Central Bureau of Research and Standardization. Such a movement will not be in the interests of the development of the fishery resources of Canada. It is much better that research work in the fisheries should be carried on at the educational centres that are situated in close proximity to the industry. For instance, the research work for the Pacific fisheries should be conducted in and directed from British Columbia University. The University of Washington at Seattle has developed very extensive faculties of fishing, biology and commerce with a view to especially serve the Pacific fisheries of the North-Western States, and if a similar work is not undertaken by the British Columbia University the Canadian Pacific fisheries will be at a great disadvantage. This work cannot be done at Ottawa, it must be done on the Pacific coast. In like manner a strong

(Continued on page 182.)



Pacific Coast Section

"The Canadian Fisherman," Pacific Coast Branch, will be glad to have inquiries from any one who wishes information in any way connected with the fishing industry.

We want to hear from you. You will receive a prompt and full answer to any inquiry you may make. Help the "Canadian Fisherman" to make this a real live, up-to-date Section.

Address communications to F. E. Payson, Pacific Coast Manager, Industrial & Educational Press, Ltd., 507 Board of Trade Building, Vancouver, B.C., Canada.

A GOOD REASON WHY A DEPARTMENT OF FISHERIES SHOULD BE SEPARATE FROM NAVAL AFFAIRS.

The following is a copy as received by Chief Inspector Cunningham of the Dominion Fisheries Department, Vancouver, on April 3rd:

For Publication, of Draft Treaty and Regulations for the Fraser River System of Sockeye Salmon

Fisheries.

One of the subjects that was referred to the Canadian-American Fisheries Conference, which was appointed last year to consider a settlement of outstanding fishery questions between Canada and the United States, was the rehabilitation and protection of the sockeye salmon of the Fraser River system, which system embraces the waters of Juan de Fuca Strait, the lower portion of the Gulf of Georgia, as well as the Fraser River itself.

The Commissioners unanimously recommended to their respective governments that a treaty for the proper regulation and protection of this fishery be entered into forthwith, and in order to facilitate consideration of the matter, they submitted a draft of a proposed treaty and regulations thereunder. The following is a synopsis thereof:

The Treaty.

The proposed treaty provides that it will apply only to the sockeye salmon fisheries of the Fraser River system, which embraces Juan de Fuca Strait and the southern portion of the Gulf of Georgia and the Fraser River; that the Federal Governments of both countries will be responsible for the enforcement of the regulations under it; that an international commission, consisting of four persons, two for each country shall be appointed to conduct investigations into the life history of sockeye salmon, hatchery methods, spawning grounds and other related conditions, which commission could also recommend for the consideration of the two governments, modifications in the regulations that experience may indicate as desirable; and that the treaty shall remain in force for fifteen years, and thereafter until either government wishes to discontinue it.

The Regulations.

The regulations contemplate the licensing of the fisheries by Canada and the State of Washington, respectively, as heretofore; that no greater number of licenses for any class of fishing shall hereafter be issued in Washington State than was granted in 1918, and that no more than 1,800 gill net licenses shall be granted on the Canadian side; that licenses shall be restricted in Canada to resident Canadians in British Columbia, or to companies licensed to do business in the province, and in the Washington State to resident American citizens or to companies authorized to do business in the state; that fishing shall be restricted in the Fraser River to the portion thereof below Mission Bridge, and that only bona fide resident land holders, living along the river between New Westminster and Mission Bridge, shall be allowed to fish in that portion of that river; that from 1919 to 1925 inclusive, there will be an annual close time for all salmon fishing from the 20th to the 31st July inclusive; that the weekly close time on both sides shall be 36 hours; except above New Westminster bridge, where it shall be 60 hours; that traps shall not be more than 2,500 ft. long, with end passageways of 600 ft., and lateral passageways of 2,400 ft., and in no instance block more than two-thirds of the channel; that the purse seines shall not exceed 1,900 ft. in length, and the use shall be restricted to westward and southward of a line drawn from Trial Island Light, British Columbia, to the north-west point of Whidby Island, and that gill nets shall not exceed 900 feet in length and sixty meshes deep.

The above was received a month and a half after the United States had made public the fact that the suggested Treaty and Regulations for the Fraser River system of sockeyes salmon fisheries. At the time this was made public it was also stated that British Columbia Fisheries had also received notices of these suggestions, but the Fisherman's correspondent could not find a copy anywhere and Ottawa had wired back in answer to a telegram from the B. C. Salmon Cannery Association to the effect that they had nothing to issue. Meantime the Fisherman's correspondent had wired Seattle, with the result that, by return mail, he received a complete copy which was published in the last issue of the Canadian Fisherman. Meantime, after considerable

correspondence, as noted above, the Department at Ottawa furnished the above copy of Suggested Treaty and Regulations.

The Seattle daily papers published more information than is contained in the above. The fact that the fishing interests were not taken into the confidence of the Department at Ottawa is one of the strong reasons why there should be a separate minister of fisheries as apart from the Department of Naval Affairs to administer to the fishing interests as applied to every section of the Dominion.

When a matter as important as this is allowed to go by without British Columbia and especially the cannery men of the Fraser River, who are vitally interested and who have done everything possible in the past and especially at the time the International Commission sat in Vancouver to assist in settling this question of the propagation and regulation of the sockeye salmon fishing, it is surely time that some change was made looking to a closer co-operation between Ottawa and the Pacific Coast than is existent at the present time.

FREE DISTILLATE FOR SALMON FISHERMEN.

For some time past the British Columbia Salmon Cannery Association has been endeavoring to secure free distillate for the salmon fishermen.

At the present time there is a regulation in force to the effect that, upon certifying that a boat was going on a trip for the purpose of deep sea fishing, they could secure distillate at Victoria, Vancouver, or Prince Rupert free of duty. The only results that the Cannery Association have been able to obtain so far is to have this ruling altered so that a boat of four ton capacity could secure a supply of distillate free of duty providing they were going to fish for salmon or deep sea fishing.

This does not answer the purpose for the reason that many of the canneries are situated at long distances from Vancouver or Prince Rupert, that the largest percentage of distillate used is in small gasoline boats, and the salmon carriers operating from these canneries. The result is that this distillate has to be shipped by a freight steamer from Prince Rupert or Vancouver to the canneries and the regulations, as noted above, will not allow them to secure the free distillate in drums or tanks as required.

When it is taken into consideration that on Rivers Inlet alone there are nine canneries, and with a rough estimate these 9 canneries would have 27 cannery tenders all powered by gasoline engines that would consume at least 30 gallons of distillate per day, or a total of 810 gallons, some idea may be had of what it means as to the requirements of canneries which are situated 200 miles from the nearest point at which distillate may be obtained. There is a freight steamer once a week to these canneries, and in some instances there are canneries that are 50 to 60 miles away from the regular steamer runs, and the service is infrequent and uncertain. To keep these canneries supplied, the distillate, as noted above, has to be shipped to them in drums and tanks.

What the salmon interests desire is to have an arrangement whereby they can secure their distillate in drums or barrels on the same basis as a four ton vessel can secure its distillate. There is no reason why this should not be done so that any salmon fisherman or firm operating a cannery or canneries can secure the free distillate for salmon fishing at any time.

The Imperial Oil people have suggested that, if the Government allows this free distillate to be delivered in barrels or drums, that the most expeditious way for handling this would be to allow a draw back on distillate on which the duty has already been paid, thereby eliminating all the bother in clearing warehouse stock, that is, it would allow the Oil Company to make deliveries from their regular stock, the drawback to be allowed upon presentation of certificates showing that the distillate has been issued for the purpose of being used in connection with salmon fishing. This suggestion is worthy of consideration for the reason that many times the offices of the canners in Vancouver receive requests from their canneries up the coast at the very last minute before the freight steamer sails for supplies of distillate to be shipped and by having the privilege of delivering from their regular stocks the oil company is enabled to get it away.

Your correspondent, upon making enquiries among the cannerymen and fresh fish men, find that, in addition to the Cannery Association taking up this matter, individuals and firms have also made a strong endeavor to secure the passage of a law or a ruling regarding free distillate for salmon fishing.

There is every legitimate reason why the salmon fishermen should have free distillate as well as those en-



A British Columbia Cannery Tender.

gaged in deep sea fishing. As it stands now, it means that there is discrimination regarding the securing of free distillate and it also means that the salmon canner and the man handling fresh salmon in British Columbia is up against just so much more expense as compared with his American competitor.

British Columbia would like to see prompt action taken in this connection and have some arrangement made so that those engaged in the salmon industry can secure free distillate in any amount at any time. Prompt action is especially necessary just now as the spring salmon season is now open and supplies of all kinds must be forwarded without delay.

As gasoline used in Canada is all refined in Canada, free gasoline cannot be asked for. The only way to secure free gasoline would be to secure free crude oil or fuel oil which is to be refined into gasoline in this country.

BIG FISHING FLEET LEAVES SAN FRANCISCO FOR THE NORTH.

The fleet of the Alaska Packers Association consists of thirty-one vessels. Completely manned this fleet carries 5,000 fishermen and seamen. The vessels "mobilize" at Bristol Bay, Alaska, during April and May and for five months are busy sweeping the Alaskan waters for their catch, which, at the end of this time, is taken to San Francisco and sold in all parts of the world.

In 1918 the company's salmon pack was 1,200,000 cases and they expect a record catch this year.

The company's ships "Star of Poland" and "Tacoma" will not accompany the fleet this year. While operating for the United States Shipping Board, the "Star of Poland" was wrecked off the Japanese Coast and the ship "Tacoma" was crushed in the Bristol Bay ice pack of 1918 and lost.

The vessels are all sailing vessels excepting six, which are steamers.

They will clear from San Francisco on different dates during April, to assemble in Bristol Bay and stations in Central Alaska and Southeastern Alaska.

class dog fish oil but producers must not look for the high prices which obtained during the war.

This oil can be produced and sold at much lower prices than \$1.00 a gallon and producers should not stop operations on account of the lowering of the prices as there is a good profit at even a much lower price and the demand will ultimately be as good as ever. It may be well to note in this connection that holders or the large oil dealers in Seattle are holding their dog fish oil and not selling to the manufacturers until the price is right which is a pretty good proof that the market will ultimately right itself and then the producers in B. C. can be sure of getting rid of their product at paying prices.

There will ultimately be paying, up-to-date fertilizer plants in British Columbia and it simply means that, when the right party or parties take hold of this part of the fishing industry properly they will produce fertilizer in British Columbia in such quantities as to make it a branch of the fishing industry of good sized di-



Alaska Packer's Ass'n Bark "Star of Lapland," Out ward Bound for the North.

PACIFIC COAST OIL & FERTILIZER MARKET.

The latest report from Seattle is to the effect that the fish oil market is inactive and prices not at all interesting to producers. The Oriental oil market, on the other hand, has been quite active and prices rather strong during the past few weeks.

During the war producers of dog fish oil realized from \$1.00 to \$1.25 per gallon for their product from B. C. but as the demand for this product decreased and the fact that the Oriental shipments of fish oil have generally increased, has caused a flattening out of the market for B.C. product. In one or two instances, brokers have been hard put to get full returns for their purchases of dog fish oil which they had taken in small quantities on the high market until they had accumulated sufficient for tank car loads for their buyers. There is no doubt that there will always be a market for first

mensions. Several have attempted this branch of the industry but to date there have been no great successes in this direction. With all of the fish waste there is every year it is a crying shame that this branch of the industry could not be worked up to a successful paying proposition quicker than is being done at the present time.

The Canadian Fisherman will endeavor to have ideas published quite frequently regarding the fish oil and fertilizer industry with the idea of having interest aroused that will secure the needed co-operation of everyone concerned in the industry to the end that this waste may be done away with. Any ideas regarding the conservation of this waste will gladly be published and the Pacific Coast Manager will do everything possible to assist in enlarging the operations of the industry.

ROBERT LOUIS STEVENSON'S SCHOONER "CASCO" IN SALT FISH TRADE.

The famous little schooner "Caseo" which once belonged to Robert Louis Stevenson, arrived in Seattle to load additional supplies. Manned by her present owners she is now on her way to the Aleutian Island fishing stations with a part cargo of salt.

The Caseo has been employed in the codfish industry during the last fifteen months for the Union Codfish Company of San Francisco, this Company having bought her from her late owner, Capt. Harry W. Crosby.

The schooner has been outfitted for the Alaska deep sea fishing season and is prepared to battle with the stormy North Pacific and Bering sea for the summer.

Robert Louis Stevenson made his famous voyage to the South seas in the "Caseo." During this time he wrote many of the most famous contributions to the literary world. Consequently the little schooner shares in much of the reflected glory of her former owner.

Some admirers of Stevenson once attempted to start an agitation to buy the Caseo and turn her into a memorial of some kind. They were not successful and Capt. Crosby sold her to San Francisco interests. Capt. C. Wicke is now her master and part owner.

B. C. MEMBERS URGE FISHING PRIVILEGES FOR VETERANS.

The Department of Fisheries has accepted the principle, urged by B. C. members, to make arrangements to give returned soldiers the preference in all fishing licenses on the Pacific Coast. The approval of the Government will probably be given at once.

The recommendation of the members was that in all gill net areas, all applications from returned soldiers for such licenses should be granted.

Where the number of licenses in area is limited by order-in-council, a certain percentage of these licenses will be reserved until June 1st, for returned soldiers. Thereafter, in issuing the balance of licenses approved by the regulations, preference will continue to be given to returned soldiers in order to insure as fast as possible that they shall be supplied with boats and nets. Additional licenses will be granted to returned soldiers only after the number provided by the regulations has been reached.

Another recommendation is that in gill net areas where fishing is limited to the persons and companies operating canneries who have hitherto furnished boats and gear to licensed fishermen, a certain percentage are to go to returned men.

It is also recommended that, in districts where there was a fixed number of licenses the canneries would be expected to reserve up to June 15 boats and nets as follows, which they will be prepared to furnish returned soldiers licenses who will dispose of their catches to them: Rivers Inlet 210, Skeena River 127, Naas River 55, Smith's Inlet 34, Bella Coola 30, Butedale 18, Namu 8.

A RETURNED SOLDIER FIRM.

The Union Fish and Cold Storage Company is now the United Fisheries. The old company having been taken over by the new firm, two of whom are returned soldiers.

Mr. Charles O. Coppin, connected with the fish business here for some years before he joined up, and Mr. W. Richmond who was engaged in the fish business in

the old Country will have charge of the practical end of the business. Mr. P. L. Harvey, the third member of the firm will handle the books and manage the business.

The new firm started operations April 9th.

ALASKA FISHING GROUNDS TO BE EXPLOITED.

Henry O'Malley, chief of the U. S. bureau of operations of the fisheries' department on the Pacific coast, returned to Seattle Thursday evening April 10 from an extended trip to Washington, D.C., and New York.

He brings the assurance that the federal government intends to put forth great effort in developing Alaska fisheries. He says, too, that a party of prominent scientists will proceed to the Bristol bay fishing grounds for purposes of investigation. Dr. Charles H. Gilbert, head of the Department of Zoology of the Stanford University, will go with the party as the Government representative. Mr. O'Malley intends to accompany the scientist on the expedition which leaves Seattle in May.

A thorough research of the Bristol Bay fishing grounds relative to the future cultural and commercial possibilities of the field, will be conducted by Dr. Gilbert whose report will be submitted direct to the Government.

As a result of his study of market conditions on fish while in the East, Mr. O'Malley declared that the outlook on Eastern markets is very uncertain, particularly on herring. Owing to lack of importations from Scotland, this industry has greatly increased during war time.

RUPERT LING COD NOT EXPORTED.

Referring to a letter from the local agent of the Deep Sea Fishermen's Union which appeared in the "Resonrees" magazine of Prince Rupert in April, and which accuses the Canadian Fish & Cold Storage Coy., of splitting and salting the bulk of the ling cod caught by the trawler and purchased under Canada Food Board regulations, Mr. T. H. Johnson, Manager of the Company, stated to a Canadian Fisherman representative "That not one ounce of the trawler's ling cod was salted for export and all was sold according to the Canada Food Board's Order No. 18 which fixed the prices to be paid the fishermen, the wholesaler and the retailer."

MUST IMPROVE HERRING PACK FOR CHINESE TRADE.

In reply to a questionnaire regarding increased trade in fish between Canada and China, Mr. J. W. Ross, Canadian Trade Commissioner, says under date of March 5th:

"For a number of years China has imported from British Columbia a certain quantity of salted herring. The trade has greatly varied in different years, some years it has been of a considerable amount, and in others it has almost dwindled away.

"This trade is capable of great expansion provided it could be properly organized, but as far as I can judge it is not organized at all, but is conducted in the most haphazard manner. The fish are very badly packed, there is no system of inspection or standardization and many dealers on account of the many complaints in the trade regarding the fish have ceased to handle them. Kamshatka and Amur river fish arrive in a much better condition."

POSSIBILITIES FOR CANADIAN TRADE IN HERRING WITH CHINA.

By WILLIAM HAMAR GREENWOOD.

One of the most prominent men in British Columbia fisheries, commenting on remarks recently made by J. W. Ross, Trade Commissioner for Canada at Shanghai, in which the Commissioner intimated that there was a good opportunity for Canada to build up an important trade in salt herring with China, says that more men have lost money in trying to develop the salt herring trade than in any other business in British Columbia, to his mind. **HE DECLARES THAT THE CHINESE MARKET IS A MARKET THAT DEMANDS EVERYTHING IN THE VERY CHEAPEST KIND OF FORM, AND THAT IN ORDER TO APPEAL TO THAT MARKET THE GOODS HAVE TO BE TURNED OUT CHEAPLY, PUT UP CHEAPLY AND SOLD AT A LOW PRICE.**

He is of the opinion that while the market is susceptible to development, it will at the present time **ABSORB ONLY A CERTAIN TONNAGE EACH YEAR,** and the vital fact is that **THAT TONNAGE HAS TO**

Chinese consider it right, and if the Canadian shipper attempts to change it he is bound to suffer a loss

My correspondent says that some years ago he had an idea of going into the business of shipping herring to China. In 1914 he put up a fairly nice package, used care in shipping his goods to China, and with the result that he lost money. The Chinese would not have the new package. They would not have the herring sold in any manner than that in which they were used to, and this shipper's experience was such that he decided to leave the Chinese trade to the Japanese and Chinese, who, so far as he could see, love to gamble for the sake of gambling.

It is true that there has been quite a demand for Canadian herring in China during the last few years, as there has been for every other food product, but there has been no tonnage to move it except some subsidized space for shipments which the **JAPANESE GOVERNMENT FORCED THE JAPANESE STEAMSHIP LINES TO GIVE TO JAPANESE SHIPPERS. THE GOODS HAVE TO ORIGINATE WITH THE JAP, GO TO A JAP IN KOBE, AND THEN BE REDISTRIBUTED FROM THAT POINT.**

From my own personal knowledge of the fishing in-



The Motor in the Pacific Herring Fisheries—Seiners and Tenders Motor Driven.

GET THERE AT A CERTAIN TIME. Then the herring has to be transported a long way inland in China. On goods that are shipped from Canada in the early fall the shipper is generally sure to make a little money. **HERRING DO NOT RUN MUCH IN BRITISH COLUMBIA UNTIL THE FIRST OF THE YEAR, SO THE EARLY FALL SHIPMENT IS PRECARIOUS.** By the time the big run of herrings is on at Nanaimo and other places in January and February, the market in China is flooded and shipments from Canada are too late to command a fair price.

So hazardous is the herring trade with China that very few Anglo-Saxons dare to touch it. In British Columbia the Japanese and Chinese have handled it almost exclusively. Trade in herring from Canada to China is no new business, for it has been going on for years. The Japs have generally caught the fish and the Chinese have done the selling. The market demands a stereotyped weight and a stereotyped and poor package, which is the only package the

industry in British Columbia I am free to say — and my opinion is reinforced by reputable fishermen on the Coast — that if the herring market in China had been susceptible of great development on the part of Canadians in recent years, there would have been a large number of Canadian fishing companies doing business in herring with China.

VETERANS AFTER THE WHALING COMPANIES.

A resolution was passed at a regular meeting of the Army & Navy Veterans of Victoria, B.C., asking that the privileges given to the Whaling Company be turned over to a body of returned men.

This resolution was passed, as the veterans claimed the whaling company are employing a large number of Orientals as fishermen and engineers, and have discriminated against returned soldiers fitted to fill the positions.

PUGET SOUND AND ALASKA.

It is reported from Hoquiam, Wash., that small catches of Quinault Salmon are being made by the Indians of Taholah. These are being shipped to fresh fish markets on Puget Sound in ice. It will be some weeks before the canning season opens.

With the conditions of the river as they are, the old-timers, familiar with the habits of the Quinault salmon, from these indications expect a big run, especially as this is the fourth year run and four years ago this was unusually heavy.

It is also expected that the effects of the first return from fry which was hatched and reared at the Lake Quinault hatchery will be felt. These were planted four years ago, and this is the season for their return.

These results will be watched with much interest.

Alaska-Portland Packers' Association will operate two canneries in Alaska during the coming season, one at Nushagak and the Naknek Plant. The plant at Nushagak is a four line plant, and the one at Naknek is two line. 130,000 cases is the maximum capacity for both plants, and the company is prepared to handle a large pack should the run of fish warrant.

The fleet of the Libby, McNeil and Libby Company are fast getting away for Alaska, and practically every vessel of the fleet carries its quota of service men, most of whom are former employes of the company.

There are an unusual number of men headed for the Northern fishing plants this season, and it is noticeable that many of these are service men, and uniforms are numerous, and noted as the vessels pull out for the North.

Every Alaska freighter that sails from Seattle now has a large part of the cargo made up of cannery supplies.

There has been no estimate made of the Alaska canned salmon pack for 1919 up to the present writing.

"FRISCO STANDARD" IN MANY NEW FISHING BOATS.

News from the Pacific Coast indicates that there are a large number of new fishing boats being built for the coming season, and judging from the way these new craft are being rushed, the indications seem favorable for a good fishing season. All along the coast, wherever there are boat yards, new fishing vessels of all kinds are being rushed to completion. The crafts include seine boats, trollers, cannery tenders, gill-nets and fish boats of every type.

An exceedingly large proportion of the western boats built this year are being equipped with "Friseo Standard" gas engines, made by the Standard Gas Engine Co. of San Francisco. For instance, in the Tuna fishing fleet which has developed to such large proportions along the coast of California, fully 75 per cent of the new boats this season will have Friseo Standards.

The same condition prevails to a large extent in the salmon fishing industry on the North Pacific Coast. A very large proportion of the motors installed are Friseo Standards.

For fishing boats everywhere, the Friseo Standard engine seems to have become a recognized standard equipment, and the motor is rapidly gaining popularity in the east. Recently, the U. S. Government installed twelve 65 h.p. Friseo Standard engines in boats which were built at Stamford, Conn., for the Coast Artillery service. These engines gave remarkably good satisfaction, and the manufacturers recently received the following letter from the builders:

"You will, no doubt, be interested to know that we have just made delivery of the last of the twelve 61 foot 'Q' boats we designed and built for the Quartermasters Department of the U. S. Army, and we wish to congratulate you upon the very satisfactory results that we have had with your engine. Every one of the engines had a dock trial and the official trial without a hitch of any sort, and on the sea trial, we obtained a speed of eleven miles an hour, using Kerosene fuel, and on which the engines functioned most satisfactorily.

"We understand unofficially that the War Depart-



A British Columbia Halibut Fisherman Motor Driven.

ment is also very much pleased with the operation of these engines, and the crews who came here to take the boats away, all seemed to be very favorably impressed.

"You can rest assured that your engine will be very prominently before us for consideration in future boats, for which it might be suitable.

"Yours very truly,

"LUDERS MARINE CONSTRUCTION COMPANY,
(Signed) "A. E. Luders, President."

THE CANNERIES

Maritime Fisheries, Ltd., Holding off in Cannery Undertakings. Not undertaking any new development.

Preparations are not being made on the same extensive scale as previous years. With prices a material and cost of production, with the doubtful price to be obtained for the finished article, conditions do not warrant the expenditure of large amounts this season. The above applies to their fertilizer and oil plants as well as to cannery.

The Canadian Trade Commission is informed that catalogues from English manufacturers sent to Spain before the war were frequently taken to the nearest German house. The German naturally said: "I can do much better for you," and got the order. Canadian exporters must see to correspondence in foreign languages.

VANCOUVER BOARD OF TRADE, FISHERIES BUREAU.

On March 20th at a meeting of the fisheries bureau of the Vancouver Board of Trade, Mr. F. E. Burke of the Wallace Fisheries, was re-elected chairman of the Bureau.

On April 1st the Bureau met and passed resolutions asking the Dominion Government to create a portfolio for fisheries, also that a committee of three be appointed from B. C. to have jurisdiction over the fisheries of that Province and that the recommendations of this commission should go direct to the Dominion Government.

They also passed a resolution asking for the appointment of an Inspector of canned fish whose duties would be to inspect and issue certificates on grade and quality of fish canned in B. C.

VANCOUVER BRANCH CANADIAN FISHERIES ASSOCIATION.

Recommends New Fisheries Portfolio.

At a well attended meeting of the Vancouver Branch of the Canadian Fisheries Association with Chairman A. L. Hager presiding resolutions were passed appointing Mr. F. E. Burke, of the Wallace Fisheries, Ltd., as representing the cannery interests and Mr. A. L. Hager of the Canadian Fishing Co., Ltd. as representing the fresh fish interests to act as delegates to meet at Ottawa, May 13 and 14, with delegates from other sections of the Dominion. Mr. Hager was given power to appoint a substitute providing he could not get away himself.

Much interest was shown in the reading of the seventeen points of the suggested recommendations as sent out from Montreal by the Canadian Fisheries Association. Mr. Burke thought that points 1, 2, 3 and 14 were the ones the meeting should consider and made the following motion, seconded by Mr. Eekman.

"Resolved that the Vancouver Branch of the Canadian Fisheries Association go on record and request that a portfolio of fisheries be created, and that a Minister be appointed in charge of same."

Also "That a practical service board of three men be appointed to act as an Advisory Board in this Province on fishing matters, and that to this Board all questions of policy pertaining to fishing matters, in B. C. be referred, and that the Minister of Fisheries act upon the recommendations of this Board in all matters pertaining to the Fisheries of B. C."

Also "That an Inspector or Inspectors of canned fish be appointed at once for this Province, whose duty it shall be to inspect and pass upon all canned fish, and to issue certificates of grade and quality upon all canned fish packed in this Province."

The general opinion of those present was that a strong personal representation at the meeting to be held in Ottawa was most essential. The strong point at the meeting was the fact that the questions as raised in the points noted above caused a most general discussion, practically every one present expressing their views.

Aside from the importance of the separating of the fisheries department from the department of Naval Affairs is the appointment of a canned fish Inspector for British Columbia. This should be done at once. It means the standardizing of the canned fish business, as Mr. Burke stated, and would inspire confidence in buyers of B. C. canned fish.

The industry is entitled to consideration on the part of the Federal Government, especially as the Government had collected a quarter of a million dollars more than ever before in operating licenses.

As regards the appointment of officials in connection with the improving of shipping facilities, the surveying of new fishing grounds, restocking of Inland waters and training of apprentices in seamanship, navigation and fishing, there is no question as to the advisability of these undertakings on the part of the government and something along these lines must be undertaken to further the interests of the industry.

It was noted to seek the endorsement of the B. C. Salmon Cannery Association on the different points and the sending of the delegates to Ottawa, as it was felt this would strengthen the position of the delegates at the meeting at Ottawa.

There was much other business to be taken up but this was deferred until the next meeting which will be held at an early date.

As it was the meeting lasted much longer than it was anticipated but every one was so interested in the importance of the questions, that only the pressure of personal business of those present caused the adjournment to take place when it did.

It was felt by all the first of many interesting and important meetings to be held by the Vancouver Branch of the National Organization resulted by the calling of this meeting. Much interest has been aroused among those interested in the industry.

AMONG THE CANNERIES.

The A.B.C. Packing Company, of which H. Bell-Irving and Company are Managing Agents, are not operating any of their six canneries on the Fraser River this season.

Mr. Wm. Hickey, manager, is at the Kingcomb Inlet Cannery of the Preston Packing, getting things ready for this season's operations.

Mr. Alfred Shaw has been appointed permanent receiver for the Defiance Packing Company. The appointment being subject to objection of Mr. A. H. Sherman, former manager of the concern. As the receiver would be in charge of property valued at \$200,000, a bond of \$150,000 will be furnished. This is in addition to the undertaking of Balfour, Guthrie & Co., on whose request Mr. Shaw was appointed.

The B.C. Packers' Association will operate only four canneries on the Fraser this season.

PRINCE RUPERT FISHING NOTES.

Halibut Catches.

In February there were 824,000 lbs. of halibut landed which is a record for that time of the year. The average delivery per boat was small on account of weather being bad.

Our national debt has run from \$46 a head in 1914 to \$270. The C. T. C. suggests the best way of meeting obligations is by exporting more and importing less.

During March there was 1,119,300 lbs. of halibut landed at Prince Rupert. The price ranged from 12 to 14 to the fisherman.

SEALING ON THE PACIFIC THIS YEAR.

The United States will slaughter 30,000 fur seals in the vicinity of St. Paul Islands this spring under the Government Fisheries Department supervision. The work being done by natives.

The furs will be tanned and dried.

The large fertilizing plant constructed by the U. S. Government last year on St. Paul Island will be operated for the first time this year. The drives will begin in May and in June and July the season will be at its height.

It is estimated that approximately 37,000 gallons of oil of the finest grade will be produced, and 550,000 pounds of fertilizer.

Formerly only the furs were shipped South but this season every part of the carcass will be utilized. The fertilizer plant will be operated under direction of the federal agent of St. Paul Island, Mr. A. H. Proctor, who has held the agency there for the past twenty years.

All products will be shipped to Seattle and the furs sent to St. Louis to be sold at auction, while the oil and fertilizer will be marketed at Seattle.

at a profit to the market, but at lower prices than other markets.

The fact that the location was not what it should be, inability to keep a sufficient supply and the cost of operating one steamer were all contributory to the failure. What was necessary most of all was practical, non-political managership, from production to consumer.

GOVERNMENT SUBSIDY REDUCED.

Hereafter the Dominion Government will allow subsidies only on shipments of fresh or frozen cods and flatfish from British Columbia into the Provinces of Alberta, Saskatchewan and Manitoba.

This means that all varieties other than cod and flatfish will carry full express or freight charges.

The Maritime Fisheries have had their salmon carrier, "Aliford Bay," overhauled during the past season, and she sailed for the North on the 30th of April, having in tow fourteen fishing boats which she is taking north for the season's operations. To give an idea of what it means for this trip, it is well to say that the Maritime Fisheries Camery is at Aliford Bay, on Queen



The Mosquito Fleet, British Columbia.

CHEAP FISH MARKET A FAILURE.

The City of Portland, Oregon, has closed its cheap fish market with a loss of \$3,000.

The principal loss is claimed to be on account of the use of the municipal tug "Pulitzer," which made several trips for deep sea fishing.

One commissioner claimed that increased rental and failure to secure a suitable location were contributory causes to the failure.

During the war the public were able to purchase all varieties of fish at less than prices elsewhere, and saved the people many hundreds of dollars.

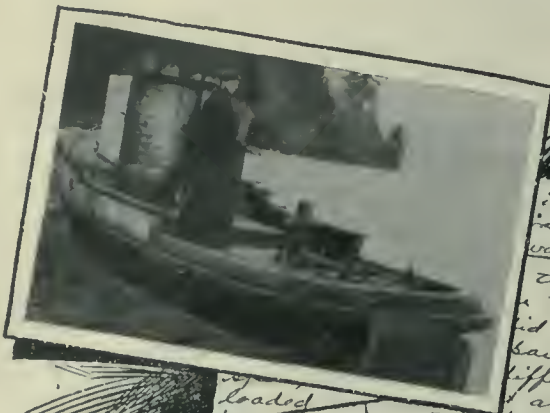
As a matter of fact the writer looked into the Portland proposition, and there was a legitimate endeavor to give the people cheap fish of number one quality, and

Charlotte Island, which means a trip of 600 miles from Vancouver. The "Aliford Bay" was built in 1918 by Hoffer Bros., she is 75 ft. over all, 17 ft. 6 in. beam, 6 ft. draft, powered with an 85 H.P. Frisco Standard, costing \$19,000. She was overhauled by the Vancouver shipyards this season and a new engine bed installed.

Imports into Australia and New Zealand totalled \$380,000,000 last year — of which a larger share than ever might well go from Canada.

The two main ideas promoted by the Canadian Trade Commission at present are: "Buy less abroad and make more for export."

Burnoil had the "Kick" says Capt. Dow.



Loaded

JAN 28 1918

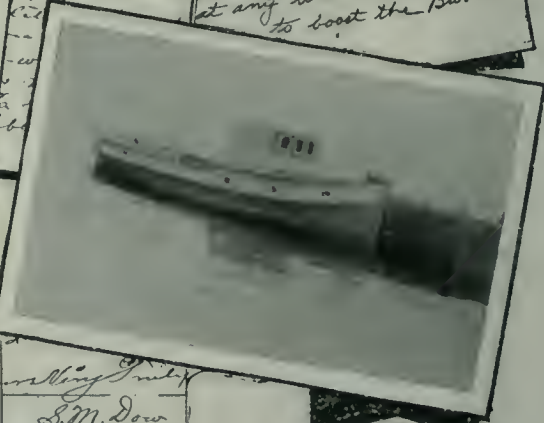
Nellita Wash
Jan 22-1918

Burnoil Engine Co
Sawmill Road, Ind.

Your letter asking about various matters in connection with my Burnoil Engine, received sometime ago. Your first question as to "gear" gear #11 I believe which you furnished with the engine. The gear is a good, strong, substantial gear and satisfactory in every way. Had no trouble with it and I never overheated it regardless of how long it is on under load.

As to the boat: - Length 38 ft - Width 9 ft - Draft, light, it floats loaded - probably 5 ft. or more, according to load. I frequently load down to the gunwales which you will notice by the little photos enclosed. There has never been more than 6 tons dead weight

... an using asphaltum base
... about 26° Baumé
... of Calif. Harv.
... Some times
... can cold with it.
... on Kerosine.
... \$2.00 per barrel
... lubricating oil
... This makes
... ting the boat less
... mile. Usually
... 2. No mid-wood
... have the best marine
... made and would not
... any gas engine ever
... her may cover point
... other satisfactory inform
... or any further informat
... at any time and always
... to cost the Burnoil



Capt. S. M. Dow, Nellita, Wash., owner of this heavy work-boat, towed 60,000 ft. of sawn lumber rafted, and picked up a disabled gas boat and towed it with the lumber, and his 12½ H.P. Burnoil turned up the same revolution. Her speed is over 9 miles.

Your Sincerely,
S.M. Dow

P.S. Has forwarded to Burns, Kimball & Co of N.Y. picture of the "Delphi" with description of boat and engine by their request S.M.D.

True copy of this interested letter, with real fact, upon request, with postage to any prospective purchaser.

Mr. Editor—After inspecting various types of oil engines, such as Diesel, Semi-Diesel, etc., find to my great surprsse the Burnoil by far superior in workmanship, practical construction, and efficiency, than any other make Oil-Engine on the market, which I am personally prepared to prove and will cheerfully offer my service to supervise the installation of any 4 or 6 cylinder Burnoil anywhere in Canada and Newfoundland, to avoid flimsy installation and line up shaft. Yours for a real Oil-Burner, Capt. Peters, Bus. Mgr., Canadian Boat & Engine Exchange, Ltd., Toronto.

Canadian Boat & Engine Exchange, Ltd.

Toronto

Canada

The Canadian Boat & Engine Exchange was incorporated for \$100,000.00 in January 1919, in order to further broaden its scope in the marine engine industry in Canada and Newfoundland.

Under the leadership of their able Business Manager, Capt. Peters, who made an extensive trip last winter through the States and inspected various marine engines and interviewed the manufacturers, the company has been very successful in obtaining various wholesale and retail jobbers' contracts for the entire Dominion of Canada and Newfoundland for the best marine engines made, both oil and gasoline. The Manager, a retired sea captain with wealth of experience, had his choice, and naturally picked out the best motors on the market, of such construction and workmanship that the company itself is prepared to back them up, besides the manufacturers' guarantee.



The successful Managing Director and Vice-President of the Company.

It may be of interest to know that this is the first and only wholesale and retail jobbing house in Canada and Newfoundland for marine engines exclusively, for which there has been a great need for a long time, and should be of special value and interest to the various boatbuilders and dealers, as immediate deliveries can be made, same day as orders are received, without the long and tiresome delay in transit from the States, besides all the red tape of customs clearing. The motors will always be on exhibit in the company's showroom, where the dealers may send their customers to inspect them, and at the same time be protected. The company has also arranged to exhibit their various engines at the Canadian National Exhibition during the two weeks from August 25 to September 6, 1919. All are welcome. **Boost Reconstruction Year.**



One section of Show Room in Wesley Bldg., Toronto, of Canadian Boat & Engine Exchange, Limited.

VANCOUVER FRESH FISH MARKET.

Fraser River Red Springs have begun to come into the market and West Coast Red are plentiful. A few sockeyes have shown up. Cod have been arriving in good quantities. Red Cod very plentiful. Blueback salmon not as heavy past few days.

Wholesale Fresh Fish Quotations.

	Per lb.
Halibut	14e to 17e
Red Springs	15e to 17e
White Springs	6c to 10c
Bluebacks	14e to 16e
Ling Cod	6c to 8½e
Red Cod (Round)	2e to 3e
Grey Cod	5e
Oolichans	5e to 6e
Soles and Brills	6e to 7e

Shell Fish.

Crabs (searee)	\$1.10 to \$1.20 per doz.
Perch	6c
Shrimps	17c per lb.
Clams	2½e to 3e per lb.

Vancouver Prices. Smoked and Salt Fish.

	Per lb.
Smoked Sable Fish (Black Cod, whole)	14e
Kippered Sable Fish	20e
Fillets, Sable Fish	17e
Smoked Pink Salmon (whole)	20e
Kippered	20e
Bloaters	7½e
Kippered Herring	9e
Eastern Haddie	16e
Western Haddie (according to size)	10e to 11e
Imperial Herring Chicks in bundles of 5 boxes.	18e
	Per Bbl.
Salt herring, large 900 to 1000 count, 250 lbs. net.	\$12.00
Do., medium, 1400 to 1500 count, 250 lbs. net	10.00
Do., large, 200 lb.	12.00
Do., large, 100 lb.	7.00
Do. large, 50 lb.	4.25
Salt Sable Fish (Black Cod) 200 lb.	22.00
Do., 100 lb.	12.00
Do., 50 lb. (Kit)	6.50
Salt Pink Salmon, 200 lb.	15.50
Do., 100 lb.	8.50
Do., 50 lb.	7.00
Salt Grey Cod, 50 to 200 lb. (per lb.)	10e.

THE CANNED SALMON MARKET.

\$16.25 per case for Sockeyes. That is what some packers are holding for. Up to May 10th it is estimated there have been close to 125,000 cases of sockeyes sold at from \$15.00 to \$16.00 per case—average \$15.50. Several sales were made in the early part of April. For a time no one wished to make prices on Red Spring but several days previous to May 10th there were sales of ½ lb. flat red springs at \$14.00 and \$14.50, and some Pink halves at \$9.25. These prices are for cans unlabelled f.o.b. warehouse.

With these prices and one half of an estimated pack

of 200,000 cases of sockeyes already sold, it does not look as though the United Kingdom buyers, who were arguing for lower prices on sockeyes and red springs, would get their share of these high grades. The argument brought forward by some of the English buyers is that on account of the United Kingdom having been fed up on canned food during the past four years, and the fishing grounds having been cleared of mines, and fresh fishing again arriving in large quantities, canned salmon at high prices would not find a ready market.

Last year ehums are still the great theme and unless some of that \$25,000,000 credit is used for the purchase of this stock, there is no knowing when they will move.

BOAT BUILDING IN VANCOUVER.

The boat builders, and in speaking of boat builders we mean the builders of fishing craft, have been fairly busy during the past winter and spring in Vancouver, and have turned out some very good boats, both for canneries and individual fishermen.

It is to be hoped that in the future this part of the shipbuilding industry may become larger than it has in the past. Many of the best seine boats that are used both for fishing and as carriers in the salmon industry have been brought over from the States. There is no reason why this should be as every facility for the building of both halibut boats and for the salmon industry is to be had right here in B. C.

It is a fact that many of the boats are built by Japanese boat builders. Of course, the Japanese fisherman naturally turns to one of his own countrymen, as there is no doubt that the Japanese work very close when it comes to assisting one another. And again, many firms turn to Japanese boat builders on account of the difference in cost for his boat. On the other hand, the firm employing white labor naturally has every chance to build up an industry right here in B. C. by using proper initiative and originality in his models, and energy in securing orders.

The Canadian Fisherman, in its Pacific Coast Section, hopes to assist in the development of British Columbia boat building for the fishing industry, and will at every opportunity do everything to assist boatbuilding in British Columbia.

Many of the agents for gas engines have been unable to have their orders filled as they would wish in the past four years. Of course, everyone knows this has been on account of war conditions, but, as these conditions are fast changing and the requirements of the Government are not now interfering with the output of the different factories, there is no reason to doubt that these conditions will rapidly change for the better, and then any engine company will be able to fill its orders on the regular schedule.

Next year should see bigger business for the boat builders than during the past season. The reason for this statement is the fact that many of the cannery firms feel rather uncertain as regards conditions during the coming season, especially as to prices on the markets for the lower grades of salmon, and it may be that this year the pack of the lower grades may not be as large as it would be were conditions a little different.

There are several instances where the different canners would have enlarged operations this year had

A BOOK FOR THE FISH TRADE

"THE FISHERIES OF THE NORTH SEA"

BY

NEAL GREEN

The Best and Most Up-to-date Book on the Great North Sea Fisheries.

Contains a Description also of the Fisheries of Scandinavia, Germany, France, Russia and America.

THE "CANADIAN BOOKMAN" SAYS:—

"The Fisheries of the North Sea," by Neal Green, is a welcome addition to piscatorial bibliography. The writer shows a distinct grasp of the subject and an unusual knowledge of the fisheries of Scandinavia, France, Germany, Russia, Canada and the United States. It is a little book, but its chapters are well balanced and show evidences of some clear thinking. Mr. Green gives a light and comprehensive sketch of the history and the natural advantages of the North Sea fisheries, and, while dealing particularly with that prolific

fish-producing area, he introduces several interesting features on fish migrations, methods of fishing, value of catches in other waters.

"All that Mr. Green says can be applied to Canada in the development of our own fisheries, and we heartily recommend this book to Canadians—not only those directly interested in the fishing industry, but also those thoughtful citizens who are now studying the ways and means for the economic development of our natural resources as a medium for paying our debts and adding to the wealth of the Dominion."

"FISHERIES OF THE NORTH SEA" CLOTH COVERS, PRICE \$1.25 POST FREE.

GARDEN CITY PRESS,

ST. ANNE DE BELLEVUE, QUE.,
CANADA

conditions been more stable, and without doubt, they would have added to their fleet of boats had conditions been different.

Taking all this into consideration, and the fact that herring fishing may possibly be developed to a greater extent during 1920, which would mean more boats for this branch of the industry, there should be a livening up in the boat building in B. C., and, without doubt, this livening up may be helped to a great extent if more publicity is given to the fact that there are facilities for building this type of craft just as good as on the other side of the line.

Our advice to the prospective builder of fishing craft is to consult the B. C. builder, get their figures, impress on them the kind of boat they want, and they will find that they can put up just as good a boat in B.C. as anywhere else.

NEW MONTREAL OFFICE OF CANADIAN ICE MACHINE COMPANY.

CANADIAN ICE MACHINE COMPANY, selling agents for the well known refrigeration machines of the York Manufacturing Company have moved to much larger premises at 324 Craig Street, W. Montreal where, in addition to their offices, they will carry a complete stock of fittings and refrigeration plant supplies. Mr. C. M. Kirby is in charge.

GUSTAVE DUBOIS

FISH SALESMAN

AND

FORWARDING AGENT

22 Rue de Paris, LE HAVRE (France)

CORRESPONDENCE SOLICITED

for sale of all kinds of preserved fish for France.

Banker; "SOCIETE GENERALE" Le Havre.

Telegraphic Address; GUBOIS-HAVRE.

TOWING AND FISHING TUGS

Trawlers, Barges, Scows, Auxiliary Schooners, Vessels, Steel and Wood. British, Canadian and American Freight and Passenger Steamers, large and small.

Second hand marine machinery for sale and wanted.

WRITE FOR PRINTED LIST.

JOHN A. MOODY, LONDON, ONT.

Credits of \$75,000,000 have been established in Europe by Canada and \$25,000,000, more is likely, but according to the C. T. C. this only touches the fringe of the world-wide trade openings.



Fish Trade Names—"The Sardine Case"

By CLUPUS FUNDY.

Trade names are receiving attention at the present time both as a result of inquiries into foreign market conditions and the movement started by the Canadian Fisheries Association to secure more uniform cognomens, and it is evident that the true value of a trade name is to be realized as never before. Should the precedent established by the high court of Great Britain in "The Sardine Case", be maintained, the commercial worth of trade names will be more carefully guarded and in the future each will be considered as an asset by producers and dealers of the fish or product to which it may lawfully be applied.

The old query "What's in a name" finds a speedy answer when the questioner happens to mention some popular copyrighted name but there is not the same response when it is a name generally applied to an article produced in a certain district or to a fish found over a considerable area and yet not all over the world and the larger the area the less commercial importance to the name. In fact the name is never counted as a commercial asset until some substitute appears on the market bearing the same label, and not then unless the substitute undersells the original article and is possessed of sufficient virtue to be a dangerous competitor. The latter situation is true of the term "sardine".

Sardines, according to the authorities were first packed in France in 1822. The name is the French word for the fish known to science as "Clupea pilehardus" or pilehard and is generally associated with the Island of Sardinia around which these fish are numerous. The habitat of the pilehard includes nearly all Mediterranean waters, the Atlantic Coast of Spain, Portugal southwestern France and the south coast of England. The industry grew until many packers in the countries above mentioned were canning sardines, i.e., small pilehards. Some firms took other small fish and canned them as sardines but this was an admitted fraud, and regulations were adopted in France which forced the packers of other fish to desist, and they called their product "Fishes in oil." Often this product was exported without label and importers in other countries labelled the cans "Sardines", also a fraud as purchasers were led by the label to believe that the cans contained small pilehards.

After investigating the sardine industry, Norwegian firms commenced to can small brisling or sprats (*Clupea Spratus*) in 1879 under the true trade name of the fish and labelled them "Sprottin in oel". The sardine packers backed by 50 years or more of experience and having an established trade held the market, and shortly the Norwegian packers changed the name of their product to "Sprottin à la Sardine", thus indicating that the contents of the can were sprats canned in the same style as sardines, which was of course a state-

ment of fact. Then the name was changed to "Norwegian Sardines" and this use of the word enabled the packers to make serious inroads into the market previously held by the French, so serious that the French Congress of sardine packers decided in 1912 to force the issue and fight for the commercial standing of their trade name.

Complaint was filed in the Bow Street police court against two British dealers in canned fish, charging them with violating the Merchandise Marks Act by applying a false trade description namely "Sardines" to fish in oil packed in tins. The plaintiffs centered their attack on "Norwegian Skipper Sardines," a brand which has been handled by the Defendants since 1903.

The case aroused great interest as counsel appeared not only on behalf of the French and Norwegian packers and the Defendants but also for the Norwegian Government. The case was hotly fought and after one of the longest hearings on record Sir John Dickinson, Chief Metropolitan Magistrate, on March 20th, 1914 answered the question "What is a sardine" by declaring it to include only one kind of fish i.e. pilehards. The vital sections of his verdict follow:—

"The name "Sardine" is the French name for the "pilehard both before and after it has been caught, "prepared and packed in oil in tins, and in France is "limited to the pilehard though dishonest persons "may have prepared, tinned and labelled other small "fish, and fraudulently sold them as "Sardines."

"The name "Sardine" is also applied to the pilehard which is packed in oil in tins in Spain and in "Portugal, and exported to this and other countries. "In these countries also dishonest persons have prepared, tinned and labelled other fish, and fraudulently sold them as "Sardines".

"I find as a fact that the trade description "Sardine" was not, at the present passing of the Merchandise Marks Act, 1887, a trade description lawfully and generally applied to goods of a particular class, that is to say, to any small fish suitable for packing, but that it was a trade description which was not only lawfully and generally applied to one definite and particular kind of fish, namely the pilehard.

"I find as a fact that the name "Sardine" is and "always has been limited by eminent restaurateurs, "and highclass dealers in provisions and canned goods, to the immature pilehard packed in oil in tins.

"I find as a fact that it has been the practice of the Defendants, in applying the description "Sardine" to the Norwegian Brisling packed in oil in tins, to use with the word "Sardine" one or more other words as part of the description; and in the case

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Reliable Flashlights give most hours of light. All the standard styles and sizes of metal and fibre flashlights and beautifully enamelled Tubular Flashlights, and Searchlights in red, blue, brown and green.

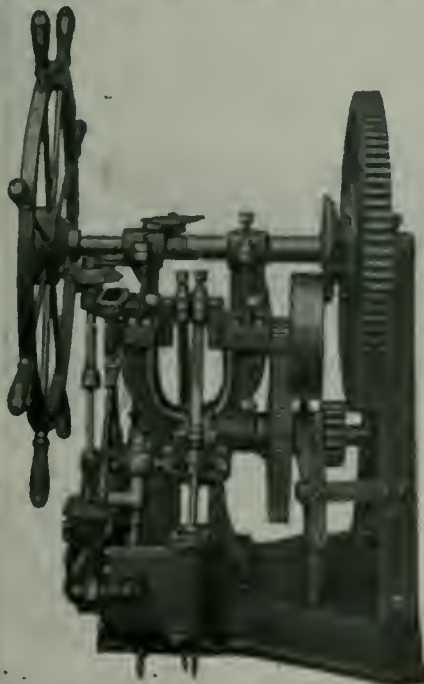
Use Reliable Dry Batteries for your motor boat engine. They give a fat, hot spark that fires all the gas. They serve long because made of best materials.

Ask a Reliable dealer to show you Reliable Flashlights and Dry Batteries.

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Toronto, Canada

Crossley Steam Steering Gear

"The Machine That Has No Equal"



Simple
in
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Absolutely
Dependable

Easy to
Operate

Equipment
with
Crossley
9 H.P.
Double
Engine

Mfgd by Crossley Lead and Machine Co.
ERIE, PA., U.S.A.

Also Mfgs of CROSSLEY NET LIFTERS, LEADS & OTHER EQUIPMENT



"in respect of which the information was laid, the words "Norwegian" and "Skipper" were used immediately before the word "Sardines", making so far as concerns the marking of the tin, and paper covering, the description "Norwegian Skipper Sardines" and as regards the invoice, and paper label or seal the description "Skipper Sardines".

"I have accordingly come to the conclusion that the Defendants have sold goods to which a false trade description was applied, and they have not proved to me at the time of committing the offence they had no reason to suspect the genuineness of the trade description, or that they have acted innocently and I therefore convict them, and fine each of them £20, and further order each of them to pay 100 guineas costs."

The decision of the Magistrate was appealed by the

It is not unlikely that packers of true sardines will follow up their legal victory in Britain by bringing cases on this side of the Atlantic for the decision of the High Court was not handed down until July 28th, 1915, when the world was busy quashing another fraud, and having settled the more serious case again has time for little things like sardines.

On this side of the Atlantic roams a branch of the elupea family whose other name is harangus, commonly known as herring, and canners both in Canada and the United States having been packing these fish under the name sardines for several years, each adopting such camouflage as suited their taste. In Maine these fish are canned as American sardines while the New Brunswick canners go to the whole way and boldly dub them "sardines", prefixing their firm names. The Department of Fisheries has its own answer to the



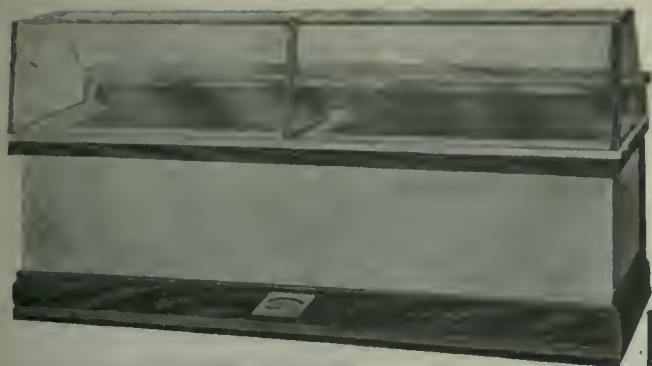
Sails Cut Down—Power Installed. An Auxiliary Fishing Schooner.

Defendants and on being heard by a court of general quarter sessions at Clerkenwell, London, the appeal was upheld and the conviction quashed. The Plaintiff carried the question up to the King's Bench Division of the High Court of Justice and the court, including Lord Chief Justice Reading, Mr. Justice Darling and Mr. Justice Avory reversed the decision of the court of general sessions and ruled that Sir John Dickinson knew a sardine when he saw one, so the Norwegians are now packing fish for Great Britain under the name Brisling, but they continued to ship their product to Canada and United States as sardines.

query and says that in its regulations governing canneries "sardine means any small elupeoid fish." Suppose some enterprising canner sent his fish boat out into the gulf stream far enough to pick up one of those poisonous elupeoid fish which abound in the West Indies — perish the thought.

So far as names go, sardine has nothing on either sprat, pilehard or herring, but commercially it has a value and we have found it profitable to infringe on that value by purloining the name instead of creating a new one of our own.

The French and British, however, have barred the



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Don't wait until the hot weather before ordering. Last minute jobs are never satisfactory. Write us now. Take time to decide. No matter what you want from the small refrigerator silent salesman to a complete refrigerator plant, we will be glad to mail descriptive catalogue and estimate on your requirements. You can order now for delivery next spring.

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SHIPMATE RANGES

Smallest size
Body 18 1/2 inches long.

Largest size
No limit to length.

By sticking his knife into the foremast, a Finnish sailor could make a fair wind. Nowadays, a sailor of any nationality can make a good dinner by sticking his knife into a meal cooked on a SHIPMATE.

Made by

The Stamford Foundry Company
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Established 1830

BOLINDERS HEAVY CRUDE OIL ENGINES

For Fishing Vessels of All Kinds Built in sizes of 10 to 160 B.H.P. 2 cyl.
240 to 500 B.H.P. 4 cyl.



British Herring Drifter, length 82'9", breadth 18'6", equipped with one 120 H. B. P. Bolinder Engine.

The Captain of this vessel writes as follows:

"We had a run with two of our F. R. drifters down Loch Lochy, but we easily beat them by a mile and a half and coming down from Londonderry we passed every drifter and motor we came in touch with and there are the very best of the fleet here now. I don't think there is a drifter going that could beat the "Bolinders." She is working first class now ahead and astern as quick or even quicker than the drifter."

Vessels engaged in the trawler and drifter industry will be more efficient vessels if equipped with Bolinder Crude Oil Engines. We shall be glad to submit figures proving this contention.

Swedish Steel & Importing Co., Ltd., Montreal

door to our fraud and both Canadian and American packers must drop the word sardine from labels on fish intended for export to these countries, but even this has not forced the coining of a new trade name for we have been content to export our product as "Little herrings" a name without punch, commercially, or of national value. Imagine a Frenchman calling his pack "Little pilehards".

Canners on the California coast, where runs a close relative of the pilehard, (*Clupanodon Caerulous*) have named their pack for export "California pilehards."

The time is opportune for Canadian canners to select a trade name for their pack and stage a world wide publicity campaign to put it across big. No doubt the Department of Fisheries and Canadian Trade Commission could be induced to assist in so good work. All that is needed is the name and several have been suggested already, that are as euphonious as sardine. Herewith a list of all which, but the first, should be considered with the prefix "Canadian".

Canadines.	Brit.
Fundyfish.	Herringlet.
Fundlings.	Cluplings.
Fundys.	Acadines.
	Brunlets.
	Novawieks.
	Princelets.

No doubt, a still better name can be suggested, and if the reader has one at hand he should send it to Dr. A. G. Huntsman, Professor of Biology, University of Toronto, who is giving attention to the selection of better trade names for Canadian fish.

AN ABLE LITTLE CRAFT.

We print herewith a broad side and bow view of one remarkable little boat. This vessel is being adopted by the United States Coast Guard as the standardized lighthouse tender and when you read what follows in reference to the performance of this little vessel, you will agree that she is a wonder.

This boat was designed by Mr. Hitchins of the Lighthouse Department, U. S. Coast Guard, Buffalo,

N. Y., and measures 26' overall, 7' 6" beam, 4' depth of hold and displaces 7,500 pounds. It was designed on a block co-efficient of .763 and the co-efficient of the load water-line is .60. The power plant is the Model "D" 12-15 h.p., 2 cylinder, 4 cycle Sterling, which develops 11½ miles per hour over a measured course. This boat has been running the entire season of 1918, operating as a tender to Lightship No. 98. We do not have the dimensions of Lightship No. 98, but the little tender is powerful enough to tow the ship about the harbor in Buffalo, which has been done



Bow View of Lighthouse Tender.

on occasion, and No. 98 is the standard size for a lightship, probably 100 feet long.

Another stunt which the little vessel has accomplished was to pull a 14" square by 30' long spar buoy attached to a concrete sinker weighing 1,400 pounds out into Lake Erie, dragging bottom with the anchor on it, out for a distance of about three miles and leaving the buoy to mark the entrance to the channel, for traffic down the Niagara River.

This little boat can carry a ton of cargo in the after cockpit without settling at the stern and is a remarkably fine boat. There is not a straight line on her. The local lighthouse keeper with thirty years experience says she is the first real boat with a real motor for the purpose that he has operated since being in the Service.



An Able Lighthouse Tender Powered With Model D. Sterling 12-15 H.P.



THE TRADE MARK OF QUALITY
WHEN PLACED ON

**LONG COATS
and
SLICKERS**

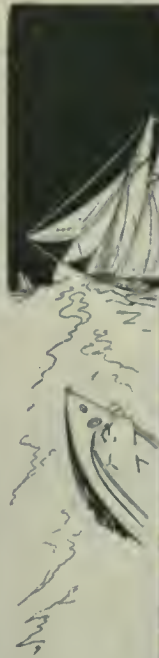
"Takes the Wet Out of Rain."

**FOR THE
FISHERMAN**

A STRONG, well made garment—that will stand all the hard wear that a coat of this kind will get. The shoulders and sleeves are double, the body being lined half way down. Made of heavy material finished with corduroy collar and two outside pockets. Fastened with solid brass rust-proof clasps. The name "Tower's Fish Brand" is found only on the best waterproof clothing. Ask your dealer.

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Toronto. Halifax. Vancouver.
Coast to Coast Service.



Points True!

THE  OIL COMPASS

Dial adjusted to remain steady in a seaway, and will not warp or crack, very sensitive in smooth water, which usually prevails during fogs. Needles of special magnetic steel. Absence of floats, needle tubes, rubber packing or mica simplifies instrument and lessens chances of trouble. At your dealer's.



FREE BOOKLET, "Compass Talks & Tests on request. Contains practical information and tables for recording deviation.

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22 S. Main St., Middletown, Conn., U.S.A.

World's Largest Mfrs. of Marine Hardware

CAILLE

FISHING BOAT MOTORS

There are over a thousand fishing boats equipped with Caille heavy duty motors along the Newfoundland coast. Ask the owner of any one of these boats what he thinks of Caille motors and you'll get a more glowing report than ever appeared in any catalog.

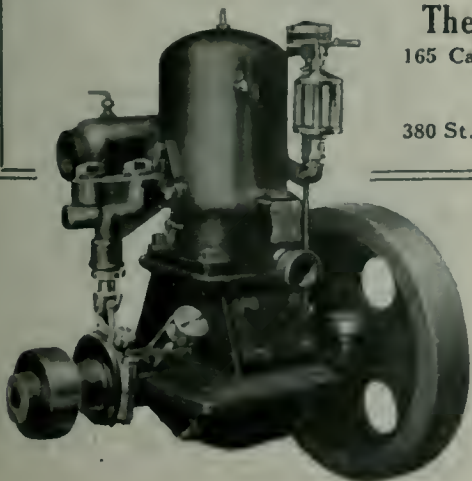
And yet, their enthusiasm is not overdrawn. They have just cause to be proud of their Caille motors. For many's the time that little motor was all that stood between them and death. Its reliability—its sturdiness—its perfect behavior under the most adverse circumstances is all that saved their lives in many a rough sea. Ask any user. Write for beautiful catalog. Always give length, beam, draft and type of boat to be powered.

The Caille Perfection Motor Co.

165 Caille Bldg., - - - Detroit, Mich.

Perfection Motor Co.

380 St. James St., - - - Montreal, Can.



Caille 8 H. P. Heavy
Duty Fishing Boat Motor



McAVITY'S GETTING BACK TO PEACE TIME WORKING TRIM.

Messrs. T. McAvity & Sons, Ltd., of St. John, (N.B.) who are probably the largest concern in the Dominion in their line, which is the manufacture of Brass and Iron goods of all descriptions, after having been engaged in war contracts since March 1915, have completed the same transformation of their munition plants and are now prepared again to render to their customers that same good service for which they were noted in the days "before the war".

When the call came in the early days of the war for Canadian Manufacturers to undertake the supplying of shells to "convince Bill" McAvity's were among the first of these to do so, accepting their initial contract for 4.5 British high explosive shells in March '15, and completing same early in September of that year. Since then they have turned out numberless thousands of 3.8, 4.5, 4.7, 8-inch, 9.2 and 9.5 shells for the Canadian, British and American Governments as well as a quantity of 9.5 Cast Iron target practice Projectiles and a large amount of manufactured Brass and Iron Marine work which helped in a large part to enable Canada to play the part she did in solving the world's shipping problem at the time the Hun policy was "sink on sight."

Their Rothesay Avenue Plant which was erected in 1916 and was used solely in the manufacture of munitions has been re-fitted throughout and the Brass Foundry, Iron Foundry, Machine Shops, Pipe Plant and Warehouses which have before been located in different sections of the city will be consolidated into this one twenty-eight acre plant. A large Steel Foundry has been erected and is now turning out steel castings of all descriptions.

The firm carried on their regular business, whilst they were engaged on war work, and the success they achieved in meeting war conditions in regards to deliveries of orders will not be quickly forgotten by their customers, although at times it seemed almost impossible to say just where raw material was to be obtained. Railroad Supplies were in demand in larger quantities than ever before and as this class of work is an important part of the McAvity line the orders for same handled by them amounted to a considerable amount of business.

A new catalogue showing their extensive line in detail has been compiled by Messrs. McAvity and will be distributed very shortly. The book contains some twelve hundred pages and is a very complete index of the goods made by McAvity's, who by the way, have been doing business in St. John since 1834.

A NEW HEAVY DUTY ENGINE.

The Hamilton Gear and Machine Company of Toronto are putting on the market a heavy duty four-cylinder engine, 22 horse power, which is especially adaptable to the fishing industry. In our advertising columns this engine is fully described, and the low price quoted makes it particularly attractive. It would be to the advantage of our readers considering the purchase of a marine engine to get full particulars of this from the above company.

MOTOR FISHING BOATS ON THE MISSISSIPPI.

The impetus that the internal combustion engine has given commercial fishing on inland rivers can scarcely be overestimated. It is of particular importance just now since the demand for fish has so greatly increased in our effort to conserve meat. The Mississippi river, one of the greatest fish-producing bodies of water in the world, is a striking example of the wonderful boost liquid-fuel power has been to the fish industry.

Nearly 10,000 men are engaged in fishing and clamming on the Mississippi. In the old days they used row boats exclusively. Fishing grounds were usually several miles away from their home and it required the best part of the day to get to and from the fishing grounds. There was the laborious effort of plying the oars for long hours also. It is little wonder that the fishermen eked out so small an existence under such conditions that only a very inferior class of men were in the business.

The marine motor has revolutionized the order of affairs. There is money in the fish business now and also the market is supplied with several hundredfold as many fish from the Mississippi as formerly. Practically every fishing boat on the river has its little three or five horsepower engines and most of the fishermen have beside power launches. They start out in the morning with a launch and several boats usually in tow and in a very short time are in the sloughs and lakes setting their nets and lines. Having made their haul they are back at camp in a short time getting the fish ready for sale while they are very fresh.

Aside from the basses, pickerel, pike, sunfish, croppies and catfish, which are recognized everywhere as the best food and game fishes in the world, the Mississippi holds in its waters enormous quantities of buffalo, sturgeon, suckers, carp, sheep-head and dogfish. These are all now marketable fish and by far the largest per cent of fish marketed are of this class. The yearly catch reaches many million pounds. Most of it is shipped to eastern markets. New York City is the largest buyer. One single haul off the shores of Iowa recently netted fishermen who landed it \$2,000.00. A fish dealer who buys over a stretch of twenty five miles of the river estimates that a mile of the river yields about \$3,000.00 a year. The fishermen say there is no falling off of the number of fish in the river and that with proper management the output can be increased. The use of the gasoline engine and the dollars it is putting in the business is attracting a better class of men to the profession and the present prospects are that the industry will grow in importance. Motorship.

FISH TRADE OPPORTUNITIES ABROAD.

Members of the Canadian Fisheries Association who desire to enter the export trade in canned and preserved fish are requested to communicate with the Secretary, C.F.A., Room 30-B, Board of Trade Bldg., Montreal. Bulletins, giving particulars of these Trade Opportunities, are mailed to all members interested. These bulletins are sent to bona fide packers and producers in Canada only.

THE SHACK LOCKER

BY

F. W. WALLACE

Cloth, \$1.25

CANADA'S BEST WRITER OF SEA YARNS

If you are not satisfied with our judgment that this book is worthy of a place in your library in comparison with domestic and foreign literature in this department of fiction your money will be refunded.

AT ALL BOOKSELLERS OR

J. M. DENT & SONS, Ltd., Publishers, London, Eng., TORONTO.

“SCYCO” OILED CLOTHING

Red and Blue Label

Wet Weather Garments

“Red Label”

Double Garments

BEST FOR THE FISHING TRADE

Write us for price list.



Manufactured by

SCYTHES & COMPANY Limited

MONTREAL

TORONTO

WINNIPEG

THE PACIFIC CODFISH FLEET FITTING OUT.

After an eventful voyage from the Fiji Islands with 300 tons of copra, the schooner John A., of the Pacific Coast Codfish Company arrived in Seattle early Saturday morning, April 12. While the John A. is preparing for a trip north, the schooner, Maid of Orleans, of the same company is being fitted up and manned with a big crew of fishermen by Capt. H. Gard. She will sail for the fish banks Monday—the first of the 1919 codfishing fleet to leave Seattle Harbor.

There are a number of codfishers now in the North from upper Sound, San Francisco and other places. The schooner Wawona of the Robinson Fisheries, is ready to join them.

Mate A. Slottstrom, of the John A., reports that the schooner Charles R. Wilson, of the Pacific Coast Codfish Company which is to be outfitted for the North upon arrival in Seattle, was preparing to sail from the Fiji Islands when the John A. sailed. She lost her sails the first day at sea and had to return to be equipped, but is expected any day with the Blakley, a four-masted schooner in charge of Capt. Manca.

The John A., whose captain is John Grotle, experienced a hurricane on the way over and was buffeted by strong head winds. She made the voyage in sixty-six days.

FISH PACKAGES MUST BE FULLY ADDRESSED.

The Canadian Fisheries Association's Transportation Committee have been advised by the Dominion Express Company that from now on express packages of fish must be marked with the full name and address of the consignee.

FISH ITEMS FROM CHEMICALS ABSTRACTS.

The nutritive value of certain fish. J. C. Drummond, *J. Physiol.*, 52, 95-109 (1918). — The coagulable proteins of fish muscle (cod, herring and canned salmon) are equal in nutritive value to those of beef. Fatty fish may also serve as a valuable source of fat-soluble vitamins. Water-soluble vitamins was not detected in appreciable amounts in the muscle of tissues of the fish examined.—(Chem. Abs.)

The value of herring as food. E. J. A. *Nature*, 102, 6-7 (1918).—A review of a paper of J. Johnstone in the 1917 report of the Lancashire Seafisheries Laboratory. Analyses are given of the flesh, which is shown to vary greatly in composition with difference of season and of states of development. In addition to many analyses of fresh herrings the original paper contains others for cured fish of various kinds, pickled herrings, kippers, bloaters, and red herring as well as sprats, and the effects of cooking and chemical effects of salting are discussed.—(Chem. Abs.)

Deodorizing fish oils. K. Inooka, *Jap.* 32,772, June 3, 1918. Fish oil is placed in a kettle with sawdust, green leaves of the *Crytomeria* and the *Chamaecyparis obtusa*, and H₂O. This mixture is stirred for 2 hours with heating. It is filtered and then exposed to sunlight for a few days. — (Chem. Abs.)

FISH IMPORTS RESTRICTED BY GREAT BRITAIN.

The following articles of fish are restricted from importation into Great Britain except under license from the Controller, Department of Import Restrictions, 22 Carlisle Place, London, S.W.I.

Bristlings, herrings, sprats, mousses, tinned in oil, or other dressings.

Crabs, prawns, shrimps and oysters, canned.

Lobsters, canned.

Exporters may keep posted on alterations by communicating with the Canadian Trade Commission, Ottawa.

CONCRETE VESSEL TO BE EQUIPPED WITH CRUDE OIL ENGINE.

Mr. W. N. McDonald, Sydney, N.S., expects to launch shortly his concrete motorship "Permanencia", which event is looked forward to with a great deal of interest in shipping circles. The vessel is 127 ft. long, 27 ft. wide and 12 ft. deep and will be equipped with one 240/265 B. H. P. Bolinder Heavy Crude Oil Engine (equal to about 330 T.H.P.) She is expected to attain a speed of 9 knots loaded.

The guaranteed maximum fuel consumption of the above engine is 0.582 lbs. per Brake horse power per hour, or about 19 gallons. The actual consumption is even less. For a 24 hours continuous run the fuel consumption at the maximum rate is about 456 gallons, or 3,400 lbs. A steam engine of the same power would require during same length of time about 19,800 lbs. of coal or nearly six times the weight. For a continuous run of 10 days the motorship will, consequently, need about 17 tons of fuel oil, while a steamer would consume 99 tons of coal. This means that the motorship will carry 82 tons more cargo with a smaller crew and at less expense.

FRISCO STANDARD ISSUE EXCELLENT "BOOK OF BOATS."

One of the best demonstrations of the ever increasing popularity of the marine motor in its application as a propelling agent in all types of craft, is to be seen in the pages of the Frisco Standard "Book of Boats." This splendid book is published by the Standard Gas Engine Company of San Francisco, and will delight the eye of the boat lover. Profusely illustrated by photographs and plans, the "Book of Boats" portrays the adaptability of the motor in driving practically everything that floats from pleasure launch to the large coastwise and offshore freighter. The book is a pleasing advertisement of the company's product inasmuch as, besides featuring the many types of craft equipped with Standard Gas Engines, it also portrays something of the romance attached to their various vocations. The able freight and tug boats of the Pacific Coast rivers; the trading schooners of the Pacific Islands and the Alaskan and Behring waters are illustrated pictorially and historically, and readers of the "Canadian Fisherman" will be interested by the large part the motor boat plays in the fishing industry by the photos and descriptions of the halibuters, cannery tenders, trollers, seiners and other fishing craft with which the book very largely deals, and among which many Canadian vessels are included. The "Book of Boats" is well worth securing and can be had from the Standard Gas Engine Company, San Francisco.

W. R. SPOONER

Wholesale and Commission Dealer

FISH OF ALL KINDS

119 Youville Square, - MONTREAL

*I am in the Market at all times to Buy or Sell on
Commission, Fresh, Frozen Smoked and Salt Sea
and Lake Fish in Carload Lots or less.*

CORRESPONDENCE SOLICITED

REPRESENTING

National Fish Company, Limited

Halifax and Port Hawkesbury, N.S.

OWNERS AND OPERATORS

Steam Trawlers—"VENESTA" and "LEMBERG"

"NATIONAL BRAND"

Haddies, Fillets, Kippers,
Bloaters, Scotch Cured Herring

PRODUCERS

Fresh, Frozen and Salt
Sea Fish

J. Bowman & Co., Port Arthur, Ont.

Wabakin Fish Co., Montreal, Que.

A. W. Fader, Canso, N.S.

CANADIAN FISHERIES ASSOCIATION PRESENT RECOMMENDATIONS FOR BETTER FISHERIES DEVELOPMENT.

(Continued from page 159.)

biological and commercial faculty should be built up in the educational centres of the Maritime provinces. Heretofore all the research work that has amounted to anything in Canada has been done by the heads of the biological faculties of the universities of Toronto, McGill and Queen's together with those in charge of the biological stations, none of which, by the way, is located at Ottawa. They are located in the fishing districts. This work should be extended and strengthened, and the best way to do it is for the Federal Government to assist the universities that are situated in close proximity to the fishing industry to build up important biological and commercial faculties. If a Central Bureau of Research is established at Ottawa with the object of blanketing the research work of the whole Dominion it will stultify the research that is already being done in our educational centres and will retard for years the proper development of the fisheries.

The proposal that is now before the House of Commons comprehends the establishment not only of a Central Research laboratory, but also one of standardization. There is no question but that Canada should have a Bureau of Standards. But it would be a great mistake to separate such a bureau from the proper government department and put it under the direction of the Honorary Advisory Council of Industrial and Scientific Research. There is no other country that we know of that has admitted such a course. In the United States,

their Bureau of Standards is a part of the Department of Trade and Commerce. Like Canada, the United States has an Advisory Board of Research and Resources, and the director of the Bureau of Standards is one of the members of this advisory board. But the work of the Bureau of Standards in the United States is not under the direction of the Advisory Board, it is under the direction of the Department of Trade and Commerce. The separation of work such as this from our government departments and placing it under special commissions and boards is tending to weaken and cause a good deal of overlapping and discontent among the departments. The country needs strong men at the head of its governmental departments and it is not likely to get such men if work which properly belongs to the departments is separated from them and overlapping and discontent is allowed to creep in. These were some of the considerations that led the delegates of the Canadian Fisheries Association which assembled at Ottawa on the 12th of May to pass the following resolution:

"In the opinion of the Canadian Fisheries Association, the establishment of a Central Bureau of Research is not advisable, but the work now being done by the Biological Departments of our Universities should be strengthened by a Federal Subsidy distributed through the Provinces in the same manner that the Federal Subsidy was given to the Agricultural Colleges. The establishment of a Bureau of Standards is advisable, but should be put under the jurisdiction of a Department of the Government rather than under the Advisory Council of Industrial and Scientific Research."



The Guysboro Railway.

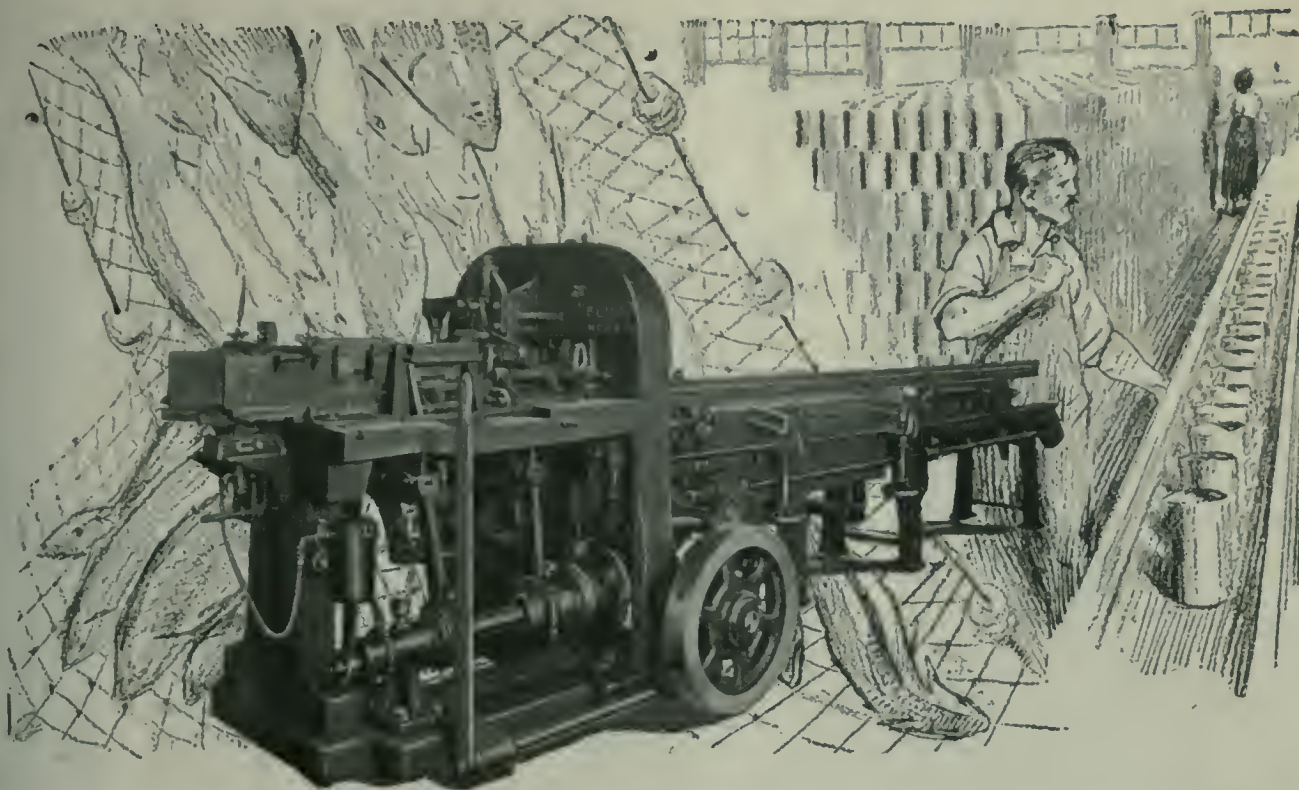
A Bit of Construction, That Would be a Real Step Forward, and Prove an Important Item in any Program of National Reconstruction Contemplated To-day.

By CECIL BOYD.

Now that Reconstruction, with its building programs, is in the air, and everyone is thinking and talking, or pretending to think and talk along the lines of constructive development, would seem to be an opportune time to bring again before the public, and to the attention of the Powers that be, the crying need, for a bit of construction, long, long overdue down in this Eastern end of Nova Scotia. We refer, of course, to the building of that much-talked-of, and oft-projected, but not-yet-connected railway through Eastern Halifax and Guysboro counties, the so-called "Guysboro Railway."

Canada, with her immense distances, owes much to

the railroad. It has taken a large share in the connecting-up of her far-flung borders, and in the opening up to commercial enterprise of the grain growing and agricultural possibilities of the prairies, the industrial capabilities of East and West, the fisheries of the coast, and her many other rich resources. But the space-slaving properties of this beneficent utility have not been, as yet, as equitably distributed in all cases as they might and ought to be. While some sections rejoice in a superfluity of this valuable asset, others have been wholly forgotten and neglected, left to tread a lonely furrow, without this helping hand. A most glaring example of the latter is seen in



“CANS!---MORE CANS!”

When the run of fish is good that is the cry. If the pack is to be successful and profitable the machines that meet emergencies must be dependable.

The supply of cans must meet the incoming rush of fish smoothly — always ahead, no stoppage for repairs, no failure on the part of any of them to perform its share.

“Bliss” Automatic Can-Making Machinery is used in every part of the world where cans are required—is the development of nearly sixty years—can be depended upon.

“BLISS” AUTOMATIC LOCK-AND-LAP SEAM BODY-MAKER
No. 22-N is the machine illustrated above. Shown with automatic suction blank feed and roll solder attachment. Production speed upwards of 150 per minute.

Write for Catalogue Section No. 18-A



E. W. BLISS COMPANY



Main Office and Works; BROOKLYN, N.Y., U.S.A.

CHICAGO OFFICE
People's Gas Bldg.

DETROIT OFFICE
Dime Bank Bldg.

CLEVELAND OFFICE
Union Bank Bldg.

1857

1917

LONDON, S.E., ENGLAND, Pocock Street, Blackfriars Road

PARIS, FRANCE, 100 Boulevard Victor-Hugo St. Quen

the wholesale way in which this southeastern shore of the Nova Scotian mainland has been cruelly left to shift for itself in the matter of up-to-date transportation facilities. Time and time again, the subject has been agitated and talked over; time and time again, political parties and prating politicians have glibly promised action; time and time again so-called surveys have been made, and contracts drawn up; but as to the accomplished fact, that is still decidedly conspicuous by its absence.

In an article by the writer, published in 1915, some statistics were given, which well illustrate the extent of this isolation, and which, as I believe they still remain practically exact (they certainly do as regards poor old Guysboro county) may profitably bear insertion again. Here they are:

County.	Miles of Railway.	Area in Sq. miles.	Area for each mile of Rly.
Halifax	162	2,123	13
Cumberland	149	1,683	11
Annapolis	122	1,323	10 ³ / ₄
Cape Breton	115	966	8
Pictou	108	1,124	10
Lunenburg	105	1,202	11
Colchester	90	1,451	16
Inverness	89	1,408	15 ³ / ₄
Shelburne	85	920	10 ³ / ₄
Hants	85	1,229	14 ¹ / ₂
Kings	59	864	14 ¹ / ₂
Digby	55	1,000	18
Queens	54	1,102	20
Yarmouth	50	858	17
Antigonish	43	556	13
Richmond	36	489	13 ¹ / ₂
Victoria	10	1,111	111
Guysboro	7	1,656	236

The above table speaks for itself, and tells its own tale of neglect. From it we see that Guysboro county, the third county in the Province in point of size, is expected to get along and develop itself, on 7 miles of rail, which nips through one corner of the county, at Mulgrave, on its way to other more favored parts.

Experts have more than once investigated the traffic possibilities of this district, and reported favorably as to the business prospects of certain proposed routes. Messrs. Archibald and Donkin, both, I believe, railway men of reliability and experience, handed in such a report, a good many years ago now. An extract or two from their report may be of interest, as showing with what a favorable eye they regarded the traffic of the district. Here is one.

"The writers of this report are both familiar with the districts now served by existing railways in Nova Scotia, Cape Breton and the adjacent Province of new Brunswick, and Prince Edward Island. They have no hesitation in stating that hundreds of miles of these roads cover territory that does not compare in population, wealth and sources of traffic with the country, it is now proposed to open up with this line. An examination of the map enclosed with this report will show that Eastern Halifax, the southern portion of Pictou and Antigonish, and practically the whole of Guysboro counties are at present without any railway facilities whatever."

The report goes on to enumerate in detail the various industrial features, which promise paying de-

velopment, and mentions farming, fishing, mining, lumbering, and tourist traffic. Of the fishing it says:—

"The fishing industries along the southern shore also affords profitable occupation for labor, and are suffering for want of proper railway facilities. Good prospects for carrying fish."

Then Mr. Louis Whitman, C.E., in a report, made in 1908, on the proposed Intercolonial Railway Branch to Country Harbor, after making some encouraging estimates of probable revenue and operating expenses, says:—

"Other sources of revenue would be chiefly lumber and fish, with the possibility of Country Harbor developing into an ocean terminal for through freight. Country Harbor is well situated for carrying on a large lobster and fresh salt fish business, and this would undoubtedly follow as soon as railway communication was established."

Further on in his report he says:—

"Putting the fish and lumber business down at a low figure and omitting any mining possibilities, it will be safe to figure on a revenue of \$350 per mile, in addition to that stated above, making probable excess revenue as follows:

	Per Mile.
Probable revenue from local population ...	\$ 980.00
Probable revenue from mails	50.00
Probable revenue from other sources	350.00
	<hr/>
	\$1,380.00
Operating expenses	1,256.00

Excess revenue \$ 124.00

"To this can be added tourist travel and other possibilities that cannot be estimated, and a yearly increase of at least five per cent of the traffic shown above, which leads to the reasonable conclusion, that this section of the line would yield a fair return, for a line not costing over \$20,000 per mile, including the subsidies."

Further on, writing of the possibilities of developing a fresh fish freight from Country Harbor, Mr. Whitman takes the Canso trade via Mulgrave as a basis, and gives the figures for the Canso fish freight from 1896 to 1907 as follows:—

Year.	Tons Fresh Fish.	Value.	Freight paid.
1896	900	\$73,000.00	\$6,460.00
1897	987	77,600.00	9,596.00
1898	1,415	99,050.00	11,312.83
1899	1,353	94,710.00	14,443.00
1900	1,450	100,000.00	16,500.00
1901	1,400	133,000.00	19,760.00
1902	1,800	126,000.00	18,720.00
1903	1,600	112,000.00	16,840.00
1904	1,700	127,000.00	17,580.00
1905	2,201	164,070.00	23,032.06
1906	3,154	220,780.00	29,063.00
1907	3,156	220,920.00	27,417.70

The report then proceeds to comment on the fish business at Canso, as per the following extract:—

"The fresh fish business has only been carried on for ten years at Canso, and has increased from 900 tons to 3,156 tons, and will be increased to 5,000 tons inside of four years, if the business is pushed at all. The fishing is not carried on at Canso during the Lenten season, when the demand is greatest, and on the rest of the coast in the vicinity of Country

GOODRICH

"HI-PRESS"

Rubber Footwear

THERE are good boots and poor boots. The market is full of them—and as far as looks are concerned you often cannot tell the poor ones from the good ones.

To make no mistake—always insist on Goodrich "Hi-Press" Rubber Footwear. You can tell it by the Red Line 'Round the Top.

Nothing like it anywhere—far outwears ordinary boots—can't leak or peel. Made IN ONE SOLID PIECE.

All styles—Hips, Shorts, Arctics, Shoes, etc.—for fishermen, miners, lumbermen and laborers.

Sold by 40,000 dealers.



Made by

THE B. F. GOODRICH RUBBER CO.

Factories: AKRON, OHIO



Harbor, the population is idle from the first of December to the first of April. At the present time the Montreal markets and those of the West are supplied during the lenten season from Gloucester with fish caught on Sable Island and Nova Scotia banks only two to four hours' sail from Country Harbor, and from two to four days' sail from Gloucester."

This gentleman also gives some figures, as his conception at that time of the capabilities of the fresh fish business on the coast from Canso to Country Harbor. Here they are:

Place	Probable Shipment of Fish	Probable Shipment After Five Years.
	Once. Tons.	Tons.
Country Harbor	200	2,000
Isaac's Harbor	1,000	3,000
Goldboro	1,000	4,000
Drum Head	500	3,000
New Harbor	500	2,000
Little Harbor	100	500
Tor Bay	200	2,000
	<hr/>	<hr/>
	3,500	16,500
	<hr/>	<hr/>
Larry's River	500	3,000
Charles Cove	200	1,000
Cole Harbor	300	2,000
Port Felix	500	4,000
White Head	1,000	5,000
	<hr/>	<hr/>
	2,500	15,000
	<hr/>	<hr/>
Queensport	1,000	4,000
Dover	1,000	4,000
Canso	5,000	15,000
	<hr/>	<hr/>
	7,000	23,000
	<hr/>	<hr/>
Total	13,000	54,500

"There is no fishing done during the Lenten season, when the demand is largest. The trade is changing rapidly from salted to fresh fish. The other prospects of traffic would be fresh and salt fish and lobsters from Guysboro and Canso (the largest fishing centre in Nova Scotia), gold mines at Forest Hill, and the possible development of iron ore deposits at Salmon River Lake, together with a certain amount of summer tourist travel. From which, with the usual increase of 5 per cent in local traffic it can be assured that this branch would pay to operate on a one train each way per day basis."

From the above extracts, we get an idea of the opinions, fortified by figures, formed by experts, who looked over the ground, and whom one would naturally suppose capable of coming to a fairly reliable conclusion. As to the estimates given above regarding revenue and operating expenses, the figures, of course, are more than 10 years old now, and may need revision. Not being at all familiar with the running of railways, the present writer cannot speak with any authority, when it comes to giving even approximate figures on such matters, but common sense and common comparison tell us that the latent wealth of the territory in question would well repay, in the course of time, both in earnings and general benefit to the community at large, any expense involved in its development.

Mr. Whitman, it will be noted, was reporting on the Country Harbor route. Now, we in the Eastern end of Guysboro County would hardly be satisfied with anything in the railway line, that stopped short of Canso, which, after all, is easily the chief fishing centre in the county, but we are not at all fussy as to the route taken in getting here. That is a matter for experts to decide, though we cannot speak with such expert authority as to the best route, we do say, boldly, and confidently, that the whole coast, as well as the whole interior, is rich with promise. What is needed badly is a little performance to bring out the promise, and cultivate it.

It will also be noted that Mr. Whitman makes a prediction, based on the figures for 1907 and preceding years, that the fresh fish business at Canso "will be increased to 5,000 tons in four years, if pushed at all." Well, here are the figures for the next half-dozen years:

Year.	Tons Shipped.	Value.	Rly. Charges.
1907	3,156	\$220,920	\$27,417.70
1908	3,372	235,900	31,644.03
1909	2,371	191,170	26,685.55
1910	3,431	240,100	36,022.58
1911	4,110	308,250	45,179.11
1912	4,238	317,850	45,730.60
1913	5,314	398,550	60,442.00

From these we see that his estimate was approximately realized, and this, remember, in spite of the fact, that the expected railway, did not materialize at all. It is well to remember also that the above figures do not tell the whole story. For example, in 1913, in addition to the total shipped via Mulgrave, as set out above, the various firms forwarded to Halifax by steamer, the following:

250 tons fish oil	\$12,000
75 tons fish glue	9,000
350 tons fish fertilizer	12,250
1,100 tons fish	77,000
	<hr/>
	\$110,250

I regret that statistics for later years are not at hand for this article, as they would furnish still further evidence of Canso's success, though toiling under the heavy handicap of primitive carrying facilities, in building up a valuable fish trade.

In the May, 1915, number of the Canadian Fisherman, appeared a short article, by the present writer, on this same subject. It was backed up by a strong editorial, from the pen of the editor of that journal, in which, among other things, he said:—

"Canso, in Guysboro County, N.S., is not a mushroom town of recent growth. It is one of the oldest settlements in Canada, and came into existence because of its proximity to the great fishing banks of the North American Coast. Large quantities of fish are shipped to all parts of Canada from Canso, and great fleets of fishing craft use the port for harbor and the purchase of supplies, yet Canso has been denied railway facilities throughout the years it has bravely struggled to keep pace with the progress of other towns with less to recommend them.

"In this age it is unthinkable that a centre like Canso, where so much lucrative business can be got for transportation by rail, should be neglected, while millions of dollars are invested in laying railroad lines into territories, which will never pay the interest on the cost of construction. The agricultural interests of the West got the Hudson's Bay Railroad

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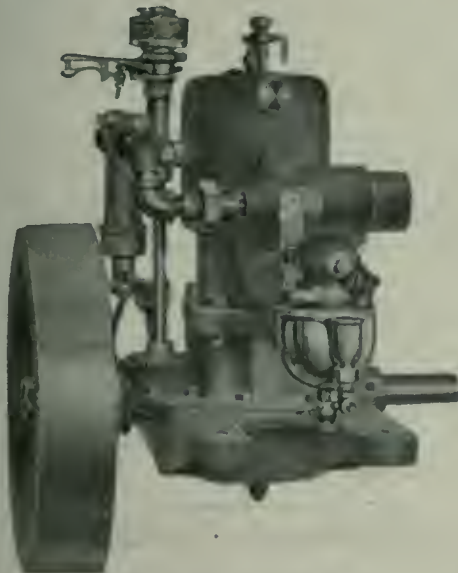
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built to further an idea of grain transportation, which is exceedingly ephemeral. It is still more unthinkable when one considers that Canso is asking but for a few miles of railroad to link the town with the markets of the West.

"The resources of the county are being strangled by the lack of railway facilities, and realizing this handicap, as far as the fisheries of the district are concerned, we would advise every resident of Guysboro County to co-operate with each other, and through their Parliamentary representatives demand that the Government railway be extended to the eastern limit of the county. The whole future of the district depends upon the railroad, and those vitally interested should not rest until their request is granted."

Here we find another person of discernment, possessed of practical and comprehensive knowledge of the fishing industry, and acquainted with the section in question, lending the weight of his strong appeal to the project advocated in this article.

It appears that great men, as they grow in power and responsibility, are apt to forget to further some of the worthy causes and projects they advocated in their earlier, less well-known, and less responsible days. Sir Robert Borden would seem to be a case in point. In 1910, Sir Robert, then Mr. R. L. Borden, leader of H. M. Opposition at Ottawa, was strong in his support of placing a railway for the use of Eastern Halifax and Guysboro County. In December of that year, in speaking to a resolution, in regard to "the extension of the Intercolonial Railway into the non-railway counties of Eastern Nova Scotia," introduced by Mr. MacKenzie (who, curiously enough holds the same Parliamentary position to-day that Sir Robert did then), our present Premier said in part:—

"I passed along the shore of the County of Halifax to the County of Guysboro last summer. I travelled altogether about 500 miles through districts not served by railways at all, and where railway development would mean a great deal to the people, and lead to a considerable development in that little Province.

"I can tell the Minister of Railways a great many things I saw. I could speak of a great many districts where railway facilities might mean a great deal to the people, and might lead to very great progress and advancement in that little Province. I saw in the County of Guysboro, just across the line from the County of Halifax, one of the most splendid harbors that can be found anywhere in the world—Country Harbor. This harbor stretches back ten miles from the mouth, with water close up to the shore everywhere from 45 to 60 feet in depth, land-locked twice, and with a splendid roadstead outside, where in almost any weather, ships can ride in safety.

"The people of Halifax County as well as those of Guysboro County, and those of other Counties in the Province of Nova Scotia, to which allusion has been made, have, it seems to me, fairly good reason to complain that their interests in respect to railway development have not been properly attended to in the past.

"The Minister of Railways and Canals says that great projects of development have been and are being undertaken to-day. In that connection, I have

just this word to say: If the resources and revenues of this country are great enough to build 1,400 miles of railway through a practically uninhabited country between the city of Quebec and the city of Winnipeg, it seems to me there is good reason for the complaint on the part of the people of counties in the Province of Nova Scotia, that the Intercolonial Railway has not been developed and carried into these counties. It seems to me, that where these people have been living for a hundred years—as, in some counties of Nova Scotia they have been—without opportunity for railway communication, we might well have had a little regard for them, before we commenced to build 1,400 miles of railway, through a country with absolutely no population and of the resources of which we have no adequate knowledge, though at this moment the railway is now perhaps more than half constructed."

Just as our Prime Minister felt then, so we feel to-day. As was the case at that time, as mentioned by him, so it is again the case to-day that, "great projects or development have been and are being undertaken, some of them, we are told, more with the object of furnishing employment, than of filling any very vital need. When the estimates were brought down at Ottawa, a few weeks ago, something over \$50,000,000 was voted for branches, repairs, and improvements to the national railways. With this we have no fault to find, except insofar as the claims of Guysboro have been ignored. I venture to hazard the statement, that scarcely a cent of that 50 millions could be spent to better and more permanent advantage, than in helping the fishery and other resources of southeastern Nova Scotia to come into their own.

While the Great War was on, and absorbing Canada's energies to the exclusion of many other pressing matters, there may have been some small excuse for a "let things stand as they are" policy, but now that Peace is at the threshold, and Reconstruction schemes are in the air, there can hardly be any justifiable excuse for the further shelving of this undertaking, so vital to the full development and future prosperity of this district.

In this article, we have endeavored, briefly, to call attention to the hampering isolation, under which Guysboro County suffers, the way in which her transportation needs have been ignored, the promising field she offers for commercial enterprise in the development of her fishery and other resources, as testified to by many whose conclusions carry authority, and here we rest our case in the hope (a hope, which, though long-deferred, still struggles to survive) that steps will be taken at no distant date, to make amends for the shameful neglect of the past, and brighten the future with the strength derived from a hope realized, a longfelt want satisfied.

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A MONTHLY JOURNAL DEVOTED TO THE COMMERCIAL DEVELOPMENT OF THE FISHERY RESOURCES OF CANADA AND NEWFOUNDLAND, AND THE TECHNICAL EDUCATION OF THOSE ENGAGED IN THE INDUSTRY.

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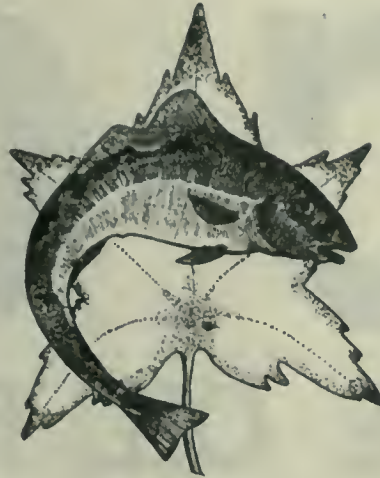
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FREDERICK WILLIAM WALLACE
EDITOR

Official Organ of the Canadian Fisheries Association and Affiliations

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No. 6

FISH—CHEAPEST OF ALL FLESH FOODS.

A special parliamentary committee is investigating the high cost of living: the daily press is giving much space to the subject—accusing many industries of profiteering and suggesting no remedy. Various public bodies are passing resolutions condemning meat packers, butter and cheese dealers, the producer and the retailers generally, yet the ones on whom the blame should be rightly laid are the people themselves.

Canada is suffering from too much prosperity in the past. Wages have been high generally for the worker—skilled and unskilled—and with high wages came high living—or rather “living high.” It is not a question of the high cost of living, but the cost of high living.

While hectic diatribes are being featured in the press on the subject and parliamentarians are muddling with commissions of investigation, the Cost of Living Commissioner announces that there are over eighteen million pounds of fish on hand in Canada—of which amount nearly fifteen million pounds are in cold storage. Many papers mentioned this fact, but stopped right there—leaving the public to imagine that the fish men were in a class with the profiteers holding out for high prices.

This huge amount of fish is not being held in storage because the fish men are desirous of holding on to it, but simply because they can't sell it. The public don't want fish, yet it is being offered to them at pre-war prices and on very small margins. Fresh fish is coming in on the market in large quantities and at low

prices, yet the demand is not good enough and the people generally are not taking advantage of it. Mackerel—a real luxury fish—is at present being offered in quantity and lower priced than even pre-war days, but it is being passed up. Other lines of excellent food fish are in the same condition.

The fish trade would welcome an investigation by a parliamentary or any other official committee. It has nothing to hide and an examination would reveal the fact that the dealers are working on small margins and against many handicaps not to be found in other industries.

The campaign work of the Canada Food Board should have been carried on. A publicity campaign in favour of fish should be inaugurated by the Government now if they wish to do anything towards reducing the cost of living. The public never find out these things themselves, it seems. They have to be told. If told by the Government, they will fall in line and the fish trade will back the effort to the limit. But for the trade to do the publicity work on their own initiative will not bring success as it will be regarded as an effort on the part of the mythical “fish trust” to exploit the consumer “not for the Glory of God but for the shareholders.”

GET THE FACTS, MR. EDITOR!

No! We are not intending this as a criticism of ourselves, though all editors are open to criticism and usually appreciate it if it is constructive. This paragraph or two is addressed to our brothers of the Fourth Es-

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tate—those unsung heroes of the daily news-sheets whose business it is to dish the day's news to the public in readily digested form and with a sauce of piquant headline to catch the eye.

We have been following the fortunes of Canada's fishing industry for a decade and fishery items in other papers generally come under our notice. We have come to the decision that the average newspaperman is prejudiced against fish generally. The joke columns feature the sporting fisherman as a man who exaggerates, drinks freely and is untruthful to his wife. The news columns scare-headline reports of fish in storage and seizures and dumpings of spoiled fish. The market columns give prices from day to day of all food commodities and ignore fish entirely. The educational page raves over Canada's great natural resources in agriculture, forests and minerals, but seems to consider the fisheries as beneath cursory mention.

In most papers nowadays there is a column or two on the H. C. of L. It is almost a standard feature. Every food and fuel product comes in for honorable mention or drastic censure daily, but never a "stick" about fish as a cheap and palatable food with which to fight the H. C. of L. and the profits of the packer and produce merchant. Paraphrasing the words of an ancient orator it would seem that the average newspaper editor "has come to damn fish—not to praise it!"

They cannot plead ignorance. When the Canada Food Board was in existence they received all kinds of literature and facts with regard to fish and the fisheries, but the patriotic interest which gave fish a "look in" with many papers soon died, and the fish bulletins went into the waste paper basket.

However, there are two fish items the average editor seems to take interest in. A short report of unusual quantities of fish in cold storage will merit a big headline and possibly an editorial imputing that the "fish trust" is at their naughty tricks again and bleeding the poor consumer. We have known instances where fish producers have wired the newspaper editors offering to put ear-loads of first-class fish into their towns at rock bottom prices if they would find a market for it. The editor smiles cynically at these vindications; characterizes the offer in vulgar parlance as "bull" and consigns it to the waste-paper basket and the incident animates him to write another "slasher" at the "fish trust."

The second item which appeals to the sensational soul of the Editor is the report of a Municipal Health Department stating that so many pounds of fish were condemned in cold storage and dumped. Another outrage, he will ejaculate, and the item will be headed, sub-headed and often set up in two columns with a box border, so that no reader could possibly miss it among the war communiques. An editorial often accompanies this with the common innuendo that the "trust" purposely allowed the fish to spoil by holding it for high prices or to prevent it being dumped on the market too cheap.

This placarding and brazening of half-truths is not playing the game. There is not a fish dealer in the country today who would not be glad to see his cold storage empty, and there is very little joy in the heart of the wholesaler who has his storage "plugged to the roof" with fish. Fish has been cheap at all times, even throughout the war, but the average editor will not believe that. "There are no philanthropists in business nowadays," he says, and the fish dealer is classed with all the other hundred per cent dividend distributors.

Then again, he forgets that fish is a highly perishable commodity and spoils easily. Much of the fish

dumped by municipal authority is fish refused by consignee through spoilation in transit and sent to storage while claims are being adjusted. Large quantities spoil in storage through inability to sell. If the instances of storing and dumping were investigated by the newspaper, we would venture that in every case the incident could be satisfactorily explained both to the investigator and the consumer.

The ignoring of the fisheries in the reading columns and the lack of favourable presentation from a development point of view is hard to explain. Possibly it is because fishing is an industry which is carried on by an unassuming people on waters far from common traverse. Few newspapermen ever see a fishery, while most have seen mining, lumbering and other basic industries.

This little protest at misrepresentation and ostracism may meet the eyes of some brother editors who will read it and think. The industry asks for no favors, but a square deal.

CANADIAN CANNED SARDINES OF HIGH FOOD VALUE.

Interesting comparisons and analyses of the food values of various food-stuffs are to be found in Bulletin 423 issued by the Food and Drug Laboratory of the Department of Trade and Commerce. The nutritive value of the commodities analysed are measured in terms of energy—the caloric being the unit used. As explained in the bulletin, a caloric "is that amount of energy which in the form of heat is just enough to raise the temperature of one kilogram of distilled water, one degree Centigrade."

The following table, compiled by various authorities, shows the daily energy requirements of food for certain occupations per adult.

	Calories.
In bed 8 hours, work involving sitting in a chair	
16 hours	2,170
Bed 8 hours, sitting 14 hours, moderate exercise	
as walking 2 hours	2,500
Man with moderate muscular work	3,000
Man with fairly hard muscular work (farmer)	3,500
Man with very hard muscular work.	5,500

Looking over the Bulletin we find that Canadian canned sardines exceed all other meat and fish food-stuffs mentioned by a nutritive value in calories of 1,832—devilled beef ham alone exceeding by a caloric value of 1,878. In the analysis, several brands of Californian and Norwegian sardines were taken, but the Canadian brands packed on the Atlantic Coast exceeds them all in calories—the best Norwegian brand containing 1,663 calories and the Californian, 864.

Our people should make more use of our canned sardines. They are cheaper and more nutritious than the foreign packs which we have been importing so extensively, and there is no scarcity in supply.

CANNED FISH TO COME IN UNDER LICENSE.

With an overstock of 300,000 cases of chum and other grade salmon and 40,000 cases of Canadian sardines in Canada at present, the Canadian Trade Commission now requires importers of foreign canned salmon and sardines to take out an individual import license before such goods can be brought into the country.

This is a good move and should result in cutting down these unnecessary imports of fish—imports which

merely pander to the exotic tastes of people who think that nothing is worth having unless it comes from abroad.

In a country teeming with fish of all kinds, there is no reason why we should import fish products to the value of nearly three million dollars annually.

RETURNED SOLDIERS ALLOWED TO PRACTISE SALMON FISHING.

A number of returned soldiers, with no previous experience in fishing, have been granted licenses to engage in drift net fishing for sockeye salmon in the Northern district of British Columbia. The season opened on June 20th, and as these men wished to get onto the hang of setting drift net gear before the season opened, the Government by Order-in-Council on May 19th, permitted them to practise with salmon driftnets not more than eighty fathoms in length prior to the opening of the season.

We commend the Department of Fisheries upon its consideration of these men and trust that the returned soldier, whether experienced or not, will be given a fair chance to secure licenses in licensed fisheries and some opportunity for fishery training. Many branches of the fishing industry should appeal to the returned soldier, and they should be encouraged to engage in the fisheries as much as possible in order that the hordes of aliens who have exploited them up to the present may be chased back into those countries where their Bolshevik opinions may find favor.

RECENT FISHERIES LEGISLATION IN BRIEF.

(1) Order-in-Council, April 24th, 1919. The following rivers and streams in Cape Breton Island, N.S., are not allowed to be fished by any means whatsoever for three years from May 1st, 1919, in order that the species frequenting them may be allowed to increase by natural propagation:—North Aspy River, or North River, Cape North, closed from Hellen's Bridge to its source and including tributaries; Warren's Brook, Ingonish; Indian Brook, St. Ann's; Church Brook; Indian Brook and Black Brook; North Branch of Baddeck River; Lake Law Brook; Faribault or Prairie Brook; McLennan's Brook; Fork's Brook or Meadow's Brook; Salmon River, Mira.

(2) Order-in-Council, May 1st, 1919. The Canned Foods Act relating to fish states: All fish and shellfish canneries shall be inspected also all fish and shellfish packed in cans during the whole course of preparation. All such cans must be marked with full name of packer. A true and correct description of contents, vernacular name of product, minimum net weight and name of place where packed to be printed on label. No false names allowed. Minister of Fisheries to be supplied with copies of every kind of label used." It is now ordered "that cans of fish or shellfish exported to foreign markets shall be exempt from the requirements of being labelled."

(3) Order-in-Council, May 5th, 1919. Special Fishery Regulations for Ontario, Section 6, paragraph (a) amended "in Georgian Bay waters not more than eight fathoms deep the use of nets having meshes of not less than 2 1-8 inches extension measure when in use may be permitted for the capture of fish for bait purposes."

(4) Order-in-Council, May 19th, 1919. Returned soldiers operating drift net licenses for sockeye salmon fishing in Northern B.C. waters allowed to operate

eighty fathoms nets for practise purposes before opening of season on June 20th.

(5) Order-in-Council, May 19th, 1919. Special Fishery Regulations for Manitoba, Saskatchewan and Alberta, amended "Nelson River and lake expansions, Cumberland and Namew Lakes and expansions of Big Saskatchewan River, fishing for sturgeon may begin on June 1st. Catch not to exceed 100,000 lbs. dressed weight in one year from Nelson River, and 50,000 lbs. dressed weight from Cumberland and Namew Lakes and Big Saskatchewan River."

(6) Order-in-Council, May 31st, 1919. Amendment to Lobster Fishery Regulations. Statement of number of fishermen employed, pack and other details as per Section 24, Fisheries Act, Chap. 8, 1914, must be delivered to local fishery officer seven days after closing of the lobster fishing season for the district.

PISCATORIAL PARAGRAPHS.

Live lobsters are now being transported by aeroplane between Brussels and Paris. Five hundred pounds thus carried recently arrived in excellent condition.

Captain P. C. Robinson, of Port Dover, Ont., is planning to build and equip a gill-net fishing tug with oil engines. The Captain intends to be the pioneer among Canadian lake fish men in discarding steam, and is fully convinced that he is making a wise move.

Write for the Evinrude catalog just out. It is a finely gotten up book and illustrates very fully the uses of the handy detachable outboard motor. These outboard motors should interest fishermen. They do not cost much: are easy to run and easy on fuel, and will save many a hard pull or beat to windward. Drop a card to the Evinrude Company, Milwaukee, Wis., and get the catalog. You'll be interested. With the catalog you will receive a leaflet explaining Government laws and regulations with regard to Evinrude equipped boats. According to this, detachable motors are exempt from the U.S. War Excise and Special Excise Tax.

The Canadian Fish & Cold Storage Company, Ltd., of Prince Rupert, B.C., are fitting up additional storage to their plant—increasing their present storage capacity by another 3,500,000 pounds.

What appeared like a serious set-back to the Convention of the Canadian Fisheries Association at Vancouver in May, 1920, was averted by the Sherlock Holmes' abilities of Vice-President A. L. Hager, of the C.F.A. A gang of miscreants broke into Mr. Hager's cellar and removed a large quantity of liquid contents, and when the local police failed to discover the parties who "spirited" away the spirits. Mr. Hager, employing powers peculiar to Conan Doyle's creation, finally located the thieves and the "goods." Though bars are abolished in B.C., the former are now behind those of the "pen" while the "hooch," recovered, reposes behind those of the cellar.

"How do fish come?" faltered the young wife.

"In various sizes."

"Then give me a pair of sevens. That is the size of my glove."



Improving Municipal Markets

Canadian Fisheries Association Make Important Move.

The effort of the Canadian Fisheries Association, along with other public bodies, to improve the municipal markets of Montreal and other cities in order that fish, meats, vegetables and other food commodities may be distributed to the consumer in the cheapest and best possible manner, has resulted in some valuable work being accomplished by the Committee in charge of the movement.

Mr. J. J. Harpell, of the C.F.A., visited the public markets of Washington and Philadelphia, and while in Washington succeeded in having Mr. G. V. Branch, Market Expert of the U.S. Bureau of Markets, come to Montreal and address a meeting of those interested.

A meeting was held on May 28th at McGill University, Montreal, at which numerous municipal officials, representatives from Women's organizations and other public bodies were present. Mr. J. A. Paulhus, Second Vice-President of the C.F.A. acted as Chairman and introduced Mr. Branch to the gathering.

Illustrating his address with colored lantern slides, the speaker commanded the interested attention of the audience for nearly two and a half hours, and every word of his address contained valuable advice on the subject of markets and marketing.

Every conceivable form of public marketing was illustrated and explained and Mr. Branch went very fully into details of the failures and successes of each. The outstanding points which he impressed on his hearers were:

(1) Market buildings should be of simple and not too costly construction—otherwise the rental of stalls will be too high.

(2) Markets should not be located in residential districts as this has proved to be a general failure. The best public markets are located down-town in shopping districts and should have railroad tracks adjacent.

(3) The market should be equipped with a cold storage plant for storing perishables. Pipes should be run from freezing machinery to stall counters of fish, meat and produce dealers.

(4) Produce should be displayed in glass cased counters to keep from dust.

(5) The Cash and Carry System should be encouraged. Every market should have a Delivery Station where shoppers may leave their purchases and have them delivered for a moderate charge.

In illustrating point No. 1 Mr. Branch showed pictures of elaborate municipal markets with clock towers and ornamental stonework. While these buildings looked very well, yet the cost of construction was so great that the Municipality either bore the loss itself or added it on to the stall rents. This repudiated the first principle of a public market, viz.: low stall rents in order that goods may be sold to the public cheaper than in ordinary stores. Several handsome markets located in residential districts were also shown to illustrate point No. 2. These markets were erected by City Councils on the erroneous supposition that by locating them in residential districts they would serve the housewife

by proximity of location. The mistake in this is that such a market can only serve that section of the city in which it is established. If it is located in the west end of a city, no trade will come from the other quarters. A centrally located market downtown will draw trade from all quarters, and it has been found by experience that women prefer to travel into the city to market. Several of the suburban markets shown by Mr. Branch had to be sold for other uses.

In emphasizing point No. 3, the speaker stated that cold storage facilities were a necessity in every public market. Views of a modern market were shown where pipes were laid under the display counters of the stalls. At the end of the day, the counter goods could be placed in cold cupboards under the counters until next morning. Reserve stocks could be kept in the main cold storage under the market building. He strongly advocated glass counter show-cases with refrigerated pipes running through them. Point No. 4 shows another advantage of the glass counter show ease in keeping produce free from dust. The most sanitary market in the United States with tiled walls and floors was not free from dust, and Mr. Branch spoke very strongly upon the manner in which most markets exposed produce such as butter, cheese, pickles, etc. (which are not cooked or washed before eating) on open counters without any protection whatever from dust and flies.

With regard to point No. 5, the speaker stated that much of the high cost of food-stuffs could be laid to high rentals, delivery systems, and the cost of telephones and maintaining credit accounts. He strongly favored the Cash and Carry system in public markets and illustrated his point by views of a successful market where neither telephones, credit accounts or deliveries were maintained by the stall owners. In this market there was a Delivery Station maintained by the market at which the purchasers could leave their parcels and have them delivered for a nominal sum. This delivery station had wagons running on certain routes at certain times and the system worked very satisfactorily.

The Canadian Fisheries Association believe this work to be in the best interests of the home trade and will endeavour to have the public markets of Montreal improved along the lines suggested. If successful, Montreal will form a good basis for the other cities of the Dominion.

FRENCH TRAWLERS BEING BUILT FOR NEW-FOUNDLAND FISHING.

Mr. Walter Lapbert, M.I.N.A., agent in Canada for Hall, Russell & Company of Aberdeen, trawler builders, advises us that they are building two 170-foot steam trawlers for French owners to engage in fishing on the Newfoundland banks. This seems to corroborate reports of the development plans now being undertaken by France in the Miquelon Islands. It is stated that a large cold storage will be erected on the Islands this year.



Research and the Fishing Industry

By Dr. A. G. HUNTSMAN.

The passing by the Canadian Fisheries' Association of a resolution opposing the establishment of a Central Bureau of Research has induced me to consider carefully the basis of advancement in the research that is connected with the fishing industry, and to make a brief statement of the case as it stands with us at the present time. As my attention and energies have been devoted to fisheries research for the past few years I have had an opportunity of becoming acquainted with the question and with the situation in Canada in regard to it.

The point that was raised that investigation must be carried on in close proximity to the fishing districts is most sound. At present the investigations are carried on at the Atlantic and Pacific Stations and also at subsidiary temporary stations as the need arises. But in addition an equal volume of work is done at the following universities during the winter: St. Francis Xavier's College, New Brunswick, Laval, McGill, Queen's, Toronto, Western, and Manitoba, as well as at Ottawa. It is unfortunate that Dalhousie and British Columbia Universities, although so favorably situated and invited to take part, have not contributed in this work. They doubtless have had too many other responsibilities, but it is expected that they will be able to co-operate soon. I have heard neither suggestion nor hint that any of this work will be lessened in any way by the establishment of a Central Bureau of Research, but rather that it will be extended as it greatly needs to be.

Research in connection with the fisheries is so extensive as well as important that it must be attacked in the most diverse ways. While theoretically it might be possible to make all the necessary investigations at a single station, at a series of stations, or at a sea-side university, practically this is neither feasible nor desirable. Some problems or parts of problems are best attacked in the field in direct contact with actual living organisms and existing conditions, others in specially constructed laboratories or workshops in close proximity to abundant and varied aquatic material as at St. Andrews and Departure Bay, others in the atmosphere of stimulating ideas and in touch with the varied library that only a large university affords, and others still in a special research laboratory with the most varied and complete equipment and with the consultation and assistance of trained investigators in related fields of research. All of these methods should be strongly developed, and only the last one is entirely undeveloped with us at the present time. This great need will be met by the Central Bureau of Research.

The point should be emphasized that the results of

investigations financed purely by public funds must be available to all the interested public, and if special firms or groups of firms or companies desire to have their special problems solved and to have the sole right to the benefits accruing therefrom, they must be prepared to finance the investigations either in whole or else in part—that is with some assistance from public facilities or institutions. It is to be hoped that this will be clearly understood by the Canadian Fisheries' Association. If the Association or individual firms represented in it take up the question of supporting some special research or of employing investigators for their special problems, they would soon have a fuller realization of what is involved in the question of research, and as well would lay the foundation for rapid progress in the branch investigated, which advance would soon extend to other branches. It is most encouraging to witness the active interest and progressive ideas that characterize the gentlemen who are guiding the affairs of the Association, and I am confident that greater advances than those of the immediate past will be made in the industry in the very near future.

The investigations financed with public money have as their legitimate field the solution of the general problems affecting the industry and the laying of the foundations upon which the investigator of a small and special problem affecting a firm or group of firms can build with success. The general problems include the principles underlying the canning, curing, refrigeration, and deterioration of fish, the utilization of refuse, etc., as well as the factors influencing and determining the distribution, growth, and abundance of the various fishes.

Canada has made a start of which we may well be proud, but it is only a beginning. Full sympathy and support should be accorded to all the enterprises necessary for ensuring the maximum production of fish, the greatest knowledge and ability of all those connected with the industry, and the use of the best methods and appliances from the capture of the fish to its consumption in the home. Research or discovery of the most varied nature to obtain the information, and then the education or training of those concerned to impart the information, are the two necessary links in the chain to attain this important object.

The educational problem is to some extent separate from that of research. Schools or Colleges of Fisheries should be established in connection with certain of the universities, ultimately perhaps three—one on the Atlantic coast, one on the Great Lakes, and one on the Pacific coast. At these colleges could be given the theoretical and practical instruction of longer or short-

er duration in the subjects most necessary for men who are to succeed in the various branches of the trade, as well as in fish culture, fish protection and administration, and as scientific specialists.

To accomplish this purpose (and not so much for research) "the best way is for the Federal Government to assist the universities that are situated in close proximity to the fishing industry to build up their biological and commercial faculties." Proximity to the industry is necessary as the students cannot easily travel far. To have such Colleges or Faculties connected with universities is advisable in order to avoid unnecessary duplication of teaching staff and for the stimulating effect of being associated with a large educational centre. As the Canadian Fisheries' Association has this matter of education very much at heart, I am sure that it will strongly support the establishment of such colleges.

The question of the method of administration of a Central Research Institute or Bureau of Standards is far from simple. Research and Standardization, which are closely connected with each other, are related to nearly all department of the Government and their association with one rather than with another is certain to be arbitrary. The advantages of the association of two branches under one head are, presumably, co-operation and avoidance of overlapping in work. These may be had without, and do not necessarily follow from, such association. They depend upon the personnel of the branches and the character of the head in charge. The tendency in the past has been for the administrative and scientific branches of Departments of the Federal Government to separate rather than to come together, probably in each case for lack of a suitable head with proper ability and sympathy for both branches. Intimate association is advisable when such a head can be found. Failing that, more and better work is accomplished by the branches being separated than by their being together in spite of overlapping of work, and at the same time there will be more co-operation because of less conflict. It is fatal to have anyone in charge and with the authority to direct who lacks the necessary knowledge or ability and at the same time is not in full sympathy with those under him who have the greater knowledge or ability. Business men understand or unconsciously recognize this principle. The tendency, therefore, is for divisions to separate until small enough to be

administered properly by one man, when a capable man can be found. The Canadian Fisheries' Association has acted on this principle in pressing for the separation of the Fisheries Branch from the Department of the Naval Service.

The question of overlapping in research work may be considered. The field of such work is so broad and there are so many pressing problems that even with many times the present number of investigators there would be no reason on this score for overlapping. However, it is a well known fact that discoveries usually require confirmation before they are considered by the public as established. No stronger confirmation can be obtained than that when two investigators working independently with different viewpoints and along somewhat different lines reach the same result. If they do not, both results are of considerable value as a basis on which the unbiased observer may form a true judgment. Nevertheless, hasty and superficial research by poorly trained and incapable men should be avoided and must always be strongly condemned. Canada has not been free from this in the past, but with the awakening to our needs for greater knowledge and better methods that has come to practically all classes as a result of the war, we may be confident that many of our best men will become thoroughly trained for this work of investigation in the course of very few years.

To recapitulate,—the fishing industry requires on the investigational and educational side for its growth and expansion necessary to meet the increasing commercial competition, the **extension and development** of: (1) the facilities (boats and equipment) for investigation in the field, (2) the seaside laboratories for special research, and (3) the universities for the training of men and for general research, and the **inauguration and rapid development** of: (1) the Central Research Bureau for co-ordinated research and standardization, (2) special researches by firms or corporations conducted in either public or private laboratories, and (3) Schools or Colleges of Fisheries in certain favorably situated universities to train men for the industry and associated fields. It should be thoroughly understood that these are not independent, but, on the contrary, **interdependent** enterprises, and the failure to develop any of these will prevent progress or will make Canada dependent upon the crumbs falling from the tables of other and more progressive nations.

Encourage Fishery Research in Fishery Localities

By the EDITOR.

It has always been the editorial policy of the CANADIAN FISHERMAN to publish the views of our readers whether we agree with them or not. By doing so we give the Industry a chance to weigh the pros and cons of an argument and decide for themselves which is the best course to pursue in deciding any particular question.

The Ottawa delegation of the Canadian Fisheries' Association went on record as being opposed to the establishment of a Central Bureau of Research and the following resolution was passed:—

"In the opinion of the Canadian Fisheries' Association, the establishment of a Central Bureau of Research is not advisable, but the work now being done by the Biological Departments of our Universities should be strengthened by a Federal Subsidy distributed through the Provinces in the same manner that the Federal Subsidy was given to the Agricultural Colleges. The establishment of a Bureau of Standards is advisable, but should be put under the jurisdiction of a Department of the Government rather than under the Advisory Council of Industrial and Scientific Research."

On the opposite page we publish a letter from Dr. A. G. Huntsman, Chief of the Biological Department of Toronto University, a well known contributor to our columns and a gentleman for whom we have a great deal of admiration and respect. Dr. Huntsman does not altogether agree with the C. F. A.'s resolution, though he coincides very heartily in the advisability of building up the Biological Departments of our Universities and he fully realizes the need for extended research in matters affecting our fisheries. However, he favors the establishment of a Central Bureau of Research in Ottawa to which, we assume, the Biological Departments of our Universities and the Biological Stations would rank in a subordinate capacity as field workers and collectors of data. We do not believe in this and feel that if the Central Bureau of Research is established our fishing industry will gain nothing by such centralization.

Biological work in connection with our fisheries **must be done on the ground** from investigation to final analysis. It is not possible to do this work at Ottawa—a centre which is distant from every important fishery we possess. Only in Nova Scotia can the scientific fishery problems pertaining to the Nova Scotia fisheries be solved. The same axiom applies to British Columbia and the other provinces. Let us take one instance—the utilization of fish waste. It is not possible to properly carry out experiments in this work in a Central Laboratory located in Ottawa. Fish offal would have to be shipped inland a thousand miles and could not be successfully transported without deterioration. Results of experiments obtained in Ottawa could not be taken as a basis for commercial exploitation in British Columbia or Nova Scotia where climatic and other local conditions must be taken into account. Investigations into fish refrigeration can only be conducted at the freezers located on the coast, and the same applies to the hundred and one problems connected with our fisheries.

In all scientific work in relation to our fisheries, Mahomet must go to the Mountain—the Mountain cannot go to Mahomet. The work must begin and end in the locality. Ottawa cannot tell us how we should smoke haddocks, freeze, can and catch fish. Another point we have very decided opinions upon is the placing of this Central Bureau of Research under the aegis of the Council for Scientific and Industrial Research and the Department of Trade and Commerce. We already have too many departments interfering with each others' work. **The whole of the biological work relating to the fisheries should be under the auspices of the Department of Fisheries and the Chief of the Biological Staff should report to a Deputy Minister of Fisheries.**

The fisheries have been cursed by having too many patrons and their non-progression may be attributed to "too many cooks." We have asked for the segregation of the Fisheries Department from that of Naval Service and for a Deputy Minister of Fisheries. This will probably be organized shortly, and **we want to see a real Fisheries Administration**—one handling everything pertaining to Fisheries—but we won't have a capable and aggressive administration if other Government Departments take over sections of the work.

In our opinion, the Federal Government should give immediate attention and subsidization to the Biological Departments of our Universities and equip them with the necessary apparatus to conduct research work in

their localities. The Colleges of Nova Scotia should be encouraged to conduct and finally analyze the whole of the research work pertaining to the local fisheries. The students are often the sons of parents engaged in the fisheries. These men will step into their father's business with a mind trained to tackle the problems incidental to the trade. From the student body of such colleges will come the much needed research workers and they will continue to solve the problems connected with the Nova Scotia industry and nothing else. To these local Biological Departments the fisherman can refer his problems. The lobster packer and fish producer of Nova Scotia will be able to have his problems solved far more readily by the Biological Department of Dalhousie University at Halifax than by any Central Research Bureau located in Ottawa. The same applies to British Columbia and the other provinces where Universities are located in close proximity to important fisheries.

Let there be a Central Bureau at Ottawa, but its functions should be purely editorial and collaborative. The Central Bureau could collect the reports of the various Biological Departments and compare results and analysis and publish complete reports. It might also collect data and scientific information and disseminate same, but in no case should it direct the work of the University Biological Departments—otherwise we will have Ottawa requiring British Columbia to investigate problems, which may look important in Ottawa's eyes and which will not benefit the B. C. fishermen one iota.

With regard to a Bureau of Standards. By all means let us have it, but in this we adhere to the same principle of placing it under the Government Department most interested—that of the Department of Trade and Commerce. This Department is engaged in building up our various trades and standardization is vitally important to their efforts. In the United States, the U. S. Bureau of Standards is connected with the Department of Commerce, and this is undoubtedly the best policy.

WASHINGTON GROWERS TO DEVELOP OYSTER INDUSTRY ON SOUND.

The State of Washington received approximately \$10,000 from the sale of seed oysters on Monday, April 28, by State Commissioner L. H. Darwin, of Washington. The seed oysters were developed by the Puget Sound oyster reserves which are operated by the State. The sale was conducted at the Oakland bay oyster reserve near Shelton.

The Oakland bay bivalves were sold at \$2 a sack and Commissioner Darwin had many applications to purchase at this price. As the seed were sold they were loaded on scows and taken to the oyster beds of the purchasers.

On May 12 between 500 and 1,000 sacks will be sold at the Clifton reserve on Hood canal and a similar quantity will be sold at the Oyster bay reserve. Owing to lack of funds to combat the stealing of seed bivalves from the Willapa harbor reserve these oyster beds will not be opened this season.

There are now twenty-five acres of oyster lands on Puget Sound dyked and improved, whereas six years ago there were one and a half acres of improved oyster lands.

It is reported the sale on May 12th was not so successful as the growers have a full supply.



The Fishing Vessel Owner's Opportunity

Fleets of Canadian Built Trawlers and Drifters for
Sale at Less Than Cost.

By JOHN S. BRETT.

The CANADIAN FISHERMAN has always fulfilled the true functions of a trade journal in that, moulding its attitude on the model of the "Candid Friend," it has not only exercised a beneficial influence on the industry by giving publicity to the wonderful resources of the nearby fishing grounds, but has also never failed to ventilate freely, fearlessly, and, when necessary, the uneconomical methods, the faulty preparations and packing, and the antiquated practices which have from time to time required remedial measures for the ultimate good of the industry. It is not therefore necessary to apologise for the following candid remarks.

The fisherman is the most conservative of men, and in no way has his retention of old ideals been more evidenced than in his continued adherence in type to the fishing vessel of his forefathers.

Particularly is this apparent in Eastern Canada, where the bank schooner still holds its entrancing sway. There is nothing more beautiful than one of these noble vessels in full sail, but, alas, nothing more uncomfortable or unsuitable to modern conditions of labour and commerce. They are not able to do business at the time when their catches can be most profitably marketed, and when they do leave for the fishing grounds, it is Providence alone which decides their return, and what fare they bring back, with the result that contrary to the modern axioms of business, that "demand should regulate supply," we find that perforce the "supply governs the demand."

To-day's outstanding problems, and to-morrow's, too, for that matter, are unquestionably "the labour problem," and "the high cost of living," and these two vital issues are to a great extent inter-dependent on each other.

Fishermen are scarce, and crews difficult to muster in full strength. Even in Nova Scotia, where men are born to the sea, it is gradually coming to them that the life is a hard and isolated one, with little or no relaxation, while jobs ashore are plentiful and the workman is the top dog. As a result even high wages or participation in profit sharing does not produce the fish that are there to be had, and for which a market can be found.

There is only one solution to this dual problem, so far as the fish trade is concerned, and that is to improve conditions for the men, and to provide a me-

thod of getting the catch more economical in labour, in time, and money. In the ordinary walks of life the day of machinery arrived a decade ago; the home, the factory, the workshop, and even our pleasures are replete with labour saving devices, but the fisherman still lives in the sailing ship era, at the mercy of the elements, encountering dangers to life and property, and countenancing a waste of time which is avoidable and unnecessary.

Forgetting for the moment, war and ante-war conditions, what is the situation in Europe? The available fishing areas cannot compare with the coastal waters of Canada in productivity, extent or suitable location. The British, French, Norwegian, and perhaps it may even be at no distant date, the German—fishing vessels are being compelled to go farther and farther afield, to Iceland waters, and to the Banks, and now they have to be specially built at increased cost, with extra large bunker capacities to make long voyages to the fishing grounds, and most of their time is taken up with steaming to and from the fishing grounds, rather than in fishing—very expensive conditions both in time, in wages, in interest on capital expenditure, and in fuel consumption. Even under these deterrent conditions, and with a population to be fed unmeasurably greater than that supplied at present by the Canadian fisherman, we find that fish is a staple, rather than an occasional article of



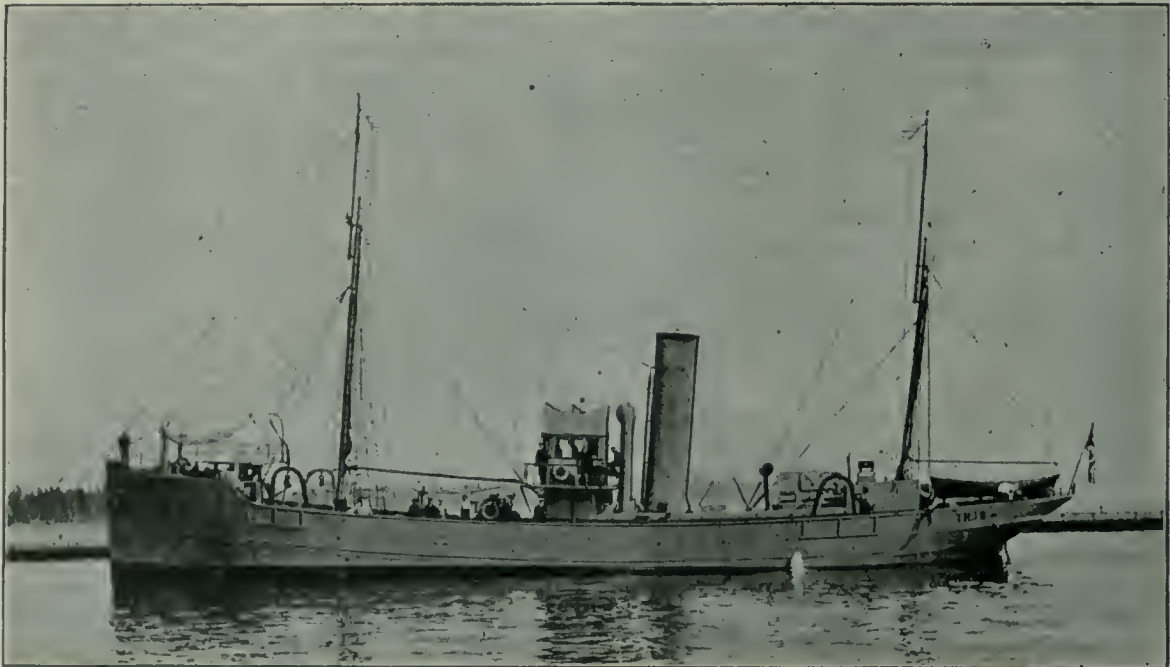
Canadian Naval Drifter.

diet. It is not retailed as a sideline, but invariably at stores which do no other business; and furthermore, it is placed on the table at a cheaper price and in better condition than in Canadian cities, and with the help of very little cold storage. It will be pointed out that climatic conditions and transportation distance largely accounts for this favourable result, and to an extent, this is freely admitted, but it has also to be recognised that during the period of the year when climatic conditions are entirely favorable to the keeping qualities of the fish, it is most difficult to maintain a regular and adequate supply owing to the difficulty of fishing at this time with the means available. It is also a fact that if the methods common to Canada were adhered to in the European fishing grounds, fish as an article of diet would be a luxury for the rich instead of the most nutritious and economical food available for rich and poor alike. I have no reliable data to allow of an exact comparison to be made, but am confident that if it was possible

to obtain Government assistance in view of the vital importance of the industry as one of Canada's primary natural riches, but this, in the writer's opinion, should be considered as a last resource only, and should be unnecessary, as it is, with conditions of nature altogether in our favour, with the fishing grounds of the Atlantic and Pacific at our door in a practically virginal state, we are barely marking time, and getting nowhere.

This is a condition of the Canadian fishing industry which this paper has frequently urged upon the trade, and undoubtedly the old antipathy and distrust of the steam trawler is giving way to a realization that in this modern and economical method of fishing lies the hope of the future of Canada in the purveying of fish to its own people, and to the densely populated countries of this and other continents.

This change of attitude has evidenced itself to some extent, and in a cautious way, by the purchase of trawlers (mostly old and out of date) for service on



Canadian Naval Trawler.

to state the quantity of fish per man, per day, caught by the agency of drifters and trawlers in European waters, as against the number obtained through the use of dories and schooners in the more favourable fishing grounds of the West Atlantic, the statement would convert the most conservative and reform the most bigoted. This, after all, is the essence of the matter, and it is this that has during the past fifty years made rich men of very poor fishermen even in the face of exacting competition.

The difficulty of financing the capital expenditure involved, has not been touched upon, and is not intended to be within the scope of this article. Undoubtedly the British financier has considered tonnage as an adequate security in a much more favourable light than the Canadian financiers do, but if the latter is properly advised by expert and reliable opinion, there is no reason why he, too, should not be converted to the acceptance of financial responsibility in a large measure. Failing this it may be necessary

the Pacific Coast, and the chartering of trawlers for service on the Atlantic Coast. Developments on a larger scale have been retarded owing to war conditions making it impracticable to obtain vessels from England, where they have been vitally necessary for naval purposes, while it has not been considered a commercial proposition to build them in Canada on account of the excessive cost of Canadian built tonnage. American fishing interests have, however, built a few vessels at very high prices, and such experience as has been gained supports the contention that the adoption of trawler fishing with modern and adequate equipment, on a large scale, is the logical development of the present situation.

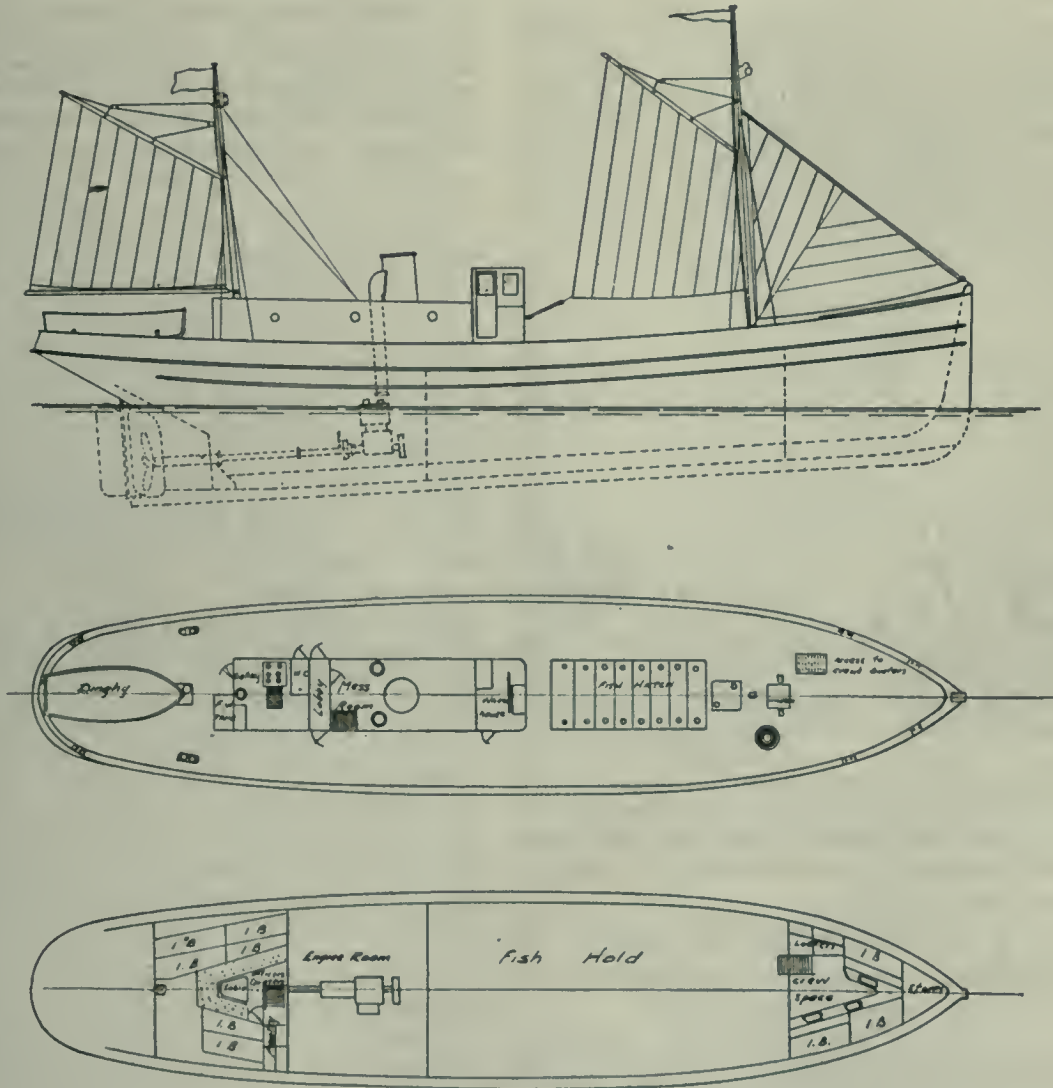
The embargo on the British built trawler has now been partially lifted, but prices are high, while so many are on order by British interests to replace lost tonnage that it is difficult to obtain adequate delivery or favourable terms. There is no sign of an immediate improvement in this situation; rather the re-

verse, indeed, and anyone who is holding off in the hope that the \$50,000 trawler is coming back is doomed to disappointment. In the meantime, the markets of the world are open to Canada, and she is unable to take advantage of the fact.

It is doubtless within the knowledge of many that

when the Armistice was signed. These vessels were then placed on the market and purchased, not by the fishing industry, but by an enterprising firm of vessel brokers, who have since sold many of them to foreign interests. This is on the face of it, rather a reflection on the foresight, or is evidence of a lack of

CONVERSION OF A STEAM DRIFTER TO
MOTOR POWER



not the least of Canada's war efforts has been the building of a large number of steel steam trawlers, and wooden steam drifters, to the order of the British Government, for Naval service. Many of these, on completion, were delegated to Canadian service, and others were uncompleted or awaiting delivery

readiness on the part of the industry, but while the available number of vessels is being depleted, it is still possible to retain some of these vessels on Canadian Registry by purchase.

In all fairness, it should be stated, that there exists a prejudice against these vessels on account of

the alleged defects of a few. The writer has not had an opportunity to inspect them, but has been in very close touch with other classes of vessels produced by the same shipbuilders, and has no hesitation in asserting that the average quality of workmanship of the Canadian shipbuilders during the past few years is equal to the average of British shipbuilders producing a similar class of tonnage.

These trawlers (referring to the numbered class) were designed and laid down after the model of perhaps the most popular type of British trawler, namely, the "Castle type," so that so far as design is concerned, there is nothing fundamentally wrong. Their building and fitting-out have further been supervised by the chief engineer of one of the largest trawler building firms in England, who was sent to this country for this particular purpose by the British Admiralty.

They are built to British Corporation class, of steel, to the following principal dimensions: Length between perpendiculars, 125 feet; breadth, 23½ feet; depth moulded, 13½ feet; draught fully loaded, 15 feet aft. The machinery comprises triple expansion engines, having cylinders 12¾ ins., 21½ ins. and 35 ins. diameter, by 24 ins. stroke, capable of developing about 500 indicated horse power at 118 revolutions per minute, which is good for a speed of at least 10 knots. A separate surface condenser is fitted, also a direct-acting reversing engine, and the most modern equipment for a vessel of this type. Steam is supplied by a Scotch boiler, 13½ feet diameter by 10½ feet long, having 3 furnaces, the heating surface being 1,600 square feet, and the grate surface 55 square feet, built for a working pressure of 180 lbs.

The coal bunker capacity is 160 tons, which should allow of a steaming radius of at least 3 weeks. Fresh drinking water tanks of 10 ton capacity, and feed water tanks of 15 tons are provided, and accommodation arranged for 14 men, which latter, however, could be increased as desirable. Electric light is fitted throughout, the installation comprising a 7½ k.w. generator, which is of sufficient capacity to take care of a wireless set, besides lighting the vessel.

Wireless is, of course, a very desirable feature, as by this means, time of arrival of vessel in port, with details of the catch, could be given in advance, so that by the time the vessel comes alongside wharf it is possible for the whole catch to be sold and shipment arrangements effected.

The whole of the fishing machinery is fitted on deck, arranged in accordance with best British practice, complete with trawl-winch, gallows, airleads, etc., but excluding warps and otter boards.

The fish hold has a capacity of 6,000 cubic feet. This space is at present occupied by accommodation fittings for a naval crew, and would require to be dismantled. As, however, the hold has been lined, cemented and drained as usual for carrying fish, this change could be effected at the minimum of trouble and expense.

The trawl-winch has cylinders 9 ins. diameter by 14 ins. stroke, and works at full boiler pressure. The main shaft is of forged steel 7 ins. diameter, and carries two cast steel barrels with heavy brass bushes, each barrel being capable of winding 1,000 fathoms of cable. The main driving wheels are of helical cast steel gearing, and the main clutch gear, which

engages the barrel is of cast steel fitted square, avoiding the use of keys.

Bilge keels are fitted to the hull to neutralize excessive rolling in heavy weather, and vessel has 3 watertight bulkheads.

It is betraying no official secrets to state that the actual cost of these vessels was in the neighbourhood of \$200,000, but it is even yet possible to purchase those remaining for immediate delivery in a thoroughly good condition, ready for sea, at a less figure than it is possible to buy British built vessels of equal value, either new or second-hand.

With regard to the wooden steam drifters, this method of fishing has not been tried out on a practical basis in this country, and while there is no substantial reason why they could not be used very profitably for drift-net fishing in suitable localities, the Gulf of St. Lawrence, for instance, it is somewhat doubtful if anyone would care to experiment with these vessels as they are, being expensive in upkeep for the size of vessel, both on account of coal consumption and the necessity of employing certified engineers. They are, however, very similar in type to the fish tugs largely in use on the Great Lakes and could be easily adapted for this service.

These vessels are built of fine clear Douglas fir, to the following principal dimensions: Length between perpendiculars 84 feet; breadth, 19¼ feet; draught aft, 9 feet. They are fitted with compound surface condensing engines, having cylinders 12 ins. and 24 ins. diameter, by 16 ins. stroke, designed to indicate 200 horse power at 140 revolutions a minute, and giving a speed of about 8½ knots. Steam is supplied by a multitubular marine type boiler, fitted with 2 furnaces.

The vessels are arranged in every way similar to the British herring drifter, a very large number of which are continually operating around the British Isles. Accommodation is arranged fore and aft for a crew of 10 men.

Steel casings are fitted over the machinery space, the after part of which forms the galley on deck, and the forward part, the wheel house. Coal bunker capacity is provided for 13 tons in side tanks, and 7 tons in a cross bunker, while 2 large tanks are fitted for supplying fresh water to the boiler.

These little vessels are of a very seaworthy model, and some of them have in fact crossed the Atlantic under their own power.

They can be purchased for immediate delivery, ready for sea for approximately one-third of their building cost, while they are of a size and type of construction as could be kept up at small expense at any of the small slipways or wooden shipyards abounding in the fishing centres.

It is suggested that the initial cost and operating expense could be considerably reduced by removing and selling the steam machinery, which is of a most useful size for small harbour tugs, coasting vessels, etc., and installing instead a semi-diesel engine consuming crude oil, of, say, about 100 horse power.

As will be noted by reference to the illustration, they are already fitted with sails, so that with the addition of an internal combustion engine they would make very handy auxiliary fishing vessels—the proposed change effecting an economy in fuel cost and storage; increased fish capacity; and reduced crew, while the sale of the steam machinery should leave a substantial balance after paying for the cost and in-

stallation of the motor, the upkeep of which should also be less expensive.

These vessels would then be very similar in type to the cannery tenders used in such large numbers on the Pacific Coast.

The question remaining for consideration is "Does the availability of purchasing these vessels present a reasonably safe and remunerative opportunity to the Canadian fishing vessel owner"? The writer is of

the opinion that, taking into consideration the present unsettled conditions in Europe, and the vital importance of Canada securing her trade connections, while comparatively free from competition, the opportunity is a real live one.

It is up to the Canadian fisherman, especially the salt bank fisherman, and it should be his ambition, to demonstrate his ability to serve the world with fish.

Developing the Fisheries of the Gulf of St. Lawrence

By J. T. BERTRAND.

Being acquainted with the Gaspé District for over twenty years and being in charge of the harbor and river works of improvement for fifteen years as District Engineer for the Department of Public Works of Ottawa, I have become deeply interested in the development of the said district, specially in its main source of revenue of its most important natural resource, **its fisheries.**

In 1916, in a memoir to Hon. Senator Baigue, President of the Senate Commission to look into the after-war problems, I stated "that Gaspé and the Fisheries of the Gulf of St. Lawrence constituted a most important factor for our consideration in after-war reconstruction and that all problems affecting our fisheries such as (1st) harbors of refuge and shelters for small crafts, (2nd) proper highway communications as a **belt road around the Peninsula, which is, for a stretch of some 60 miles, without any roadway whatever,** (3rd) A direct short railroad connection with the **American and Canadian systems** of Railway, should be carefully looked into and acted upon without delay.

The three great factors of transportation, viz.: railroads, highways and waterways, must be considered together and as a whole. Without either, transportation is, and **always will be, defective.** The rail route must be the shortest with the easiest gradient and cheapest operation from producer to consumer; the Highway must allow the producer to easily and quickly truck his goods to shipping centres, either railway stations or landings, and the harbors must offer at least one main harbor of refuge for all craft from a man-of-war to a fishing smack, with secondary harbors at intermediate shipping points with modern loading facilities, and in every cove, adequate breakwaters for small fleets of fishing craft.

A full inventory of the topographical and economical conditions together with the actual means of transportation and the improvement to be recommended about same should be at hand in each district. The officials and the engineers of the Federal and Provincial Governments could co-operate to give said information.

Bad transportation and improper packing are the cause of irregular supply and consequent congestion of the market. Let us take proper care and hold what we have, and the fish problem will be solved.

To meet the transportation problem I would suggest that there should be along the Gaspé Coast from Rimouski to Cape Rosier, (1st) At least one safe harbor of refuge to be located probably at Grande Madeleine or thereabouts with secondary landings at every fifteen or twenty miles, (2nd) One main highway to

connect said harbor of refuge and secondary harbors with the fishing coves along the whole coast which would mean the construction of some 40 miles of roadway along the short line from Ste. Anne des Monts to Madeleine or thereabouts. As already stated trucks and autos cannot actually go further than Ste. Anne although by far the best fishing grounds are below Ste. Anne going towards and below **Madeleine, which is a future centre of industry and colonization in the heart of the Peninsula.** I would suggest further that there should be about halfway between Gaspé and the head of Baie des Chaleurs at the most convenient location another safe harbor of refuge with secondary harbors and fishing cove accommodation above and below. At the Magdalen Islands there should be one or two harbors of refuge for all craft. Without said harbors of refuge it is useless to think of using large boats for fishing operations and of improving fishing coves and harbors by dredging operations because there is no place to shelter said ships or plant from Gaspé up both coasts at present.

Two great objections are the short life of timber structures on account of the limuria and toredo in the Gulf and the actual high cost of crib-work. I have good reasons to believe that all or at least most of the timber structures can be made permanent at a reasonable cost by enclosing the perishable core by concrete slab sheathing.

To meet the last objection I have made experiments that can materially reduce the construction of any breakwater besides landing piers and thereby allow us to protect any open fishing cove at 38 to 50 per cent. of the ordinary cost.

AMONG THE PACIFIC CANNERIES.

Mr. A. H. Sherman is reported to have leased the Seeley Bros. Cannery at Blaine, Washington, and also the Gulf Island Cannery near Lasqueti Island.

Many of the Fraser River canneries have planned to pack red springs this season, but the outlook is not promising for a large supply.

The Nootka Cannery at Nootka Sound on the West Coast of Vancouver Island have packed a few thousand cases of red spring so far.

The San Mateo Cannery, on Barelay Sound, on the West Coast of Vancouver Island has packed some red spring, but the run has been slow so far. This is one of the Gosse-Millerd Canneries.

The Duty of the Municipal Council to the Canadian Fisheries

Increase Fish Consumption and Develop a Great Natural Resource and Train Seamen for the Canadian Mercantile Marine.

FREDERICK WILLIAM WALLACE,
(In Canadian Municipal Journal.)

Since June, 1917, when the Canada Food Board first took office, the consumption of fish in Canada has increased on an average by 100 per cent., largely due to the propaganda work of the Board in urging the consumption of fish as a substitute for meats required for export.

Considerable assistance has been given the Board by Municipal officials in various localities who co-operated by encouraging the establishment of fish stores in towns where no such places formerly existed. Municipalities guaranteed the accounts of the fish dealer thus established and did every thing possible to have their citizens patronize the local fish store and give more thought to fish meals on the daily menu. In localities where the Municipal officials took this interest, fish consumption increased wonderfully, and during the war days most right thinking people felt it was their duty to eat fish and save the beef and pork for overseas shipment.

What was regarded as a duty then has now developed into a genuine liking for fish food. Hundreds of times have we heard the remark passed, "I used to eat fish because the Government asked us to, but now I eat fish two or three times a week because I like it, and it is cheaper than meat." Fish has only to be properly cooked to command the gastronomic fancy of most people.

Now that the war is over and Heinie and his friends have been placed where they belong, there are several important reasons why Municipal officials should continue their interest in increasing fish consumption in their particular localities. It is vitally necessary that the work to increase fish consumption be carried on and in assisting, municipal officials can do a great work for Canada.

The Canadian fisheries are a great national asset and one which is capable of enormous expansion. We have the greatest fishery resources in the world, and by the development of our fisheries, a huge source of revenue can be assured to the country which will assist in paying off the debts which we have incurred through the war. A good demand from the home market encourages fishermen to expand their present business and more men will engage in the fisheries. It may be said: "Why not develop our fisheries by catering to the export trade?" By all means, but the export trade means tying up capital invested in fish for an indefinite period, while in the home trade, capital invested is turned over within two or three weeks.

The bulk of the Canadian fish exported is in a canned or cured state. A huge initial outlay is required for cans, salt, barrels, and other material. The fishermen are paid cash by the canner or wholesale dealer, but the latter's capital is tied up until the goods are marketed in Europe, the West Indies, South America or the other countries to which Canadian cured fish is exported. Thus, in the case of salted and dried fish, it may take five or six months before the money invested

is turned over. In the home market for fresh or chilled fish, the fisherman is paid when he brings his fish in to port, and the shipper collects his money when the fish arrives at its destination in Montreal, Toronto or Winnipeg—all within the space of a few days. At the present time fish is landed at the sea coast and consumed in Montreal or Toronto within fifty or sixty hours, and the capital invested in the product has been turned over almost within that time.

The home market is our own market. The foreign markets place us in competition with the fishermen of Newfoundland, Great Britain, Holland, Denmark, France, Norway and Sweden, and in fighting competition returns on capital are often meagre. Thus, it will be seen that there is much to commend the development of the Canadian consumption of Canadian fish.

Another vitally important aspect is the relation of the fisheries to the Merchant Marine. Great Britain attained her maritime supremacy through her fishing fleets. "Sea fishing," says Professor J. Russell Smith in his volume "Industrial & Commercial Geography," "is considered the cause that first led men to sail upon the ocean, and from this beginning all maritime nations have had their rise. Such was the origin of the fleets of the Phoenicians and the Greeks. The Norsemen on the inhospitable shores of Scandinavia developed fleets where man must fish or starve. The Dutchman, who wrested the commercial supremacy of the world's seas from the Portuguese, had had years of maritime training on the fishing banks of the North Sea. The fleets of England had their origin in these same fishing grounds, and later the New Englanders became the pioneers of America because good fishing banks were near them."

To these facts might be added Canada's maritime supremacy in the days of wooden ships. Early shipbuilding in this country was primarily for the fishing fleets, and latterly the building of larger vessels to transport the fish to the West Indies and South America. When the boom in shipbuilding came during the years from 1840 to 1870, the Canadian fishing vessel builders got into the game and began to build deep-water brigs, barks and ships from the readily available supplies of timber to be had adjacent to the water. The officers of many of these craft were drawn from men who learned their seafaring in the fishing fleets of Canada, and while the poor wages and miserable conditions of fore-the-mast seafaring in those days did not attract fishermen as crews for the deep-water ships, yet a large number of Canadians served as seamen in the coasting and West Indian trades.

Nowadays, Canada is engaged in building up a merchant marine of her own, but if we do not want to have these ships manned and officered by foreigners, we must, as Great Britain and other nations have done, look to the fisheries as the nursery from which to draw the necessary personnel.

A thriving fishing industry will draw Canadians into

the seafaring game, and from the fishing fleets, the younger and more ambitious spirits will transfer into the Merchant Marine. A boy of sixteen can go fishing and earn good money while putting in the sea time necessary for an officer's certificate aboard a merchantman. If he feels that the Merchant Service of Canada offers more opportunities, he can leave the fishing and ship as quartermaster for a year and then take his second mate's certificate in the mercantile marine. The other method is to put in three or four years as an ordinary seaman aboard a merchant ship or ship as an apprentice—paying a premium to be instructed in the arts of steamanship or navigation. The former method has much to recommend it, as, should a man dislike the Merchant Service, he can always go back to fishing again—a trade which the ordinary merchant sailor cannot tackle without experience.

Thus, it will be seen that the Municipality has a national duty devolving upon it in the consumption of fish in the locality under its jurisdiction — no matter how remote it may be from the sea and ships, and the problem of encouraging the greater consumption of fish is deserving of thought and effort. In centres where no fish stores exist, the Municipality should select a bright, capable man—a returned soldier preferred—and secure for him a good location for a store. If he lacks capital, it would not involve an extensive outlay on the part of the municipality to fit up a store for him. The citizens should be enjoined to place weekly orders for a certain amount of fish and the Municipality should guarantee the man's account.

In places where the population is too scattered to maintain a store, opportunities should be given a man to peddle fish by horse and wagon, such as is done extensively in Great Britain and Europe. This, also, would give a good livelihood to a returned soldier. Endorsed by the local council, a fish peddler will stand a good chance of building up a lucrative business.

In larger centres maintaining a public market, a good fish stall is a necessity. The public markets in many cities relegate the fish stall, if any, to the meanest and poorest location in them. Cities like Montreal maintaining public markets would do well to pay some attention to properly equipped fish stalls. Walls should be of white tile; the floors of cement or tile, and modern refrigerator chambers should be part of the store. Market fish stalls, dark, ill-smelling and crowded, with walls slimy and damp, do not encourage the consumption of fish nor give the proprietor of the stall a chance to do the business he is capable of.

The question of increasing fish consumption and encouraging the establishment of retail organization whether by market, store or peddler, should be a part of every municipality's deliberations during the year 1919, and speedy action along the lines indicated should follow.

Canada's destiny as a nation lies in the development of her natural resources and the shipping to transport our products to other markets. The Municipal Council, while it has its own local affairs to attend to, has yet a larger duty to the Dominion of which it is a part, and it is only when such Councils do their share in promoting such matters as increasing fish consumption, that Canada will attain the position to which it is entitled by right of the wonderful resources with which we are endowed.

"CANADA PRODUCT" is a mark the Canadian Trade Commission intends to make the best guarantee of quality and service.

SPECIAL EXPORTER'S EDITIONS OF THE CANADIAN FISHERMAN TO SECURE FOREIGN TRADE.

In conjunction with the Canadian Trade Commission and the Department of Fisheries, the publishers will produce three special exporter's editions of the CANADIAN FISHERMAN commencing with the August number.

These editions will comprise the August, September and October issues. Each will be greatly enlarged and special articles and features of interest to foreign importers will be printed in French and Spanish as well as in the English text.

These editions will be sent free to a selected list of the most reliable importers of fish products all over the world as well as to foreign Boards of Trade, Consulates, Commercial Bureaus and Trade Agencies.

The immensity of Canada's fishery resources, the variety and quality of our fish products will, by these editions, be prominently brought to the notice of foreign merchants and far-reaching trade connections will undoubtedly result. Such a scheme has never been attempted in the fisheries before and neither time, effort and expense will be spared in order to make these Export editions a credit to the Fishing Industry of Canada and the Canadian Fisherman.

CANADIANS LACK BUSINESS COURTESY.

A grave statement on the lack of business method by some firms which is hurting the general Canadian reputation in Great Britain is contained in a communication from Mr. Henry B. Thomson, of the Canadian Trade Commission, now in London in an advisory capacity with the London Mission. He says:

"It has been brought to our notice by several firms here that Canadian manufacturers and others are very lax in not replying to correspondence and enquiries, and it is having the effect of creating an impression that Canada as a whole is not looking for business, or making much effort to get it. Trifles of this kind create a false idea, as the people in the U. S. are very particular about prompt reply to enquiries, and furthermore carry on a regular follow-up course of correspondence. Not only has it a bad effect in creating an impression of slackness, but it is also causing some of the importers here to make strong representations to the Government to remove the import trade restrictions of the importers are sufficiently strong and inspire. At the present moment, Canada is, as you are well aware, particularly favored in this regard as compared with the United States, but if the representations of the importers are sufficient strong and insistent, the Government will be forced to allow certain commodities to be brought in here on a par with Canada, because these commodities cannot be procured, or apparently so, within the Dominion. Even if they have not got the stocks on hand, or do not deal in the commodities they are asked about, surely it would be a simple matter for them to write a note to the English firm enquiring and explain the situation to them."



Could "Jerk Their Hand" For Trade

How the Fishermen Lose Business.

The Canadian Trade Commission, which recently through its Fish Section issued many thousands of circulars in English, French, Spanish, Portuguese and Italian to fish merchants and importers in almost all parts of the globe, has been struck by the plain-spokenness contained in the replies and much criticism of laxity in the Canadian Fish Trade. It would appear that the first thing largely to extend Canadian trade in cod, for instance, is so trifling as to make it surprising that the change has not been adopted. The codfish trade in the West Indies furnishes a typical example.

"Since the beginning of the war we have purchased our supply in Nova Scotia," is one statement from a large importer in Cuba, "but we desire to inform you that Norwegian and Scottish cod have always had the preference over the Canadian variety. This is due chiefly to the more acceptable form in which cod is cured in these countries. No doubt you are aware that this market has always preferred white nape cod, but in spite of the fact that it is so entirely simple in preparation in this form, we have never been able to secure it from the curers of Nova Scotia."

Another large importing house in the West Indies writes:—

"We consider that if Canadian packers would pay special attention to the preparation of white cod they could easily compete with the English product. Cases should be in every equal to those which are usually imported from Norway."

Losing The War-Time Gains?

Norway alone, before the war, held 50 per cent. of the Cuban trade in fish. Then, owing to the impossibility of shipping from Scandinavia, the United States and Canada captured it. Does the Dominion now stand a chance of losing all the gain made during the last four years?

For those unacquainted with the fish trade, it may be mentioned that white nape cod is simply the trade term for ordinary salt dried cod of which the dark inner skin has been ripped off—a process requiring exactly two jerks of the packer's hand. The Canadian Trade Commission has information of the proposal of a Nova Scotia dealer who had a large Cuban order to give \$1.00 per quintal more for fish dealt with in this way than without. Out of a total purchase which the merchant made of 40,000 quintals, he could only secure on the Canadian Atlantic coast 2,000 quintals of white nape fish. That is to say, by declining to adopt a small change in their old-time methods of curing cod, Canadian fishermen almost in so many words threw away \$38,000.

Other Trades Sinners.

But this weakness by which trade is "leaking" is by no means confined to the fishing industry. The Canadian Trade Commission in the same connection has had it forcibly brought home that samples prepared by Dominion firms for competition in the trade established under the Canadian credits abroad in far too many cases show the same lax business methods. Attention is not given to the little points of neatness and attractiveness which are so powerful in effecting a sale. In each case the Canadian Trade Commission do not hesitate to bring the comparison home to many firms whose samples sent in for Rumanian and other business fields just lack, in the opinion of the experts employed by the Commission, the little "selling turn" which makes the difference between good and bad business.

It was a fisherman's proverb which taught that "The boat was lost for a ha'porth of tar." Its application goes far beyond the scope of the fish trade.

BRITISH ADMIRALTY FISHING SCHEME.

Fishermen to be Shareholders in a Company With 400 Drifters.

The British Admiralty are considering a proposal whereby British fishermen who served during the war, and thereby suffered in comparison with others of their calling who reaped a rich harvest through the greatly enhanced price of their catches, shall be substantially helped.

The provisional plan evolved by a Committee, over which Admiral Sir W. May has presided, is to make these war-service fishermen shareholders in a Commercial Company, at whose disposal the Admiralty proposes to place some 400 drifters hitherto engaged in war work.

It is hoped the Treasury will make a grant in aid to put the venture on its feet.

The idea underlying the scheme is the co-operative principle, and the Admiralty does not intend competition with other traders, merely hoping to do something for fishermen who served their country so well.

[Considerable opposition to this scheme is being made by British fishing vessel owners and it is doubtful if it will be carried out.—Editor, C. F.]

The Rainy River Fishermen's Association has been organized at Fort Francis, Ont., and desire to affiliate with the Canadian Fisheries Association.



FISH CURING

By

J. J. COWIE.

VI.—*Smoked Haddock.*



VI.

I have purposely refrained from using the name "Finnon Haddock or Haddie," which is commonly given in Canada to all smoked haddock, as the heading of this article. Strictly speaking, no finnon haddocks are produced in Canada. The name "Finnon" is derived from a method of haddock smoking practised at one time by the wives of the fishermen of Cove, Findon, Portlethen, etc., fishing villages of Kincardineshire, situated a few miles to the south of the city of Aberdeen on the east coast of Scotland. The smoked product of these villages was sold in Aberdeen, where it was very highly prized. The excellence of these smoked fish was really attributable to the fact that they were line caught, and were smoked in the evening of the day they were caught.

After the introduction of steam trawling at Aberdeen, in the eighties, and when the smoking of trawled haddocks began there, the curers, thinking of the fine quality of the line caught smoked fish produced in the nearby villages, adopted a modification of the method of smoking in practice by the fishermen's wives, built what are called finnon kilns or smoke-houses, appropriated the name "Finnon" and advertised it far and wide. This no doubt accounts for the erroneous supposition that "Finnon Haddies" was the common name given to all smoked haddocks in Scotland.

At Aberdeen, which is now the great centre of the smoked fish business of Scotland, there are also in use what are known as "North" or "Moray Firth" kilns, in which haddock are smoked by another method. These are not known by the rather over-boomed name of finnon, but are equal in flavour to anything produced from the finnon kilns.

Before steam trawling had developed to its present huge dimensions at Aberdeen, the towns and villages to the north of that port and along the shores of the Moray Firth annually produced great quantities of smoked haddocks between the ending of the great summer herring fishery in September and the beginning of the early herring fishery in the following month of May. These haddocks, like those of the Kincardineshire villages to the south of Aberdeen, were caught by line and smoked the same day as caught. The smoking was done partly by fishermen's wives, but mostly by curers and smokers specially trained for the purpose.

The real Findon haddock, with its slight flavour of "Peat Reek" was not appreciated alike in all markets of Great Britain. For instance, while Edinburgh and London desired a highly coloured haddock, Glasgow, a great consumer of haddocks, would not tolerate colour. As a matter of fact when the writer was last directly connected with the production of smoked haddocks for those markets, the Glasgow trade was being supplied with haddocks that were simply split, pickled for twenty-five or thirty minutes, and packed for shipment without having been inside of a smoke house.

No Moray Firth man will ever admit that the product of Findon or any of the Kincardineshire villages was superior in quality or flavour to that of the northern villages, and so far as quantity was concerned, the output of Findon was insignificant compared with that of the town of Buckie, for example, on the southern shore of the Moray Firth. In its palmy days of haddock fishing, Buckie would produce more smoked haddocks in a week than the village of Findon could turn out in the course of six months. Moreover, the word haddie is not in use amongst the people of the Moray Firth. They talk of smoked haddocks or of "yalla' hathocks," but never of smoked haddies.

The Moray Firth smoked haddocks were marketed chiefly in Glasgow, Edinburgh and London. Consequently, their excellence was not specially noised abroad as was that of the Findon product by the people of Aberdeen.

All the smoke houses in Canada are of the Moray Firth type, and the method of smoking practised is that of the Moray Firth, so that while strictly speaking, our Canadian curers do not produce finnon haddocks, they do manufacture smoked haddocks by a process that is equally as long-tried and excellent as the other; and may I add, by the way, that there seems to be no good reason why Canadian curers should not market their haddocks with such names as Digby Smoked Haddock; Loekeport Smoked Haddock; Canso Smoked Haddock and so on, without the appellation "Finnon" which, in my opinion, does not help their sale one bit.

With that explanation I shall proceed to describe first and chiefly the process of haddock smoking most commonly practised, and second and briefly the real "Finnon" process.

Smoked Haddocks.

Gutting and Beheading:—Slit open the belly of the fish, remove the entrails and the black lining of the belly, and cut the head off neatly; then wash the fish, by scrubbing both inside and out, and remove blood and slime.

Splitting:—The splitter enters the knife, which should always be a sharp one, at the shoulder of the fish, by the side of the bone, and, keeping the edge of the blade close to the bone, splits the fish open from the shoulder to where the fish and tail-fin meet. Any one who has seen a smoked haddock will know that it is unnecessary to say the splitting should be down the front of the fish, not down the back. As much of the bone, where the blood cavity is, should be opened with the point of the knife as will expose the blood, and cause it to be easily brushed away. From large haddocks, the bone may be removed entirely to within a few joints of the tail end, as in boning a cod for drying.

Washing:—The split fish should now be carefully washed. Any slime remaining on the skin should be scrubbed off, and any remnants of black lining of the

belly adhering thereto removed. Any blood marks whether on the bone, or on the fish, should be brushed away.

Pickling:—When the fish have been thoroughly washed they should be placed in pickle. The pickle may be made in the usual way by dissolving salt in clean water until it is sufficiently strong to float a potato. Care should be taken to always make pickle of the same strength.

This pickling is usually done in a large tub or tank. The fish should be spread out singly and laid flat in tiers, so that each fish may get an equal share of the pickle, and in order to prevent the pickle from losing its strength too soon, half of one handful of salt might be sprinkled over each tier. The fish may be laid in the tub or tank either face up or back up; if laid face up the top tier should be turned back up. They should float easily in the pickle, although completely immersed in it. The length of time haddocks are allowed to remain in pickle depends upon the size and fatness of the fish; for instance, haddocks taken in the spring-time when they are thin after spawning, absorb the pickle much quicker than those taken in the end of year when they are fat and in fine condition. It also depends, of course, on the market they are being prepared for, and the length of time that may elapse before they reach the consumer. Half an hour may be taken as a fair average length of time to leave haddocks in the pickle. In this connection it should be constantly kept in mind that smoked haddocks are not intended to be kept indefinitely. They should be looked upon as a semi-fresh fish and salted accordingly for almost immediate use; otherwise, there is no excellence in the product.

Hanging:—After the necessary period in pickle, the fish should be lifted therefrom into a shallow box such as that described and shown in Article III. on the smoking of herring. Tents exactly like those described for the hanging of herring for kippers may be used, on which the haddocks should be spread out and hooked up just as kippered herring are. Iron rods, 4 feet long and about the thickness of a lead pencil may also be used, in which case the haddock is picked up by the left hand, folded with the skin-side inwards, and the rod which is held in the right hand, pushed through both "lugs" under the lug bone. As many fish are strung on the rod as it will conveniently hold when they are spread out, as in Figure 1.

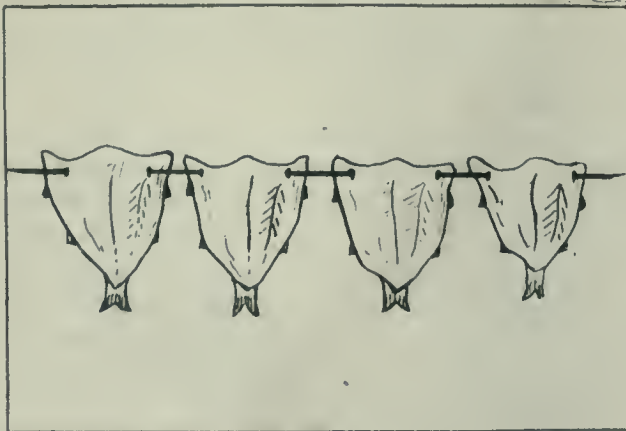


Fig. 1.

If the fish, after being placed on the tenters or rods, have to be carried some distance to the smoke house, a barrow such as has been described in the article on herring smoking, should be used.

The Smoke House:—A kippered herring smoke house of the type described in Article III. is commonly used for smoking haddocks in, and the description need not be repeated here. Figure 2 shows the exterior of such a building. This is what is known in Scotland as a "Moray Firth" kiln.

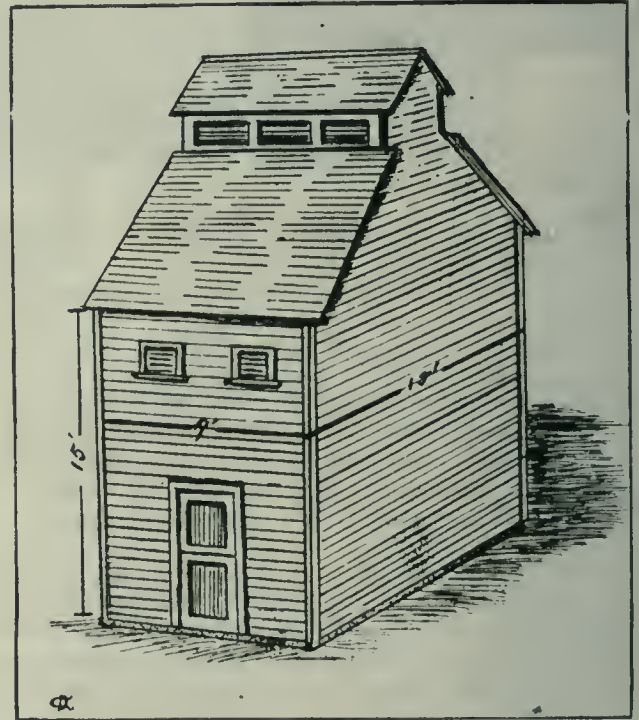


Fig. 2.

Smoking:—Smoke is produced from fires made of small heaps of hardwood chips and sawdust. What was said regarding the care of the fires and the attention to the draughts in the article on herring smoking, applies equally to the smoking of haddocks. The time required for smoking haddocks varies from three to six hours in accordance with the amount of colour desired. A straw colored haddock can be produced in about three hours, whereas five or six hours are necessary to produce an orange coloured one.

Packing:—The smoked fish should be thoroughly cooled off, and then packed flat in the well known 15 lb. and 30 lb. shallow boxes.

Finnon Haddocks.

The fish are split down to about an inch from where the fish and tail-fin meet. In addition to this, a cut is usually made from the shoulder to near the point where the splitting stops, on the bone side of the fish to give it a broader appearance.

The fish are then washed and pickled in the manner described for ordinary smoked haddocks.

After they are taken from the pickle the fish are, as a rule, laid out on boards to drip or dry over night before being hung in the smoke house.

Iron rods are used as in the ordinary process, but they are pushed through one "lug" only, as is shown in Figure 3.

The original Finnons were smoked in the wide old-fashioned chimney places of the fishermen's homes. For that reason, the chimney idea for smoking finnons is still adhered to. A modern finnon smoke-house thus contains a chimney or funnel of sheet iron attached to a brick wall about 20 feet high, which conforms to the shape of the funnel. The funnel is surmounted by a

revolving hood and vane. About two feet from the bottom of the brick wall, a row of bricks projects an inch or two; a foot higher is another row, and so on up to the bottom of the funnel. Hanging from the front of the funnel, which may be ten, or up to twenty feet from

lowest rod in a finnon kiln is only two feet from the fire, and that the fish hang by one "lug" only, necessitates the drying before smoking. Soft wood sawdust and peats broken into small pieces are used in order to give finnon their high colour quickly.

Figure 4 shows the side elevation of the funnel arrangement in a finnon smoke house.

Smoked haddocks, whether finnon or the other, should be made from fish that are landed in an absolutely fresh condition. Haddocks that have been a long time in the vessel before being landed should not be smoked. Such should rather be laid aside for splitting, salting and drying.

The consumer's taste should be studied and catered to with scrupulous care. Close attention should be given to having the smoked fish always of the same uniform degree of saltness. To accomplish this properly, the large fish should be pickled separately from the medium and small fish.

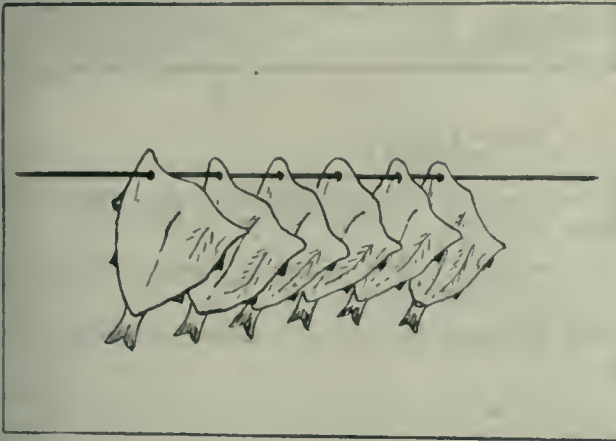


Fig. 3.

side to side at the bottom, are chains with a space of eight or nine inches between each. In each chain, at intervals of a foot, are rings opposite the projecting bricks in the wall. One end of a rod containing the fish rests on a projecting brick and the other in a ring opposite. The floor is of brick. The fact that the

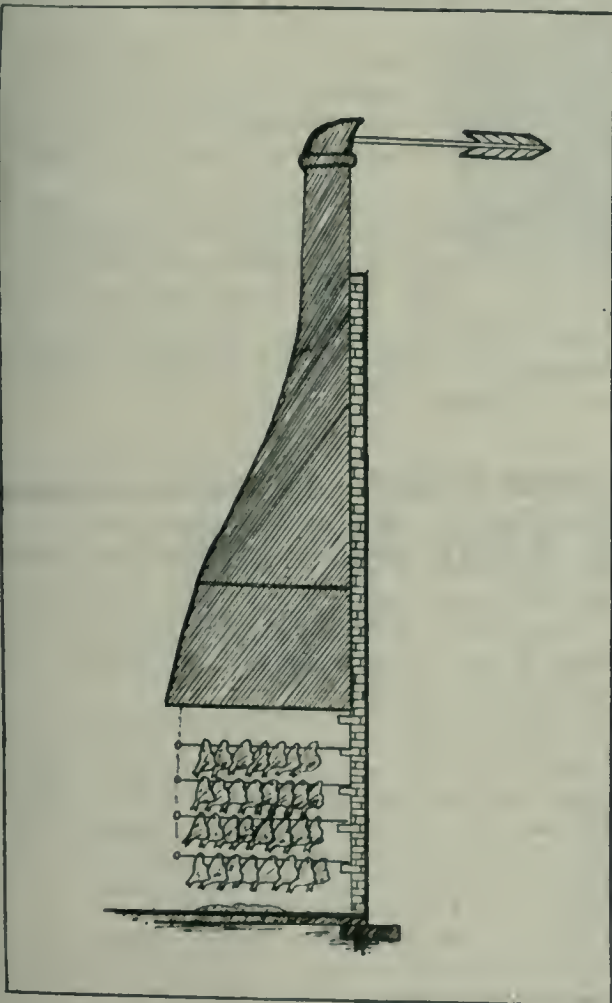


Fig. 4.



"CANADA-PRODUCT."

The Canadian Trade Commission has adopted the word "Canada-Product" as its trade-mark (though the term is not strictly correct.) The hyphen is an integral part as it was thought necessary to overcome the objection that the word "Canada" as an adjective is a little bare and strange to the ear "Canadian," though well understood in English-speaking countries, would not be nearly so expressive to the foreign peo-

ples with whom Dominion trade is now extending. The root of "product" has the advantage of being understood in about four-fifths of the world's commercial languages as:—

- FrenchProduit
- SpanishProduct-o
- PortugueseProduct-o
- ItalianProdotto
- GermanProdukt-en
- Austrian "
- Dutch in:
- Holland "
- South Africa "
- Dutch West Indies "

The phrase would be at once made widely-known without translation than "Made-in-Canada" or "Canadian-made." It also covers the double fields of agricultural "produce" and industrial "manufactures."

FISH CURING PLANT.

Arrangements are being made by C. P. Reil, of the Prince Rupert Fisheries, Ltd., to establish a fish curing plant at Langara Island. The Prince Rupert Fisheries, Ltd., has just been incorporated with a capital of \$22,000.



Pacific Coast Section

"The Canadian Fisherman," Pacific Coast Branch, will be glad to have inquiries from any one who wishes information in any way connected with the fishing industry.

We want to hear from you. You will receive a prompt and full answer to any inquiry you may make. Help the "Canadian Fisherman" to make this a real live, up-to-date Section.

Address communications to F. E. Payson, Pacific Coast Manager, Industrial & Education Press, Ltd., 507 Board of Trade Building, Vancouver, B.C., Canada.

SHARE OF CREDIT FOR FOOD STUFFS SHOULD GO TO B. C. CANNERS.

Messrs. F. E. Burke and A. W. Sterrett of the Canadian Fisheries' Association have been to Ottawa in the interests of the canneries of B. C. Much interest is being shown in the trip as it involves the expenditure of \$5,000,000 in canned goods in British Columbia.

The Canadian Government have appropriated \$25,000,000 for food stuffs on the foreign loan credit and canners of this province decided to send delegates to Ottawa in an endeavor to obtain a fair share of this amount for British Columbia.

The men are using the argument that prior to 1918 the canneries of this province were doing a good business, marketing their packs in their own way and had no trouble in disposing of their red and medium salmons. Last year, however, when the Allied Provisions Export Company took over the control of the salmon export business for America, the result was that the first class fish went overseas, leaving the cheaper grades on the hands of the men who had patriotically canned to the extent of their credit.

The United States made loans to Italy and other south European countries, placing all the chum salmon and other low grades on that side on the credit list and the entire stock was sent across the Atlantic.

This was not done in Canada with the result that the canneries have been forced to hold their cheap stocks and carry them at a great expense.

The contention of the delegates is that, as Canada has now no more cattle and stock than is required for domestic use, it is better to utilize the appropriation in the purchase of second grade fish and allow the livestock to remain in the country where it is a necessity. Canned fish could very well take the place of livestock on the food lists.

The report of the delegates is awaited with more than ordinary interest. They are expected back from Ottawa sometime during the first week in June and it is hoped they will bring the assurance that the canneries will be kept busy for an extra few months this year on cheap fish packing.

Upon presentation of the B.C. Canners' case to the Canadian Trade Commission, the Commission immediately communicated with Mr. H. B. Thompson, who is now in Europe in the interests of the Commission, and he is to do everything possible to market the canned chum salmon, herring, pilchards and salt her-

ring now held in stock in British Columbia. Meanwhile the British Columbia Salmon Canners are awaiting developments, and the feeling is that the government are slow in acting for the interests of its own industries as compared with the prompt action taken by our neighbors in the United States.

STEVESTON NARROWLY ESCAPES BEING WIPED OUT BY FIRE.

A fire which was started by the upsetting of an oil stove in a Japanese shack, results in damage of about \$10,000 at Steveston on Sunday night, May 25th. The cannery bunk house and twelve Japanese cannery workers shacks were completely wiped out. Little of this was insured.

Although it took three and a half hours to get the blaze under control, the volunteer fire brigade, with the aid of residents, were able to handle the situation successfully. The hydrant water pressure proved quite satisfactory.

On May 14 a year ago the place was nearly wiped out. Accordingly, the excitement was intense when the fire was at its height.

DEFIANCE PACKING CO'S NEW MANAGEMENT.

With Mr. J. F. Ellis as district manager, the Defiance Packing Co. will begin operations for the coming season.

Mr. Ellis was for fourteen years with the B. C. Packers' Association at their Balmoral Cannery on the Skeena River, and is thoroughly up to date in the salmon cannery operations.

Mr. Carl Splain is to be manager at the Great Northern Cannery of the Company, where he has been for several years. The manager for the Port Renfrew Cannery has not been appointed at this writing.

The same fleet of fish and freight carriers will be operated that was in commission last season. This consists of the auxiliary schooners Emma H. and Borealis, and a fleet of gasoline carriers.

Under the supervision of Balfour Guthrie & Co., whose local manager is Mr. T. W. B. London, and with the active management in the hands of the capable men noted above, the Defiance Packing Co. should make a good showing for the season of 1919.

Rounding The Tenth "Mile-Stone"



ACADIA GAS ENGINES LIMITED

BRIDGEWATER

::

NOVA SCOTIA

—1919—

Rounding The Tenth "Mile-Stone"



W. T. RITCEY,
President and General Manager, Acadie Gas
Engines, Ltd.

Ten years ago, Mr. W. T. Ritcey founded the business which bears this name. That we have just passed the **Tenth** "mile-stone" is not important in itself. But the knowledge which those ten years have brought,—the experience, the progress—the steady growth in "Capacity for Service"—of those things we are justly proud.

* * * * *

As the years passed—appreciation of the company's efforts forced us to increase space and equipment, until we outgrew the original plant and were compelled to build again and again. Today—Acadia Gas Engines, Limited, is the largest manufacturer of two-cycle engines in Canada.

* * * * *

In a floor space of approximately 65,000 square feet, occupying six separate buildings, equipped with the most modern of spe-

cially designed machinery, the plant stands,—a model of manufacturing efficiency,—a tribute to the worth of the marine gas engines produced there.

* * * * *

But wonderful as that plant may appear to the visitor, its **greatest** qualities remain unseen. The genius, the initiative, the conscientiousness—which have developed the organization,—the keen desire to build faithfully every “Acadia” manufactured, the painstaking study of each customer’s needs, the **active, willing, co-operation**—The “Service” behind it all, the taking care of a customer’s interests,—**AFTER** he has bought,—**ALL** of these things have counted to the fullest degree. Therein lies the secret of the Company’s growth—“**Confidence**” in the “**SERVICE**” which stands behind the “**NAMEPLATE.**”

* * * * *

In all this, then, there are strong reasons why Acadia Gas Engines Limited have **EARNED** your most serious consideration in connection with the marine engine equipping of your ‘**day-in-and-day-out**’ requirements.

* * * * *

Consider the advantage gained in dealing with an **EFFICIENT** organization of **unusual** resources and equipment, consider a thoroughly trained and highly skilled staff of master workmen.

* * * * *

Here you will find a real “Service,” not alone in the manufacture of honest engines,—but also in that care and consideration of the customer’s interests to which the spending of his money in all honesty entitles him.

* * * * *

And so the record stands,—

* * * * *

Shoulder to shoulder with you in all your requirements, Acadia Gas Engines Limited offer the aid of **men who know engines**—rather than the aid of salesmen “interested” in the marketing of new and experimental types of machines.

Always, we have been our own worst critics. Many a part we reject,—parts which the user himself would "O.K." But no "Acadia" leaves the plant until WE are satisfied.

* * * * *

Ten years of honest manufacture have put a keen edge on our judgment.

* * * * *

Why not demand for every dollar you spend for marine gas engines, the "Service" to which you are entitled?

* * * * *

If such "Service" appeals to you—if you desire that your engine investment earn, for you, returns from that investment—the "Returns" you have a right to expect,—ask us to describe to you the process of manufacture of "Acadia" marine engines—and to quote you prices which **YOU** can Afford to pay.

* * * * *

At your service, — —



The Works of the Acacia Gas Engines, Limited, Bridgewater, Nova Scotia.

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Fishermen and motor-boat users are finding "Reliable" Flashlights and Searchlights indispensable for night work.

There is a world of satisfaction and service built into every "Reliable" Flashlight case. Hand-

some metal enamelled cases—a distinct advance in flashlight making. Just as durable and "Reliable" as they are attractive.

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Toronto, Ontario

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RELIABLE
TRADE MARK

Canadian Products

"Lively and Lasting"

THE ST. THOMAS COLD STORAGE

ST. THOMAS, ONTARIO



¶ The only Cold Storage Plant in Ontario specially equipped for the handling of fish.

¶ Located in the heart of the Lake Erie fishing district, maintaining private switches with direct connections on N. Y. C., C. P. R., G. T. R., P. M., and London & Port Stanley Railways.

¶ Smoking plants in connection.

Distributors of

Finnan Haddie, Salmon, Halibut and other varieties of fish

WRITE OR WIRE US YOUR PROPOSITION

Operated by

The St. Thomas Packing Co., Limited

MOTOR BOAT NOTES.**Built for Carrying Salmon.**

The Newcastle No. 6 was built for T. Ode & Company, Vancouver, B.C. The designer and architect is Mr. Tom Halliday, of Vancouver, B.C. The builders were the Sunset Shipyards.

The dimension are as follows: 90 ft. over all; 18 ft. 6 in. beam; 8 ft. 3 in. moulded depth; 8 ft. 9 in. draft ex-load; 101.93 gross tonnage; 64 registered tonnage. Powered by: 110 B.H.P. six cycle Gorham.



Newcastle No. 6.

Speed: 10 to 12½ miles per hour light; 8 to 8½ miles per hour loaded. Fitted with electric winch and automatic engine to run a 10 K.W. dynamo. Crew accommodation: sky deck, captain's cabin, chart room and pilot house. Main deck; engineers room and four bunks, also mess room, gallery and toilet. Forecastle; eight bunks. This carrier has a capacity of 20,000 chum salmon and is built exclusively for carrying salmon and cargo.

New Boat for A. B. C. Packing Co., Ltd.

The "Fir Leaf," built at the Vancouver Shipyards for the A. B. C. Packing Co., Ltd., of which H. Bell-Irving & Co., Ltd., are managing agents, is the fourth boat of this company to be named after a variety of leaf, the others being the "Holly Leaf," the "Ivy Leaf" and the "Laurel Leaf." These are a part of a fleet of ten carriers and seine boats.

The "Fir Leaf" measures as follows: 70 ft. overall, 15 ft. 6 in. beam, 6 ft. draft. Powered by a 100 H.P., Type C. O., semi-Diesel, Fairbanks Morse Engine. She will operate from the Knight's Inlet Cannery.

The "Fir Leaf" had a good test as to her seaworthiness on her first trip, which was to Seattle for a load of oil. On the return a heavy blow came up but the new boat weathered the heavy seas in great shape, and although things were lively for a time, every one aboard had nothing but praise for the way she behaved.

The "Fir Leaf's" second trip was to the cannery for the season and she took in tow two scows and made the trip at an average of 5¾ knots per hour. Her regular speed is 9 knots.

A Tow Boat.

The Powell River Company, are having a tow boat built at Menhions boatyard. She will be finished about June 1st, and will be: 50 ft. over all; 13 ft. beam;

6 ft. draft. Powered by a 75 H.P. Type C.O. Semi-Diesel Fairbanks Morse Engine. Will use heavy oil. This boat is to be extra heavily braced and creosoted with the idea of standing up under all kinds of work.

Trollers.

Ferrier & Lucas have been turning out some new



Salmon Troller "Allenby."

type trollers, and the "Allenby" is one of this type. This is one of seven all of same type and all fishing out of Prince Rupert. The "Allenby" is: 30 ft. overall; 7 ft. 6 in. beam; 3 ft. 6 in. draft. Powered with a 5 H.P. Atlas Imperial engine. Cost including engine was \$1,600.

A Fleet of Seine Boats.

The "Kitgora" is one of six boats operated by the Canadian Fishing Co., Ltd., all of the same size and

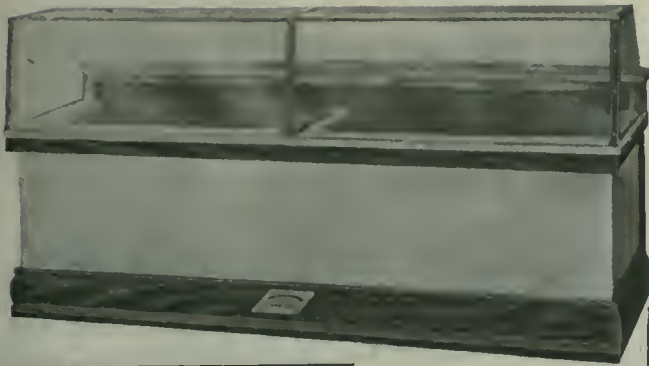


"Kitgora."

type. They are used for seining, carrying fish and large line halibut fishing. The boats are designed and equipped by Ferrier & Lucas, of Vancouver, B.C. The "Kitgora" is 60 ft. overall; 15 ft. beam; 8 ft. 6 in. depth. Powered by a 40 H.P. Atlas Imperial engine and cost complete \$13,000. The builders fully equipped this boat except dishes and charts. The five other boats are powered as follows: One 50 H.P. Frisco Standard. Two 40 H.P. Frisco Standard. Two 40 H.P. Atlas Imperial.

Other Boats.

Y. Nishima has had a new boat built at Vancouver Shipyards. 60 ft. overall; 15 ft. beam; 7 ft. draft. Powered by 50 H.P. Frisco Standard.



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FREEMAN
MODERNIZE YOUR STORE**

No matter from what angle you consider your equipment problem, it pays to install the best. Don't wait until the hot weather before ordering. Last minute jobs are never satisfactory. Write us now. Take time to decide. No matter what you want from the small refrigerator silent salesman to a complete refrigerator plant, we will be glad to mail descriptive catalogue and estimate on your requirements. You can order now for delivery next spring.

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SHIPMATE RANGES

Smallest size
Body 18½ inches long.

Largest size
No limit to length

"Never pass a skipper to windward on his quarterdeck," and never attempt to pass another brand of stove on the man who has sailed with a SHIPMATE. He knows it to be the old reliable—fair weather or fo l.

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THE STAMFORD FOUNDRY CO.,
Stamford, - - - Conn.

Established 1830

BOLINDERS HEAVY CRUDE
OIL ENGINES
SIMPLE, DURABLE, DEPENDABLE

Built by a firm who stands supreme in the whole world as Oil Engine experts. The result of 30 years experience. Built in sizes from 5 to 500 B. H. P. Used by fishermen all over the world—at one port alone there are over 1,000 fishing vessels fitted with Bolinder Engines. Particularly suitable for

**HIGH POWERED TRAWLERS, DRIFTERS,
FISHING TUGS**



The "Madeleine Constance" one of W. & S. Job & Co's Bolinder equipped vessels.

People using the Bolinder Engines know their value.
NEW YORK, Nov. 18, 1918.

"In reply to your inquiry regarding the engines of the "Madeleine Constance," "The Alembic" and the "Metamora," which vessels our Newfoundland firm is working, we have to say that we have had the very greatest satisfaction in the operation of same. Each vessel has been running for some time and we find the engines are both reliable and economic, and if we were buying any more engines we should certainly not pass your brand.

Very truly yours,
W. & S. JOB & CO., Inc.
(Sgd.) W. C. Job, President.

REPRESENTATIVES:—

Swedish Steel and Importing Co., Limited, Shaughnessy Building,
MONTREAL

PUGET SOUND AND ALASKA.**Surf Packing Company to Build Large Clam Cannery.**

The Surf Packing Company, according to Alvin Hemrich, the President of that Company, are building the largest clam cannery in existence. The plant is located on Snug harbor, Cook inlet, Alaska, and is progressing so rapidly that it will soon be in operation and by July will be shipping thousands of cases of Alaska razor elams southward to the American market.

For a long time the Surf Packing Company have been putting up razor elams from the ocean beaches of Washington State and they are now putting their experience into practice in the development of this large packing plant. The practical exhaustion of the beaches at Aberdeen made it necessary to close the company's cannery there and seek new fields of supply. Mr. Hemrich's son, Mr. Elmer Hemrich, spent several months in the north and found in the Snug harbor an immense supply of fine big elams, which, on account of the white sand of Snug harbor beach, are unusually white of meat.

Mr. Paul Glaser is manager of the Surf Packing Company, while in the north the company is co-operating with George W. Palmer, who has been a resident

in Alaska for the last thirty or thirty-five years, and is well known in connection with the mercantile business. Mr. Glaser located the Snug harbor beach and now has a store and is building a school for the education of the natives at that place.

Mr. Hemrich says, "We will not only operate this plant as a clam cannery, but as well will pack a large amount of the fine salmon that run in Cook Inlet."

JAPAN TO ENCOURAGE FISHING INDUSTRY IN JAPAN SEA.

There has been considerable talk of developing the fishing industry in Japan, but so far there has been little activity in this line along the Coast of the Japan Sea. Arrangements will be made for herring fishing off Vladivostok and the authorities are now considering the steps to be taken to encourage fishing in the Japan sea.

Following the last session of the diet, Mr. Murakami, director of the fishery section in the department of agriculture and commerce, was sent to make a report of the fishing industry in Ishikawa, Toyama, Fukui and other places.

U. S. RESEARCH OF ALASKAN FISHERIES.

Headed by Mr. Henry O'Malley, field assistant of the Pacific Coast Bureau of Fisheries, a party of Government officials left Seattle Monday, May 12, for the purpose of extensive research of the northern fisheries and salmon grounds. It is expected that these districts will ultimately develop into the world's best sea food areas.

A. E. HALLETT,
BROKER

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wholesale fish concern.

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PROVINCE OF ONTARIO
Department of Game and Fisheries
SALES BRANCH

Producers of Fresh caught fish from the waters of the province and distributed to the people of the province at stated prices through the co-operation of the municipalities.

Address all correspondence to the Sales Branch, Parliament Buildings, Toronto.

GEO. H. RAPSEY, Superintendent.



THE TRADE MARK OF QUALITY
WHEN PLACED ON

**LONG COATS
and
SLICKERS**

"Takes the Wet Out of Rain."

**FOR THE
FISHERMAN**

A STRONG, well made garment—that will stand all the hard wear that a coat of this kind will get. The shoulders and sleeves are double, the body being lined half way down. Made of heavy material finished with corduroy collar and two outside pockets. Fastened with solid brass rust-proof clasps. The name "Tower's Fish Brand" is found only on the best waterproof clothing. Ask your dealer.

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Coast to Coast Service.

Since 1847, Nothing But
QUALITY

From the very beginning, 72 years ago, we were firm in the opinion that if quality was right, the business would come. It did. The demand has increased steadily every year, till today the is the

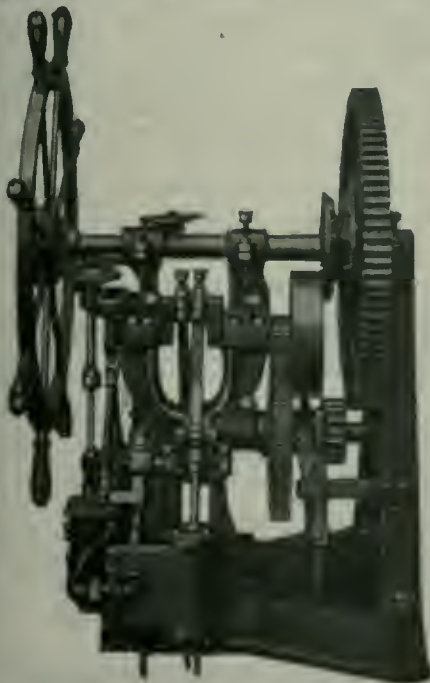
**World's Largest Line of
MARINE HARDWARE**

Fishermen in all U. S. and Canadian waters buy our supplies naturally; they know from experience that each piece is built to stand hard, stubborn use and does it. You can get the line from all Canadian dealers. Try it;

**It Pays to Buy Our Kind
WILCOX, CRITTENDEN
& Co. Inc.,
22 S. Main St., Middletown,
Conn. U.S.A.**

Crossley Steam Steering Gear

"The Machine That Has No Equal"



Simple
in
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Absolutely
Dependable

Easy to
Operate

Equipped
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Double
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**V A C
Rubber
Boots**

are the best

For
All Purposes

Sold only by

**The Robert
Taylor Co. Ltd.**

Halifax,
N.S.



APRIL ARRIVALS FRESH HALIBUT AT PACIFIC COAST PORTS.

	Pounds.
Seattle, Wash	1,395,597
Vancouver, B.C.	345,500
Prince Rupert, B. C.	2,070,500
Ketchikan, Alaska	419,574
	4,231,171

Halibut prices at Seattle ranged as follows:

Opening.	High.	Closed.
14 1/4 e	22 c	10 1/2 e
Ketchikan:		
Opening.	High.	Closed.
10 e	12 c	9 1/2 e
Prince Rupert:		
Opening.	High.	Closed.
14 3-10 e	15 1-10 e	9 6-10 e
Vancouver:		
Opening.	High.	Closed.
14 1/2 e	14 1/2 e	11 e

CANNED SALMON MARKET.

Sockeyes—Without doubt this variety of canned fish is practically all cleaned up. If not on firm buys at least on purchases S. A. P. The price has gone as high as \$16.75 a case on firm buys. Red Springs halves are still holding at \$14.50 for top price. Pinks are still bringing \$9.25 for half pound flats.

Nothing doing in chums. The Trade Commissioner has nothing to report on last season's chums in connection with the credit arranged with foreign countries in Central Europe. This matter was taken up with the Commission by the Canadian Fisheries' Association delegates from B. C., and the Commission promised to do all they could to market these fish.

LOCAL ITEMS.

Mr. A. A. Kirby, representing F. T. James & Company of Toronto, was in Vancouver recently. Mr. Kirby has been on a business trip to the coast, taking in Seattle, Vancouver and Prince Rupert.

Fred Mills, bookkeeper for the Canadian Fish & Cold Storage Company, is back from a trip into the interior and is looking much better. Fred says there should be more fish eaten than there is and good live fish men could make a good living in operating first class fish stalls in cities that now have none.

Mr. F. J. Hayward has just returned from Siberia, and the Orient. Mr. Hayward has some interesting items to report at a later date regarding his observations on the other side of the Pacific, and these will be of interest to all concerned in the fishing industry.

WORST WEATHER ON THE PACIFIC FISHING BANKS IN FIFTEEN YEARS.

The report from the deep-sea fishing vessels is that fishing off the Pacific Coast has been under the worst weather conditions experienced in the past fifteen years.

This has meant long trips and small catches. Of course this has hit the halibut men harder than any others.

The salmon trollers on the West Coast of Vancouver Island have been up against the same bad weather with the result that the catches have been poor up to date.

THE FLAT FISH STEAMERS.

The Steam trawlers, "Geo. E. Foster," of the Canadian Fish & Cold Storage Co., the "Imbriearia" of the Canadian Fishing Co., and the "B. C. P." of the British Columbia Packers' Association have all been fishing the past few weeks, but owing to the bad weather their catches have not been large.

These boats are all fishing otter trawls and supply the Eastern and Prairie markets with the palatable flat fish the Government has done so much to place before the public.

Over 5,000,000 lbs. have been marketed in Canada since the Government took hold of the fishery.

CREDITOR MAY BE PAID IN FULL IS SUGGESTION MADE BY W. E. HODGES.

If negotiations can be successfully entered into with Balfour, Guthrie & Company, by which this company would finance the operations of the canneries this year, the creditors of the Defiance Packing Company may eventually be paid 100 cents on the dollar. This is the prospect held out by W. E. Hodges, liquidator, at the creditors' meeting on Tuesday, May 27.

A committee of creditors was appointed to act with the liquidator and if they deemed it advisable, to enter into an agreement with Balfour, Guthrie & Co., along the lines suggested or along other lines, subject to ratification by the creditors.

The admission of the validity of the debentures they held as well as the fact that \$120,000 was admitted to be due and owing thereon; that the validity of the agreement of January 11 regarding the payment of \$200,000 in fish be admitted; that only the Great Northern and Port Renfrew canneries be operated and in a manner approved of by them; that the sum to be advanced should not exceed \$150,000 with interest at 7 per cent., to be secured as a first charge; that Balfour, Guthrie, should act as selling agents for the pack at the usual commission, and that Mr. Sherman should take no part in the operations of the canneries, are the conditions upon which Balfour, Guthrie & Co. would undertake to finance the operations this year. Another condition was that the whole assets shall be sold by public auction if the canneries were operated at a loss this year.

At a later meeting the creditors agreed to allow the canneries to be managed by Balfour, Guthrie & Co.

NORTHERN FISH TRAPS BEING PLUNDERED.

It has recently been reported that a number of fish traps near Juneau, Alaska, have been robbed. It is the opinion among the Alaskan cannerymen there that an organized gang of thieves has been brought north from the States to plunder Southeastern Alaska fish traps.

Several canneries are protecting their traps with armed guards and it has been reported one company has a machine gun fixed to a launch.

PACIFIC COAST OIL AND FERTILIZER MARKET.

The fish oil market is very active and a decided interest is being shown in Pacific Coast oils. Although no prices are being quoted at the same time a marked interest is being shown by purchasers.

**WE DESIGN & INSTALL
SUCCESSFUL
FISH FREEZING,
COLD STORAGE
& ICE PLANTS.**

**"YORK"
ICE MACHINES**



CALGARY WINNIPEG

TORONTO MONTREAL

**'SCYCO'
OILED CLOTHING**

Red and Blue Label

Wet Weather Garments



"Red Label"

Double Garments

BEST FOR THE FISHING TRADE

Write us for price list.

Manufactured by

SCYTHES & COMPANY Limited

TREAL

TORONTO

WINNIPEG

TO PROVIDE FACILITIES FOR DEEP-SEA FISHERMEN.

Wharves and Warehouses Planned for Waterfront at Prince Rupert.

Wharves and warehouses for halibut fishermen are to be built in the vicinity of Eleventh Avenue in Seal Cove, Prince Rupert. This property is owned by the federal and provincial government. Plans will be prepared by Major G. B. Hull, district engineer for the federal government, who has just returned from Ottawa.

Permanent quarters for the fishing fleet will be built on Seal Cove which is located at the east end of the townsite of Prince Rupert. Major Hull also announces that the government will dredge Matlakatla Bar, which will enable boats to make quicker access to the open sea.

Another public work to be undertaken soon is the dredging of Skidegate Narrows, between Graham and Moresby Islands, in the Queen Charlotte group. This will be of importance to northern fishermen and mariners generally.

FISH-SKIN LEATHER.

A new Alaska industry is the manufacture of leather out of fish skins. They have a plant in operation at Seward. Shark skins, especially, it is said, produce fine leather of dark hue, which takes a beautiful finish. What remains of the fish after it has been skinned is used in the manufacture of such by-products as oils, glue, gelatines and fertilizer.

VANCOUVER STRIKE CAUSES INCONVENIENCE.

Although the majority of canners along the Coast had taken action looking to the possibility to a tie-up of the B. C. Coast steamship services and had laid in a plentiful supply of food stuffs and other supplies some time ago, at the same time the tying up of the steamships at just this time caused considerable inconvenience in getting fishermen and cannery employees to the canneries.

The general strike in Vancouver started on June 3rd and within a few days had spread to the steamship companies, although the steamship tie-up was not entirely a sympathetic strike, but on account of the inability of the steamship owners and certain employees not being able to come to an agreement on certain matters. Since that time the canneries have been endeavoring to get their men north to the different stations for the summer run of fish.

On June 12th two steamers left Vancouver for the north carrying full loads of passengers and perishable food stuffs, no other freight being shipped. One of the Grand Trunk Pacific steamers had among these passengers a large number of returned soldiers who were anxious to get to their homes up the Coast. Just how long the strike will continue is problematical. Meantime the fish supply is keeping up although it is not as large as under normal conditions. Wholesalers state that they have a supply sufficient to fill requirements.

Owing to the meat cutters going out the retail butcher shops, where a great deal of the fish is handled, are short of help and in many instances have discontinued buying fish until things get back to normal again.

The Citizens' League is handling the food supply situation and up to the present time the public are

getting their full supply of fish and meats as usual although in some instances the retail markets have been put to considerable inconvenience to secure ice owing to the ice drivers being tied up.

NORTHERN B. C. FISHERIES, LTD.

The name Northern B. C. Fisheries, Ltd., a company incorporated in July, 1918, is unfamiliar to many connected with the fisheries industry and, for the benefit of those who are not familiar with the composition of this Company and for others who may be interested the Canadian Fisherman prints the following:

This company is possessed of seven canneries, a saw mill and a box factory. The canneries are Kincolith Packing Company, Limited, at Mill Bay, on the Naas River; the Skeena River Commercial Company, Limited, at Port Essington, B.C., on the Skeena River; Port Edward Fisheries, Limited, on the Skeena River; Portland Fisheries, Limited, at Kumeon, B.C.; the Draney Fisheries, Limited, at Namu, B.C.; Tallheo Fisheries, Limited at Bella Coola, B.C.; Kimsquit Fisheries, Limited at Kimsquit, B. C., and the Namu Box Company, with saw-mill and box factory at Namu, B.C. At the Mill Bay plant there is also a cold storage, but this part of the plant has not been operated for the past year or two.

The officers of the company are: Mr. R. V. Winch, president, whose name everybody in the Canning Industry is familiar with and who has built up an enormous and most successful business. Henry Doyle, vice-president, who is without doubt, if not the best, at least one of the best posted men on the salmon fisheries on the Pacific Coast; C. A. Crosbie, general manager, is a comparatively new man in the canning industry, but is widely and most favorably known as having been for sixteen years superintendent of the B. C. branches of the Royal Bank of Canada. Under Mr. Crosbie's able management there is no doubt of the success of such a consolidation.

The success of any group of canneries is without doubt due to the proper management of the canneries and in this connection it is worthy to note the names of the managers of the different canneries and those who have had anything to do with the salmon canning business for many years past will recognize the names as those of men which are familiar in the cannery industry as able managers.

At the Mill Bay plant Mr. J. T. Cousens is manager; at the Skeena River Commercial Company, Port Essington, the manager is Mr. A. D. Matheson; at the Port Edward Fisheries plant Mr. F. W. Rudge is manager; at the Portland Fisheries plant at Kumeon, Mr. J. W. Burr is manager; at the Draney Fisheries plant at Namu, Mr. H. Reek is manager; at the Tallheo Fisheries plant at Bella Coola, Mr. W. E. Draney is manager; at the Kimsquit Fisheries at Kimsquit, B.C., Mr. C. I. Draney is manager and at the Namu Box Company, Mr. F. M. Bradford is in charge.

The company has made no alterations or extensions this year and the pack of better grades of salmon has been disposed of at good prices.

CANNED FISH MARKET.

An order for 25,000 cases of cohoes at \$13.00 per case has been placed. A quotation of \$8.00 per case for pound tall pinks is reported.

W. R. SPOONER

Wholesale and Commission Dealer

FISH OF ALL KINDS

119 Youville Square, - MONTREAL

I am in the Market at all times to Buy or Sell on Commission, Fresh, Frozen Smoked and Salt Sea and Lake Fish in Carload Lots or less.

CORRESPONDENCE SOLICITED

REPRESENTING

National Fish Company, Limited

Halifax and Port Hawkesbury, N.S.

OWNERS AND OPERATORS

Steam Trawlers—"VENESTA" and "LEMBERG"

"NATIONAL BRAND"

PRODUCERS

Haddies, Fillets, Kippers,
Bloaters, Scotch Cured Herring

Fresh, Frozen and Salt
Sea Fish

J. Bowman & Co., Port Arthur, Ont.

Wabakin Fish Co., Montreal, Que.

A. W. Fader, Canso, N.S.

U. S. GOVERNMENT TO PROTECT ALASKA HERRING IN COMPETITION.

The Seattle headquarters of the United States Department of Fisheries intend to prepare a series of bulletins showing the probable size of the Scottish herring pack and other information by which Alaska and Seattle Packers' may gauge their output. This is in order to stimulate herring production and packing in Alaska and to promote this new industry in competition with foreign products.

Sometime during the latter part of May and August H. D. Klie, herring expert of Hoboken, N.J., and well known in Washington, was sent to Scotland by the federal department to obtain this information for the benefit of the Northern and Northwestern packers. He will investigate herring conditions in Scotland and ascertain the size of the pack of cured herring.

"This information will be immediately dispatched to Seattle for the benefit of packers," announced Henry O'Malley, Pacific Coast head of the United States fisheries department. "Now that the war is over the Alaska herring industry, which developed during the war, is brought into sharp competition with the Scotch product. The government intends to promote production of Alaska herring and to continue for this year at least the practice of sending federal demonstrations to the Northern fishing grounds."

From now on Alaska herring will be brought into competition with the Scotch product in the big herring markets of New York and Philadelphia. An uncertain feature of this trade will be the freight rates, which are considerably lower from Scotland to the Atlantic Coast than from Alaska to these markets.

THE FRESH FISH MARKET, VANCOUVER, JUNE 13th.

Owing to the extremely rough weather there has been no large catches of any variety of fish. The result has been that prices have not varied.

Salmon have arrived in varying quantities and halibut is not any too plentiful. Catches have been small and costly.

The large trawlers are not bringing enough to affect the market.

Wholesale Fresh Fish Quotations.

	per lb.
Halibut . . . . .	.14c to 17c
Red Springs . . . . .	.15c to 17c
White Springs	6c to 10c
Bluebacks . . . . .	.14c to 16c
Ling Cod	6c to 8½c
Red Cod (Round)	2c to 3c
Grey Cod . . . . .	.5c
Oolichans	5c to 6c
Soles and Brills	6c to 7c

Shell Fish.

Crabs (scarce)	\$1.10 to \$1.20 per doz.
Perch . . . . .	.6c
Shrimps . . . . .	.17c per doz.
Clams . . . . .	.2½c to 3c per lb.

Vancouver Prices. Smoked and Salt Fish.

	per lb.
Smoked Sable Fish (Black Cod, whole) . . . . .	.14c
Kippered Sable Fish . . . . .	.20c
Fillets, Sable Fish . . . . .	.17c
Smoked Pink Salmon (whole) . . . . .	.20c

Kippered	20c
Bloaters	7½c
Kippered Herring	9c
Eastern Haddie . . . . .	.16c
Western Haddie (according to size) . . . . .	.10c to 11c
Imperial Herring Chicks in bundles of 5 boxes . . . . .	.18c
	Per bbl.
Salt herring, large, 900 to 1,000 count, 225 lbs.	
Salt herring, medium, 1,400 to 1,500 count, 250 lbs. net	\$12.00
Salt herring, large 200 lb.	12.00
Salt, herring, large 100 lb.	7.00
Salt herring, large 50 lb.	4.25
Salt Sable Fish (Black Cod), 200 lb.	22.00
Salt Sable Fish, 100 lb.	12.00
Salt Sable Fish, 50 lb. (Kit)	6.50
Salt Pink Salmon, 200 lb.	15.50
Salt Pink Salmon, 100 lb.	8.50
Salt Pink Salmon, 50 lb.	7.00
Salt Grey Cod, 50 to 200 lb. (per lb.)	10c

PRINCE EDWARD ISLAND FISHERIES.

The lobster fishermen on the north side of the Island were hard hit by the north-easterly storm which swept the Island about a fortnight ago, and continued for nearly a week. In some sections the damage to gear was so great that the fishermen abandoned lobstering for codfishing and mackerel fishing, which are now being carried on very profitably, the catches being large.

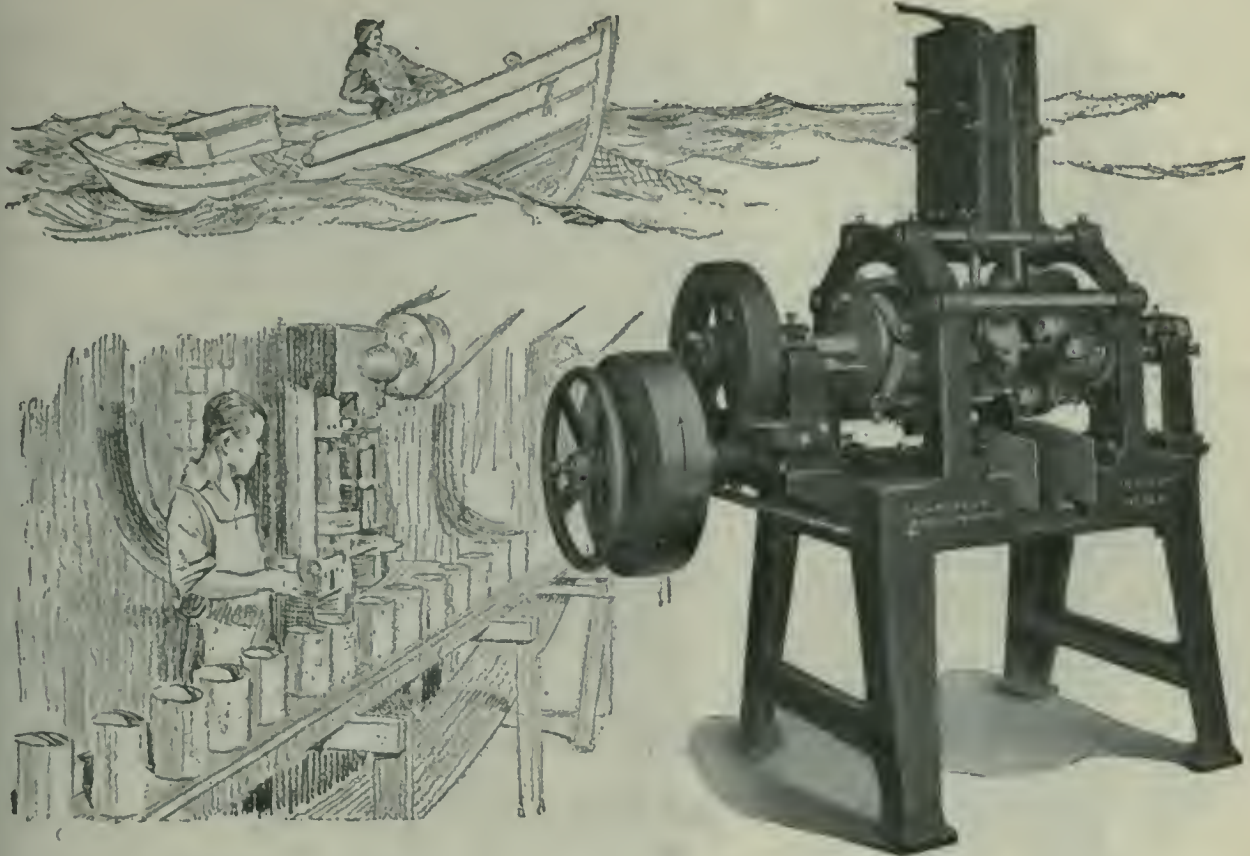
In the sections of the Island, such as the west and east, where the full force of the storm was not felt, and where the gear suffered little damage, very fair catches of lobsters are being taken. The price paid to fishermen is the highest known, in some sections \$10 per hundred being the rate.

The Georgetown Fish Company, organized this year, resuscitated this spring the smoked herring industry, which was started first on the Island about eighteen years, maintained for several years, and then abandoned. The buildings of the old plant have been refitted, and J. Guptill, of Grand Manan, placed in charge. The smoker is now almost full of herring procured from the Magdalene Islands. The company has been using a trap in the waters near Georgetown, but so far with little success, so the supply of herring has to be sought elsewhere.

At the recent session of the Legislature the rights of the fishermen came in for more attention than at any other session for many years.

For instance, it was strongly urged that the returned soldiers, who are fishermen, should be accorded assistance from the Dominion Government in the way of providing them with equipment to be paid for at the end of the fishing season. It was pointed out that many of these men, when they enlisted or were called to the colors, disposed of their boats, etc., at a sacrifice. The soldiers who have been farmers are being assisted to buy and equip farms, and the fisherman is equally deserving of Governmental aid, so the argument ran.

Near the close of the session a resolution was unanimously passed, after an interesting discussion, against the desirability of encouraging steam trawlers in the coastal waters of the Island. The Federal Depart-



Modern Cannery Practice

Allows little time to elapse between the catch and the final operations on the pack. Prompt and continuous streams of all the elements necessary to make cans are depended upon to avert loss.

Clean cut, high quality output required of all "Bliss" Automatic Can Making Machinery, but steadily continued production at high speed is likewise a feature of importance. These things have been developed in The "Bliss" lines through nearly sixty years of experience and co-operation with cannery and can makers in all parts of the world.

"BLISS" AUTOMATIC ROUND-CAN DOUBLE-END FLANGER, NO. 15-K.
This machine flanges both ends of can bodies simultaneously and is entirely automatic and continuous in operation. It produces flanges on 100 to 150 cans per minute and can be readily adjusted from one size to another.

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1857

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ment of Fisheries was also asked to extend protection to Island fishermen against the depredations of such trawlers.

The arguments against the trawlers, in brief, were as follows:

(1) The fishermen now operating line and trawl fishing in the coastal waters, have a large amount of capital invested in boats, and other outfit, and this outfit will be destroyed and the shore fisheries ruined.

(2) The Charlottetown Board of Trade has passed a resolution asking the Government to provide three steam trawlers for the Island. The number of men to be benefited by the operation of these three trawl-

ers would be very small in comparison with the large number of men now engaged in shore fishing, who would suffer injury.

At a meeting of the Provincial Fish and Game Association held recently, a resolution was unanimously passed asking that a body of men similar to that of the North West Mounted Police, be appointed to patrol the province and see that the game regulations were observed. Since the abolition of fish wardens, the need of better protection of our trout streams is more urgent, although the warden system, as previously in force, did not meet with the approval of the Association.

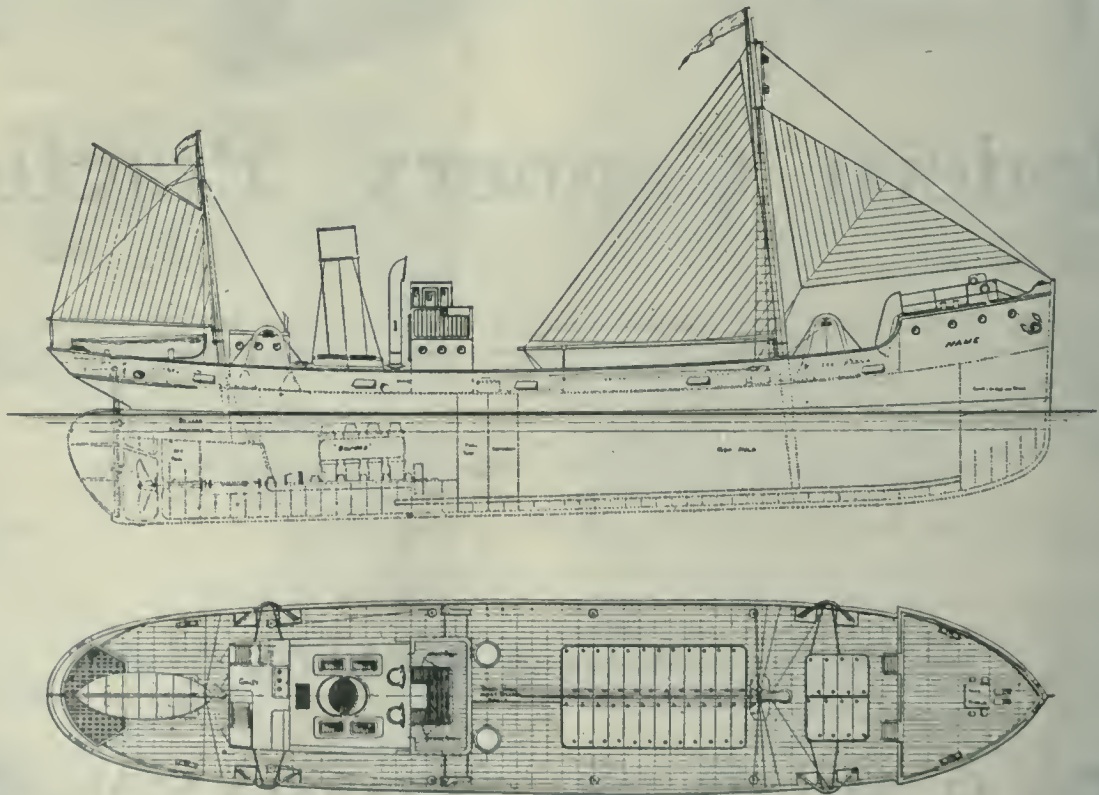
CRUDE OIL ENGINES FOR HIGH POWERED TRAWLERS.

The Atlantic fishermen are beginning to appreciate more and more the necessity of Power Trawlers. Our neighbors to the south are beginning to adopt oil engines for their trawlers and the examples has been followed by some Nova Scotia concerns. The question is of vital importance and all information on the subject is, therefore, of value.

We are reproducing above a plan of a high powered trawler equipped with a 500/600 B.H.P. Bolinder Engine. This Engine develops its maximum strength on 160 R.P.M., but can easily be operated on as low as 80

The main engine in the above trawler would consume about 900 gallons of oil per 24 hours running full speed. Adding the fuel consumption of the auxiliaries, a total average consumption of 1,000 gallons per 24 hours might be figured on. For a 15 days cruise at full speed about 15,000 gallons, or about 56 tons, would be required. A coal burning trawler of same size and speed would require about 20 tons of coal per 24 hours, which means that her cruising radius would not be the half of that of the oil-engined trawler, and even at that her cargo carrying capacity would be considerably curtailed.

The following are, therefore, the main advantages of the motor-driven trawler: (1) Greatly increased



R.P.M. A single unit of 500/600 H.P. is to be preferred to twin engines for propulsive purposes.

The representatives of the Bolinder engine, the Swedish Steel & Importing Co., Ltd., Montreal, inform us that they recommend the installation of a smaller Engine of about 80 B.H.P. to supply electric power for driving winches, capstan, etc., with direct connected motors. There should also be installed a small electric set to be used for electric light, steering gear, etc., when the 80 H.P. Engine is not in operation.

radius of action; (2) A considerable gain in cargo capacity; (3) Reduced crew, and consequently smaller wage and food bill; (4) Large reduction in fuel bill.

With the large future of the fishing industry this oil engine question should be thoroughly considered by owners, and those who are progressive enough to favor the proposition should look at same in a broad manner, appreciating as they must do that sooner or later the oil engine will oust the steam for all types of fishing vessels.



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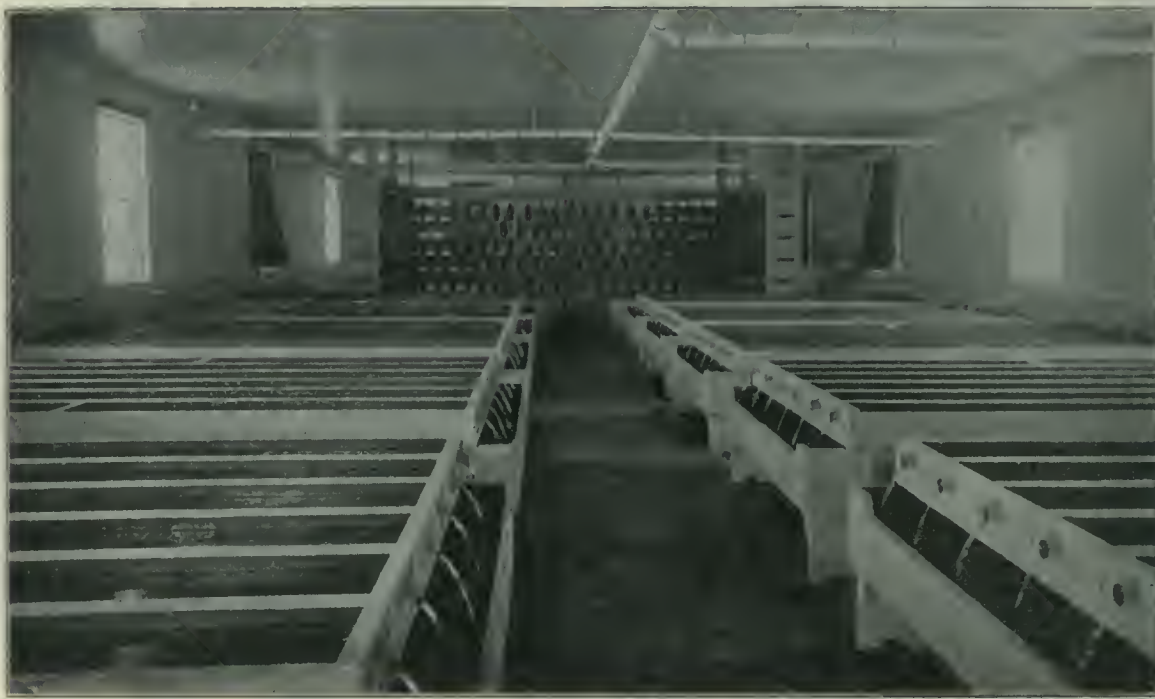
GOODRICH "HI-PRESS" Rubber Footwear

ONTARIO'S FISHERIES PROGRESSING.

Ontario's commercial fisheries have increased to a remarkable degree during the past season, as indicated by the twelfth annual report of the Game & Fisheries Department just issued. The increase over that of the previous year was 6,629,191 pounds. The Deputy Minister, Mr. D. McDonald, is paying particular attention to the hatcheries of the province, and for the 1919 season four hatcheries will be under the operation

size of fingerlings, all danger of spring floods, which resulted in the loss of so much of the fry in former times, is over, and the experiment has proven a great success at both Mount Pleasant and Port Arthur.

For the first time, the Department has been successful in collecting 170,000 brook trout spawn for the Mount Pleasant Hatchery and 1,500,000 speckled trout spawn from the famous Nipigon stock for the Port Arthur Hatchery. The output of the new hatchery at



Interior, Provincial Fish Hatchery, Port Arthur.

of the department. A hatchery 38' x 76' has been built in Current River Park, Port Arthur, fully equipped for the hatchery of both speckled and lake trout, whitefish, herring and pickerel, with ideal conditions as to the source and supply of pure water, having a capacity for 75,000,000 whitefish and 15,000,000 trout.

The erection of ponds for rearing speckled trout fry is one of the advance movements inaugurated by Mr. McDonald. By rearing the fry until they attain the

Normandale consisted of 1,400,000 pickerel dore, 15,500,000 whitefish, and 38,000,000 herring fry, and were all planted in the water of Lake Erie. Adding to these figures the hatch of 2,000,000 pickerel dore fry at the Port Carling Hatchery, which were planted in the Muskoka waters, make a total of 56,900,000 as a total distribution by the province. This is the first year the Department undertook the propagation of fish other than game species, and speaks well for the progressive method adopted by Mr. McDonald.

NEW BRUNSWICK FISHERIES.

A meeting of the Weir Owners Union of St. John and Charlotte County was held at St. George on June 10th, to discuss the sardine situation. Delegates Byron, Dick and Carson of St. Andrews, said that owing to many packers having stock on hand they favored a compromise and lowering of the price demanded from packers. Messrs. Belyea, Logan, McLeod, Howard and Ellis of St. John, said that \$20 a hogshead was the lowest they could accept. Alonzo Stewart, of Deer Island, said he favored the \$20 price, but they were up against the situation on Deer Island that many weirmen were outside the union, and were selling at \$10. Hoyt, Letete; Hooper, Back Bay; Browning, Bocahee; Pendleton, Holt and Kileup, of Poelogan; Harris, of Mascarene; Captain Kelson, of Beaver Harbor; Simpson, Letete; Groom and Dick, of Jutasen, took part in the discussion. Capt. Richardson, of Deer Island, said the weirmen there would leave the union if the price was not lowered.

A resolution to inform the packers that they would have to pay \$25 after June 15th, if they did not stop buying for less than \$20 was voted down. A resolution introduced by M. N. Coekburn, and Fred Belyea, declaring that the union adhered to the \$20 scale, was carried by a big majority.

A number of the smaller Maine packers have been at work for some weeks, paying \$10 per hogshead.

On the North Shore of the Province there has been a big run of herrings, and Fred Magee and other smokers have had all the fish they could handle. Grand Manan has been getting herring for smoking from the Magdalen Islands, where there has been plenty of fine herring. At Buetouche the fishermen's nets have been sunk with the weight of fish.

Connor's Bros. of Black's Harbor, report that their surplus stock of sardines has been moving freely, and they plan on operations as usual this year. Most of the big Maine packers decided not to commence operations till July 1st, and some may be later.

Enquiries for fish from other countries, some com-

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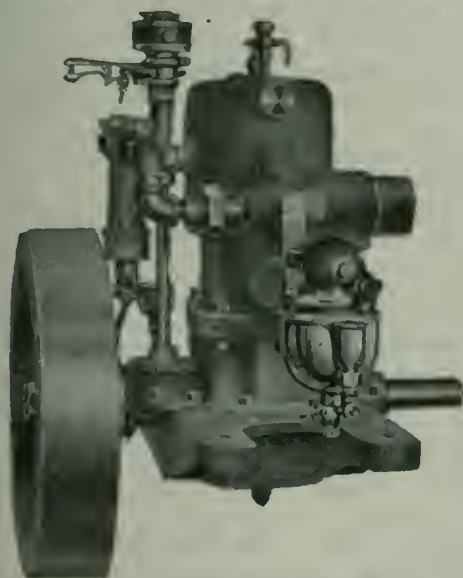
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General Dimensions of 5 H.P. Model "A"

Bore of Cylinder	4 1/2	Inches
Stroke	4	"
Weight, engine only	230	lbs.
Complete shipping weight, with outfit	420	"
Diameter of Propeller, 2-blade	18	Inches
Diameter of Propeller, 3-blade	16	"
Shaft diameter	1	Inch
Shaft length	5	feet

For full information regarding this or any other Model send for catalog. State size engine required.

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ing from as far away as New Zealand. England has shown little interest, but last week several enquiries were received here from Paris and Havre. Among dry fish dealers there is much speculation as to price prospects. The Porto Rico market, which is generally regarded as a barometer for dried fish, is offering very low prices, nearly to the pre-war level. The Nova Scotia bank catch is reported good, and this may affect prices. Recently there have been good catches of mackerel on the eastern shores of Nova Scotia.

Gaspereau fishermen at St. John have done well recently, but the fresh market and the demand for bait have taken about all the catches, and the indications at present are that there will be few for salting and export, which used to be a big feature of this fishing.

W. S. Loggie represented New Brunswick on the Canadian Fisheries Association delegation, which visited Ottawa recently to urge the appointment of a Deputy Minister of Fisheries.

There has been some talk here of forming an export group of fish merchants, with the idea of pooling resources to develop foreign markets. Prices last week in St. John were: Halibut, 30 cents; salmon, 45 to 50 cents; mackerel, 15 cents; shad, 20 cents; smelt, 20 cents; finnen haddie, 18 cents; smoked boneless herring, 35 cents; box herring, 30 cents; boneless cod, 22 cents per pound; gaspereau, 5 cents each; kippers, 6 cents each; salt herring, 60 cents per dozen; lobsters, from 25 cents upward.

"I want the Canadian people to get a vast vision of the trade opportunities in Europe. It is not trade between one firm and another, but trade between whole nations and a sister nation." That is the message of Mr. Lloyd Harris, head of the Canadian Mission in London, on his return to Canada.

The Greeks are reaching out more and more into the merchant trade of the rich Levant, and their own trade development in Greece will be huge. Canada has a glorious opportunity here for exporting, the Canadian Trade Commission believes.

"Ships are the secret of our success," says Mr. Lloyd Harris, head of the Canadian Mission in London. "We must find means of joining our railways with the railways in Europe. Ships only do this."

A new law proposed in the Canadian parliament is to the effect that fishermen in B. C. will pay a tax of \$5 per 1,000 for all fish they take during the late summer and fall runs, also affecting the big hump-back. If this law becomes effective this year the Washington tax, which is 50 cents per 1,000 on their catches, will represent but 10 per cent. of the British Columbia levy.

Returned soldiers in B. C. have filed petitions asking that aliens be barred from fishing in waters of that province.

CANNERY DESTROYED WITH LOSS OF \$350,000.

A cable was received in Seattle from Skagway to the effect that the main buildings of the Chilkoot cannery of the Alaska Pacific Fisheries' Company, located on the Lynn Canal, near Skagway, Alaska, were destroyed by fire on July 8th. The estimated loss is \$350,000.

BRITISH FISH MARKETS.

It is reported that there are considerable stocks of frozen fish in store which were brought over here for the use of the Dominion and other troops, but which, owing to the cessation of hostilities are not required for that purpose. At the present moment there is not the slightest call for frozen fish, apart from salmon and halibut, and it would seem as if the Canadian Military Authorities in holding out for price a few months ago have lost their opportunity of finding an outlet for this fish. It is an unwritten law of the fish trade in the United Kingdom to cut your loss; a sale could have been found for this fish a few months ago at a certain figure, but now it is absolutely hopeless to offer it, as the trade will not even look at it, let alone bid for it. Except occasionally during the winter months, the day of high prices for imported frozen whitefish is now past, and even then fish which has been in store for any length of time will be looked at askance.

May 31st, 1919.—Heavy supplies of all kinds of trawled fish have been landed this week, and the markets in the consuming centres have received rather larger quantities than could be conveniently handled day by day. At Billingsgate, in addition to huge arrivals from all parts of the United Kingdom, three steam carriers have come in from Ymuiden, Holland, with cargoes of trawled fish, the "Freia" discharging nearly 50 tons on Monday and Tuesday; the "Holland V." some 30 tons on Wednesday, and the "Derika VII." 90 tons on Thursday and Friday. Each of these vessels was consigned to the firm of Peter Forge for management and sale. As may be imagined, with substantial quantities for disposal, salesmen have been compelled to accept easy figures to effect business, and speaking generally, the prices current this week for most kinds of fish have been well down to the pre-war level. Mackerel, too, has been very plentiful, and rates for this kind have fallen to a lower level than previously this season. Herrings, on the other hand, have not been unduly prominent; owing to the unsatisfactory prices realized at the port of landing, many Scotch herring vessels have been laid up until the outlook is more promising. The herrings at present being landed are, in many cases, young, immature fish, and will not stand the journey to the big consuming centres in England with the present hot weather, and, on the other hand, owing to uncertainty, curers for the Continental markets, who were the principal purchasers of herrings prior to the war, are not inclined to operate.

Strenuous efforts are being made to clear the stocks of Canadian frozen fish still on hand, but there is little prospect of this fish finding an outlet through the ordinary trade channels. It is reported that a prominent preserving firm has bought a large quantity of this fish at a figure which would scarcely cover the cost of the boxes. Under present circumstances prospects for frozen fish in this country, apart from salmon, are anything but rosy.

It has been reported that the balance of the undisposed stock of Canadian frozen fish in England has been given to the Salvation Army.—Editor, C. F.)

There must be no adverse balance of trade if Canada's prosperity is to be upheld. The Canadian Trade Commission is trying to get class and mass to understand the purport of the message.

THE CANADIAN FISHERMAN

A MONTHLY JOURNAL DEVOTED TO THE COMMERCIAL DEVELOPMENT OF THE FISHERY RESOURCES OF CANADA AND NEWFOUNDLAND, AND THE TECHNICAL EDUCATION OF THOSE ENGAGED IN THE INDUSTRY.

The Industrial & Educational Press, Limited

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Published on the 24th day of each month. Changes of advertisements should be in the publisher's hand ten days before that date. Cuts should be sent by mail, not by express. Readers are cordially invited to send to the Editor items of Fishery news, also articles on subjects of practical interest. If suitable for publication these will be paid for at our regular rate.

FREDERICK WILLIAM WALLACE
EDITOR

Official Organ of the Canadian Fisheries Association and Affiliations

Vol. VI.

GARDEN CITY PRESS, St. Anne de Bellevue.

No. 7

A GOOD MOVE.

The representations of the Canadian Fisheries Association have borne fruit. It is announced by the Hon. Mr. Ballantyne, Minister of Marine & Fisheries, that a Publicity & Transportation Division of the Fisheries Department is being formed and an appropriation to enable such Division to carry on active work is being obtained this Session.

The Industry and the Association congratulate the Minister upon the step undertaken by his administration, and we feel that this is one Division which has great possibilities and which can do much to develop the fisheries provided its efforts are not restricted by too niggardly appropriations.

Publicity in building up home and foreign markets and the transportation of fish are the two big problems facing our Industry. With an active and intelligent man in charge of the Division and one who will co-operate with the trade, good results will follow quickly. The new Division has our best wishes and is assured of our heartiest co-operation.

THE FISH AND CHIP RESTAURANT.

It is to be hoped that the new Publicity Section of the Fisheries Department will give some attention to encouraging the establishment of more fish and chip restaurants throughout Canada. We have written much on this subject before, but feel that it is of sufficient importance to keep harping on.

Mr. H. B. Thomson, of the Canadian Trade Commission at present in England as Overseas Trade Commissioner advises us that the fish and chip restaurants are as popular with the aristocratic classes in Eng-

land as they are with the proletariat. He sends us a copy of the London Evening Standard of June 18th, where in connection with a report of the Ascot Race Meeting it states that the fried fish and chip stalls were packed with humanity. The Ascot races draw the most exclusive and fashionable racing fans in England with Royalty invariably in attendance, but they are not too exclusive or fashionable to be above crowding into a fish and chip stall and making an al fresco luncheon off these palatable foods.

We need more fish and chip restaurants in Canada. By their establishment, the cost of living could be considerably reduced, and a large home market for fish developed. The writer has patronized fish and chip restaurants in several Canadian cities and found the fare served tasty and remarkably cheap — so much so that it is a mystery why more of these restaurants have not been established.

A short and aggressive campaign by the Fisheries Publicity Department backed by an official endorsement from the Cost-of-Living Commissioner or Board of Commerce, would help to turn the public patronage to the fish and chip restaurants. The cheapness of potatoes and fish cannot be disputed even in these days, and their healthfulness as food is unquestioned.

CANADIAN FISHING VESSELS SUNK THROUGH GERMAN RAIDS.

Now that peace has been signed, it is up to the Hun to foot the bills for the damage he has caused through illegal warfare. Among the Canadian claims which are being presented is a list of the vessels under Canadian registry which were sunk by enemy submarines

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Saskatoon, Calgary, Vancouver,
Victoria.

or raiders, and included in this list are a number of Canadian fishing craft. As the names of the fishing vessels and the details of their destruction may soon be forgotten, we are publishing same herewith.

TRIUMPH, steam trawler, 239 tons, owned by National Fish Co., Halifax. Captured by German submarine on Middle Bank, August 20th, 1918, and converted into a raider. After sinking several vessels, she was afterwards destroyed.

C. M. WALTERS, fishing schooner, 84 tons, owned by Zwickler & Co., Ltd., Lunenburg, N.S. Sunk by submarine on St. Pierre Bank, August 25th, 1918.

E. B. WALTERS, fishing schooner, 98 tons, owned by Zwickler & Co., Ltd., Lunenburg, N.S. Sunk by a submarine on St. Pierre Bank, August 25th, 1918.

ELSIE PORTER, fishing schooner, 91 tons, owned in La Have, N.S. Sunk by a submarine on Grand Bank, August 29th, 1918.

GLOAMING, fishing schooner. Sunk by submarine while fishing on St. Pierre Bank, August 26th, 1918.

J. J. FLAHERTY, fishing schooner, 110 tons. Sunk by submarine on St. Pierre Bank, August 26th, 1918.

LUCILLE M. SCHNARE, fishing schooner, 93 tons, owned by W. C. Smith & Co., Lunenburg, N.S. Sunk by trawler TRIUMPH on Quero Bank, August 29th, 1918.

NELSON, A., fishing schooner, 27 tons, owned in Yarmouth, N.S. Sunk by a submarine 25 miles south of Cape Roseway, N.S., August 4th, 1918.

PASADENA, fishing schooner, 91 tons, owned by Enos Wentzell, Mahone Bay, N.S. Sunk by submarine on Quero Bank, July, 1918.

POTENTATE, fishing schooner, 91 tons. Sunk by a submarine on Banks, August 31st, 1918.

UNA SAUNDERS, fishing schooner, 95 tons, owned by Zwickler & Co., Lunenburg, N.S. Sunk by a submarine on Middle Ground, August 20th, 1918.

VERNA D. ADAMS, fishing schooner, 90 tons, owned by W. Duff, Lunenburg, N.S. Sunk by a submarine on St. Pierre Bank, July, 1918.

In addition to the vessels named, several Canadian schooners in the fish carrying trade were sunk in other waters.

THE ROUMANIAN MARKET FOR FISH.

Newfoundland shippers succeeded in placing a cargo of 56,720 quintals of dried cod on the Roumanian market at a good price, and Newfoundland producers hope to dispose of between 30,000 and 50,000 quintals in Roumania annually from now on. Canada has extended a large credit to Roumania. How is it that we could not place some of our surplus stock of canned chum salmon or pickled herring there?

RETURNED SOLDIERS IN THE FISHERIES.

It is particularly pleasing to hear from our Pacific correspondent that returned soldiers are being given a chance in the Pacific salmon fisheries. A certain percentage of fishing licenses is being reserved for them by the Government and the B. C. cannery companies

are pledging themselves to employ a certain quota of returned men. This is a first class move and might be emulated in other fisheries.

The fisheries of the Pacific coast differ from other Canadian fisheries inasmuch as a large proportion of the fishermen engaged therein are aliens who entertain but little love for Canada other than the opportunity to make money exploiting her natural resources. It is to be hoped that returned soldiers will be given the preference over alien fishermen in future and that the day may not be far distant when we shall have nothing but Canadian citizens engaged in our Pacific fisheries.

CATCHING UNDERSIZED FISH.

At the recent convention of the Lake Erie Fishermen's Association several speakers touched on the waste of catching small and immature fish. Hon. Mr. McDiarmid condemned the practice, and Mr. S. W. Downing, Superintendent of Hatcheries, Put-in Bay, Ohio, gave several instances of the destruction of fish by catching small herring, white-fish and pickerel. In the United States, fishermen and officials roundly scold Canadian fishermen for catching undersized fish and consider that we are destroying the fisheries of Lake Erie.

This matter has been very thoroughly discussed by Canadian fishermen on Lake Erie and we believe the most practical and level-headed men are in favor of using larger meshed nets in order to save the small fish. There is no doubt but what natural propagation is preferable to artificial propagation, and the best method of natural propagation is by having close seasons when the fish are spawning and restrictions on the size of the fish to be caught.

The gill-net measure of 3in. extension is sufficient to allow the escape of undersized fish, but the small mesh of pound-nets prevent the immature fish from getting away. It has been suggested that Lake Erie pound-net men adopt the State of Pennsylvania rule by employing a mesh of 2 11-16 factory extension measure, which, it is claimed is sufficient to allow the small fish to escape.

It is a rule of true economics and conservation to save the young of any living animal or plant until it shall have reached maturity and reproduced itself. In some cases, this is rather difficult, but it should be carried out wherever possible, and it is infinitely better for fishermen to get together and decide upon measures for conservation themselves and, if necessary ask the Government to make it law, rather than for the Government itself to step in and make the law on its own initiative. In the former instance, the fisherman shows himself a good citizen, while in the other he is looked upon as a destructive agent whom it is necessary to restrain.

The fishermen of Lake Erie are a superior class of men with an aggressive and enterprising association. In that association, it would be worth while having a Committee of Fisheries Conservation which would study matters affecting the maintenance of the fish supply of the lake and draft recommendations which would ensure its perpetual productivity on a generous scale. After all, it is the fishermen who gain their livelihood from the products of the laeks; it is their money which is invested, and any method of fishing which is destructive should be discontinued in their own interests.

SCIENTIFIC DIVISION OF FISHERIES DEPARTMENT.

Since the conclusion of hostilities, the Federal Fisheries Department is endeavoring to strengthen their administration for a more aggressive development of the fisheries. Up to the present, fisheries research and development has been under the aegis of several departments — Conservation Commission, Biological Board, Council of Scientific and Industrial Research, Canada Food Board and possibly some others. While not deploring the work if any of these organizations, we feel that the time has come for a consolidation of effort and authority, and we are desirous of seeing the Department of Fisheries empowered to take charge of all administration and development work in connection with Canada's fisheries.

We are pleased to learn that a Scientific Division of the Fisheries Department is being established. In the past, the whole scientific work of the fisheries, was, by legislation, under the exclusive control of the Biological Board who could investigate what they liked, when they liked and where they liked. A Bill has been framed amending the Biological Board Act whereby scientific fishery investigations will be undertaken by a Scientific Division of the Fisheries Department reporting to, and responsible to the Minister of Fisheries. This Bill has already gone through the House of Commons and is now before the Senate.

It is to be hoped that this Bill will be passed and the Fisheries Department given control of the scientific investigation work pertaining to the fisheries. No good can come of individual efforts unless it is directed by the Department most concerned. We would further like to see this Scientific Division of the Fisheries Department aided by strong Biological Sections in our various universities working under the auspices of the Department. With an organization of this kind established, we feel sure that a splendid start can be given to co-ordinated effort in solving scientific fishery problems and the industry will be benefitted accordingly.

[Since the above was written, the Bill was defeated by the Senate and unless it is brought up again, matters will remain as formerly.]

RECENT FISHERIES LEGISLATION.

May 31st, 1919. Fisheries Regulations. Fleming Lake, Fleming River, Kawashkeana Lake, Thunder Bay District, Ontario, closed to fishing for three years from June 1st, 1919. May 31st, 1919. Sullivan Creek, Flat Creek, Willow Creek, Rice Creek, South Fork, Middle Fork and all tributaries to the main or North Fork of the Highwood River, Alberta, closed to fishing for two years from June 1st, 1919.

PISCATORIAL PARAGRAPHS.

The Dominion Government has voted appropriations of \$33,000 for harbor improvements at Port Stanley; \$50,000 for harbor improvements at Port Dover, and \$48,000 for breakwater extensions at Thessalon, Ont.

The fishermen of Boston and Gloucester are threatening to go on strike and are asking for a fixing of the minimum price at which fish shall be landed at the piers in order to assure them of a certain minimum wage for their work throughout the year. The Unions

have appealed to the Attorney-General to establish the legality of their demand, while the dealers state that such price fixing would be a violation of the U. S. Federal Laws.

A very heavy run of mackerel has been a feature in Nova Scotia of late and the cold storages are freezing great quantities.

The Halifax otter trawler M. F. B., Capt. Backman, is now on her first trip. The M. F. B. was originally built in Nova Scotia for French owners and is under the French flag. She is engaged in salt fishing.

The lobster season in the Municipality of Digby, which ended a few days ago was, considering it was only for three months, exceptionally good. 150 boats with about 300 men were engaged and approximately 9,000 traps were set. The catch is estimated at 400,000 fish, weight about 350,000 pounds and valued at \$67,000. The catch last year was 496,800 pounds; in 1917, 766,500 and in 1916, 1,146,000—but these three seasons were of six months' duration. Altogether 1,600 cases were packed.—Digby Courier.

The Montreal Gazette, in a recent editorial regarding the militia bill, went adrift in its metaphors. It stated "that unless the pruning hook is applied with a firm hand there is danger of a horde of barnacles sticking to the Ship of State." Surely a new use for pruning hooks!

The next issue of the CANADIAN FISHERMAN will be the first of the Special Export Editions and will be produced under the auspices of the Marine & Fisheries Department and the Canadian Trade Commission. This is intended as the initial effort in building up our export trade in fish and should receive the co-operation of the whole Fishing Industry of Canada.

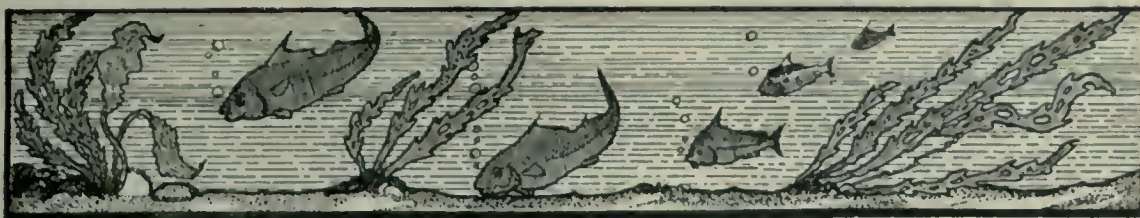
On June 27th, a fire totally destroyed the wharf, wharf buildings and store of J. E. Snow, Digby, N.S. The loss is placed at \$12,000.

TRAWLERS FOR SALE.

In this issue, six steam trawlers, at present in England, are being advertised for sale by Mr. Fred Parkes, Boston, Eng. Two of these craft are just being completed, while the other four are in commission after being re-conditioned. Further particulars regarding these vessels can be had from the Editor, CANADIAN FISHERMAN.

PACIFIC FISH TRANSPORTATION SUBSIDY TO BE DISCONTINUED.

Following the discontinuance of the transportation subsidy on Atlantic fish on March 31st, the Marine and Fisheries Department announce that it is the intention to discontinue the payment of the transportation subsidy on Pacific fish after the end of August. The Department is of the opinion that the subsidies have played their part in building up a demand for the fish and that the appropriations can be used to better advantage in other methods of publicity.



Technical Training for Fish Hatchery Officers

By PROFESSOR EDWARD E. PRINCE, M.A., LL.D., D.Sc., F.R.S.C.
Dominion Commissioner of Fisheries, Ottawa.

In glancing over the history of Fish-Culture on this continent and in Europe, the surprising fact appears that a large proportion of those most prominent in the pioneer work were self-taught and untrained men. Their success was great, but might have been greater had "Science" been called in to aid their "Practice." The reports we have of the operations of these pioneer fish-culturists, show that they held many erroneous views, and often committed serious blunders, but their scrupulous care and attention to details, and their enthusiasm in overcoming difficulties, enabled them to accomplish remarkable results, and in spite of the defects of their procedure and their very palpable ignorance of well-known scientific facts, it is not too much to say that they achieved eminent success.

Success of Pioneer Fish Culture.

No one can deny that the fishermen of La Bresse in France seventy years ago, and such leaders as Armistead, Frank Buckland, and Maitland Gibson, in Britain, Theodatus Garlick, Mather, and the two Clarks, in the United States, and Samuel Wilmot, Richard Nettle, Holliday and others, in Canada, were practical men who accomplished really great things. At any rate, they awakened intense public interest and got the support of governments to help them in their fish breeding schemes.

They illustrate the point that I wish to emphasize, viz., that the work of fish-culture has been mainly carried on by what are called "practical" men, that is to say, men with little or no exact knowledge, and entirely without technical training, and whose success depended upon fortunate "rules of thumb" which they struck, and by the care, perseverance, enthusiasm, and self-sacrifice, which characterized all their labours. Much that they did proved that they had little scientific knowledge, and no familiarity with the biological conditions and laws of embryology, which are essential to complete success in this important work.

Crude Blunders of Untrained Men.

I remember well, early in my experience on this continent, after my ten years of scientific fishery training in Scotland, England, and Ireland, that I found a most remarkable case of defective knowledge, which was of such vital importance that I took means to have it immediately corrected. For years I found that certain hatchery officers had been instructed to take a glass tube and blow into the eans of water, containing young fish during their shipment from hatcheries. This was supposed to be oxy-

gen to revive the fry when showing signs of weakness. These men, in other words, emptied their lungs of deadly carbonic acid gas, in order to revive the fish; but any scientific tyro would know that it was one of the best methods of killing fish, to thus poison the water which they were breathing.

I have also seen many times, hatchery officers put a handful of salmon eggs, covered with particles of mud, into their mouth, in order to clean them, and then return the eggs to the tray after the mud had been thus disgustingly removed. To put salmon eggs into the hot chamber of the mouth is also a very effective way of killing them, or at any rate, of causing them to develop abnormally. No one would entrust his watch to the ordinary baggageman on a train and allow him to manipulate its delicate and intricate internal mechanism, but it was customary to do a similar thing with living fish eggs, which are far more delicate objects than any watch. Thus rough, ignorant treatment explained a great many of the failures which for years troubled fishery departments in this and other countries.

Fish Eggs are Delicately Organised.

It was one of my first duties as Dominion Commissioner of Fisheries in Canada, to explain some of the hatchery officers that the living ovum of a fish is a far more delicate object than a watch. It is a living developing organism, and though we handled them by millions, like peas in the market—indeed the men called them "peas" at times—yet each of these millions of eggs is a marvel of Nature's delicate and intricate mechanism, and a thousand physical, chemical, mechanical and biological conditions affect them for evil or for good.

How necessary then it is, that these marvellous objects, called fish eggs, from which a living creature, a wonderful little fish-embryo, will emerge, should be cared for by men with knowledge and with trained intelligence. Otherwise, the risks of failure, of disease, and of death, are not only great, but inevitable.

I can personally testify that some of the pioneers to whom I have referred, and most of whom I personally met, strongly resented the interference of scientific men, and many of them referred at times to biologists and scientific embryologists as mere indoor book students whom they viewed with something approaching contempt. Just as a farmer for a long time objected to the scientific agriculturist and practical rules, so the men in whose hands fish hatcheries so long remained in Europe and on this continent, looked with disfavour upon technical knowledge and upon scientific advice and procedure.

Science Essential in Fish Culture.

Under the auspices of the Federal and of the Provincial authorities, fish culture has become an important departure of public service, and the operations carried on with a view to benefitting that large and important body of citizens—the fishermen and fish traders—and of providing food for our tables and fish for our sportsmen, should not continue under the old conditions longer than is unavoidable. Hatcheries should be in all cases operated on scientific principles, and the staff of officials in these institutions should have a benefit of all the knowledge that researches in biology, embryology and alive sciences can give. It is necessary that government departments and government officials should understand the serious character of the fish hatchery appointments, and that the public, or such of the public as may be induced to engage in fish culture work and desire to secure positions in hatchery services, should understand the real nature of the demands it makes upon all who would carry on successful fish propagation.

I am well aware that I am stating no new proposition in emphasizing this. Science has already been enlisted in the work of fish culture, and Japan has led the way in establishing a system of national training for hatchery officers—a system which France inaugurated in a less systematic way many years ago, and which has also been carried out in Scotland under the Scotch Fishery Board.

Fish Hatching an Expert Profession.

But fish culture is now an established profession—one even may say a learned profession, and the idea that any man is called to take charge of a hatchery when he has learned to squeeze spawn from a ripe fish, manage a pump and control the flow of water through trays, jars or tanks, must be dismissed forever. Various countries are recognizing, and governments here and elsewhere must recognize, that a man trained as a carpenter, or plumber, is not on that account especially qualified to handle those wonderful miracles of nature,—living fish eggs and delicate fish embryos and fry. I have heard men of intelligence express the opinion that fish eggs could be gathered and roughly shipped by rail, just as peas may be gathered in the field and tumbled into baskets for transmission long distances in freight cars. I have even heard legislators of some eminence, express surprise that they could not be promised a supply of delicate newly hatched fry in the hottest months of the year, and have them shipped safely for long distances by rail and by team, over rough country, and on more than one occasion I have heard instructions given to arrange for exhibiting trout and salmon eggs in a public exhibition at a time of the year when such fish are not spawning. One Member of Parliament demanded that newly hatched salmon fry should be exhibited in a Provincial exhibition many months before such fry could have grown to a suitable size for the purpose. One prominent gentleman told me, "I must have a small hatchery in operation at our exhibition in the month of June or July," and he was surprised when I told him that neither eggs nor young fish could be got any more than ripe Vermont apples could be taken from the trees and exhibited in the month of May.

Qualities Needed in Hatchery Officers.

Our hatcheries must be in charge of men trained in all that pertains to successful fish culture, and I myself would insist upon qualifications and training, in the case of all officers put in charge of fish hatching and rearing operations. Let no one think that the modern fish hatchery officer has easy duties—duties entirely pleasant and welcome. Much rough work is done in the cold and wet, and often under disappointment and despair after failure of his efforts to secure ripe parent fish. He has days and nights of incessant labour at times, and the hatchery officer often asks himself if there is any work so unpleasant, so exacting, so uncertain as his. Many a young man, when visiting a hatchery in operation on a fine spring day, has thought that no work could be so light and so pleasant. Looking over the hatchery building and ponds after the fry had all been distributed and before the new supply of eggs had been collected in the fall, and while the main work of the staff seemed to be to attend to the flower garden or to painting gates and fences and varnishing tanks and trays,—such a visitor has pictured the life as an easy and ideal one. It is a life spent amidst the wood and streams, and it may be in the midst of wild romantic scenery, but he is apt to forget that when hatching is going on in winter, a supply pipe may be frozen some cold morning before daylight, that the fry may crowd the receiving tanks when some of his staff are away, and he is at his wits end to handle his output. All again, disease may creep in upon his eggs or young fish, or worst of all, eggs may be so scarce as to be almost unobtainable and his jars or trays are empty and waiting to be filled. Sometimes fierce snow storms or gales of great severity may overtake him and his staff when on the spawning grounds, and a thousand mishaps and difficulties may occur to discourage and disappoint him.

Enthusiasm Essential.

The first qualification for a hatchery officer is enthusiasm in his work. He must have an interest in fish and fish matters. You cannot make a successful naval officer out of a youth who hates the sea, and you cannot make a successful fish culturist out of a man who has no real interest in fish, just as one man loves horses, or dogs, or orchids, so they are men who by nature are devoted to fish or fish lore. There is no hope of making a successful fish hatchery officer out of a man who has no real interest in fish life and habits of fish. A famous Professor of Geology, in the University of Oxford, once said to me, "To make a Geologist, you must begin with an enthusiast—all then is easy." This applies in an eminent degree to fish culture. It provides plenty of hard work, requires long weary hours to be spent in the cold and wet, often amidst snow and ice; it involves repeated disappointments and failures; but enthusiasm will carry a man successfully through all these.

Exactness and Care Necessary.

Carefulness and exactness I place next to enthusiasm as essential qualities. A rough, careless, dirty or clumsy man has no business handling living fish eggs or young fish. A man careful in what he is doing, exact and precise in his methods, will ensure success where a stupid, clumsy man will secure failure and loss.

Accurate Knowledge Important.

Intelligence I place amongst the qualifications, though it is perhaps hardly necessary, for it is a qualification essential in any line of human work, unless it be the "white wing brigade." A quick and accurate judgment, a well informed and ready intelligence—these are invariably in the difficult and often perplexing situations of the fish culturist. But most of all, I insist upon knowledge—knowledge of an accurate, technical, scientific nature. In other words, a trained specialist is what the hatchery officer should be. Nor is the knowledge of a limited or superficial kind which is necessary for hatchery work.

Course of Scientific Instruction Outlined.

The knowledge which it is necessary that hatchery officers, and others who have anything to do with fish eggs during incubation and development, should include:—

(1)—Embryology,—that is, the structure of the egg and its contents, with the details of germ development and embryonic growth. The maturation of the ovarian eggs and the growth of the ovaries to a state of ripeness, within the parent fish, should also be included. Sperms and milt maturation should be studied.

(2)—Physiology. Respiration and nutrition of the germ, the conditions vital to its health and normal evolution, including temperature, oxygenation, light, etc., are included under this heading.

(3)—Physics. The law of water-pressure, of viscosity, surface-film phenomena, momentum and flow of water, etc., also the physical characteristics and behaviour of ice, and of winter conditions; the laws of light as affecting embryonic life, and numerous other questions are essential to be taught.

(4)—Chemistry. A slight knowledge of chemistry, especially the chemistry of water, and some knowledge of the elements, hydrogen and oxygen, etc., the action of poisonous pollutions such as carbonic acid gas, sulphuretted hydrogen, etc. Alluvium and deleterious substances in water, and impurities which cause eggs and fry to weaken and perish.

(5)—Biology, especially the biology of fishes. Food, enemies, fish parasites (vegetables and animal) and the internal activities and external environment of the fish from the earliest stage inside the eggs to the advanced or post-larval condition.

Much ignorance exists respecting the enemies of fish, and many water-birds and aquatic animals have been destroyed because they were supposed to devour eggs or fry, when as a matter of fact they were destroying insects and other foes of fish in their early stages.

(6)—Pathology. Some slight knowledge of pathological science, so far as it relates to diseases of fish and fish-eggs, and their remedies, is very important.

Value of Even a Minimum Training Emphasized.

I take it that no fish culturist is ignorant of the various types of eggs, modes of deposition, nesting and rearing habits, times of spawning, and the details of fertilization or vivification of eggs. He could not enter upon his work without some knowledge of these important matters, but this preliminary information will help him in taking up the six subjects which I have named, and in which every man who has responsible work in a hatchery should have instruction and training. The period for training will of course be limited, in the case of an officer occupied with

hatchery duties, and can only be sufficient to enable him to avoid errors and failure, and achieve success in the practical operations which as a rule fill up most of his time.

Biological Stations of Canada Could Give the Training.

It would take a few months under competent instructors, to give him a proper training. A little practice with the microscope would be valuable, though not essential. Indeed, demonstrations in a Biological Station by an instructor would no doubt be enough. A week or ten days would do a great deal, but from my long experience as assistant in one of the great universities of the world,—Edinburgh University—and afterwards as a Professor of Biology in Glasgow, I feel bound to conclude that it would take at least a whole summer vacation for such a theoretical and scientific course as I have indicated, and the months from May or June to September would not be too long. Some officers might be spared from their hatchery work for this length of time, but most officials would require to have a much shorter course, and it might be spread over two or three years.

BRITISH FISH MARKETS.

Billingsgate, June 14.—Speaking generally the markets have had a buoyant tone this week. Supplies, although not unduly heavy, have been more or less generous taking the country as a whole, and with a pretty keen demand, prices for all kinds of choice fish have hardened perceptibly until to-day when some kinds commanded considerably more than they did a week ago. Jumbo haddocks, as the large haddocks landed by the Icelandic trawlers are known, for instance, made as much as 6s 6d. to 7s per stone at Billingsgate to-day, whereas a week ago they were a rather difficult sale round 1s. 3d. per stone. Cod is another variety which has appreciated in value, while many kinds of flatfish have made more money than for several weeks past. A dispute has broken out at Hull between the trawler owners and the engineers engaged on the trawlers at that port working the grounds off Iceland, and as the vessels have come in they have been laid up. The full effect of this will not be felt immediately, but unless the dispute is speedily settled a shortage in the near future is presaged. Mackerel has been quite scarce while except on one or two days herrings have been in light supply. The weather continues exceptionally hot which is not conducive to fish arriving in the consuming centres in the prime condition. Of course, cold storage is not made use of to any extent for fish in this country—except imported—and proper refrigerator cars on the railways are almost an unknown quantity. With the holiday season now in full swing, there is a very keen demand from seaside resorts for best quality fish of all kinds.

Canada has been too modest in advertising her fisheries. The world thinks that all fish come from Norway, Sweden and Newfoundland. It is up to us to blow our own trumpet a bit louder.

OBITUARY.

Nova Scotia lost one of its most representative men when Howard Anderson of Digby passed away on June 28th following an operation for appendicitis, and the fishing industry records the death of one of its pioneers.

Howard Anderson, of the big heart and cheery hail, fisherman, master mariner, town councillor, fish merchant and harbor master of Digby, was a genuine product of Nova Scotia and a man who endeared himself to all who knew him. Born at Parker's Cove, Annapolis County sixty-three years ago, Captain Anderson grew up with the breath of the sea in his nostrils and the roar of its surf in his ears, and like most boys brought up in such environment, went to sea at an early age. Spending his youthful years as a fisher-



CAPT. HOWARD ANDERSON.

man and also a seaman on occasional West Indian voyages, he reached man's estate and inherited then the ability to command which seemed to be the right of most Nova Scotian seafarers in those days. Moving from the ancestral home on the rock bound shores of the Bay of Fundy, he came to beautiful Digby and successfully commanded many fishing schooners out of that port.

After twenty years as a fisherman and skipper, Captain Anderson retired from the sea and went into business for himself as a fish dealer. With the steady purpose and clear-sightedness which characterized his life at sea, combined with integrity, square dealing and careful management, he built up a successful business and the firm name of Howard Anderson, of Digby, came a synonym among his customers for products as reliable as the man who prepared them. When the Maritime Fish Corporation was formed in 1910, Captain Anderson linked up his business with the

Corporation and became superintendent of the firm—looking after the vessels and plants and the preparation of their various fish products. To his excellent judgement in matters pertaining to the practical end of the business, the Maritime Fish Corporation owe much of their present day success.

He leaves to mourn, his widow, who was Miss Florence Adams, of Deep Brook; two daughters, Miss Lena Bowers, of Morganstown (N. C.), and Mrs. M. E. Harms, of Edmonton (Alta.); one son, Frank L. Anderson, a councillor of the town of Digby; one brother, C. B. Anderson, of Shediac (N. B.), and one sister, Mrs. E. C. Spooner, of Newport (R. I.)

His record as a good citizen is shown in the fact that he was twice elected to the Town Council of Digby and served on the School Board. He was a Baptist in religion and Liberal in politics, but, happily broad-minded and tolerant in both. As Harbor-Master of the Port of Digby, he filled the duties of the office since 1896. He was a member of King Solomon Lodge, A. F. & A. M.; a charter member of the Western Nova Scotia Yacht Club, and a charter member of the Canadian Fisheries Association.

A man is known by his friends. Howard Anderson was everybody's friend and he was theirs. No fulsome obituary or florid epitaph can say too much about Captain Howard. His was a magnetic personality which made people love him and his passing away will mean a loss to Digby and the fishing industry of Nova Scotia which can never be replaced. When he hove-up anchor and slipped quietly away on the ebb tide for his Last Harbor, those who had the privilege of knowing him felt that Howard Anderson had sailed to meet the Great Pilot with a fearless mind, an unblemished log-book and the knowledge that he had done his work "sailor-fashion and like a man."

NORWEGIAN FISH AND OIL TRADE.

The cod fisheries off the coasts of Norway have turned out very well this year, the statistical reports showing the following figures up to the middle of May:—

	1919.	1918.	1917.
Cod caught (millions)	23.7	17.3	23.0
Steamed medical oil (hectolitres)	29,188	16,039	33,141
Raw liver for making oil (hectolitres)	4,060	6,431	3,499

The mackerel fisheries which have just started also look very promising.

QUEBEC FISHERY OFFICIAL IN ENGLAND.

Mr. E. T. D. Chambers, of the Department of Colonization and Fisheries, Province of Quebec, is at present in England. Mr. Chambers will study the British fishery methods, both in catching and marketing, with a view to developing the fishing industry of Quebec Province.

We have the greatest fishery resources in the world, but if we are ever going to develop them we must build up our export trade. Canada can never hope to consume her present or possible production.

IMPORTANT!**EXPORT EDITIONS OF "CANADIAN FISHERMAN."**

As already announced, arrangements have been completed to publish three Export Editions of the **CANADIAN FISHERMAN** commencing with the next issue.

These editions are intended as a special effort to secure export trade and will be issued under the auspices of the Marine & Fisheries Department, the Canadian Trade Commission and the Canadian Fisheries Association. They will also be designed to educate foreign importers as to the value and variety of Canada's fishery resources.

The two Government Departments concerned have expressed the hope that all Canadian producers of fish will assist by advertising their products in these special issues and by furnishing the Editor with information regarding their specialties in order that such data may be included in the reading matter of the issues.

The Canadian Trade Commission have been inundated with requests from abroad asking for particulars of Canada's exportable fish products, our fisheries, and the names of producers. The Export Editions of the **CANADIAN FISHERMAN** will be compiled to answer these enquiries, and it is certain that no better means can be found of placing our fisheries and fish products prominently before foreign importers. The three editions will form a Directory of Canada's Fisheries which importers will keep on file for permanent reference.

Illustrations will play a prominent part in telling our story and we may claim that we have the most comprehensive collection of fishery photographs to be found anywhere. The most important information and articles in each issue will be translated into French and Spanish which, with the English text, will ensure that the Export Editions will be readily understood in any part of the world. The advertisements will also be set up in the three languages.

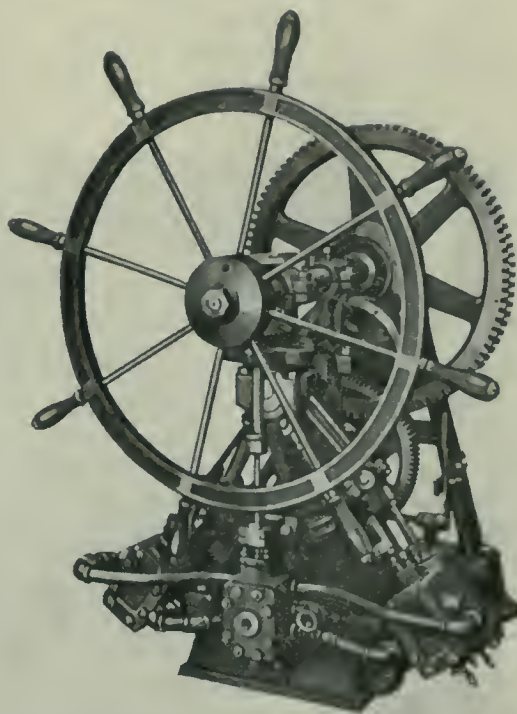
In addition to our regular circulation, the Canadian Trade Commission has guaranteed the distribution of the Export Editions to a selected list of 2,500 importers of fish products abroad. A large number of these importers have been importing fish from countries outside of Canada and the Editions will be sent to them with the object of showing them that Canada possesses the greatest fishery resources in the world with a quality and range of variety in fish not to be excelled anywhere.

In compiling these editions we are working on the axiom that every country outside of Canada can use Canadian fish. This refers to the United States, Great Britain, all the British Colonies, Europe, Asia, Africa, the Americas, and Australasia. We would request our advertisers to remember that fact and to feel that the whole world is our potential market.

THE CROSSLEY STEAM STEERING GEAR.

In a steam steering gear, simplicity and dependability are the two great factors to be considered. The Crossley Steam Steering Gear, the latest and best outfit to be introduced for tugs and steam vessels, embodied both of these principles to the highest degree.

The Crossley Steam Steering Gear is entirely automatic. A slight touch of the wheel will start it up and it will continue to run as long as the wheel is moved, stopping the instant the wheel is held. If the wheel is spun, the engine will run faster, moving the rudder rapidly as is necessary in turning hardover from a straight course or in similar instances. The position of the rudder is always shown on an indicator on top of the gear, in plain sight at all times.



The engine in this steering gear is the Crossley 2 cylinder reversible engine, with but one eccentric—the same as is used in the Crossley Double Engine Net Lifter, which is being used on hundreds of steam fish tugs on the Great Lakes and on nearly all of the large steam trawlers of the Atlantic Ocean. This engine develops 9 horsepower with but 25 pounds of steam.

These steering gears may be operated by hand at any time it is desired. Changes for this purpose are quickly made. A pin, provided for the purpose, is slipped into place on the front of the wheel and a lever at the side is pulled forward, disengaging the gears. To change back to steam steering, this lever is shoved back, putting the gears in mesh again, and the pin is removed. Either operation is accomplished quickly and without any handicap in the steering of the boat.

The Crossley Steam Steering Gear is absolutely reliable and dependable, is entirely automatic, easy to operate, simple in construction, and will wear for many years without any adjustment and without a cent's worth of repairs. It is guaranteed to do its work every time. The materials in it are of the best and only skilled workmen are employed by the builders, the Crossley Lead and Machine Company. The machine has been designed by Edward Crossley, the president of the firm.



The World's Greatest Fish Market

Billingsgate in Good Friday Week.
By SIDNEY J. WILLIAMS.

Of all the great markets throughout the Empire where the food of man is handled and distributed, none is better known—by name at least—than Billingsgate, the great fish market in London. And as so many of Canada's sons who travelled across the Atlantic as soldiers are now returning to again take up peaceful pursuits, which include in numerous instances one section or the other of the fish trade, the Editor

days in various ways, such as "Blynesgate," "Byllyngesgate," "Billingesgates," etc., has been associated with selling of fish, and that it is a long way the most ancient fish market in the United Kingdom, being well established centuries before the present leading fishing ports were known as, or had any association with, the industry.

The present market was erected nearly fifty years



An Interior View of the Section of the Market.

of THE CANADIAN FISHERMAN has asked me to send him particulars of market operations at Billingsgate during Good Friday week—the principal week of the year in the fish trade in the United Kingdom. Before doing so, however, no doubt readers would like some details of Billingsgate Market itself, especially as so many of the Canadian troops have included a visit to the great fish emporium on the banks of the Thames in the course of their "sight seeing" during their sojourn in England.

It is almost impossible to say the earliest date at which fish was sold at Billingsgate, and I have been quite unable to ascertain the origin of the name. The most common explanation is that in the very early history of London, the place was known as "Berlin's Gate." Be that as it may, the fact remains that almost from time immemorial, "Billingsgate,"—spelt in earlier

ago, being opened in 1876. The area covered by the market itself is 39,000 feet, but this in no way represents the area included in the term "Billingsgate," as facing the market itself there is another building, known as Billingsgate Buildings, otherwise "The Haddock Market," from the fact that the bulk of the tenants there are haddock eurers, while most of the premises in the adjoining thoroughfares of Lower Thames Street, Monument Street, Fish St. Hill, Love Lane, etc., are mainly occupied by those engaged in the fish trade.

Prior to the War, Billingsgate received its supplies partly by water and partly by rail. The waterborne fish was brought direct from the North Sea by fast steam carriers, these vessels conveying the fish, packed in trunks containing on the average six stones of fish, rapidly from the steam trawlers to the London

market. This system was known as "fleeting," from the fact that the vessels of the four steam trawling fleets operating for Billingsgate worked in "fleets," i.e., their combined catches were placed on the steam carrier for transit to London, and not taken to market by the actual vessels catching the fish, which is known as "single boating." Between two hundred and three hundred steam trawlers made up these four fleets, and a carrier from each fleet, or four in all, landed at Billingsgate most mornings except during fog, or very rough weather. The rail-borne supplies are brought by the various railway companies from practically every fishing port in England, Scotland, Ireland and Wales, being carried from the different London termini by vans, and, of late years, to an increasing extent by motors. These supplies commence to arrive between four o'clock and five o'clock in the morning, and in ordinary times, the sales commence at the latter hour. As an indication of the extent of the trade at Billingsgate, I give below the quantities returned as delivered at the Market annually from the year before the war. It must be borne in mind, however, that these figures represent merely the total supplies delivered to the market proper, and upon which toll is paid, and do not in any way reveal the full dimensions of the actual quantities received, as they take no account of the fish handled by firms established outside the market itself in the thoroughfares mentioned above—but in the immediate vicinity—firms, which although not in Billingsgate, are of Billingsgate.

Year.	Quantity delivered	Quantity delivered	Total arrivals.
	by land.	by water	
	Tons.	Tons.	Tons.
1913	117,297	65,452	182,749
1914	120,931	47,629	168,560
1915	105,517	19,629	125,146
1916	106,078	5,620	111,698
1917	104,945	2,069	107,014
1918	123,546	186	123,732

The scene at Billingsgate during the busiest market hours almost baffles description. In fact, to one unacquainted with Billingsgate, a visit during the busiest time would probably give the impression of chaos: the whole of the avenues would be found to be thronged with what at first might be considered a medley of salesmen, buyers, and porters, with a policeman here and there, and, above all, the ear would be struck by the apparent incoherency of the whole. Yet, to one familiar with the scene, everything is conducted with a maximum of method, and, with each one intent on his own particular business, order is evolved from apparent confusion. The ease with which almost any quantity of fish can be received and distributed at Billingsgate speaks volumes for the care with which the regulations governing the market have been drafted and are enforced. The market is controlled by the Corporation of the City of London, being under the immediate supervision of a superintendent. I may mention here that the whole of the stands in the market were rearranged some five or six years ago by the present superintendent, Mr. James O'Neill, who was appointed to the position in the early days of the present century, and this alteration gave much satisfaction as it greatly assisted the expeditious handling of supplies.

But it is not only in the market proper that the day's business is transacted. The streets in the immediate neighborhood are blocked by railway vans with the consignments for the various salesmen, from the tiny box of smelts to the huge "tank" of "loose"—i.e., fish not placed in any kind of package—Iceland, Faroe, or White Sea fish. Beyond these, in the adjoining thoroughfares, extending almost from the Tower of London to London Bridge, are the vehicles of fishmongers from all over London and the surrounding districts, waiting to convey the morning's purchases to the owner's retail shops. The number of horses and carts attending Billingsgate daily must run into many thousands, all engaged in conveying fish food to London's millions.

The influence of Billingsgate extends far beyond the confines of the Metropolis, or even England. It is the Mecca of innumerable fishing stations through-



Porters Unloading North Sea Fish Carriers at Billingsgate.

out the United Kingdom. In short, Billingsgate occupies a unique position in the world's markets. There is no other market where it is possible to purchase every kind of fish. As already stated, fish arrives from all parts of the United Kingdom daily; huge quantities are not only received from the great fishing ports of England and Scotland, such as Grimsby, Hull, Fleetwood, Milford Haven, Aberdeen, Lowestoft, North Shields, etc., but the tiny fishing villages of Devon and Cornwall, the pleasant seaside resorts of Kent and Sussex, the storm-swept isles off the West of Scotland, the fishing hamlets of Orkney and Shetland, and the isolated fishing stations of Ireland, all contribute their quota to the great London fish market. For this reason Billingsgate might almost

be termed the pulse of the fishing industry, for the wires giving the day's prices and prospects there are eagerly scanned at all places when the hardy toilers of the deep land the spoils they have wrested from the ocean, and these wires to a large extent control the prices.

What I have described goes on ceaselessly day after day, year in and year out, with the regularity with which the great river hard by flows into the sea. Great is Billingsgate!

Before leaving this part of my subject, mention must be made of the Billingsgate porter, who is quite a character. It must be understood that the bulk of the fish must be taken in and out of the market by manual labor. For this purpose the porters wear a curious shaped padded hat, the fish being carried on the head,

expand to large proportions on the Wednesday and Thursday. This year, however, proved an exception to the rule, as the quantities marketed were uniformly generous throughout. The actual quantity delivered at Billingsgate Market itself—and my previous remarks regarding the additions which must be made to this total to arrive at the aggregate supplies must be borne in mind—over Monday, Tuesday, Wednesday and Thursday, was no less than 2,954 tons, or an average daily supply of nearly 740 tons. I have been at some pains to compare these figures with the record in Good Friday week, 1915, the first Easter in the war period, and I find that in that year for the corresponding four days, the arrivals scarcely reached 2,400 tons, and of this quantity nearly 200 tons came by water direct from the North Sea fleets.



A View of Lower Thames Street, Billingsgate.

and it is certainly surprising the ability with which the men manipulate the packages, some of which weigh nearly two hundred weight. These men have the reputation, falsely to a large extent, of being adepts at the use of strong language; on the whole they are a hard-working class, who lead a strenuous life, leaving home in the very early hours of the morning, summer and winter, and on busy days not finishing work till past noon, and it is not surprising if, while endeavoring to make his way through the market with a huge barrel or a large box on his head, the porter is not inclined to stand on ceremony should he find someone in his way who appears to have no other task but gazing everywhere except where he is going.

So much for the market as a whole. Now to refer to the market in Good Friday week. These markets, as mentioned earlier, are the principal ones in the whole year, the Lenten demand then reaching its zenith, and after which inquiry slackens off until trade reaches its lowest ebb in the summer months. The working of the vessels is so arranged that as many boats as possible land at the ports on the Wednesday prior to Good Friday. Thus it oftens happens that for the first two days in this week arrivals fall off to

For some considerable time past, all kinds of fish have commanded very high prices in this country, this being due to the general stringency in food supplies. In fact, prices began to soar so high that the Ministry of Food deemed it advisable to enforce a Schedule of Maximum Prices. This Order, however, except in regard to salmon, soles, turbot, brills, halibut, herrings, mackerel, and one or two other kinds, was withdrawn a month or two ago, as in view of the steady increase in the landings of fish, and the general improvement in the food situation, it was felt that the withdrawal of "control" would tend to lower rates, as it has been proved that the fixing of maximum prices for any commodity has the effect, in most cases, of such maximum prices also becoming the minimum figures. However, although there has not been any statutory maximum rates for most kinds in force recently, the trade as a whole voluntarily agreed not to transact business at a level above what were the "control" rates scheduled under the Fish (Prices) Order. With the heavier deliveries resulting from the removal of Admiralty restrictions on many fishing areas and the ever-increasing number of steam trawlers being released from national services, values of several of

the most abundant kinds of fish have shown an easier tendency recently. This downward trend in values had been noticeable in the previous week, but it was expected by many that supplies, as is usually the case, would shorten up until about Wednesday and Thursday, and that this would give values an opportunity to recover. But it is always the unexpected that happens in the fish trade, and that this is a truism was never more strikingly demonstrated than at Billingsgate during Good Friday week. The opinion was held

I have been interested in comparing the prices realized this year with those current in the corresponding week of 1915, to which I have already referred, and it is worthy of note that those kinds for which a maximum price is still in force were at a much higher level this year than four years ago, while for several of the uncontrolled varieties, noticeably plaice, fresh haddocks and cod, the converse was the case.

A feature of the Good Friday week supplies this year was the generous quantities of "loose" deep-sea



Another view of Lower Thames Street.



A Daily Scene Outside the Market.

by many of those most competent to judge that when the break in prices came it would come suddenly, as it cannot be gainsaid that the level at which fish has been maintained for so long is a false one, and, as mentioned already, entirely the outcome of the unprecedented food crisis through which the country has passed; but few, if any, anticipated that the slump would occur in Good Friday week, the week in the fish trade. The fact remains, however, that prices did break that week, and with a vengeance, too. Still, although values declined appreciably, the great fact remains that an outlet was found for the whole of the huge quantity received at Billingsgate. Apparently the cheaper fish attracted the public, as on Good Friday morning, when nearly 400 tons were delivered (this is in addition to the 2,954 tons marketed earlier in the week), demand quite active, the market being much more animated than is usually the case on Good Friday morning, and by about noon practically everything was cleared.

fish received. For the sake of those unfamiliar with Billingsgate I may explain that the bulk of the consignments reach the market in various kinds of packages, such as boxes, cases, kits, barrels, etc. Deep-sea fish, on the other hand, i.e., fish from the Icelandic and Faroese grounds, chiefly fresh haddocks, cod and plaice, as well as fish from home waters to a lesser extent, is often consigned to Billingsgate not packed in any way, but placed loose in the railway trucks, or in specially constructed tanks, known as machines. My own firm (Peter Forge), for instance, received between eight and a dozen trucks of loose fish for sale each day in Good Friday week, apart altogether from hundreds of packages of different kinds every morning.

I have little fear of being contradicted when I state that there is not a single fish market in any part of the world which could successfully distribute the huge quantities which can be handled at Billingsgate — large as the arrivals were during Good Friday week

the daily deliveries in the summer time often exceed 1,000 tons in normal times. The secret of the success of the market, of course, lies in the fact that it is the great clearing house of the fishing industry of Great Britain, the teeming masses of London and its suburbs, which now extend far out North, South, East and West, and many of which in themselves contain a greater population than many fair-sized cities, assuring an outlet for any quantity of fish. To any one but an Englishman such a market would appear to be indispensable. And yet there are those in this country, mainly officials in Government Departments, who consider that Billingsgate is a quite unnecessary centre, the allegation being that it introduces a redundant link, in the shape of middlemen, in the chain of distribution. This view was strongly held by some of those appointed to positions in the Ministry of Food during the war period, and although no open hostility was shown, the activities of that Department in regulating the fish trade tended to squeeze out the markets acting as distributing centres. I must admit that when supplies for a prolonged period proved totally inadequate for requirements fertile soil was to hand for such theorists, but the nation, as a whole, as well as the fishing industry as a unit of the community, can congratulate itself that there were those bold enough to counteract the influences at work to mortgage the interests of the future for the passing necessities of the moment; in other words, that while a market such as Billingsgate might — and even here opinions are divided — have been dispensed with during the great time of scarcity occasioned by the war, it was necessary to preserve it for the requirements of peace time, with its recurring gluts. It is safe to say that without such a centre as Billingsgate the waste of good food in this country during times of abundance would be appalling, while on the other hand the working classes would be denied the opportunity of securing fish — a highly nutritious and palatable food — at a low figure. Those who claim from a theoretical standpoint that Billingsgate is superfluous unfortunately appear to wield influence in inverse ratio to their numbers and importance, as they seem to have more time at their disposal than the practical tradesmen has for gaining the support of the more blatant section of the press.

The finest indication of the necessity of Billingsgate is to be found in the fact that despite its antiquity it has not become feeble with age, but is as vigorous as the best of its younger rivals in the provinces, while, so far as London is concerned, all attempts to establish wholesale fish markets in other parts of the metropolis have been dismal failures, leaving Billingsgate quite unperturbed. In fact, its position is unassailable.

In conclusion, I hope that this review of Billingsgate, conscious as I am of its shortcoming, may prove interesting to those engaged in the fishing industry of the Dominion of Canada, among whom I am happy to think I have many friends. Despite all the opposition with which it is, and has been, assailed, Billingsgate can well say with Tennyson's "Brook":

"Men may come, and men may go
But I go on for ever."

"CANADA-PRODUCT" has been chosen by the Canadian Trade Commission as the trade-mark of goods going to Europe under government credits.

GERMAN FISHERY DEVELOPMENTS.

By COLIN McKAY.

The British Admiralty has at last decided to allow Germans to fish in the waters the ex-Kaiser fondly called the German Ocean. Whatever may have been the special reason for barring the German fishermen from the North Sea for many months after the armistice, such a course no doubt had its justification in the fact that the German State had administered its fisheries with a certain regard to their possibilities as a nursery for seamen to man torpedo craft and under-sea boats. At the principal fishing ports the State maintained hotels providing good fare and excellent quarters for fishermen at a nominal charge, and these hotels were centres of instruction of a naval character. That the U-boats obtained first class pilots among the fishermen is well known; many of their exploits would not have been possible if it had not been for the intimate knowledge of the North Sea and British Coasts acquired by fishermen.

Before the war the Germans had made giant strides in the development of their fisheries. After their fashion they made a study of the methods of catching, handling and curing fish in other countries, and then adapted all the ingenious dispositions they found elsewhere to their special circumstances. They invented nothing new, but they built up ports on the most modern lines and constructed fleets of fishing vessels equipped with the latest devices. They worked according to plan, and arranged everything carefully from taking fish out of the water to placing fish on the table.

As a result Geestmunde and Nordenham doubled their catch in less than ten years, and Cuxhaven in four years. In 1912 their principal ports showed catches as follows:

	Quantity in kilos.	Value in Marks.
Geestmunde	46,980,000	14,094,000
Hamburg	22,685,000	6,805,000
Altona	18,660,000	5,598,000
Cuxhaven	12,373,000	3,712,000
Nordenham	11,460,000	3,438,000
Bremerhaven	7,816,000	2,343,000

The Germans had two different organizations for the administration of their fisheries; one of a police character concerned with protection of the fisheries, and the other modeled on business lines concerned with the technique of the industry, and the realization of its commercial possibilities. The State of Prussia, the Grand Duchies of Mecklenburg and Oldenburg, and the free cities of Hamburg, Bremen and Lubeck, each had their own police organization for the protection of their contiguous fisheries. Prussia having the largest coast line had a number of armed vessels for this purpose. The Minister of Agriculture and Public Domains had general supervision over the Prussian fisheries inspectors. The Hamburg Senate

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Post War Reflections

J. A. PAULHUS,
(Second Vice-President, Canadian Fisheries' Association.)

It has been stated by a military authority that 15 per cent. of our returned soldiers will gladly adopt farming for a living, and that the balance, that is, 85 per cent., have seen so much mud in the trenches that a return to the soil will have but little attraction for them.

To place these 15 per cent. of our men on farms, we should require 65,000 farms. The question is, where are those farms? What has been done so far to meet this emergency?

It has been vaguely proposed to utilize tracts of land owned by real estate promoters in the west, but so far nothing practical has come out of the proposition.

We were all agreed that war fell upon us like a bolt from the blue sky, and that this sudden awakening should be a lesson to us for future preparedness, yet, here we are quite unready for the new conditions that peace will bring in our social and economic life.

When the news of the armistice became known, our population went mad with excitement in a manifestation of flag-waving and din of all manner of description. We forgot during this orgy of joyful demonstration that if war has its problems to solve, peace also has her duties to fulfill, and these demand courage, sober-thinking and more sacrifices. War has cost us blood and life. Peace will require energy, resourcefulness and enterprise.

If we reckon that we have not paid too dearly for the preservation of our threatened liberties—for the defence of our free institutions, we have contracted a financial debt which, however, should not be a burden to a resourceful country like Canada.

Let us be practical now that the effervescence caused by victory has passed off, and face with a resolute mind the problems of reconstruction. First, by finding remunerative occupation for all our returned soldiers. Second, by organizing our economic life in such a way that we shall be able to meet without unnecessary struggle the obligations that this war, has imposed upon us.

We can do this by utilizing to their full extent, by exploiting intensely the natural resources that are in store for us in this country. For instance, we pride ourselves in possessing the most prolific fisheries of the world, and this is not contested. Can we not turn this valuable asset to better advantage for the interests of all.

By dividing in lots all the unoccupied land contiguous to the sea, lakes, and rivers, we could find room and profitable occupation for thousands of people.

Farming and fishing in conjunction, undertaken under the supervision and direction of experienced hands could not fail to produce best results, economically and morally. The best feature of the proposition

is, that not a very great amount of capital would be required to start fishing operations. A very small sum to commence working with practical hints and direction would soon give the hopeful, earnest soldier a sense of ease and comfort.

The fish industry properly handled and managed can also help wonderfully to increase the wealth of the country and thereby assist in the work of reconstruction.

Reconstruction depends on two essentials — production and economy. Our rural people are not a fish-eating community. The value of fish as a food has not appealed to them so far. Yet, it has been proved beyond any doubt that fish is substantial, contains as much nutritive matter as meat, and is much less expensive. Our farmers would gain considerably if they would sell their meat, poultry, butter, cheese and eggs, and use more fish in their homes.

At certain times of the year a provision of good, well-cured fish, such as salmon, codfish, turbot, herring and frozen fish in winter would be found very palatable, hygienic and nutritive. For instance during the warm days of summer, meats such as pork and beef are heating and enervating, whereas, a diet of fresh, pickled or frozen fish is refreshing, appetizing and soothing.

In hot climates under the tropical skies very little meat is used, but enormous quantities of fish, particularly cured or dried fish, forms the main article of diet. Our country exports annually, thousands of tons of dried codfish, hard cured herrings and pickled fish of all sorts to the West Indies, South America, the Mediterranean countries: Italy, Spain, Greece, etc. In fact, our codfish industry is dependent mostly on these markets for the disposal of its production.

If the consumption of fish was more general in Canada we could supply on a larger scale the European markets with beef, bacon, butter, cheese and eggs. These articles being known would always sell readily and give better results to the producer.

This would also increase the total exports, and with judicious management and economy at home, the balance of trade would grow in such proportions that our war debt would be wiped out as easily — though in a different manner—as France paid her debt after the terrible humiliation of 1870.

The increased production of our fisheries would also develop subsidiary industries, such as boat construction, fishing implements, cold storage plants. It would, further, provide more tonnage for railroads and navigation, stimulate enterprise, invite capital, and above all teach a lesson of patriotism, of love of one's country, without which progress and prosperity are only a delusion.



Weights and Measures in the Fish Trade

[This article, while dealing with the subject from a British point of view, is interesting to Canadians, as our own trade is undoubtedly handicapped by a lack of standardization in fish weights. The Canadian Fisheries' Association is endeavoring to effect standardization in weights, pack, cure and cull and recommended same to the government on May 14th last.]

A few years ago, during the height of the tariff reform agitation, Lord Rosebery was bantered by his critics for suggesting that we should adopt the metric system of weights and measures as an alternative to fiscal revision, the implication being that we were falling behind in the commercial race by refusing to make use of an instrument ministering to the success of certain of our competitors. There may have been a certain amount of Scotch humor in the observation, for it is by no means clear that the metric system would prove the most effective means of increasing British commerce. Nevertheless, there can be no doubt that the simplification and standardization of measures and weights in any industry is an important step on the path of progress, and in point of fact in many industries the reform has been more or less completely accomplished. Probably in none would it be of more benefit than in the fish trade. Ancient systems and local systems are still to the fore, and although there has been a certain amount of progress in standardization in recent years, consequent principally on the concentration of markets, there is still ample room for improvement. The influence of the Fish Controller during the last year or so has worked for reform. Most people will continue to prefer to sell and buy their fish by weight, and to know exactly what they are giving or getting, when that is at all possible.

The Variety of Measures.

The variety of weights and measures adopted in the fish trade is somewhat bewildering. Most of them originated in ancient times and many of them have only a local significance. Let us take a brief review of them. Some twenty years or so ago, we had the following methods of selling. First, there were single fish, of unguessed or estimated weight, as turbot, brills, conger eels, halibut, skates, etc. Then there were "lots," as rays, cod, turbot, brills, red mullet, the equivalent weight being said to range from about 2 stones to 20 stones. Many fish were sold by the score as cod, ling, hake, haddock, plaice, mackerel, whiting, etc., and some by the hundred or thousand. And the "hundred" may be a hundred or a "long hundred" of 120 (six score) or 126 or 132 — the number of mackerel for instance in a "hundred" exhibits in different places all these varieties. A "dozen" of crabs — they are sometimes sold by the dozen — does not mean 12, but 13 if they be large and 26 if they be small. Since the war began even the following different meas-

ures have been in vogue at Billingsgate. Salmon, soles (including "slips") dories and mullet sold by the pound weight; eels by the "draught" of 21 pounds; smelts by the 100; mackerel by the 120; all other fresh fish by the stone, of 14 pounds. Then amongst shell-fish we find the following variety—crabs by the hamper and barrel; lobsters by the score; escallops by the bag (of 20 "dozen"); winkles by the bag or cwt.; whelks and shrimps by the bushel; mussels by the bag; oysters by the hundred; cockles by the gallon and prawns by the pound. Then in the fish trade there are "boxes," "baskets," "kits," barrels, etc., about which, as described more fully below, there are vast differences as to capacity.

The Measures for Herrings.

The variety of the measures for herrings is extraordinary. They may be sold by number, as by dozens, scores, hundreds, thousands, mease, last, or by the cran, case, kit, box, or by bulk — and in different places the same measure does not mean the same thing. Some of the measures are very old and were in use in ancient times, and they depended in some cases on the number of herrings that could be conveniently lifted in the hands. Take the term "mease" (or maise, mayse, meze, messe) a measure that used to be employed in this country and in France, and is still in vogue in Ireland, the Isle of Man and certain parts of Scotland, and like all the others meant a different thing in different localities. In France when applied to red herrings it meant 1,020 fish and when applied to white herrings it meant 816 fish; in this country the number of herrings in a mease is stated at 500, 525, and 620. In the Isle-of-Man the number is 620, counted as follows, the hundred being the long hundred of 120. Two of the crew work together, taking the herrings in threes and using both hands; the fish are thrown into a basket alternately, one calling the odd and the other the even numbers, up to forty handfuls of threes. Then one throws in three more, saying "warp," and the other throws in one and says "tally," and a notch is cut on a stick to denote the "hundred" (124.) When this has been done five times you have a "measure." No doubt the practice is a very old one. The hundred, thousand and "last" on the east coast of England, as at Yarmouth is based upon four herrings, called a "warp"; 33 warps make a "hundred" of 132 fish; ten of these hundreds make a "thousand," of 1,320 fish, and ten of such thousands make a "last," of 13,200 fish. The "last" is an old Saxon measure, properly meaning the quantity, burden or load carried by a vessel or vehicle; the quantity varied for different kinds of goods. Applied to white herrings it has always meant 13,200, as above stated; applied to red herrings it used to mean 10,000, at five score to the hundred, or twenty "eades" (a term used

for red herrings and sprats) of 500. Applied to barrels it means twelve barrels in this country; in Holland it means 14 barrels.

Crans, Barrels, Boxes.

The cran measure now in general use was introduced, or at all events standardized, in 1852, when the measure of 32 gallons English wine measure was fixed as containing $37\frac{1}{2}$ gallons imperial standard measure (163.57 litres.) It has been of great benefit and is very generally used, especially as the quarter-cran basket. A cran of herrings is equal to $3\frac{1}{2}$ cwts. as a rule, but the weight varies a little according to the size of the fish; the number of herrings contained in a cran varies similarly, from 700 or 800 to over 1,000. Then fresh herrings are sent in barrels and boxes or half-boxes, kits, etc., and these may vary considerably in size, even among the same class of receptacle. A barrel may hold anything from three-eighths to three-quarters of a cran, while the capacity of kits and boxes is regulated by custom or convenience, but should represent a "basket," or a quarter cran. It will be recalled that in the autumn of 1905 the German Fish Preserving Association ("Verein der Fischindustriellen Deutschlands") raised the question of the packages in which fresh herrings were sent from this country to Germany, partly on the point of not returning the empties, and partly as to the capacity of the boxes or kits. The matter was satisfactorily settled at a conference at Lowestoft, and according to the rules of the German Association (dated 12th February, 1913) fresh herrings from Grimsby and Lowestoft must be in boxes, as follows: Without ice, half a cran; with ice, seven-sixteenths of a cran; the deeper half-cran boxes, with ice or without ice, half a cran; the smaller quarter-cran boxes, with ice or without it, a quarter cran. Other regulation of corresponding import were made with reference to trawled herrings in kits from Hull, etc. The trade in fresh herrings with Altona and Hamburg is, or was, of much importance, and the boxes coming from Sweden and Norway were regulated in a similar way, though they differ in capacity from one another and from the English. The great thing was a standard for the fish from any particular source, and the example from the German Association might well be followed in other directions.

Boxes for White Fish.

There is even greater laxity and variety in the boxes used for sending white fish to market, and almost every port has a different standard. Thus a box of fish may mean anything from about six or seven stones to nine and a half or even over ten stones, and there are variations both with the kind of fish and with the packing and the ice. At one and the same port the differences may be marked, not only between the weights of boxes of different kinds of fish, but between the weights of the same kinds. Here for instance are the records of the actual weighings of the fish contained in over 220 boxes at one of our large fishing ports, and the disparity would have been somewhat greater had the number of boxes examined been larger: Large haddocks, 106 to 149 pounds, difference, 43 pounds; medium haddocks, 108 to 139 pounds, difference, 31 pounds; small haddocks, 103 to 134 pounds, difference 31 pounds; small cod, 123 to 156 pounds, difference 33 pounds; whiting, 88 to 131 pounds, difference 43 pounds; large plaice, 129 to 150 pounds, difference 29 pounds; small plaice, 117 to 141 pounds, difference 21 pounds; medium plaice, 119 to 148 pounds,

difference 24 pounds; large witches, 122 to 143 pounds, difference 21 pounds; small witches, 93 to 130 pounds, difference 37 pounds; lemon soles, 127 to 151 pounds, difference 24 pounds. The average weights were much over one hundredweight (which the boxes were presumed to contain), the extreme range being from 88 to 156 pounds, a difference of no less than 68 pounds, more than five stones or half a hundredweight. No doubt the buyer is able to judge tolerably well the rough weight of the fish in the boxes he is buying, and the seller can judge too, and in large purchases the deviations become smoothed out more or less. But it would be far better for both if the fish were weighed, which could be quite well done in many cases with a little organization and arrangement; and with the greatly enhanced price of fish the need is now keener than ever.

A Restraint of Trade.

When one thinks of how the defective system of weights and measures works in the fish trade, it is not pressing the case too hard to say it is tantamount to a restraint of trade. How can the market quotations from different places be compared with anything like accuracy when such conditions prevail? The variety of weights and measures by itself is perplexing to many, and when there is so much variation in one and the same measure it is made all the worse. It may be impossible in practice to introduce an absolute standard, but surely something can be done to lessen the objectionable irregularity. What has been done in the herring business by the general use of the quarter-cran basket, and in the trade with Germany by the standardization of the boxes, should be attempted in other directions. At the last international conference of the fish traders of the continent, which was held at Copenhagen in 1912, the utility of a uniform system in relation to exportation to Germany was strongly urged. On the continent, it may be said, the same sort of irregularity exists, in some countries more than in others. There herrings for instance may be sold by the *tal* (tale or number) 200, but sometimes 220, or more as in Holland; by the *ol* or four-score, as in Denmark; by the *val*, also four score, as in Sweden; in Norway by the *maal*, a measure containing 150 litres; but in recent years there is a distinct tendency to use the hectolitre for measures and the kilogramme for weights—as Lord Rosebery recommended. Even the barrels of pickled herrings differ in capacity in different countries. In Germany, Holland and Norway the gross weight of a full barrel of herrings in pickle is stated to be about 150 kilogrammes (331 lbs.); in Germany 44 pounds is allowed for the weight of the barrel, $70\frac{1}{2}$ pounds for the salt and pickle and 216 pounds for the fish; the Dutch allow from 242 to 253 pounds, and the Norwegians 220 pounds as a minimum, but under the present regulations herrings of various brands are put up to weigh 100, 105, 110 and 115 kilogrammes. The fishing industry is entering upon a new era. If in the process of "reconstructing" the industry anything could be done to introduce greater uniformity in weights and measures it would be "a boon and a blessing" to the fish trade.

There is every indication, says the Canadian Trade Commission, that cost of manufacturing in Canada for a long time will not be greater than in Europe. Canada in the meanwhile could get a footing in the foreign



A College of Fisheries for the State of Washington.



The University of Washington has established a College of Fisheries, and is fortunate in securing such a man as John N. Cobb as the head.

In a communication addressed to the "Canadian Fisherman's" Pacific Coast representative Mr. Cobb expresses the hope of welcoming Canadians who wish to acquire knowledge along this line. The similarity of fisheries makes it an easy matter to instruct students from both Canada and the United States.

The following description of what the new College will offer should be of interest to all engaged in the fishing industry throughout Canada.

Washington Fisheries College.

The College of Fisheries just established by the University of Washington enjoys the distinction of being the only one of any consequence in the world outside of Japan. In latter country the Imperial Fisheries Institute at Tokio is a government institution and has been in existence since 1897. It has so conclusively proven its worth that a number of subsidiary schools have since been established in the various provinces of Japan.

Seattle is in an especially favorable spot for the location of such a College, as it is the only American city within whose corporate limits, or in territory immediately adjacent, are to be found in active operation practically every type of plant used in turning the raw fishery products into all forms of manufactured articles both for food and for use in the arts and sciences; fishery operations are carried on even in Seattle harbor; while the great salmon, halibut, cod, and herring fleets operating in Alaska waters have their headquarters mainly in this city, outfitting here and bringing back the products for shipment to all parts of the world; also one of the leading universities of the country is already established here and in position to take up the work.

The College will offer four year courses covering the biology, technology, fish culture, and business management of the fisheries.

The technological, or economic course, will be the most important, as there is to-day a heavy demand for trained men in the canneries, cold storage plants, smoke-houses, and fertilizer and oil plants. It is hoped soon to have a special fisheries building on the campus which will embrace within its walls a fully equipped cannery, smoke-house, refrigerating plant, etc., in which practical instruction may be given under as nearly as possible the same conditions as prevail in the commercial plants. This equipment will be especially valuable in making practical tests for the fishing concerns and others, of the best means of utilizing certain species for commercial purposes.

On the biological side there will be a steady demand for the graduates of the College as teachers in other institutions, and as scientific assistant with the U. S. Bureau of Fisheries and the various State fish commissions. They will be especially valuable in the lat-

ter institutions, because of their intimate knowledge of the fisheries obtained in the College.

The study of fish culture is becoming an increasingly important one throughout the world, and the demand for trained men far exceeds the supply. Students at the College will not only have the benefit of its instruction and equipment, but can also get an abundance of practical experience along all lines of fish culture at the many federal and state hatcheries scattered throughout the States of Washington. The U. S. Bureau of Fisheries and the various State fish commissions will take care of most of the graduates in this course, and there will be a considerable demand in time, from companies and individuals who engage in pond culture as a business. The country is dotted with innumerable ponds, and low marshy spots which could easily be turned into ponds in which the raising of fish may be carried on with much profit, thus turning what is at present an economic waste into a money-producer.

It is hoped in the near future to offer short courses in practical fishery subjects during the winter months when fishing operations are quite generally suspended, these courses to be open to those now engaged in the fisheries and others who desire knowledge along special lines and do not have the time nor desire to take the full courses.

As the University is a State institution, an especially important part of the work of the College of Fisheries will be in rendering assistance and advice whenever called upon by the State authorities, and also to aid the commercial fishermen not only of the State, but of the nation in solving the many problems which beset them, and to aid in the conservation and perpetuation of our wonderful fishery resources. Research work along the lines of utilization of hitherto neglected species, and of waste products, will be carried on and it is hoped will result in materially increasing the wealth of the state and nation.

It is anticipated that as it becomes better known many students will come to the College from Canada, Mexico, Siberia, etc., as the fisheries of the Pacific Ocean will naturally form an important part of the courses.

Mr. John N. Cobb has been selected as Director of the College and Professor of Fisheries. Mr. Cobb has been intimately connected with the economic fisheries of the United States for some 24 years, and is considered as probably the best posted man along this line. In 1895 he was appointed a Field Agent of the U. S. Bureau of Fisheries, and remained in its service until he resigned in 1912. While his headquarters were in Washington, D.C., his work carried him during each year to practically every fishing hamlet and town in the United States, and incidentally to various fishing sections of Canada and Mexico. His work was praiseworthy collections of fishes and other aquatic animals, especially along economic lines, although he made many and also did some fish cultural work. While the

greater part of his work appears in divisional reports of the Bureau, he also published numerous important reports under his own name, among which may be mentioned the following: "The Pacific Salmon Fisheries," "The Pacific Cod Fisheries," "The Lobster Fishery of Maine," "The Sturgeon Fishery of the Delaware River and Bay," "Fisheries of the Interior Lakes and Streams of New York and Vermont," "The Sponge Fisheries of Florida," "The Fisheries of Lake Ontario and the St. Lawrence and Niagara Rivers," etc.

In 1906, at the request of the State of North Carolina, he made an investigation of the Shad fisheries of that State. His report was published by the State and used as the basis for a comprehensive revision of the laws of the state covering that fishery, the depleted condition of which has been the reason for the investigation.

Mr. Cobb carried on the first investigation ever made of the commercial fisheries of the Hawaiian Islands in 1901, and followed this with a second investigation in 1904, in each instance preparing complete reports as to what he found, both reports being published by the Bureau of Fisheries.

When the Bureau of Fisheries took over control of the fisheries of Alaska in 1904, Mr. Cobb was offered the position of assistant agent in charge of same, and from then until he resigned in 1912 he spent the greater part of the year on the Pacific Coast and in Alaska, being the only agent in Alaska most of the time, and annually published a report on the Fisheries of Alaska, which did much to stimulate the wonderful development of the fisheries of that section of the country. It was also during this period that he published his books on the salmon and cod fisheries of the Pacific, which are the standard works on the subjects to-day.

Mr. Cobb has given much attention to the development of the aquatic resources of the country, and especially of the Pacific Coast, and has published considerable of importance along this line. In 1918 the Committee on Scientific Research of the California State Council of Defense published a comprehensive report from his pen upon "Increasing Our Pacific Coast Fishery Resources," in which the many opportunities for utilizing hitherto neglected resources were presented at length.

He has also written much for the proceedings of the various scientific and technical societies of which he is a member, and has also contributed articles on fishery and other subjects to various magazines and other journals. He has now in the hands of his publishers a comprehensive technical work on "The Canning of Fishery Products," which, when published, will be the only work of its kind in existence.

After leaving the government service Mr. Cobb was for four years editor of the Pacific Fisherman, of Seattle, and later was assistant general superintendent of the Alaska Packers' Association.

He is a member of the American Fisheries Society, the Pacific Fisheries' Society, the Western Society of Naturalists, and the American Association for the Advancement of Science.

"As a nation we can only consume to the value of what we produce, and if production falls away there will be less to go around, and each will have to pay more for the things he obtains."—The Chairman of Barclay's Bank, quoted by the Canadian Trade Commission.

NOTES ON SEA FISHING RESULTS FOR MAY.

Weather conditions were favorable for fishing operations on the Atlantic coast, during May, with the exception of the last week of the month, when a severe north-east storm resulted in the destruction of a great many lobster traps and herring nets all over the coast, but more especially in those parts of Cape Breton that are exposed to the north and east.

The fishing results for the month, however, taken all over, were excellent and exceeded very greatly those for May last year, both in quantity and value.

The quantity of cod and haddock landed amounted to 238,874 cwts., against 91,750 cwts. for the same period last year. Lunenburg, N.S., contributed a large part of this increase. Guysborough and Digby counties, N.S., also produced considerably greater quantities of these fish; while the traps at Ingonish, Victoria Co., N.S., took more than 20,000 cwts. of haddock, against none for May last year.

The spring herring fishery resulted in a very large increase, amounting to 167,700 cwts., due mainly to a great abundance of fish at the Magdalen Islands.

The mackerel catch for May amounted to 3,764 cwts., against 4,545 cwts. for the same month last year.

The lobster fishery was prosecuted with much success. The catch for the month amounted to 143,300 cwts., against 111,600 cwts. Lobsters seemed to be abundant on all the fishing grounds, and a greater quantity would have been landed but for the severe storm towards the end of the month. Since the beginning of the canning season on March 1st, 69,150 cases have been packed. The pack up to the end of May last year was 52,686. It should be noted, however, that canning commenced two and a half months earlier last year.

Owing to the somewhat stagnant condition of the market for canned sardines, the sardine fishermen did not push this fishery during the month. Consequently, not more than 1,860 barrels were taken, as against 38,376 for May last year.

Rather unfavorable weather prevailed on the Pacific coast throughout the month, and interfered considerably with fishing operations. In the northern part of the Pacific province, boats trolling for salmon were unable to operate continuously. The catch of salmon, therefore, was slightly less than that for the preceding month of May. The catch of halibut, on the other hand, was 4,000 cwts. greater.

The total value of sea fish, at the point of landing on both coasts, was \$3,085,050. For the same month last year, the value amounted to \$2,229,877; an increase of over \$800,000.

OIL ENGINES IN FAMOUS FISHING CRAFT.

The New London Ship & Engine Co., Ltd., of Groton, Conn., advise us that the "Frances S. Grueby" — which vessel was mentioned in our May issue as being the high-liner out of Boston for 1918 — is equipped with a 120 B.H.P. Nelseco Heavy Marine Oil Engine which has been in successful operation for a number of years.

The schooner "Arabia," which was used as an American Naval "Q" boat or "mystery ship," while German submarines were playing havoc with the fishing fleet on this side of the Atlantic, is also equipped with a Nelseco Diesel Engine of 120 B.H.P.



PACIFIC COAST SECTION

"The Canadian Fisherman," Pacific Coast Branch, will be glad to have inquiries from any one who wishes information in any way connected with the fishing industry.

We want to hear from you. You will receive a prompt and full answer to any inquiry you may make. Help the "Canadian Fisherman" to make this a real live, up-to-date Section.

Address communications to F. E. Payson, Pacific Coast Manager, Industrial & Educational Press, Ltd., 507 Board of Trade Building, Vancouver, B.C., Canada.

VANCOUVER DELEGATES TO CANADIAN FISHERIES' ASSOCIATION CONVENTION, AT OTTAWA, IN MAY, MAKE THEIR REPORT.

At a special luncheon meeting of the Vancouver Branch of the Canadian Fisheries' Association, Messrs. F. E. Burke and A. W. Sterrett made their report of the results of the Convention at Ottawa, May 13 and 14. A full report of the resolutions as presented to the Minister of Marine and Fisheries and Naval Service appeared in the May number of the Fisherman.

The report was most interesting in many respects, especially in regard to the feeling created by the reception of the Western delegates by those in the East. This was referred to by both delegates.

As for the results of the convention, these were gone into by both delegates for the information of those present as regards the points of most interest to the Western members. One point that was brought strongly was a canned fish inspector and the Eastern members were most enthusiastic over this and went further by saying they favored an inspector or inspectors for all cured fish including smoked fish.

A feature which Mr. Burke brought resulting from his attendance at the convention was the fact that he believed that the exporting business would finally come to a point where the result would be a centralizing of all the export business. This would require considerable working out, but would finally come. Mr. Sterrett did not have strong faith in Association work before he left but before he had been long at the conference, his ideas were much different. He believed the Canadian Fisheries' Association was a body that could do an enormous amount of good, and that the results of this convention would show this to be so. He believed all branches of the industry should join this association for the betterment of the industry.

The result of a canvas among the members at the conference from all over the Dominion showed that the next convention to be held in Vancouver in May, 1920 would be largely attended, and all the members of the

C. F. A. may be sure that the Vancouver branch will be looking forward and preparing for the coming of the members from the East.

RETURNED SOLDIER CITIZENS START SALMON FISHING.

Through the untiring efforts of President William Marden of the Fraser River Fisherman's Protective Association, who returned from overseas early in the year, assisted by J. R. Reid, another returned veteran; the fisheries department, Capt. Reid and the New Westminster branch of the Great War Veterans' Association fishery committee, there are now between four to five hundred returned soldiers actively engaged in the fishing industry.

When this matter was first taken up the co-operation of Col. F. H. Cunningham, chief inspector of fisheries, and his assistant James Motherwell, was readily enlisted, and with the further help of W. G. McQuarrie, Dominion member and Senator J. D. Taylor, excellent progress was made.

Ernest and willing co-operation in this project has been extended by many of the canners, among them being Col. McMillan, of the 7th Battalion, owner of the Casiar Canning Company and also interested in the Wallace Canning Co. Others are the McTavish, Wallace, Wineh, Bell-Irving, Western Packers, Todd & Co., of Victoria, and the Rivers Inlet Canning Company.

The work of giving the returned soldier a place in the fishing industry was begun by J. R. Reid, who is an experienced fisherman, on his return from overseas. He took up the matter of placing returned men in canneries and met with considerable difficulty until Marden arrived, when they joined forces and with hard work and the assistance of the others mentioned, soon had matters in a fair way to success. Col. Cunningham has expressed himself as being very pleased with the fine class of men that have taken up fishing and predicts a decided improvement in this industry.

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San Francisco, Calif.	- - -	149 California St.
Los Angeles Calif.	- - -	American Bank Bldg.
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some metal enamelled cases—a distinct advance in flashlight making. Just as durable and "Reliable" as they are attractive.

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It was at first proposed to place inexperienced men in the charge of experienced fishermen, who were to be paid a regular salary for tuition, and that the men themselves, regardless of category, should be paid under the vocational training schedule while learning their new trade. However, after consideration, the government decided that only lower category men would be eligible to come under the vocational training clause in respect to fishing.

While at Ottawa Chief Inspector Cunningham took up the matter of providing for the able-bodied men and on his return announced a concession allowing thirty per cent. of the licenses in certain districts to be reserved for returned veterans and making it compulsory for the canneries to take that percentage for the season. Further concession was made in the way of giving returned men the right to fish with 80 fathom nets for practice purposes from June 1 until June 20, when the fishing season opened, and allowing them to secure licenses any time of the year in any of the three districts. Several months ago Lieut. R. P. Foster examined category men and selected a large number to learn the fishing industry.

Capt. Reid, who has had 35 years' experience in fishing and is an active member of this working committee, has interviewed the canners, and so well has the matter been carried out since it was first taken up that about 500 men will in the five weeks of this season clear between \$400 and \$500 during the sockeye run. Capt. Reid states that if the government gave to returned fishermen a grant equal to the \$7,000 allowed to farmers, with which to purchase their own boats, nets, gears, etc., that ninety-eight per cent. of them would make good, and in this contention Chief Inspector Cunningham heartily agrees. If the men wish they can continue fishing for fall fish until November.

All arrangements have been made so that a returned soldier who takes up fishing, has absolutely no initial expense. The cannery pays his first-class fare from Vancouver to the cannery, supplies the boats and gear and allows a liberal credit at the store.

Most of the canneries have taken their allotment of men and many have taken more than the compulsory percentage. Some have expressed a desire to employ the low category men, who are unable to do any hard work, as watchmen, tallymen or in any capacity in the cannery. All arrangements have been made for passage on boats.

The Government set the basis of percentage as follows: Thirty per cent. of licenses in the Rivers Inlet, Smith's Inlet and Bella Coola districts and 15 per cent. in the Skeena and Naas districts. In the Bella Coola district returned men on the grounds handle the placing of men and the two canneries there are employing between 60 and 70. In the Rivers Inlet and Smith's Inlet 240 men is the allotment.

The following facts show how many of the canneries have co-operated in this matter: The Stratheona Cannery should employ 25 men, but have to date taken 45. The Rivers Inlet Cannery Co. had a limit of 12 men placed upon it but took 25. The Good Hope Canning Co. were only compelled to take 20 but took 45. The Wallace people at Smith's Inlet, with a limit of 12, sent down word that they would take all returned men that were sent up. The Western Packers, Margaret Bay, had a limit of 20 to take. Recently manager McAlister went up with 35 and left orders with J. R. Reid to bring or send up 15 or 20 more.

Winch & Co. running the Namu Canning Co. have taken 22 men, but have declared that they will place returned men wherever possible. The Beaver Canning Co. took their limit of 23, the Provincial 15 and McTavish 15.

The Wallace Fisheries, who now have about 150 returned men in their employ, will give any returned man a job any time there is a vacancy to fill, and the Bell-Irving people are doing the same.

Capt. Marden, with headquarters at the Alcazar Hotel, Vancouver, has now taken over all work in the re-establishment department of the fisheries proposition. All those who have worked so hard in this connection are well pleased with results and intend to increase the percentage of returned fishermen next year.

NEW TRAWLER GOES ON FISHERIES DUTY.

On Saturday, June 21st, Col. F. H. Cunningham, chief inspector of fisheries, confirmed the report that the **S.S. Givenchy**, one of the government trawlers which recently came from the Atlantic, is to be taken over at an early date by the fisheries department here. Col. Cunningham stated that as soon as the **Givenchy** can be put into commission it will sail for the west coast. The department is badly in need of this big patrol boat on the west coast of Vancouver Island. The **Givenchy** came to Victoria from San Francisco, being one of three which accompanied **H. M. C. S. Stadacona** from the Atlantic to San Francisco.

GOOD REPORTS ON WORK OF RETURNED SOLDIERS IN FISHING INDUSTRY.

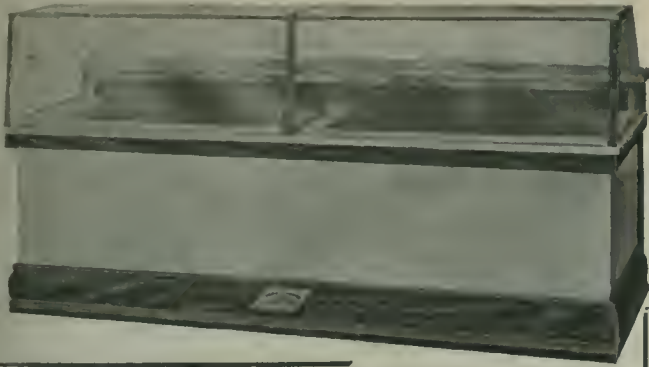
Many returned soldiers who have obtained gill-net licenses went North weeks ago, but as the fish had not started to run the canneries gave the men work inside until the season opened. Col. Cunningham, who has recently returned from a trip to the coast, found them all in line on the different rivers and ready for the first fish attempting to run the streams.

"In every instance," said the chief inspector, "I found the men contented and eagerly anticipating the busy canning season. On Rivers Inlet there are about 210 returned soldiers, some are old-time fishermen and they are taking great delight in teaching their fellow fighters who are just beginning. The spirit seems to be that they must uphold the honor of the soldiers in industrial life the same as they did when fighting for the protection of the nation."

There are 30 returned men at Bella Coola and 40 at Skeena. Rough weather has resulted in poor fishing on the West Coast of Vancouver Island, but the returned men who have seining licenses on this coast expect to reap a harvest there the latter part of August and in September.

Col. Cunningham has expressed his belief that if the fine spirit in which the returned men have taken to the fishing industry continues, the fisheries of B. C. will gradually work back into the hands of British Fishermen.

Every Canadian producer of fish who sells his product outside of Canada should secure advertising space in the export editions of the "CANADIAN FISHERMAN."



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Very truly yours,
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VANCOUVER FRESH FISH MARKET.

Owing to the strike shipments of fish from stations up the Coast have been out of the question. As a result the wholesalers have had to depend upon small boats to bring in their supplies. Just now there are quite a few blueback salmon coming in. These are sold heads on. A few local smelt are coming in and these are bringing 10 to 12c per lb.

Red Spring salmon have been fluctuating and the price has varied the past month from 14 to 18c per lb.

Point Grey herrings are coming into the market again.

Wholesale Fresh Fish Quotation.

	per lb.
Halibut	15c
Red Springs (heads off)	18c
White Springs (heads off)	10c
Bluebacks (heads on)	12 to 15c
Ling Cod	8c
Grey Cod	5c
Red Cod (round)	2 to 3c
Smelt	10 to 12c
Soles and Brills	6 to 7c
Herring	4 to 6c
Skate	4c

Shell Fish.

Crabs (scarce)	\$1.10 to \$1.20 per doz.
Perch	6c per lb.
Shrimps	17c per lb.
Clams	2½c to 3c per lb.

Vancouver Prices, Smoked and Salt Fish.

	per lb.
Smoked Sable Fish (black cod, whole)	14c
Kippered Sable Fish	20c
Filletts, Sable Fish	17c
Smoked Pink Salmon (whole)	20c
Kippered Salmon	20c
Bloaters	7½c
Kippered Herring	9c
Eastern Haddie	16c
Western Haddie (according to size)	10c to 11c
Imperial Herring Chicks in bundles of 5 boxes.	18c

	per bbl.
Salt herring, medium, 1,400 to 1,500 count, 250 net	\$ 8.50
Salt herring, medium, 1,400 to 1,580 count, 250 lbs. net	7.50
Salt herring, large, 200 lb.	8.50
Salt herrings, large, 100 lb.	5.25
Salt herring, large, 50 lb.	3.25
Salt Sable Fish (Black Cod), 200 lb.	22.00
Salt Sable Fish, 100 lb.	12.00
Salt Sable Fish, 50 lb. (Kit)	6.50
Salt Pink Salmon, 200 lb.	15.50
Salt Pink Salmon, 100 lb.	8.50
Salt Pink Salmon, 50 lb.	7.00
Salt Grey Cod, 50 to 200 lb. (per lb.)	10c

VANCOUVER STRIKE.

The fishing fleet of the Canadian Fishing Co., Ltd., are tied up and waiting for the firemen and sailors to go back to work.

The fishermen refuse to work with non-union men and as a result the following boats belonging to this company are tied up: S. S. Kingsway, Flamingo, Imbricaria, Celestial, Empire, Canada, Pescawa and Carlotta Cox. The S.S. New England is fishing out of Ketchikan, and on her last trip brought in 130,000 lbs. of halibut. Their fleet of gasoline boats are all working.

Shipments of fresh fish from points along the coast has stopped owing to the freight steamers being tied up on account of the strike and those that do run are only carrying food supplies for the camps and residents.

The small fishing boats are bringing in a small amount of Bluebacks and cod so that there is a supply of certain kinds on hand all the time.

There have been some independent halibut boats into Vancouver that ordinarily land their catches at Prince Rupert, but owing to the sympathetic strike at that point have had to land either at Ketchikan, Vancouver or Seattle.

Taking everything into consideration the strike in Vancouver has caused a lot of inconvenience and the loss of many thousands of dollars to everyone associated with the business. By the time this goes to press it is hoped the strike is over. The Winnipeg strike has been called off and everyone hopes Vancouver will follow suit.

STRIKE TIES UP PRINCE RUPERT.

The sympathetic strike in Prince Rupert which started two weeks ago included every organized trade, and as a result fish handlers, expressmen and others employed in handling fish and fish shipments went out and practically no fish has been handled since.

No boats could be unloaded except by permit from the strike committee. For this reason the independent halibut boats had to go to Ketchikan, Vancouver or Seattle to unload. All shipments for the Canadian Fish and Cold Storage Co. were sent out from their Vancouver branch.

VANCOUVER LOCALS.

Mr. John Demetris is operating the "Azores," formerly owned by the late Peter Seelis. Demetris is operating between here and Campbell River just now. Handling blueback salmon mostly.

Capt. Shannon will have his trawler in commission soon.

FISH OIL MARKET.

The same. Still waiting for a rise in price. A few cars in Vancouver being held.

CANNED SALMON MARKET.

Not much activity just now. A few pinks are moving. Talls at \$8 and halves at \$9.50.

Cohoes halves at \$13.

The strike is adding to the cost of canned salmon. Supplies are being handled three or four times owing to freight steamers not running.

Your advertisement in the Export Editions of the "CANADIAN FISHERMAN" is as good as a personal call upon a possible customer. These Editions will be kept on file as a permanent fish directory.



THE TRADE MARK OF QUALITY
WHEN PLACED ON

**LONG COATS
and
SLICKERS**

"Takes the Wet Out of Rain."

**FOR THE
FISHERMAN**

A STRONG, well made garment—that will stand all the hard wear that a coat of this kind will get. The shoulders and sleeves are double, the body being lined half way down. Made of heavy material finished with corduroy collar and two outside pockets. Fastened with solid brass rust-proof clasps. The name "Tower's Fish Brand" is found only on the best waterproof clothing. Ask your dealer.

TOWER CANADIAN LIMITED

Toronto. Halifax. Vancouver.
Coast to Coast Service.

Since 1847, Nothing But
QUALITY

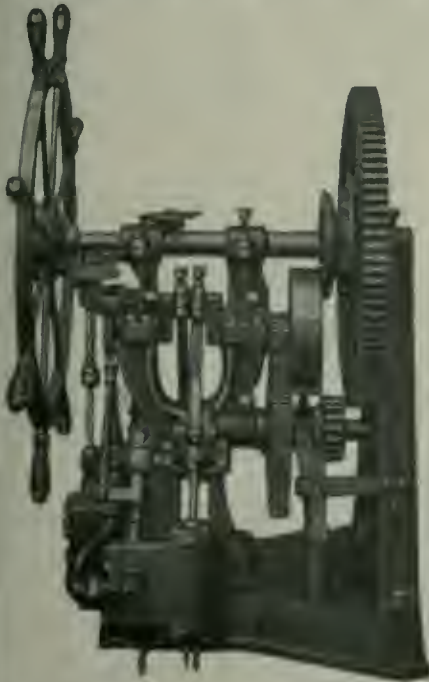
From the very beginning, 72 years ago, we were firm in the opinion that if quality was right, the business would come. It did. The demand has increased steadily every year, till today the ⚙ is the

**World's Largest Line of
MARINE HARDWARE**

Fishermen in all U. S. and Canadian waters buy ⚙ supplies naturally; they know from experience that each piece is built to stand hard, stubborn use and does it. You can get the line from all Canadian dealers. Try it;

It Pays to Buy Our Kind
**WILCOX, CRITTENDEN
& Co. Inc.,**
22 S. Main St., Middletown,
Conn. U.S.A.

Crossley Steam Steering Gear
"The Machine That Has No Equal"



Simple
in
Construction

Absolutely
Dependable

Easy to
Operate

Equipped
with
Crossley
9 H.P.
Double
Engine

Mfgd by Crossley Lead and Machine Co.
ERIE, PA., U.S.A.

Also Mfgs of CROSSLEY NET LIFTERS, LEADS & OTHER EQUIPMENT

**V A C
Rubber
Boots**

are the best

For
All Purposes

Sold only by

The Robert
Taylor Co. Ltd.

Halifax,
N.S.



WHY PRODUCE MORE FOOD IF NO MARKET?

There were 50,000 cases of Red Alaska salmon from the United States disposed of in Canada during the past year and it is estimated that 100,000 cases will be disposed of in the Dominion this year. The Government took away all the best grade salmon from the B. C. Cannery and shipped them out of the country, leaving the market clear for the United States canner to come in and dispose of his best grade goods. What kind of business policy is this? The theory is that the more imports a country has the trend of exchange is up and everybody knows what Canadian money is worth in the United States.

This is poor policy especially when we remember the 300,000 cases of chums still in the hands of the B. C. Cannery, and that the U. S. Government was good enough to look out for the interests of the U. S. Cannery by arranging a credit a long time since for their canned chums.

Many are crying "Produce more food," but the B. C. Canner asks "What's the use?" Here are 300,000 cases of good economical food and no market. Just think nearly 15,000,000 cans of good palatable nutritious food, nearly two cans for each inhabitant of the Dominion, but because this grade of salmon has always been disposed of outside of Canada the Canadian market cannot absorb this amount.

If the Government cannot arrange a credit outside of the Dominion, it should start a campaign of publicity inside the Dominion and assist the packer to dispose of his stock.

A store in the east did dispose of 75 cases of half pound flat tins of chums in two days time at 25c for two. If this can be done by one store, there is no reason why a general publicity campaign should not average at least the same, and if a week's sale all over Canada was arranged a big percentage of this stock would no doubt be moved. This is a suggestion. Cheap food is asked for, why not give it to the public from our own resources?

GASOLINE ENGINES—AND BOAT NEWS.

Edward Lipsett and Company, representing the Frisco Standard, have sold a 40 h.p. gasoline engine to Sukyama and Fukyama to be installed in the new purse-seine boat built by these two Japanese. This is to be one of several boats owned by the same men.

A seven horse-power engine has been sold to H. Hamada to be used in a troller. Also a 7 horse-power engine for a fish boat. This same firm has also sold two 16 H.P. Frisbie gasoline engines to fishermen working out of the Low Inlet Cannery of the B. C. Packers' Association.

Capt. Shannon's new boat for trawling purposes is nearly in commission, waiting for his winch.

It is 30 ft. long, 9 ft. 6 in. beam and powered with a 12 horse-power heavy duty Atlas-Imperial. A vertical niggerhead winch working from the engine will operate trawl. The Atlas-Imperial was bought from Ferrie and Lucas.

Ferrie & Lucas report the sale of 3.5 horse-power Atlas-Imperial Trolling engines to T. Ode and 1.6 H.P. Atlas Imperial Trolling engine to S. Ito and report several sales pending.

SALMON SEASON IN BRITISH COLUMBIA, DISTRICT NUMBER 2.

The salmon fishing season opened in No. 2 District of British Columbia, on June 20th.

The prices to the fishermen are understood to be the same this year as last.

Most of the canneries are employing a large percentage of returned soldiers, and many of these men are old fishermen. Some are men that have been fishing on the Fraser in previous years, but owing to the poor outlook they are now looking to the northern district for employment.

Some springs are being taken, but the catches are not heavy.

Prince Rupert did not get any Red Spring from trolling this season, as the weather was bad while the run was on.

MR. R. R. PAYNE MARRIED.

The marriage of Miss Annie Law and Mr. R. R. Payne, both of Vancouver, took place on June 21st. Mr. Payne, or as he is better known among his business associates, "Bob" is fish production manager of the Canadian Fishing Company, Ltd.

This young couple have a large circle of friends in Vancouver where they have resided most of their lives. The fishing fraternity extend congratulations to them on this happy event and wish Mr. and Mrs. Payne many years of happiness. The wedding tour was a three weeks motor trip over Vancouver Island and camping in the open.

"Bob" has been associated with the Canadian Fishing Company, Ltd., ever since Mr. A. L. Hager assumed the management. He has risen rapidly and to-day is one of the best posted men on the coast as regards the production of fish, and stands high in the estimation of his business friends.

GOVERNMENT FISH MARKET SPECIALIST.

The Civil Service Commission is advertising for a man to look after the Fish Publicity and Transportation Division of the Fisheries Department. The salary is \$1,950 per annum. Candidate should have a knowledge of the industry and a returned soldier will be given the preference. Apply Civil Service Commission, Ottawa.

TO BUILD COLD STORAGE ON ST. PIERRE AND MIQUELON.

The Turner Construction Company of New York have secured the contract for the building of the large cold storage at St. Pierre on French Government account. Men and material are already on the ground. France evidently proposes to make a most important fishing base of her North American colonies at large appropriations have been passed to build cold storages, wharves and other harbor improvements.

Canada is often called "The Granary of the Empire." We must endeavor to have it known as "The Fish Store of the World." We have the goods, but we haven't got the name yet. The Export Editions of the "CANADIAN FISHERMAN" will start the ball rolling. Get behind and shove.

**WE DESIGN & INSTALL
SUCCESSFUL
FISH FREEZING,
COLD STORAGE
& ICE PLANTS.**

**"YORK"
ICE MACHINES**



CALGARY WINNIPEG

TORONTO MONTREAL

**"SCYCO"
OILED CLOTHING**

Red and Blue Label

Wet Weather Garments



"Red Label"

Double Garments

BEST FOR THE FISHING TRADE

Write us for price list.

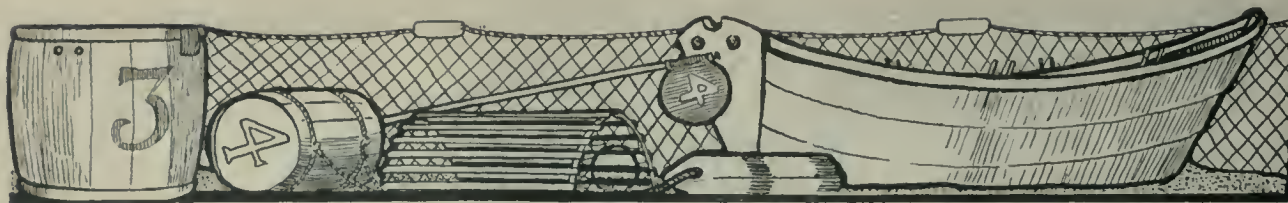
Manufactured by

SCYTHES & COMPANY Limited

TREAL

TORONTO

WINNIPEG



The Making of Lion Brand Rope

(From the March "Busy East.")

"In that building, long and low,
With its windows all a-row,
Like the port-holes of a hulk,
Human spiders spin and spin,
Backward down their threads so thin
Dropping each a hempen bulk."

Thus many years ago did the poet sing of the making of rope, an industry rich in historical association and one that occupies a most important place in the

so far as possible, technical terms, which might prove dry and uninteresting, but the information given will be accurate so far as it goes, and it is hoped may add to popular knowledge and give a new and deeper meaning to rope, whose strength, durability and dependability, every moment of the day and night, render magnificent service to man.

Every industry must of necessity enter into the labors of others. The manufactured product of one industry may be the raw material of another. For in-



Showing the Offices and a Portion of the Plant of the Consumers Cordage Co., Limited.

commerce of the world. A piece of rope seems such a common, ordinary thing, that one can scarcely imagine how interesting are the processes employed in its manufacture. A bit of rope in action was one of the first things which we remember, but our childish mind was not then specially concerned with the steps required in its making. Later years have softened our aversion to rope, which has very many uses besides that of being an instrument for administering corporal punishment to young humanity that has strayed from the paths of virtue and rectitude. Briefly it is our intention to follow the processes which take raw material in the shape of manila, hemp, sisal, jute, etc., and convert them into cordage varying in size from a fine twine to a rope eighteen inches in circumference. In treating of the subject an effort will be made to avoid,

stance, iron which is produced from iron ore by means of a blast furnace, is the raw material for countless manufacturing industries. The production of the raw material which goes into the manufacture of rope is in itself a very important industry, which is carried on in various parts of the world, including the United States, Mexico, Philippine Islands, India, Africa, New Zealand, Italy and Russia.

Vegetable fibres, of which there are two divisions, hard and soft, form the basis of all hempen rope. Many different fibres are used for rope-making, but for the combined qualities of strength, flexibility, and durability none can compete with manila hemp, which is a fibre of remarkable tenacity, of unapproachable value for heavy cordage, but too stiff for small cords and twines. After manila in utility come sisal hems of

W. R. SPOONER

Wholesale and Commission Dealer

FISH OF ALL KINDS

119 Youville Square, - MONTREAL

I am in the Market at all times to Buy or Sell on Commission, Fresh, Frozen Smoked and Salt Sea and Lake Fish in Carload Lots or less.

CORRESPONDENCE SOLICITED

REPRESENTING

National Fish Company, Limited

Halifax and Port Hawkesbury, N.S.

OWNERS AND OPERATORS

Steam Trawlers—"VENESTA" and "LEMBERG"

"NATIONAL BRAND"

Haddies, Fillets, Kippers,
Bloaters, Scotch Cured Herring

PRODUCERS

Fresh, Frozen and Salt
Sea Fish

J. Bowman & Co., Port Arthur, Ont.

Wabakin Fish Co., Montreal, Que.

A. W. Fader, Canso, N.S.

Mexico, Europe, New Zealand and East Indies—all fibres of great strength and largely used by rope-makers. Manila and sisal are the only representatives of hard fibres. Jute, which is obtained from India, is used to some extent in the manufacture of rope, but for the most part in making twines, which require to be less strong and durable than rope.

These vegetable fibres arriving at the rope factory by car and ship loads, are stored in big warehouses, the various varieties being kept separate. Manila fibres vary in length from eight to eighteen feet, while sisal fibres vary from three and half to five feet. Manila fibre forms the backbone of the industry because of its

The process of spinning vegetable fibres is quite similar to that of spinning wool. The slivers, which correspond to the woolen rolls, are fed to special machines operated by girls, who become very expert with their work. One experienced girl can look after ten or twelve spinning jennies, as these machines are called. In the Dartmouth plant of the Consumers Cordage Co., Ltd., which the writer recently had the privilege of visiting, there are hundreds of these high speed machines, which every day spin an enormous quantity of manila, sisal and jute, which are subsequently manufactured into the excellent cordage for which the Consumers Cordage Co. is justly famous.



1,320 Feet of 12 Inch Manila Tow Line, Weighing 6,410 lbs., Made by The Consumers Cordage Co. Ltd., Dartmouth, N.S.

well known qualities, chief among which is its power to resist water.

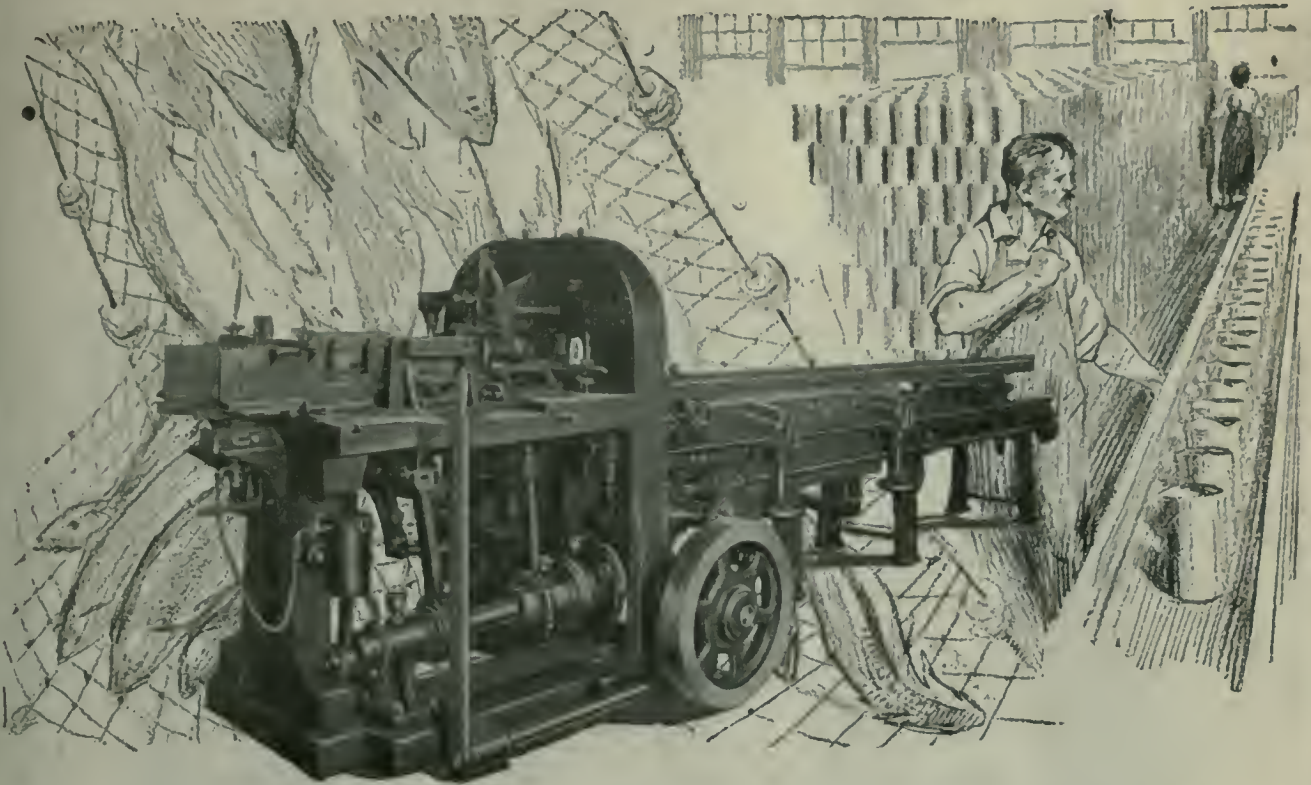
The first step in the process of rope-making is the preparation or hackling of the fibre. Just as wool has to be carded before being ready for spinning, so must the vegetable fibres pass through various machines each having its special function to perform. Three machines, known as breakers or spreaders, are employed in this preliminary stage. The fibre as it comes from the bales is fed to the first breaker, somewhat as grain in the straw is pushed into a thresher. The idea is to straighten and comb out the fibres so that they will lie smooth and parallel to each other. The fibres, on which oil is automatically sprinkled, pass between rollers, are pulled out by gill pins (which resemble the teeth of a comb), which form an important part of the mechanism of the breakers, and the fibre is at length delivered in the form of a broad ribbon known to the rope-makers as a sliver. This ribbon or sliver is fed to a second breaker somewhat similar to the first, but having the gill pins finer and more closely set, while a still finer arrangement of gill pins obtains in the third machine, whence the ribbon or sliver is delivered to the first of a set of drawing frames, machines of somewhat similar design to the spreaders, but of more delicate adjustment where the sliver is regulated and brought to an even yardage; from which it emerges, about one inch in width and a quarter inch in thickness, ready to be spun.

As the yarn is spun it is automatically wound on to bobbins, and as these are filled to capacity they are removed from the spinners and conveyed to the next or third stage of the process, which consists of forming a group of yarns into strands.

If the reader will look for a moment at the end of a rope no matter what the size, he will see at once that the rope is composed of 3 or 4 strands, and the strands consist of a number of yarns. The strand-forming machine is made on somewhat the same principle as a spinning machine, the yarns being hauled off the bobbins and twisted into a strand, which, in turn, is wound on to a larger bobbin automatically.

The fourth step in the process is the laying of the strands into rope. The laying machines, consisting of groups of flyers carrying the bobbins on which the strands are wound; these flyers revolve in one direction and the machine itself in the opposite direction. The strands are automatically brought together, the rope is formed and a capstan arrangement pulls away the finished product, which is wound on a drum into coils. The flyers are very wonderful machines being of various sizes according to the rope they are built to produce, the size of course being regulated by the number of yarns contained in each strand.

It is interesting to note that the wearing quality of a rope depends in a large measure upon the twist which it contains. The prepared fibre is twisted to the right hand to form yarn; the required number of



“CANS!---MORE CANS!”

When the run of fish is good that is the cry. If the pack is to be successful and profitable the machines that meet emergencies must be dependable.

The supply of cans must meet the incoming rush of fish smoothly — always ahead, no stoppage for repairs, no failure on the part of any of them to perform its share.

“Bliss” Automatic Can-Making Machinery is used in every part of the world where cans are required—is the development of nearly sixty years—can be depended upon.

“BLISS” AUTOMATIC LOCK-AND-LAP SEAM BODY-MAKER No. 22-N is the machine illustrated above. Shown with automatic suction blank feed and roll solder attachment. Production speed upwards of 150 per minute.

Write for Catalogue Section No. 18-A



E. W. BLISS COMPANY

Main Office and Works; BROOKLYN, N.Y., U.S.A.



1857

CHICAGO OFFICE
People's Gas Bldg.

DETROIT OFFICE
Dime Bank Bldg.

CLEVELAND OFFICE
Union Bank Bldg.

1917

LONDON, S.E., ENGLAND, Pocock Street, Blackfriars Road PARIS, FRANCE, 100 Boulevard Victor-Hugo St. Quen

yarns receive a left hand twist to make a strand; three strands twisted to the right form a hawser; and three hawsers twisted to the left form a cable. Thus the twist in each operation is in a different direction from that of the preceding one and this alternation of direction serves to some extent, to preserve the parallelism of the fibres. The primary object of twisting fibres together in a rope is that by mutual friction they are held together when a strain is applied to the whole. Hard twisting has the further advantage of compacting the fibres and preventing to some extent, the penetration of moisture when the rope is exposed to water; but the yield of rope from a given length of yarn is diminished in proportion to the increase in twist. The proper degree of twist given to rope is generally such that the rope is from three-quarters to two-thirds the length of the yarn composing it.

strand rope. The threads are passed separately through a register plate, which is simply a plate containing a sufficient number of holes for the maximum quantity required and arranged in a series of concentric circles. There are three sets of concentric rings used in the plate for a three strand rope. As the threads emerge from the register plate they are converged to a common point and passed through an iron tube, the sectional area of the smaller end of the tube being equal to the sectional area of the strand. This operation is done for each group of one hundred threads and finally the three groups are attached to separate rotating hooks of the forming machine. As the latter moves down the walk on rails it draws the threads from the bobbins in the bank and through the register plate and tubes, while the hooks put in the twist. A perfectly circular strand without slack threads is thus formed; and at the



Looking Along the Roof of "The Rope-Walk," Consumers Cordage Company, Limited, Dartmouth, Nova Scotia.

All varieties of cordage having a circumference of half an inch or more are known by the general name of rope. Twisted cordages of smaller dimensions are called cords, twines and lines and when still smaller, threads or doubled yarn. There are two general kinds of rope, viz., white and tarred, the latter being made by immersing the yarn in a long trough of hot tar.

We have so far sought to describe the making of rope of the smaller sizes and up to two and one-quarter inches in circumference. When a rope two and one-half to eighteen inches in circumference is desired a different method is employed, the work being done in the "Rope-Walk," a building 1100 feet long. In this building there are two parallel tracks on which flit back and forth machines resembling trolley ears. The bobbins from the automatic spinners are placed upon pegs in a frame which answers the same purpose as a bank or reel used in conjunction with a warping machine. If the rope is to be say six inches in circumference there may be three hundred or more individual threads in its composition. Suppose three hundred threads are to be used then three hundred bobbins would be placed on the pegs of the bobbin bank or reel and divided into three sets of one hundred threads each for a three

same time a uniform strand is obtained since the ratio of the speed of the "traveller" to the number of turns per inch of the hooks is constant. The process is continued until the desired length of strand is made, about three hundred yards of each of the three strands are required for two hundred to two hundred and forty yards of rope. Then a little more twist is introduced. Afterwards all three strands are placed on one hook of the "traveller" and the ends from the shaping tubes are cut off and put on the hooks of a fixed machine, called the "fore-turn." The carriage containing the "top" or rope former is now brought close to the traveller and the strands are placed in the grooves of the top. The two machines are now started, the three hooks of the fore-turn machine revolving in one direction and single hook of the traveller revolving in the opposite direction. Simultaneously the carriage with the laying top moves forward towards the head of the walk, the rope being laid and the finished product being the result.

"The Rope Walk" is undoubtedly the most interesting part of a cordage plant. It is so different from anything usually seen in a manufacturing plant that one cannot fail to be impressed with its uniqueness, with



When You've Worn Boots as Long as I-

That's one reason why Goodrich "Hi-Press" sales have mounted so tremendously—word o'mouth advertising.

When men who practically *live* in their boots and who are used to the kind of wear that comes with the usual run of footwear suddenly get hold of a Goodrich and find how much longer it wears and how much more comfortable it is—they are going to talk about it, that's all.

We've sold millions of boots that way. Quality will tell, and we put Goodrich Quality into our footwear just as we do in our Tires, or Water Bottles, or great Conveyor Belts. We've built our business on it—our reputation stands on it.

We make footwear for every usage—for fishermen, miners, lumbermen, farmers, dairymen, laborers, hunters. Sold by 40,000 dealers. Try Goodrich yourself, the next time.

THE B. F. GOODRICH RUBBER COMPANY
AKRON, OHIO



GOODRICH

"HI-PRESS"

Rubber Footwear

the building long and low, where human spiders spin and spin.

This article was made possible by the courtesy and kindness of Mr. R. L. Graham, Maritime Manager of the Consumers Cordage Co., who showed the writer through their magnificent factory, which is so well equipped with modern machines. Electricity is used for power and the whole plant gives one the impression of strength and efficiency. The rope produced by this company is undoubtedly of unexcelled quality, which has stood the test of time and use. No shoddy goods are manufactured in the Cordage Company's works, which are devoted to the production of cordage products, that will worthily and fittingly represent the Maritime Provinces. This industry was established in 1868 under the name of the Dartmouth Ropeworks Company, which was promoted by the late William J. Stairs. About twenty years ago the company was bought out by the Consumers Cordage Co., of Montreal. Ordinarily about 170 hands are employed, but owing to the scarcity of labor a smaller number are now at work in the plant. The company finds a market for its goods throughout Canada, West Indies, Bahama Is-



lands and Newfoundland. The Dartmouth plant takes care of the Maritime Provinces, Newfoundland and West Indies. When running to capacity this factory has an output of twelve tons of rope per day. Mr. R. L. Graham has been with the company for sixteen years, for the last two and a half years occupying the important position of Maritime Manager.

Thus briefly have we reviewed the important Maritime industry familiarly known in Dartmouth as the "rope works."

"All these scenes do I behold,
These, and many left untold,
In that building long and low,
While the wheels go round and round,
With a drowsy, dreamy sound,
And the spinners backward go."

MANUFACTURING SHIP'S STOVES FOR FORTY YEARS.

The Stamford Foundry Company of Stamford, Conn., have been manufacturing ship's stoves and ranges since 1879, and their famous "Shipmate" ranges are known to seafarers all over the world. As a piece of ship's furniture the galley stove does not appear in a very indispensable light to the landsman, but to a sailor it is probably as important an article as the standard compass.

To the fisherman especially, the galley range fills



Fishing schooner "Helen B. Thomas," Equipped with a Shipmate Stove.

an important position. The living on fishing craft is of the Ritz-Carlton variety, minus the silver and cut glass, and the fisherman's cook is a marine chef who need not surrender his place to the best of his shore living brethren. In small quarters, the fisherman cook has to prepare meals for as many as thirty men and they all expect the best of cooking and a good variety of food. Cooking in all weathers with the vessel roll-



Steam Trawler "Spray," Fitted with a Shipmate Range.

Cable Address: Peter Forge, Bilgate, London.

Established over 60 Years

PETER FORGE

(FRED W. FORGE; SIDNEY J. WILLIAMS, Government Auctioneer.)

FISH SALESMAN, LICENSED AUCTIONEER

AND

IMPORTER OF COLONIAL PRODUCE

Agent to H. M. Government.

98, 113, 114, 115 CENTRAL AVENUE

BILLINGSGATE MARKET, LONDON

INVITES CONSIGNMENTS OF

Salmon, Halibut, Haddocks

AND ALL KINDS OF FISH SUITABLE FOR

THE MARKETS OF THE UNITED KINGDOM

Good Prospects for Best Quality FROZEN KIPPERS.

General Offices:—43-45 Monument Street, London, E.C., 3; Colonial Department, 6 The Corridor, Billingsgate Market, London, E.C., 3.

CORRESPONDENCE INVITED. ALL BUSINESS PERSONALLY SUPERVISED BY PRINCIPALS.

ing and pitching about; preparing meals for a hungry gang whose appetites are usually large and unimpaired by seasickness, the cook on a fisherman requires a range that is reliable in every way—an even-burning stove with a good oven and equable drafts and constructed of material that will not warp or fuse with the intense heat which most sea cooks maintain in their galley ranges.

The Shipmate Stove has won a reputation among fishermen and they are to be found in the forecables



The Seattle Fishing Fleet. Nearly all with Shipmates Installed.

of fishing craft of every description. Shipmate stoves and ranges are made in all sizes from the small stove suitable for the inshore gas-boats and schooners to the larger ranges for bank schooners, fish tugs and offshore steam liners and trawlers. The Canadian agents are F. H. Hopkins & Company, Montreal; Canadian Fairbanks-Morse Co., Vancouver; Lipsett, Cunningham & Co., Ltd., Prince Rupert.

MASSACHUSETTS FISH MEN SENTENCED.

Boston, July 9.—Judge Sanderson, of the Superior Criminal Court, imposed heavy jail sentences and fines on seventeen wholesale fish dealers convicted in the so-called "fish trust" trial.

The five men were sentenced to one year in jail and a fine of \$1,000 each.

The men had been found guilty of conspiring to raise the price of fish in war times, and of creating a monopoly.

F. Monroe Dyer, of New York, president; Ernest A. James, treasurer; John Burns, jr., manager, and Joshua Paine and Joseph A. Rich, directors of the Bay State Fishing Company, of Maine, were sentenced to serve one year each, and to pay fines of \$1,000. Twelve other men connected with subsidiary or associated firms of fish dealers, were given sentences of six months each with \$500 fines.

Sentence was stayed in each instance, pending a ruling by the Supreme Court on exceptions taken during the trial.

The favorable trade balance of \$572,000,000 of 1917 had already dropped to half that figure in the last fiscal year. The Dominion may have to face an adverse balance of trade next fall, and that is why the Canadian trade Commission wishes the enormous importance of exports to be grasped even by children.

Dominion trade is rapidly running back to pre-war standards. Yet the largely increased debt which war brought us makes it imperative, says the Canadian Trade Commission, that this should be prevented, and that peace-time work can be on a war-time scale.

GERMAN FISHERY DEVELOPMENTS.

(Continued from Page 242.)

had surveillance over the inspectors of that city, and kept officials at Cuxhaven to see that no fish were landed out of season or sent to the markets in bad condition.

When it came to dealing with problems of development of the industry, and of facilitating distribution, etc., the German government acted through the intermediary of the *Deutscher Seefischerei-Verein*, a large association, organized on the ancient Guild principle and having branches in most of the ports of the Empire. At the head of this association there was an executive committee of 17 members, generally selected for their knowledge of the technical or business side of the fisheries. They controlled a paid personnel which embraced a general secretary, two scientific counsellors, a chief clerk, and accountant, and a librarian, and various other officials who were experts in their line. They kept an eye on the work of the various branches, and supervised all matters of general interest. Also they acted as a clearing house of information, to which the different States might look for advice, guidance, and assistance.

Under the direction of this committee exhibitions of motor boats and nearly everything else connected with fishing were held in various ports, and local societies were assisted in providing for loans to enable fishermen to acquire motor boats. The Verein was the medium through which fishermen insured their fishing craft and took out accident policies at the lowest possible rates. It established and directed schools for the instruction of fishermen in the various branches of their industry, and at certain seasons sent out lecturers to give information respecting new development and processes. Its activities included almost constant propaganda with a view to extending the markets for fish; it issued pamphlets, conducted press campaigns, arranged for conferences, and gave demonstrations on the preparation of fish for the table. And after systematically canvassing the consumption possibilities of an inland city, its officials undertook to see that that city received regular shipments of fish in good condition, an important service upon the effective performance of which great stress was laid.

The Verein maintained biological stations, and employed a vessel called the *Poseidon*, which was specially equipped for scientific research work and made voyages in the Arctic as well as in the North Sea and the Baltic.

In order to carry on its work this Association received grants from the government of the Empire and also from the Prussian State. Just what these amounted to is not easy to determine, but it is generally admitted that they were, on a comparative basis, very much larger than any other country gave for a similar purpose. The remarkable development of the German fisheries in the years preceding the war are justly attributed to the government assistance given through an organization of practical men of the industry, which is said to have had more liberty of action and to have been better able to adapt itself to commercial purposes and usages than would have been the case if state functionaries had controlled all the administrative work.

CANADIAN FISH IN JAPAN.

Replying to an enquiry from the Canadian Trade Commission at Ottawa, regarding possibilities of trade in Canadian fish in Japan, Mr. A. E. Bryan, Trade Commissioner at Yokohama, says:

"Wholesale grocery travellers from other countries come out once a year or so to show the various brands; they bring their samples with them and quote right on the spot. So far as the writer is aware, there has never been any Canadian wholesale grocer or traveller come to Japan for this purpose. To-day, when I was in one of the stores an American traveller had about half dozen large trunks open, and was displaying as well as taking orders for the various lines which he carried. Everything look attractive and he did some good business. This should be done by Canadians. Fish packers should combine for export and should send a traveller out once a year who would carry their goods, as well as perhaps a general line of Canadian groceries. Nothing can be done here without samples and prices f.o.b. Vancouver or preferably c.i.f. Yokohama. Canadian packers should come out and study the market not only here, but in China, Korea and other eastern countries."

BRITISH PLAN TO SEND SALT HERRINGS TO GERMANY AND RUSSIA.

There is a proposal before the British Government to finance the salt herring industry. Two million pounds was suggested, but a scheme involving a smaller sum may go through.

This is one of our industries whose produce is sold to foreigners for the benefit of Great Britain.

English people will not eat salt herrings, but the "Bauers" of Germany, and the "moujiks" of Russia will live on them and nothing else.

After peace is signed export trade will be resumed, and then the Government will get back the money advanced—and something over.

There is great competition for food stuffs. Owing to the world shortage, and the operations of trusts, there may be hardly enough to go round next winter, and we may have to share the American bacon with the Russians and Germans.

But if we send them the salt herrings, which we won't eat ourselves, we can "save our bacon," a large proportion of which would otherwise go to the countries named.

Canada produces quite a "jag" of herring. Why not get in on this market if possible.

Producers of fish products interested in the export trade who desire to be advised in advance of proposed sailings of steamers operated by the Canadian National Railways should forward their name and address, without delay, to the Fish Section, Canadian Trade Commission.

Half the world never heard of Canada until the Canadian expeditionary forces went overseas. The Export Editions of the "CANADIAN FISHERMAN" will be an expeditionary force to educate the world as to our wonderful fisheries.

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Standardizing Fish Names

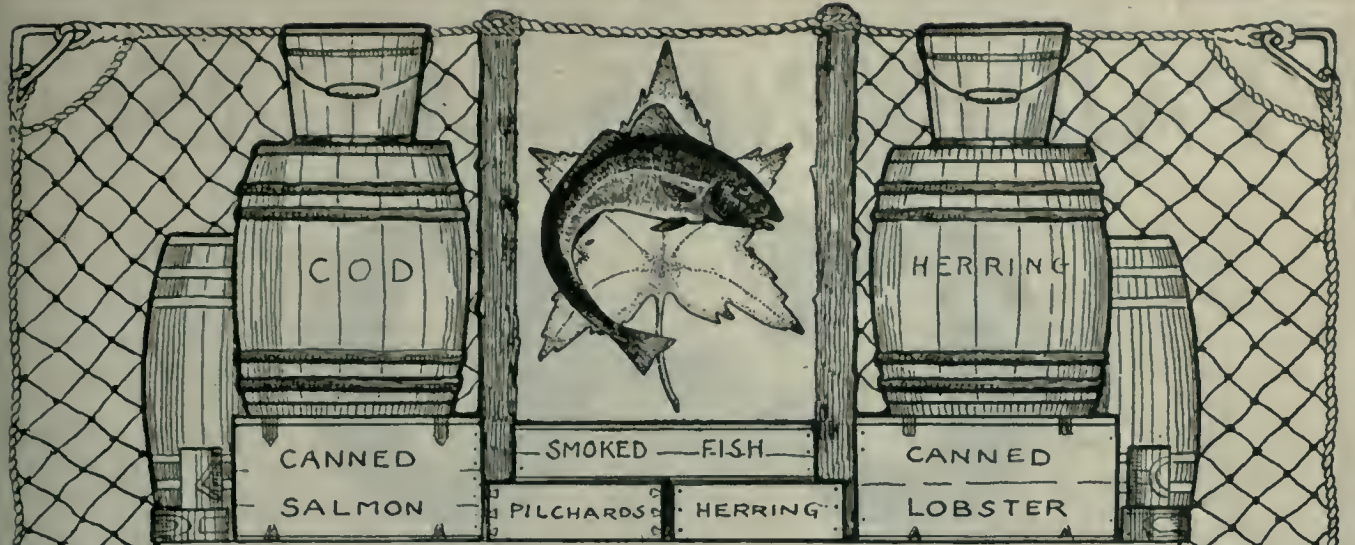
Canadian Fisheries Association commences the work.

The multiplicity of names bestowed upon certain varieties of our edible fish and the mis-naming of other species has long called for an effort to standardize the names of our commercial fish in order that they may be universally adopted. Dr. A. G. Huntsman, Professor of Biology, University of Toronto, has kindly consented to tackle the matter for the Canadian Fisheries Association, of which he is a member, and the memorandum published herewith has been sent to all members with the request that they send in their suggestions. Dr. Huntsman will compile the returns as they come in and will report to the Association. When finally completed, a handbook will be published showing cuts of the fish and the trade name decided upon. Efforts of this nature is permanent, up-building work, and is only one of the many things the Association is doing to develop and improve the Fishing Industry of Canada. The scientific name, included in the original bulletin, has been omitted in the foregoing.

Present Book Name.	Also Known As.	Where Found.	Suggested Trade Name.
Albacore	Tuna, Horse Mackerel	Atlantic	Tuna
Alewife	Gaspereau, Branch Herring	Atlantic	Alewife
Alewife Angler	Gaspereau, Glut Herring Monkfish, Goosefish	Atlantic	Angler
Bass	Striped Bass	Atlantic	Striped Bass
Beluga	White Whale	Atlantic	Beluga
Black Bass	Small-mouthed Black Bass	Lakes, etc.	Black Bass
Black Bass	Large-mouthed Black Bass Green Bass	Lakes, etc.	Black Bass
Black Cod	Skill, Sablefish	Pacific	Sablefish
Blackfish	Pilot Whale	Atlantic	Blackfish
Blue Perch	Cunner	Atlantic	Cunner
Brill	Flatfish	Pacific	Brill
Bullhead	Catfish	Lakes, etc.	
Burbot	Ling, Cusk	Lakes, etc.	Burbot
Capelin		Atlantic	Capelin
Carp		Lakes, etc.	Carp
Catfish	Bullhead	Lakes, etc.	
Catfish	Channel Cat, Lake Catfish	Lakes	Sheatfish
Catfish	Spotted Cat	Lakes	
Clam	Soft or Sand Clam	Atlantic	Clam
Clam	Butter Clam, Big Clam	Pacific	Butter Clam
Clam	Little-Neck, Sweet Clam	Pacific	Little Neck Clam
Cockle	Round Whelk	Atlantic	R'd Whelk
Cod		Atlantic	Cod
Crab		Pacific	Pac. Crab
Cultus Cod		Pacific	Cultus Cod
Cusk	Torsk	Atlantic	Cusk
Dollar Fish	Butterfish	Atlantic	Butterfish
Dulse	Dulse	Atlantic	Dulse
Eel		Atlantic	Eel
Flounder	Flatfish	Atlantic	Flounder
Flounder	Dab	Atlantic	" or Dab
Flounder	Sole	Atlantic	" or Breton Sole
Flounder	Sole, Plaice	Atlantic	" or Canadian Plaice
Flounder		Pacific	
Fur Seal		Pacific	Fur Seal
Goldeye	Northern Mooneye	Lakes, etc.	Goldeye
Greyfish	Dogfish, Flakefish	Atlantic	Flakefish
Greyfish	Dogfish, Flakefish	Pacific	Flakefish
Greyling	Rocky M'n	Rivers	Rocky M'n
Haddock		Atlantic	Haddock
Hair Seal	Harp Seal	Nor. Seas	
Hair Seal	Ringed Seal	Nor. Seas	
Hair Seal	Harbour Seal	Nor. Seas	
Hair Seal	Crested Seal	N. Atlantic	
Hake	Ling	Atlantic	
Hake	Ling	Atlantic	
Halibut		Atlantic & Pacific	Halibut
Herring	Sea Herring, Bloater	Atlantic	Herring
Herring	Digby Chicken	Atlantic	
Herring	Lake Herring	Pacific	
Herring	Jumbo Herring	Lakes, etc.	
Herring	Cisco, Longjaw, Bloater	Lakes	Cisco
Launce	Sand Eel, Sand Lance, Lant	Atlantic	Launce
Lobster		Atlantic	Lobster

Lumpfish	Lumpsucker	Atlantic	Lump
Mackerel		Atlantic	Mackerel
Masklnonge	Muscalonge, Lunge	Lakes, etc.	Masklnonge
Mullet	Red Horse, Sucker	Lakes, etc.	Lake Mullet
Mullet	Shortheaded Mullet	Lakes, etc.	Mullet
Mullet	Northern Red Horse	Lakes, etc.	
Mussel	Black Mussel	Atlantic & Pacific	Mussel
Muttonfish	Eel-point, Congo Eel	Atlantic	Muttonfish
Octopus	Devilfish	Pacific	Octopus
Ouananiche	Landlocked Salmon	Lakes	Oulanichan
Oulachan	Pacific Smelt, Candle Fish	Pacific	Oulachan
Oyster	Atlantic Oyster	Atlantic	Oyster
Oyster	Pacific Oyster	Pacific	Oyster
Perch	Yellow Perch	Lakes, etc.	Yellow P th
Perch	Surf-fish	Pacific	Pacific P th
Pickereel	Dore, Yellow Pickereel	Lakes, etc.	Pickereel
Pickereel	Blue Pickereel, Sauger	Lakes, etc.	Pickereel (Eastern)
Pickereel	East. Pickereel, Green Pike	Lakes, etc.	Jackfish
Pike	Jackfish	Lakes, etc.	Jackfish
Pilchard	Sardine	Pacific	Pilchard
Plaice		Pacific	Turbot
Pollock		Atlantic	Green Cod
Porpoise		Atlantic	Porpoise
Quahaug	Puffing Pig	Atlantic	Quahaug
Quahaug	Hard Clam	Atlantic	Quahaug
Rock Cod	Red Cod, Snapper	Pacific	R. Snapper
Rock Cod	Greenland Cod	Atlantic	Cod
Rockweed	Wrack	Atlantic	Rockweed
Rockweed	Wrack	Atlantic	Rockweed
Rosefish	Red Perch, Norway Haddock	Atlantic	Rosefish
Salmon	Atlantic Salmon	Atlantic	Salmon
Salmon	Sockeye Salmon	Pacific	Sockeye
Salmon	Coho, Silver Salmon	Pacific	Silver Salmon
Salmon	Quinnat, Spring Salmon	Pacific	Spring "
Salmon	Humpback Salmon	Pacific	Pink "
Salmon	Dog Salmon	Pacific	Qualla or Chum Sal.
*Sardine	(Young Herring)	Atlantic	
Scallop		Atlantic	Scallop
Shad		Atlantic & Pacific	Shad
Shrimp		Pacific	Shrimp or Prawn
Silver Hake	Whiting (Hake in England)	Atlantic	S. Hake or Sil. Whiting
Skate	Flatfish, Roker, Ray, samdoor	Atlantic	Ray
Skate	Big Skate, Eyed Skate	Atlantic	
Skate	Big Skate	Pacific	
Smelt	American Smelt	Atlantic	Smelt
Smelt	Pacific Smelt	Pacific	Smelt
Sole	Flatfish, Witch, Flounder	Atlantic	Breton Sole
Sole	Flounder, Plaice	Atlantic	Can. Plaice
Sole	Flatfish	Pacific	Pacific Sole
Squid		Atlantic	Squid
Sturgeon	Atlantic Sturgeon	Atlantic & Hudson Bay	Sturgeon
Sturgeon	Lake Sturgeon	Lakes, etc.	Sturgeon
Sturgeon	Pacific Sturgeon	Pacific	Sturgeon
Sucker	Northern Sucker	Lakes, etc.	Sucker
Sucker	Common Sucker	Lakes, etc.	Sucker
Swordfish		Atlantic	Swordfish
Tomcod	Frostfish	Atlantic	Tomcod
Tomcod	Pacific Tomcod	Pacific	Tomcod
Trout	Speckled Trout, Brook Trout	Atlantic	Brook Trout
Trout	Lake Trout, Togue, Salmon Trout	Lakes, etc.	Great Lake Trout
Trout	Steelhead	Pacific	Steelhead
Trout	Cut-throat Trout	R. Moun. waters	Spotted Trout
Trout	Rainbow Trout	R. Moun. waters	Rainbow Trout
Tullibee	Mongrel Whitefish	Lakes, etc.	Tullibee
Turbot	Black-backed Halibut	Atlantic	Halibut
Whale	Names for the various kinds	Atlantic & Pacific	Whale
Whitefish	Common Whitefish	Lakes, etc.	Whitefish
Whitefish	Round Whitefish	Lakes, etc.	Whitefish
Whiting	Silver Hake (Hake in Eng.)	Atlantic	S. Hake or S. Whiting
Whiting		Pacific	Whiting
Winkle	Periwinkle	Atlantic	Winkle
Witch	Sole, Flatfish, Flounder	Atlantic	Breton Sole
Wolfish	Sea Catfish	Atlantic	
Wolfish	Sea Catfish	Atlantic	
Wolfish	Sea Catfish	Atlantic	Monarch

*SARDINES, or immature pilchards (*clupea pilchardus*) are found in S.W. European, but not in Canadian waters. The term, however, has been used to cover small sprats, brisling and herring, but the High Court of Great Britain in 1915 upheld a decision forbidding importation of any fish other than pilchards under the name sardine. France has similar regulations. A trade name which will add to the commercial value of Canadian little herring is therefore essential. Some suggested are: CANADINES; FUNDYFISH; BRITS, or FUNDYS. What do you suggest?



THE CANADIAN FISHERMAN
 LE «PÊCHEUR CANADIEN»
 EL PESCADOR CANADIENSE

EXPORT EDITION
 EDITION D'EXPORTATION
 EDICION DE EXPORACION

*Official Organ of the Canadian Fisheries Association.
 Organe Officielle de l'association des Pêcheries Canadiennes.
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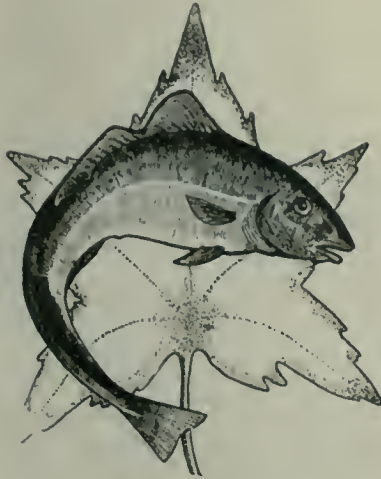
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FREDERICK WILLIAM WALLACE
EDITOR

Official Organ of the Canadian Fisheries Association and Affiliations

Vol. VI. GARDEN CITY PRESS, St. Anne de Bellevue. No. 8

ANNOUNCEMENT.

In presenting the first number of the CANADIAN FISHERMAN EXPORT EDITION to our friends in the import fish trade abroad, we feel that by illustrating and describing Canada's fisheries in this manner, a better knowledge may be gained of our fish products and amicable trade relationships promoted.

Canada is a country of great natural resources. Our agricultural, forest and mineral products are already well known, but our fishery resources have not been extensively advertised and in foreign countries our fishery products have been largely confounded with those of our great neighbour to the South.

We Canadians claim to possess within our territorial and adjacent waters the greatest fishery resources in the world. This claim is freely admitted by scientists and other authorities, and we also believe our fish to be of a superior quality owing to the fridity of the water from which they are

AVIS

En présentant le premier numéro de "The Canadian Fisherman Export Edition", à nos amis du commerce d'importation, à l'étranger, il nous semble qu'à l'aide de nos explications et d'une description des pêcheries canadiennes, nous pourrions mieux faire connaître nos produits de pêche et obtenir des relations commerciales plus étroites.

Le Canada est un pays de grandes ressources naturelles. Nos produits agricoles, forestiers, et miniers sont déjà bien connus; mais, nos pêcheries n'ont pas été beaucoup annoncées, et dans les pays étrangers, l'on a confondu nos produits de pêche avec ceux de notre grand voisin du sud,—les États-Unis.

Nous, Canadiens, prétendons posséder, dans nos eaux territoriales et limetropes, les plus grandes ressources de pêche du monde. Ce qui, d'ailleurs, est admis par tous les hommes de science, et les autorités de notre pays. Nous croyons aussi que notre poisson est de qualité supérieure,

AVISO.

El primer número de la Edición de Exportación de "EL PESCADOR CANADIENSE" se dedica a cuantos estén interesados en el comercio de importación de pescado, en la creencia de que al ilustrar y describir las pesquerías del Canadá, podemos ofrecerles un conocimiento mayor de nuestros productos pesqueros y establecer amistosas relaciones comerciales.

El Canadá es un país de grandes recursos naturales. Nuestros productos agrícolas, forestales y pesqueros no han tenido la publicación que su importancia requiere, y en los países extranjeros nuestros productos pesqueros han sido confundidos con los de nuestro gran vecino del Sur.

Los canadienses, nos enorgullecemos de poseer en nuestras aguas territoriales y adyacentes los mayores recursos pesqueros del mundo y nuestra aserción es libremente admitida por los científicos y otras autoridades. También tenemos la creencia de que nuestro pescado es de mejor cali-

taken. All our fishing grounds, ocean and lake, are located north of the forty-third parallel of latitude and comprise about 7,000 miles of sea washed shores on the Pacific and 5,500 miles of coast line on the Atlantic. In addition, Canada possesses no less than 220,000 square miles of fresh water lakes and rivers abundantly stocked with excellent food fish. To our territorial fishing waters on the Atlantic and Pacific must be added the huge fishing grounds of the Grand Banks, the Gulf of Alaska and the Behring Sea. To these prolific fishing grounds, Canadian fishermen have readiest access by virtue of proximity. No survey has yet been made of our fishery resources in sub-arctic waters.

Within the last ten years, our fishermen have adopted the most modern methods of catching, curing, packing and transporting fish. The firms engaged in producing fish are keeping pace with the times and are employing all facilities which will ensure the best possible product. Large steam, motor and sailing vessels are employed in the off-shore fisheries, and the motor boat is universal in the inshore fisheries. Modern cold storages are to be found in all the principal fishing ports: canneries are equipped with the latest appliances for rapid handling and sanitary packing of fish products, and the Government Department of Fisheries maintains a rigid inspection of fish packing premises. The dry climate and brilliant sunshine of Canada afford ideal conditions for the curing of various fish for export markets in fishing ports relatively small in population and uncontaminated by the smoke and grime of manufacturing districts.

The value of Canada's fisheries is approximately \$60,000,000 annually. This amount is but a trifle compared with our possible production, as not more than 100,000 of our 7,000,000 inhabitants engage in the fisheries, and many of these fish only during a portion of the year. We have un-

à cause de la température froide de l'eau qu'il habite. Tous nos territoires de pêches, océans et laes, sont situés au nord du 43ème degré de latitude, et comprennent 7,000 milles du littoral du Pacifique, et 5,500 milles sur les bords de l'Atlantique. De plus, le Canada possède au moins 220,000 milles carrés de laes et de rivières d'eau douce où abonde d'excellent poisson. A nos pêcheries territoriales sur l'Atlantique et le Pacifique, nous devons ajouter les immenses stations de pêche des Grands Bancs, du Golfe d'Alaska et de la mer de Behring. A cause de la proximité des ces pêcheries fertiles, les pêcheurs canadiens y ont un accès des plus faciles. Aucune exploration n'a encore été faite de nos possibilités de pêcheries dans les eaux sous-arctiques.

Durant les dix dernières années, nos pêcheurs ont adopté les méthodes les plus modernes pour la pêche, la salaison, la mise en barils et le transport du poisson. Les maisons de commerce qui s'occupent de la production du poisson suivent de près les progrès du temps et ils emploient tous les moyens possibles afin de produire un bon article. On emploie les grands bateaux à vapeur, les bateaux à moteur et les goélettes, dans les pêcheries extérieures; et les bateaux à moteur, dans les pêcheries intérieures. On trouve des entrepôts frigorifiques modernes dans tous les principaux ports de pêche; les fabriques de conserve de poisson sont pourvues de tout le matériel nécessaire pour l'emballage rapide et sanitaire du poisson; le Ministère des Pêcheries du Gouvernement maintient une inspection sévère de tous les établissements où le poisson est mis en boîtes.

Le climat du Canada, et, le fait que la préparation du poisson se fait dans les ports de mer, consécutivement exempt de toute contamination des centres industriels, ces conditions sont idéales pour faire de notre poisson un comestible parfait.

La valeur des produits de pêche du Canada est approximativement de \$60,000,000, par année. Ce montant est insignifiant comparativement à la production possible, puisque, sur une population de 7,000,000 d'habitants, 100,000 s'occupent de la pêche et ceci seulement durant une partie de l'année, nous avons des

dad, debido a la frialdad de las aguas donde se pesca, pues todas las zonas pesqueras, tanto en los océanos como en los lagos se encuentran al norte del paralelo 43 de latitud y comprenden alrededor de 7,000 millas de costa en el Pacífico y 5,500 millas en el Atlántico. Además, el Canadá posee 220,000 millas cuadradas de lagos y ríos de agua dulce, densamente poblados de pesca alimenticia. A nuestras aguas territoriales de pesca hay que añadir las enormes zonas pesqueras de los Grandes Bancos, el Golfo de Alaska y el Mar de Behring. Los pescadores canadienses tienen acceso fácil a estas prolíficas zonas de pesca debido a su gran proximidad. Los recursos pesqueros de las aguas contiguas al Círculo Ártico no han sido exploradas todavía.

Durante los últimos diez años, nuestros pescadores han adoptado los métodos más modernos de pesca, cura, envase y transporte de la pesca. Las empresas que se ocupan de la pesca están al nivel de los tiempos y tienen las facilidades necesarias para asegurar la mejor producción posible. En las pesquerías de mar-adentro se emplean grandes barcos a vapor, de motor y de vela, y en las costas generalmente se emplean botes a motor. En todos los puertos principales se han establecido cámaras frigoríficas modernas, y las fábricas de conservas están equipadas con los útiles más modernos para facilitar el manejo rápido y el envase higiénico de los productos pesqueros. El Departamento de Pesquerías del Gobierno mantiene una rígida inspección de las fábricas de conservas, lo cual, unido al clima seco y al sol brillante del Canadá, ofrece condiciones ideales para la cura de muchas variedades de pesca con destino a la exportación, en puertos comparativamente despoblados pero libres del humo y miasmas de los distritos manufactureros.

El valor anual de la pesca del Canadá es aproximadamente de \$60,000,000, cuya suma es una friolera si se tiene en cuenta la enorme producción que se puede alcanzar, pues en la actualidad, de los 7,000,000 que componen la población del Canadá, solamente unos 100,000 se dedican a la pesca y muchos de ellos pescan solamente durante cierta época del año. Nuestro "campo de acción" a este respecto no tiene límite y por

limited room for expansion, and it is with a desire to expand and sell our fish products in the world's markets that we have undertaken the publication of three export editions of our fisheries journal. The present number will be followed by two others, and in these three editions we hope to present to you a comprehensive story of Canada's fishery resources, our fishing industry, and our exportable fish products.

The Department of Fisheries, Ottawa; the Canadian Trade Commission, Ottawa, and the Canadian Fisheries Association, Montreal, are ready and glad to give information at all times to enquirers desiring more specific details regarding our fish products.

avantages illimités pour le développement de nos pêcheries, et c'est dans ce but, et afin de vendre nos produits de pêche sur le marché mondial que nous avons entrepris la publication de trois éditions, concernant l'exportation, dans notre revue. Le présent numéro sera suivi de deux autres, et nous espérons être capable dans ces trois éditions, de vous présenter un résumé de l'histoire de nos pêcheries canadiennes, de notre industrie de pêche et de nos produits de pêche pour l'exportation.

Le Ministère des Pêcheries, Ottawa; la Commission du Commerce du Canada, Ottawa; et la "Canadian Fisheries Association," Montréal, sont à votre disposition, en tout temps, et se feront un plaisir de donner les renseignements voulus à ceux qui désirent de plus amples détails concernant nos produits de pêche.

lo tanto deseamos desarrollar la venta de nuestros productos pesqueros en los mercados del mundo, a cuyo efecto hemos emprendido la publicación de tres ediciones de nuestro periódico de pesca, dedicadas a la exportación. Después de este número se publicarán dos más, y en estas tres ediciones esperamos detallar la historia de los recursos pesqueros del Canadá, la de nuestra industria pesquera y la de los productos pesqueros para la exportación.

El Departamento de Pesquerías de Ottawa, la Comisión de Comercio Canadiense en Ottawa y la Asociación de Pesquerías Canadienses de Montreal, tendrán mucho gusto en facilitar información más completa a cuantos lo soliciten por escrito.



Cod Fishing Schooners in Harbor, Lunenburg, N. S.

Goélettes de Pêcheurs dans le Havre, Lunenburg, N. E.

Goletas para la pesca del bacalao, en el puerto de Lunenburg, Nueva Escocia.



L'INDUSTRIE DE LA PÊCHE AU CANADA INDUSTRIA PESQUERA DEL CANADA

In 1914 the value of Canada's fisheries was \$33,207,000. In 1917 the value was \$52,350,000—an increase of practically forty per cent. Though prosecuted as an industry for four hundred years, it is only within the last decade that our fisheries have shown a genuine development, and since the outbreak of war, the necessity for conserving meats gave the fishing industry a great stimulus, especially in the home consumption of Canadian fish.

While the value of the fisheries for 1917 are satisfactory as compared with former years, yet it does not mean a development commensurate with the enormous fishery resources with which Canada is endowed. The export trade, which absorbs the bulk of our fish production, is capable of greater expansion and should, from now on, be aggressively developed.

Extent of Fishing Grounds.

The important fishing grounds of the world are only four in number, and all lie in the Northern Hemisphere, mainly north of the fortieth parallel of latitude. Out of these four prolific fishing areas, Canada is singularly fortunate in having two of them adjacent to her coasts, and is thus endowed with the greatest fishery resources in the world.

The habitats of all commercial fish are in waters less than 300 fathoms deep. In deeper water, the fish cannot be caught readily, and the species which inhabit these great depths are usually unfit for food. The most prolific and commercially edible species of fish are those which inhabit the "shoal" waters and the countries which are adjacent to these comparatively shallow areas are assured of abundant supplies of fish.

The Atlantic fishing grounds of Canada may be said to extend from Grand Manan in the Bay of Fundy to Labrador in the Straits of Belle Isle—an approximate shore measurement, counting bays and indentations, of some 5,000 miles of territorial fish-

En 1914, l'évaluation des pêcheries du Canada fut de \$33,207,000. En 1917, l'évaluation fut de \$52,350,000, une augmentation pratique de quarante pour cent.

Notre industrie pêchère est vieille de quatre cents ans, mais son essor a été prodigieux surtout dans ces derniers temps. La guerre a nécessité la conservation de nos viandes de boucherie, et de ces conditions la consommation locale du poisson et son exportation a reçu une impulsion remarquable.

Quoique la valeur des pêcheries pour 1917 soit satisfaisante, comparée avec les années précédentes, néanmoins, elles ne montrent pas un développement en rapport avec les ressources énormes que nous possédons. Le commerce d'exportation qui absorbe la plus grosse partie de notre production de pêche, est capable d'une plus grande expansion et devrait dès maintenant, être développée intensivement.

Etendue de Nos Pêcheries

Les territoires de pêcheries importants au monde sont au nombre de quatre et tous situés dans l'Hémisphère du Nord, principalement nord du quarantième parallèle de latitude. De ces quatre territoires de pêche le Canada en possède deux et elles sont doués comme cela des plus grandes ressources de pêche du monde.

Les espèces de poisson les plus propres au commerce et en même temps qu'on retrouve avec une plus grande abondance, habitent les banes, c'est-à-dire les fonds qui sont à proximité des côtes où les eaux sont relativement plus profondes.

L'étendue des territoires pêcheurs de l'Atlantique est d'environ 5,000 milles en longueur. Ceci comprend la longueur des côtes en suivant les sinuosités continentales à partir de l'île de Grand-Manan, située sur la frontière du pays jusqu'au détroit de Béliisle dans le Labrador. De plus il faut compter l'étendue des banes qui sont situés depuis le détroit de Davis jusqu'aux Indes Occidentales. Le trian-

El valor de la pesca del Canadá en 1914 ascendió a \$33,207,000. En 1917 subió a \$52,350,000, o sea, un aumento de casi un 40%. Aunque la pesca se ha continuado como industria durante cuatrocientos años, solamente en la última década ha sido cuando nuestras pesquerías han experimentado un verdadero desarrollo, y desde que se declaró la guerra, la necesidad de conservar las carnes dió a la industria pesquera un gran impulso, especialmente en el consumo doméstico de este artículo.

Aunque el valor de las pesquerías durante 1917 fué satisfactorio comparado con años anteriores, no por eso puede considerarse como un desarrollo proporcionado con los enormes recursos pesqueros con que el Canadá está dotado.

El comercio de exportación que absorbe el grueso de nuestra producción pesquera ofrece una expansión mucho mayor a la cual hay que dedicarse sin pérdida de momento.

Áreas de las Zonas Pesqueras

En el mundo existen solamente cuatro zonas pesqueras importantes y todas ellas se encuentran en el Hemisferio Boreal, principalmente al norte del paralelo 40 de latitud. El Canadá tiene la envidiable fortuna de poseer dos de estas cuatro zonas, las cuales están adyacentes a sus costas, estando, por lo tanto dotado de los mayores recursos pesqueros del mundo.

Toda la pesca de valor comercial vive en aguas de menos de 300 brazas de profundidad. En aguas más profundas se dificulta la pesca y las especies que allí habitan generalmente no sirven de alimento. Las especies más prolíficas, y comercialmente más alimenticias, son las que habitan los bajos, y los países cercanos a tales lugares disfrutan gran abundancia de pescado.

Las zonas de pesca del Canadá en el Atlántico puede decirse que se extienden desde el Gran Manan en la Bahía de Fundy hasta el Labrador en

ing grounds. In addition to this, the Canadian Atlantic Coast is adjacent to the enormous shoal water areas of the Western North Atlantic "banks," which range from Davis Straits to the West Indies, and in the angle formed by the south coast of Newfoundland and the Maritime Provinces we are in close proximity to offshore fishing grounds larger than Great Britain in area. These banks are the ledges of the continental shelf over which the mighty St. Lawrence and other rivers, and the Arctic currents have been depositing silt for ages. Plankton and other minute forms of marine life abound in the shoal waters and attract the countless hordes of fish which feed upon them.

gle, formé par la côte s'étendant de Terre-Neuve au nord des Provinces Maritimes à l'Ouest et l'Atlantique à l'est, renferme des bancs pêcheurs dont la superficie égale seule les îles Britanniques. Ces bancs sont les marches qui s'élèvent des profondeurs de la mer au continent et sous lesquelles les fleuves comme le merveilleux Saint-Laurent et les courants arctiques ont déposé des matières végétales depuis des siècles. Ces matières végétales développent une nourriture abondante qui attire en quantités innombrables toute une variété de poisson dont la valeur commerciale ne peut être estimée à première vue.

La côte Pacifique canadienne avec ces îles et indentations irrégulières

los estrechos de Bella Isla, una extensión costanera de bahías, puntas y cortaduras, de cerca de 5000 millas de aguas territoriales de pesca. Por otro lado, la costa oriental Canadiense está adyacente a los bancos occidentales del Atlántico Septentrional, los cuales se extienden desde los estrechos de Davis hasta las Antillas.

En el ángulo formado por la costa sur de Terranova y las Provincias Marítimas nos encontramos próximos a zonas de pesca costaneras de mayor extensión que la Gran Bretaña. Estos bancos son los extremos del Continente en el que desaguan y depositan sus sedimentos el caudaloso San Lorenzo con otros ríos, y las corrientes Árticas desde tiempos remotos. En estas aguas bajas abundan las medu-



Pacific Salmon on the Floor of a British Columbia Cannery.
Saumon du Pacifique sur le Plancher d'une Conserverie à la Colombie Anglaise.
Salmón del Pacífico en la Navede una Fábrica de Conservas.

The Pacific Coast of Canada, with its islands and irregular indentations, affords a territorial fishing area of some 7,000 miles in length. The continental shelf of the west coast does not extend so far out into the sea as it does on the east, and consequently there are no great banks lying offshore. A large shoal water area, however, is found in the Gulf of Alaska and in the Behring Sea, and to both these prolific fishing grounds Canada has the readiest access by virtue of proximity. The numerous inlets and sheltered channels of the British Columbia and Alaska coasts make up the lack of offshore banks by the abundant fish life to be found frequenting them.

For vast fresh water fishing areas, Canada is unexcelled. The Great

donne un espace de territoires de pêcherles d'une étendue de 7,000 milles en longueur. Le contour continental de la côte ouest ne s'étend pas aussi loin dans la mer comme dans l'est et conséquemment il n'y a pas de grandes côtes, outre-grève. Une grande espace d'eau peu profonde est trouvé dans le Golfe de l'Alaska et dans la mer de Behring et dans chacune de ces espaces le poisson abonde, ainsi que dans les chenaux qui courent le long des îles bordant la côte.

Pour les vastes espaces de pêche de l'eau douce, le Canada ne peut être dépassé en excellence. Les grands lacs, rivières et plus petites espaces d'eau douce forment un total de 220,000 milles carrés et rapportent approximativement \$5,000,000 de revenu par an.

sas y otras diminutas formas de vida marina las cuales atraen millares de manchas de peces que acuden a ellas para alimentarse.

La costa Canadiense del Pacífico con sus islas y cortaduras irregulares ofrece un área territorial de pesca de cerca de 7000 millas de longitud. El bajo continental de la costa occidental no se extiende tanto mar adentro como en la costa oriental y por consecuencia no existen grandes bancos. Sin embargo, en el Golfo de Alaska y en el mar de Behring se encuentra una gran extensión de agua baja; y en ambos lugares, el Canadá cuenta con dos prolíficas zonas de pesca de las cuales puede aprovecharse debido a su gran proximidad. Los innumerables islotes y canales abrigados de las costas de la Colombia Inglesa y de

Lakes, rivers and lesser bodies of fresh water aggregate a total area of 220,000 square miles and from them fish to an approximate value of \$5,000,000 is produced annually. Some of the largest fishing areas in the lakes and rivers of Northern Canada are as yet untouched, owing to lack of transportation facilities, and the great inland sea of Hudson's Bay, with its tributary rivers, is a potential fishing ground yet to be exploited.

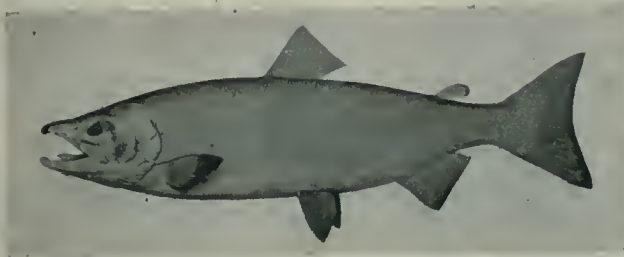
Quelques unes des plus grandes espaces de pêche dans les lacs et rivières du Canada Nord, n'ont encore été touchés, par le manque de facilités de transportation et la grande mer en-dedans de la Baie d'Hudson avec ces rivières tributaires est un territoire de pêche dont les possibilités sont encore inconnues.

Alaska compensan la falta de bancos fuera de la costa y en estos lugares la pesca es abundantísima.

El Canadá ne tiene rival en pesca de agua dulce. Los grandes lagos, los ríos y afluentes dan un total de 220,000 millas cuadradas y de estas aguas se saca una pesca anual con un valor aproximado de \$5,000,000. Algunas de las mayores zonas de pesca en los lagos y ríos del norte Canadiense todavía estan vírgenes, debido a la falta

Valeur des Pêcheries

La valeur des poissons canadiens



Sockeye Salmon
Saumon "Sockeye"
Salmón "Sockeye" (Rojo)



Pink Salmon.
Saumon Rose.
Salmón Rosado.

Value of Fisheries.

The value of fish caught and landed in Canada by Canadian fishermen during the year 1917, amounted to \$52,352,044. The value by Provinces is as follows:

British Columbia	\$21,558,595
Nova Scotia	14,468,319
New Brunswick	6,143,088

durant l'année 1917 se monte à \$52,352,044. La valeur par province est comme suit:—

Colombie Anglaise	\$21,558,595
Nouvelle Ecosse	14,468,319
Nouveau Brunswick	6,143,088
Québec	3,414,378
Ontario	2,866,419
Ile du Prince Edouard	1,786,310

de transporte, y el gran mar interior que forma la Bahía de Hudson con sus ríos tributarios es también una enorme zona de pesca que todavía no está explotada.

Valor de la Pesca

El valor de la pesca cojida y desembarcada por pescadores canadienses durante el año 1917 ascendió a



Commission of Conservation

A Catch of Canadian Pacific Halibut.
Une Prie de Flétan du Canadien Pacifique.
Un copo de mero en el Pacifico Canadiense.

Quebec	3,414,378
Ontario	2,866,419
Prince Edward Island	1,786,310
Manitoba	1,543,288
Saskatchewan	320,238
Alberta	184,009
Yukon	67,400
Canadian Commercial Fish and Value of Catch.	

Following is a table of the species of fish caught by Canadian fishermen, their value annually during 1917:

Salmon	\$17,411,029
Cod	7,402,516
Lobsters	5,654,025

Manitoba	1,543,288
Saskatchewan	320,238
Alberta	184,009
Yukon	67,400
Poisson Commercial Canadien, valeur et Prise	

Suivant, est une table des espèces de poissons pris par les pêcheurs canadiens et leur valeur annuelle, durant 1917:—

Saumon	\$17,411,029
Morue	7,402,516
Homard	5,654,025

\$52,352,044. El valor por Provincias es como sigue:—

Colombia Inglesa	\$21,558,595
Nueva Escocia	14,468,319
Nueva Brunswick	6,143,088
Quebec	3,414,378
Ontario	2,866,419
Isla de Príncipe Eduardo	1,786,310
Manitoba	1,543,288
Saskatchewan	320,228
Alberta	184,009
Yukon	67,400
Pesca Comercial Canadiense y Valor de la Saca o Copo	

A continuación publicamos una tabla



Halibut — Flétan — Mero



Aiglefin — Haddock — Merluza

Herring	3,733,688
Haddock	2,936,719
Halibut	2,066,635
Sardines	1,910,705
Mackerel	1,333,354
Whitefish	1,248,006
Smelts	1,027,555
Hake and Cusk	890,265
Black Cod	879,404
Lake Trout	699,000
Pickarel	650,000
Pollock	486,195
Pike	429,386
Tullibee	333,686
Clams and Quahaugs	222,965
Alewives	196,482
Perch	126,723
Oysters	109,265
Sturgeon	98,011
Eels	90,457
Albacore	89,961
Soles	81,109
Crabs, cockles, dulce	66,918
Flounders	55,595
Brill	51,420

Hareng	3,733,688
Aiglefin	2,936,719
Flétan	2,066,635
Sardines	1,910,705
Maquereau	1,333,354
Polisson blanc	1,248,006
Eperlan	1,027,555
Merluche	890,265
Morue Noire	879,404
Truite de lac	699,000
Doré	650,000
Merlin	486,195
Brochet	429,386
Tullibee	333,686
Mollusques	222,965
Gaspereau	190,482
Perchaude	126,732
Huitres	109,265
Sturgeon	98,011
Anguilles	90,451
Tuna	89,961

con las diferentes especies de pescados y su valor en el año 1917.

Salmón	\$17,411,029
Bacalao	7,402,516
Langosta	5,654,025
Arenque	3,733,688
Merluza	2,936,719
Mero	2,066,635
Sardina-Arenque	1,910,705
Macarela	1,333,354
Albur	1,248,006
Esperlán o pejerrey	1,027,555
Merlango y Cusk	890,265
Bacalao Negro	879,404
Trucha de Lago	699,000
Luco	650,000
Merlán	486,195
Mujol	429,386
Tullibee	333,682
Almejas	222,965
Alufa	196,482
Perca	126,723
Ostras	109,265
Esturión	98,011
Anguillas	90,457
Atún	89,961



Atlantic Salmon

Saumon de l'Atlantique

Salmón del Atlántico

Shad	52,250
Capelin	41,449
Carp	40,890
Goldeyes	40,209
Tom Cod	38,893
Catfish	38,210
Sword fish	33,178
Squid	29,751
Scallops	26,800
Mullets	22,026
Skate	20,883
Bass	24,482
Pilchards	11,810

Soles	\$1,109
Ecrevisses	66,918
Pile	55,595
Barbue	51,420
Alose	52,250
Capelan	41,449
Carpe	40,890
Poisson blanc	40,209
Poulamon	38,893
Barbotte	38,216

Soles	\$1,109
Cangrejos	66,918
Lenguado	55,595
Rodaballo	51,420
Sábalo	52,250
Carpa	40,890
Ojosdorados	40,209
Bocacha	38,893
Barbos	38,210
Pez-Espada	33,178
Calamares	29,751
Conchas o avieñeiras	26,800
Mujil	22,026



Atlantic Swordfish.
Espadon de l'Atlantique.
Pez-Espada del Atlántico.



Atlantic Tuna.
Tuna de l'Atlantique.
Atun del Atlántico.

Oolachons	10,991
Rock Cod	8,688
Grayfish	5,780
Maskinonge	3,188
Whiting	2,725

In the above list, forty-four species of edible fish are enumerated, and the values given indicate the importance of several varieties seldom heard of outside the trade. Many of the species named are due to become of increased value in the future—notably the herring, flounders, sole, brill, skate, black and rock cod and albacore. The majority of our fish will stand greater development, less in the case of the fresh water fish, but especially so in sea fish. Halibut, shad, lobsters and oysters are the only species showing signs of depletion so far.

Included in our fishery statistics are the following by-products:—

Espadon	33,178
Encornet	29,751
Coquilles St. Jacques	26,800
Mullets	22,026
Rale	20,883
Achigan	24,482
Célan	11,810
Oolachont	10,991
Morue noire	8,688
Requin	5,780
Maskinongé	3,188
Merlan	2,725

Dans la liste ci-haute, quarante-six sortes de poissons mangeables sont énumérés, et leurs valeurs données indiquent l'importance de plusieurs variétés dont on entend rarement parler en dehors du commerce. Plusieurs des espèces nommées augmenteront en valeur dans l'avenir notamment le hareng, le pile, et le sole.

Raya	20,882
Lobina	24,482
Sardina-arenque	11,8810
Oiachones	10,991
Pargo o Guachinango	8,688
Pez gris	5,780
Sollo	3,188
Cadoce o blino	2,725

En la lista que antecede se enumeran cuarenta y cinco especies de peces comestibles y el valor consignado indica la importancia de algunas variedades, raramente conocidas fuera del oficio. Muchas de las especies nombradas llegarán a tener más valor en el futuro, especialmente los arenques, lenguados, soles, rodaballo, rayas, bacalao negro, pargos, y albacora. La mayor parte de nuestro pescado puede llegar a un intenso desarrollo, exceptuando el de agua dulce. Las únicas especies que hasta el presente están mermando o decreciendo, son el mero, sábalo, langosta y ostras.

En nuestras estadísticas pesqueras

Fish oil	\$397,164
Whale oil	342,422
Seal oil	83,937
Whales and whale products	82,995
Hair seal skins	71,690
Caviare	15,106

The fish oil, seaweed and fish offal products are capable of much greater expansion and will, in the future, constitute important side industries.

Barbue, raie, morue noire et Roche et Alabacore. La majorité de notre poisson aura de plus grands développements, spécialement chez les poissons de mer. Le flétan, alose, homard et les huîtres sont les seules espèces qui tendent à s'épuiser.

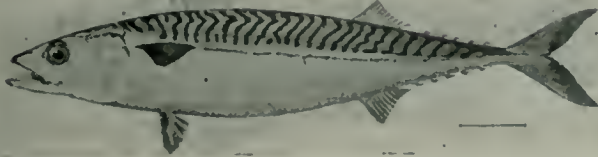
Les produits suivants sont inclus dans nos statistiques des pêcheries:—

Hulle de Poisson	\$397,164
Huile de Baleine	342,422

se incluyen los siguientes derivados de la peaca.

Acéite de Pescado	\$397,164
Acéite de Ballena	342,422
Acéite de Foca	83,937
Ballenas y productos balleneros	15,106
Pieles de Focas	71,690
Caviar	15,106

Los derivados del aceite de pescado, algas y desperdicios, ofrecen ancho campo para una gran explotación y en el futuro constituirán una fase importantísima de la industria.



Mackerel — Macquereau — Macarela o Caballa.



Herring — Hareng — Arenque

Investment in Fishing Plants and Gear.

The total capital invested in Canada's fishing industry is between thirty-six and thirty-eight million dollars. Over six million dollars are invested in the salmon canneries of British Columbia. Three million dollars are invested in ice-houses and freezers, and two and a quarter million in fishing piers and wharves in various parts of Canada. Millions of dollars are invested in traps, nets, lines, trawls, smoke-houses, etc.

The Canadian fishing fleet includes two hundred steam vessels. Of this number, nine are steam trawlers, six are steam halibut fishing vessels of the larger type, and the balance are fishing tugs, cannery tenders and fish carriers. These craft operate on the Pacific, Atlantic and Great Lakes. Operating in our fisheries are thirteen hundred sail and gasoline driven vessels of the larger size, including three motor trawlers and the handsome Bank fishing schooners and the "gas boats" of the Pacific and Atlantic. In the shore fisheries, there are over 27,000 sail and row boats and 14,000 motor boats.

It is estimated that over 100,000 persons are employed, wholly or in part, in the Canadian fishing industry. About 66,000 persons engage in the fisheries on the Atlantic coast, and 20,000 on the Pacific.

Baleines et Produits de la Baleine 82,995

Huile de Phoque 83,937

Peaux de Phoque 71,690

Caviare 15,106

Placements dans les Plante de Pêcherie et leur Disposition

Le capital, total investi dans l'industrie de la Pêcherie du Canada est entre trente-six et trente-huit millions de piastres. Plus de six millions sont investis dans les conserves de Saumon de la Colombie Anglaise. Trois millions de piastres sont investis dans des glaciers et geleurs, et deux millions et quart en jetées et quais de pêcherie dans différentes parties du Canada. Des millions de piastres sont investies en trappes, filets, lignes, seines, fumoirs, sècheirs, etc.

La flotte canadienne de pêcherie comprend deux cents vaisseaux à vapeur. De ce nombre neuf sont des chalutiers, six sont des vaisseaux du genre large vapeur pêchant le flétan et la balence soit des remorqueurs de pêcherie, des gardes de conserverie, et des apporteurs de poissons. Ceux opérant sur le Pacifique, l'Atlantique et les Grands Lacs.

Qui opèrent dans nos pêcheries, sont treize cents bateaux à voile et goélettes du grand modèle, qui inclus les jolies goélettes pêcheuses des côtes et les bateaux à gaz du Pacifique et de l'Atlantique. Dans la pêche à grève, il y a au-dessus de 27,000 bateaux à voile et à rame et 14,000 bateaux à moteurs. C'est estimé qu'au-dessus de 100,000 personnes sont employées, tout ou en partie dans les industries de pêcheries. A peu près 66,000 sont engagées dans les pêcherles sur les côtes d l'Atlantique et 20,000 sur le Pacifique.

Inversiones en Fábricas y Equipo

El capital invertido en la industria pesquera del Canadá fluctúa entre 36 y 38 millones de dólares, de los cuales más de seis millones están invertidos en las fábricas de conservas de salmón de la Colombia inglesa. Tres millones se han empleado en depósitos de hielo y en heladoras, y dos millones y cuarto en muelles de pesca y atracaderos en varios lugares. Millones de dólares se han dedicado a la compra de trampas, redes, líneas, sedales, traínas, ahumaderos, etc.

La flota de pesca canadiense consta de doscientos barcos a vapor. De este número, siete son traineras, seis de los mayores se dedican a la pesca del irero y el resto se compone de remolcadores, barcos-almacenes y barcos-repartidores. Esta flota opera en los dos Océanos y en los Grandes Lagos. También se dedican a la pesca mil trescientos barcos veleros de gran tamaño y de gasolina, entre los que se cuentan las arosas goletas de los Bancos y los "botes de gas" del Atlántico y del Pacífico. En las costas se dedican a la pesca más de 27,000 botes de vela y de remo y 14,000 botes de motor. Se calcula en más de 100,000 el número de personas empleadas directa o indirectamente en la industria pesquera del Canadá, de las cuales 66,000 pertenecen a la costa del Atlántico y 20,000 a la del Pacífico.

THE NEXT ISSUE OF THE CANADIAN FISHERMAN EXPORT EDITION, WILL FEATURE THE GREAT SALMON FISHERIES AND SALMON CANNING INDUSTRY OF BRITISH COLUMBIA. THE CANADIAN SARDINE INDUSTRY, THE HALIBUT FISHERY, AND THE LOBSTER CANNING INDUSTRY WILL ALSO BE DESCRIBED AT LENGTH IN THE SUCCEEDING ISSUES.



KING CODFISH

The Most Prolific and Valuable Fish
of Our Atlantic Waters



LA MORUE REINE DE NOS POISSONS

Le poisson le plus prolifique
et le plus de valeur de nos eaux
sur l'Atlantique.



SU MAJESTAD EL BACALAO

Es el pescado más prolífico
y valioso de nuestras aguas
del Atlántico.

The Cod — La Morue — El Bacalao

The cod is probably the most abundant fish of our Atlantic waters. Cod to the value of \$7,402,516 was taken out of the sea by Canadian fishermen during 1917, and the bulk of it was salted and dried for export to the Latin countries, where as "bacalhao" it is regarded with esteem as a prime food fish.

The unappreciated cod-fish looms large in the early history of Canada. The great cod banks of the Western Atlantic off the Newfoundland and Nova Scotia coasts lured the Basque,

La Morue est probablement le poisson le plus abondant de nos eaux de l'Atlantique. Au cours de 1917, pour une valeur de \$7,402,506 de morue fut tiré de la mer par les pêcheurs canadiens et la majeure partie fut salée et séchée pour être exportée aux pays latins où elle est considérée avantageusement comme un poisson d'alimentation de premier ordre.

Dès les débuts de l'histoire du Canada, la pêche à la morue attira l'attention. Les grands bancs de morue de l'Atlantique ouest le long des côtes de Terre-Neuve et de la Nouvelle-Ecosse attirèrent les pêcheurs Basques,

Es probable que el bacalao sea el pescado más abundante de nuestras aguas del Atlántico. Durante 1917, los pescadores canadienses sacaron bacalao por valor de \$7,402,516. La mayor parte de la pesca se destinó a la salazón y secado para la exportación a los países latinos donde se estima como alimento altamente nutritivo.

El nunca bien ponderado bacalao jugó papel principal en la historia del Canada. Los Grandes Bancos en el Atlántico Occidental que baña las



Just Caught : Codfish on Vessel's Deck.
Immédiatement Pris ! Morue sur le Pont du Vaisseau
; Acabado de pescar! Bacalao en la cubierta del barco.

British and Portuguese fishermen to our shores before the discoveries of Cabot, Cartier and Columbus. History vaguely mentions that the Basques fished the Newfoundland cod banks centuries before the discovery of America by Columbus in 1492. This is not at all improbable. Fishermen in their quest for fish, have wandered all over the world; have sighted strange coasts and being all absorbed in fishery, have paid but scant attention to geographical discovery. As a class they are conservative and secretive and even to-day, fishermen do not advertise the localities in which they have made good catches.

FISHERMEN PIONEERS.

Canada was colonized by these fishermen pioneers. At first they landed on our eastern coasts to cut wood, careen and water their ships ere returning home. Latterly, the wealth of fish to be caught in the inshore waters caused them to establish settlements on shore during the summer. The fish caught were salted and dried on the beach and shipped to Europe in the returning vessels. The summer settlements soon became permanent—the fish and fur trade proving great attractions—and fishermen left the ships and remained ashore braving savages and a rigorous winter.

In the wake of the cod fishermen came adventurers, outlaws, and those who had religious and political dif-

Anglais, et Portugais de nos rives avant les découvertes de Cabot, de Cartier, et de Colomb. L'histoire mentionne vaguement que les Basques pêchaient la morue sur les bords de Terre-Neuve des siècles avant la découverte de l'Amérique par Christophe Colomb en 1492. La chose n'est pas improbable. Les pêcheurs en quête de poisson avarié erré de par le monde étranger. Ils avaient localisé des côtes étrangères et tout absorbés qu'ils étaient par leur pêche, ils n'avaient pas porté attention à leur découverte géographique. Par nature, ils sont conservateurs et méfiants et même aujourd'hui, les pêcheurs se gardent bien d'indiquer les endroits où ils font leurs meilleures pêches.

Les Pionniers-Pêcheurs

Le Canada fut colonisé par ces pionniers-pêcheurs. Au début ils abordèrent sur nos côtes de l'est pour couper du bois, caréner leurs bateaux et les approvisionner d'eau avant de s'en retourner chez eux. Plus tard, la richesse de la pêche à poisson dans les eaux près du rivage les portèrent à édifier des établissements sur la rive pendant l'été. Le poisson pêché était salé et séché sur la plage et expédié en Europe par les vaisseaux qui s'en retournaient.

Les établissements d'été devinrent bientôt permanents—le commerce du poisson et de la fourrure ayant prouvé être d'un gros intérêt—et les pêcheurs laissèrent leurs navires pour habiter le rivage, bravant les sauvages et les hivers rigoureux.

Parmi les pêcheurs de morue, on rencontrait des aventuriers, des hors-la-loi et d'autres qui avaient eu des différends politiques ou religieux avec les autorités de leur pays. La pé-

costas de Terranova y Nueva Escocia atraieron a los pescadores vascos, ingleses y portugueses a nuestras orillas antes que se conociesen los descubrimientos de Colón, Cabot y Cartier. La historia vagamente menciona que los vascos pescaban bacalao en los Bancos de Terranova siglos antes de que Colón descubriera la América en 1492, lo cual no es improbable. Los pescadores recorrían todo el mundo en busca de pesca; visitaban costas extrañas y absortos en su trabajo no fijaban ninguna atención a descubrimientos geográficos. La reserva ha sido siempre característica entre los pescadores, y aun hoy día nunca divulgan la localidad donde han hecho un buen copo.

EXPLORADORES PESCADORES.

El Canadá fué colonizado por exploradores pescadores. Primeramente desembarcaron en nuestras costas orientales para cortar madera, carenar sus barcos y hacer agua antes de volver a su país, pero más tarde, la riqueza de la pesca fué causa de que establecieran sus primeras colonias en nuestras costas durante el verano. La pesca que sacaban la salaban y secaban en las playas para enviarla a Europa. Estas colonias veranlegas muy pronto se hicieron permanentes debido a la gran atracción que ofrecía el comercio de la pesca y de las pieles. Los pescadores desertaban los barcos y se quedaban en tierra arros-



A Field of Drying Codfish.

Un sêchoir de morue.

Un Campo de bacalao Secándose

ferences with the home authorities. The cod fishery offered a good livelihood by reason of the prolific nature of the fish. Ship after ship from England, France and Portugal landed the fishermen colonists on the shores of Newfoundland, the Gulf of St. Lawrence and Nova Scotia. Settlements became populous villages with all the inhabitants engaged in the catching and drying of cod. Fleets of fishing craft came from Europe and made these villages a base of operations for the Bank or off-shore fishery and even though their respective countries were at war, the fisher-

che à la morue leur offrait un bon moyen d'existence en raison de la nature prolifique de ce poisson. Navires sur navires amenèrent d'Angleterre, de France et de Portugal, des pêcheurs-coloniaux sur les côtes de Terre-Neuve, du Golfe du St. Laurent et de la Nouvelle Ecosse. Les établissements devinrent des villages populeux dont tous les habitants étaient engagés dans la pêche et le séchage de la morue. Des flottes de pêche habiles vinrent d'Europe et firent de ces villages leur base d'opération pour la pêche sur le banc ou sur la côte et même quand leurs pays respectifs furent en guerre, les pêcheurs de toutes les nationalités vécurent en bonne intelligence ne s'occupant que de leur métier de pêcheur de morue. Des

trando los rigores del invierno y los ataques de los salvajes.

Siguiendo a los pescadores vinieron aventureros, escapados de la justicia, y cuantos sufrían persecuciones por causas políticas o religiosas. La pesca ofrecía un buen medio de ganarse la vida debido a la naturaleza prolífica del bacalao. Barco tras barco, de Inglaterra, Francia y Portugal, desembarcaban sus colonias de pescadores en las costas de Terranova en el Golfo de San Lorenzo, y en Nueva Escocia. Las colonias se convirtieron en grandes aldeas donde todos sus habitantes se dedicaban a



Cod Fishing Schooner.

Une goélette pêchant la morue.

Una goleta pescadora de bacalao.

men of all nationalities lived in harmony and assiduously plied their vocations in the catching of the cod. Fishing companies were formed and received their charters from France, Portugal and England and some of these old established concerns are doing business today on the shores of the St. Lawrence.

In the sixteenth century, the wealth of the cod fishery soon attracted the attention of European Governments and diplomatic and bellicose struggles commenced over the rights to the fishery and the ownership of the settlements. These are recorded in the

compagnies de pêche furent formées et reçurent leurs chartes de France, du Portugal et d'Angleterre et quelques-unes de ces maisons dont l'établissement remonte à ces dates anciennes font encore affaires aujourd'hui sur les rives du St. Laurent.

Au seizième siècle, la richesse des pêcheries de morue attira l'attention des gouvernements européens et des luttes diplomatiques et belliqueuses commencèrent sur les droits de pêche et de propriété des établissements. Ces discussions sont mentionnées dans les histoires du Canada, de France et de États-Unis.

El Dorado

L'or fut l'almand qui attira les premiers voyageurs dans les Amériques,

la pesca y seca del bacalao. Flotas de barcos pesqueros llegaban de Europa y hacían de estas aldeas su base de operaciones de pesca en los Bancos o en las costas, y aun cuando sus respectivos países estuviesen en guerra los pescadores de todas las nacionalidades vivían en armonía y asiduamente doblegaban sus vocaciones a la pesca del bacalao. Se formaron compañías pesqueras con patentes de Francia, Portugal e Inglaterra, y algunas de aquellas empresas todavía continúan los negocios en las orillas del San Lorenzo.

En el siglo XVI, la riqueza de la

histories of Canada, France and the United States.

EL DORADO.

Gold was the lure which attracted the early voyagers to the Americas, but the cod soon proved to be the real El Dorado. The habitat of the cod is the great shoal waters which lie in the angle formed by the south coast of Newfoundland and the Nova Scotia and New England coasts, and in the enormous area extending from Cape Cod, Massachusetts, to Cape Chidley on Hudson Straits. The cod abounds in depths of from 20 to 70 fathoms and has from time immemorial been caught by the baited

mais la morue prouva bien vite être un véritable El Dorado. L'habitation de la morue est dans les eaux peu profondes qui baignent l'angle formé par la côte-sud de Terre-Neuve et les côtes de la Nouvelle Ecosse et de la Nouvelle Angleterre, et dans le vaste espace s'étendant du Cap Cod, Massachusetts, au Cap Chidley sur les bords de l'Hudson. La morue abonde dans les profondeurs de 20 à 70 brasses et est pêché de temps immémorial à la ligne avec un hameçon appâté bien qu'on en pêche aussi au filet.

Les caractéristiques de la Morue

La morue est un poisson d'eau froide et en raison de cette particularité, sa chair est ferme et savoureuse. C'est un reproducteur prolifique

pesca del bacalao llamó la atención de los gobiernos europeos y pronto empezaron interminables luchas diplomáticas y guerreras por los derechos de la pesca y de la propiedad de las colonias. Tales luchas están registradas en la historia del Canadá, Francia y Estados Unidos.

EL DORADO.

El oro fué el primer imán que atrajo a los viajeros que vinieron a América, pero bien pronto, el bacalao probó ser el verdadero "Dorado." La región donde habita el bacalao abarca desde la costa Sur de Terranova hasta las costas de Nueva Escocia y Nueva Inglaterra y la enorme



Steam Trawler "Lemberg" of National Fish Coy, Halifax, N. S.
Chalutier à Vapeur, "Lemberg" du National Fish Co., Halifax, N. E.
Trainera a vapor "Lemberg" de la "National Fish Co., Halifax, N. E.

hook and line, though some are captured by netting.

COD CHARACTERISTICS.

The cod is a cold water fish and by reason of this its flesh is firm and palatable. It is a prolific reproducer—a 21 pound cod containing something like 2,700,000 eggs. Though a vast number of these never reach maturity, yet the reproduction of the species is great enough to calm any fears as to extinction, no matter how heavily the fishery is prosecuted. On the Grand Banks and off our coasts, the cod has been fished for centuries by vast fleets and is as prolific today as ever. The Canadian catch of recent years has amounted to over two

une morue de 21 livres contient quelque chose comme 2,700,000 oeufs. Bien qu'un grand nombre de ces oeufs n'arrivent jamais à maturité, la reproduction des espèces est encore assez grande pour écarter toute crainte d'extinction, quelque soit le mouvement intensif de la pêche. Sur les Grands Bancs et le long de nos côtes la morue est pêchée depuis des siècles par d'importantes flottes et elle est plus abondante aujourd'hui que jamais. La pêche récente des années passées s'est élevée à plus de deux cent millions de livres annuellement, et constitue de beaucoup la quantité de poisson la plus importante amenée à terre par les pêcheurs canadiens. En outre, on peut ajouter les grosses pêches des pêcheurs de Terre-Neuve et d'Amérique et des flottes qui viennent de France, prenant pour base les Iles Miquelon.

extensión que media entre el Cabo del Bacalao (Cape Cod) en Massachusetts y el Cabo Chidley en los estrechos de Hudson. El bacalao vive a profundidades de 20 a 70 brazas, y desde tiempo inmemorial se ha venido pescando con anzuelo y carnada, pero hoy día también se pesca con red.

CARACTERISTICAS DEL BACALAO.

El bacalao es pez de agua fría y debido a ello su carne es firme y gustosa. Se reproduce con prolificidad, al extremo que una hembra de 21 libras contiene alrededor de 2,700,000 huevos. Aunque gran parte de ellos nunca llegan al desarrollo, la reproducción de la especie es lo suficientemente

hundred million pounds annually, and is by far the heaviest weight of fish landed by Canadian fishermen. In addition to this must be added the heavy catches of the Newfoundland and American fishermen and the fleets which comes out from France using the Miquelon Islands as their base.

In Canada, the cod fishery gives employment to some fifty or sixty thousand persons at sea and on shore. Out of the port of Lunenburg, N.S., a fleet of 125 schooners manned by two thousand men, engaged almost exclusively in the cod fishery, and their catch is salted and dried for export. In addition to this "Bank" fleet, thousands of fishermen catch cod

Au Canada, la pêche de la morue donne de l'emploi à cinquante ou soixante mille personnes tant en mer que sur le rivage.

Du port de Lunenburg, N. E., une flotte de 125 goélettes (morutiers) portant un équipage de deux mille hommes est engagée presque exclusivement à la pêche de la morue et les produits de sa pêche sont salés et séchés pour l'exportation.

En outre de cette flotte du "Banc" des milliers de pêcheurs pêchent la morue avec leurs petits voiliers ou leurs barques à moteur dans les eaux près du rivage, et des chalutiers à vapeur pêchant pour les marchés canadiens en capturent des quantités considérables.

La Pêche en Goélette

La pêche en goélette est une occupation des plus bizarres et des plus hardies. La poursuite de l'humble

grande para alejar cualquier temor de extinción aunque la pesca se persiga sin descanso. En los Grandes Bancos, lo mismo que en nuestras costas, grandes flotas pescan el bacalao desde hace siglos, y hoy día sigue tan prolífico como antes. Durante recientes años la pesca canadiense ascendió a más de 200 millones de libras anualmente, lo cual establece record entre los pescadores canadienses. Además hay que añadir las grandes sacas o copos de Terranova, y de los Estados Unidos, y las que hace la flota que viene de Francia usando como base las Islas de Miquelón.

La pesca del bacalao emplea de cincuenta a sesenta mil personas en el



Bank Fishing by Schooner and Dories
Pêchant par Goélette ou dories sur le Banc de Pêche
Pesca en los Bancos con Goleta y Esquifes



Map showing Canada's proximity to the great fishing grounds of the Atlantic and Pacific. All the world's best fisheries are north of 40° N. lat. Carte montrant la proximité du Canada auprès des grands bancs de Pêche de l'Atlantique et du Pacifique. Toutes les plus belles Pêcheries du monde se trouve au Nord a 40 degrés Nord Latitude. Mapa que demuestra la proximidad del Canadá a las zonas pesqueras del Atlántico y del Pacifico. Las mejores pesquerias del mundo se encuentran al Norte del arado 40 Jatitud N.



Scene on Deck of Canadian Trawler.
 Vue sur le Pont du Chalutier Canadien.
 Escena sobre la cubierta de una trainera canadiense.

from small sail and motor craft in the inshore waters, and steam trawlers fishing for the Canadian markets land huge quantities.

SCHOONER FISHING.

The schooner fishery is one of the most romantic and arduous of seafaring occupations. The pursuit of the humble cod contains material which is of the very warp and woof of romance, and the strenuous toll of the industry has no parallel in any other branch of Canadian commercial effort.

The schooners engaging in the cod fishery are strongly built fast sailing craft of from 95 to 125 tons, carrying from fifteen to twenty-five men. The fishing is done from the vessel itself by hand-lines equipped with two baited hooks, or from dories by hand-lines or long lines. The dory is a flat-bottomed boat about 20 feet long fitted with removable thwarts. From eight to twelve of these boats are carried on each schooner and when the thwarts are removed they can be nested one within the other on the schooner's decks. When the schooner arrives on the fishing ground, the dories are hoisted out, and the fishermen row away from the parent

morue comporte un contingent qui tient du roman et le travail fatiguant de cette industrie n'a pas son parallèle dans aucune autre branche de l'effort commercial canadien.

Les goélettes engagées dans la pêche à la morue sont fortement construites, jauchent de 95 à 125 tonnes et portent de quinze à vingt-cinq hommes. La pêche se fait du bateau même par des lignes à mains garnies de deux hameçons appâtés, ou de canots (chaloupe) au moyen de lignes à mains ou de longues perches. La chaloupe est un bateau à fond plat long d'environ 20 pieds et garni de traverses. De huit à douze de ces bateaux sont amarrés sur chaque goélette et quand les traverses sont enlevées on peut les emboîter les unes dans les autres sur le pont de goélette. Quand la goélette arrive sur le banc de pêche, les chaloupes sont mises à l'eau et les pêcheurs rayonnent autour de la goélette à laquelle ils appartiennent jetant leurs lignes à des distances considérables les unes des autres.

De la sorte, une goélette portant dix chaloupes pourra les faire pêcher autour d'elle sur un rayon circulaire de 6 à 10 milles. Deux hommes qui montent chaque chaloupe pêchent ordinairement avec la ligne à la main ou la longue ligne. La longue ligne a environ 2,100 pieds et est garnie tous les 32 pouces de courtes lignes munies d'hameçons. De deux à trois longues lignes peuvent être posées en même temps dans leur longueur continue, et être

Canadá tanto en mar como en tierra. En el puerto de Lunenburg, en Nueva Escocia, 2,000 hombres manejan una flota de 125 goletas, dedicada casi exclusivamente al bacalao, y la pesca sacada se sala y seca para la exportación. Además de la flota de los Bancos, millares de pescadores se dedican al bacalao usando en las costas embarcaciones pequeñas a remo y de motor. Las traineras a vapor desembarcan enormes cantidades para abastecer el mercado canadiense.

PESCA EN GOLETA.

La pesca en goleta es una de las ocupaciones más románticas y penosas del mar. La persecución del humilde bacalao ofrece bastante materia para ser alma y vida de cualquier romance, pero el duro trabajo de esta industria no tiene paralelo en ningún otro giro del esfuerzo comercial canadiense.

Las goletas que se dedican a la pesca del bacalao son veleros de fuerte construcción, de 95 a 125 toneladas y con una dotación de 15 a 25 hombres. La pesca se efectúa desde el mismo barco por medio de líneas largas equipadas con dos sedales y anzuelos, o desde botes, con líneas cortas o largas. Las goletas llevando

schooner and set their lines a considerable distance from each other. Thus a schooner carrying ten dories will have them fishing around her over a circular area of six to ten miles. Two men usually go in each dory and fish by hand line or long line. The long-line is about 2,100 feet long with short lines and hooks spliced into it about 32 inches apart. From two to three long-lines may be set at a time in one continuous length and anchored at each end along the bottom of the sea. The hooks are baited with pieces of herring, squid or capelin and the gear is hauled in by the fishermen in the dory after it has remained on the bottom for from twenty minutes to an hour—according to the run of the fish. The fish caught are thrown into the dory and when the gear has been hauled, the fishermen row to the schooner, which is usually anchored, and pitch their catch out on her deck. The fish are then dressed, split and salted in the fish hold.

The schooner fishery in Canada is carried on from March to October, and the schooners follow the fish around Sable Island Bank, thence to the Gulf of St. Lawrence and later to St. Pierre and Grand Banks. The boat fishery for cod is conducted all around the coastal waters of the Atlantic and the methods of fishing is

ancrées à chaque bout au fond de la mer. Les hameçons sont amorcés avec des morceaux de hareng, d'encornets ou de capelan et l'attirail est tiré par le pêcheur dans la chaloupe après qu'il est resté au fond de vingt minutes à une heure selon la nage du poisson. Les poissons capturés sont jetés dans la chaloupe et quand la provision est suffisante les pêcheurs retournent à la goélette qui est ordinairement ancree et transportent leur charge sur le pont. Les poissons sont alors apprêtés, depecés et salés dans la cale à poissons.

La pêche à la morue en goélette au Canada se fait de Mars à Octobre, et les goélettes sulvent le poisson autour du Banc de l'Île de Sable, jusqu'au golfe du St. Laurent et plus tard jusqu'à St. Pierre et les Grands Bancs. La pêche de la morue en bateau se fait tout le long des côtes de l'Atlantique et la méthode de pêche est, soit à la ligne à la main, soit à la longue ligne. La partie majeure des 200,000,000 livres pêchées annuellement est salée, sùchée et marinée pour l'exportation.

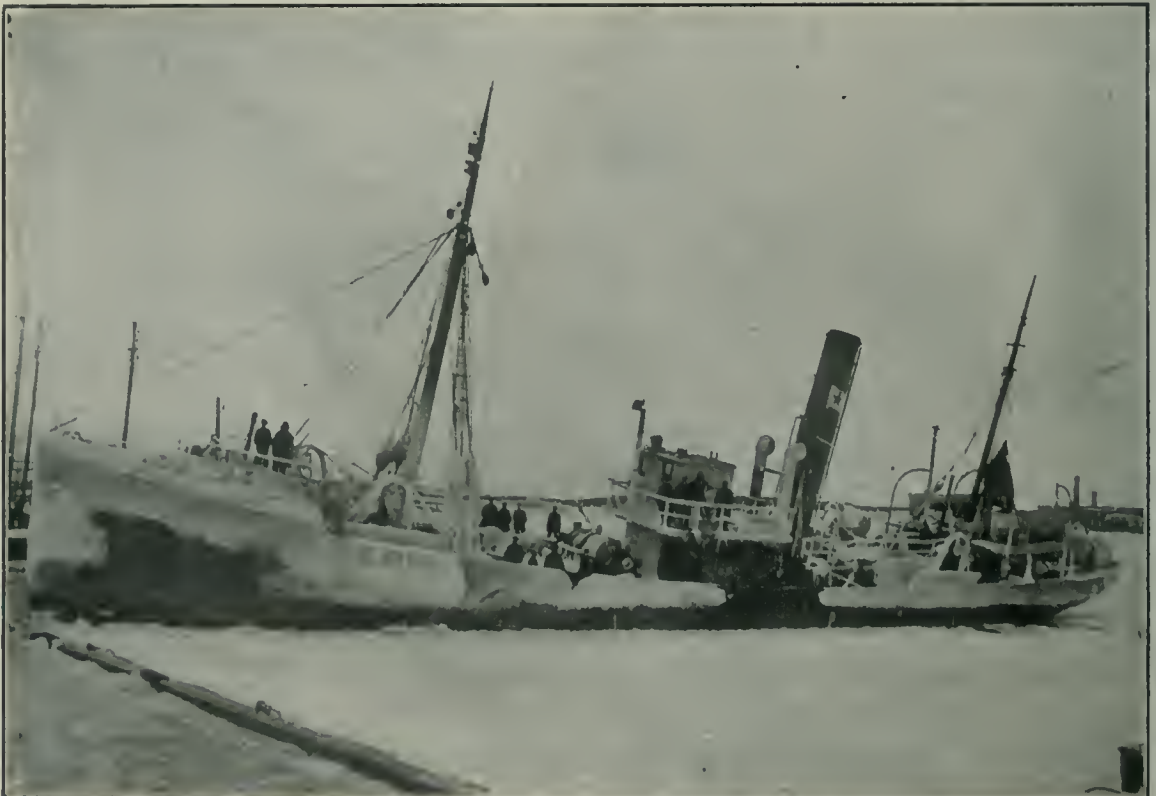
La Pêche au Chalut

Des chalutiers à vapeur et à moteur mouillant aux ports de la Nouvelle Ecosse sont engagés à présent dans la pêche à la morue de l'Atlantique.

Les chalutiers opérant dans les eaux canadiennes sont des bateaux à

ocho a doce botes de fondo plano, de unos veinte pies de longitud y traveseros movibles, los cuales van colocados sobre la cubierta de la goleta sin traveseros, uno dentro de otro. Cuando la goleta llega al lugar de la pesca se arrían los botes, se colocan los traveseros y los pescadores se alejan de la goleta, largando sus líneas de pesca a distancia conveniente unos de otros. De este modo, una goleta que lleve diez botes, cubre un radio circular de pesca de seis a diez millas. Por lo regular en cada bote van dos hombres que pescan a mano con línea corta, o bien usando una línea de unos 2,100 pies preparada con sedales cortos y anzuelos cada 32 centímetros. Dos y hasta tres líneas largas pueden emplearse amarrando una con otra por los extremos y dejándolas ancladas en el fondo del mar. Para carnada se emplean pedazos de arenque, calamares y capelines. Los pescadores recojen las líneas después de un tiempo de 20 minutos a una hora, según la pesca enganchada y el tiro de la misma. La pesca se va echando en el bote y cuando el aparejo se ha recojido los pescadores vuelven a la goleta, que generalmente está anclada, y vierten el copo en la cubierta, y en la bodega limpian, abren y salan el pescado.

La pesca en goleta se efectúa desde Marzo a Octubre. Los barcos siguen a la pesca alrededor de los Bancos de



Trawler "Rayon d'or" of the Maritime Fish Corporation after a Winter Voyage.
Chalutier à vapeur "Rayon d'or" de la Maritime Fish Corporation, après une croisière en hiver.
Trainera "Rayon d'or" de la "Maritime Fish Corporation," después de un viaje en invierno.



Fishing in a Dory.
 Pechant dans une chaloupe ou dory.
 Pescando en bote.



Fleet of Codfishing Schooners Leaving Port.
 Flotte de goélettes pêcheurs laissant le port.
 Flota de goletas saliendo del puerto para la pesca.



Codfishing on the Grand Banks.
 Pechant la morue sur le Grand Banc.
 Pescando bacalao en los Grandes Bancos.



either by hand-line or long-line. Of the 200,000,000 pounds caught annually, the bulk is salted, dried or pickled for export.

TRAWLER FISHERY.

Steam and motor trawlers are now engaged in the Atlantic cod fishery out of Nova Scotia ports.

The trawlers operating in Canadian waters are all steel screw steamers, ranging from 125 to 150 feet over-all, and capable of steaming an average of 10 knots. They are strongly constructed to stand the strain of dragging a trawl net and to resist the buffeting of winter seas. The trawlers operating in Canada use the modern "Otter" type of trawl.

The Otter trawl gear consists of a large cone shaped net with a mouth about 80 feet wide, which is kept open when trawling by two Otter doors or boards at each side of the mouth and

vapeur en acier variant de 125 à 150 pieds et capable de filet à un moyenne de 10 noeuds. Ils sont solidement construits pour supporter la tension du filet qu'ils traînent et résister aux paquets de mer. Les chalutiers opérant au Canada emploient le type de chalut moderne "Otter".

Le chalut Otter consiste en un grand filet en forme de cône avec une ouverture d'environ 80 pieds de large qui demeure ouverte pendant la traînée, à l'aide de deux portes ou planches de chaque côté de l'ouverture et auxquelles les chaînes de halage sont attachées. Le câble circulaire de l'ouverture du filet est en broche avec des rouleaux ou bobines attachées dessus pour empêcher le filet de s'em mêler sur le fond rugueux. Les planches Otter sont garnies de sabots comme les patins et glissent sur le fond. Le cône, ou la partie la plus étroite

la Isla de Sable, después al Golfo de San Lorenzo y más tarde a St. Pierre y a los Grandes Bancos. La pesca del bacalao en botes se lleva a cabo en las aguas costaneras del Atlántico usando línea corta o larga. De los 200,000,000 de libras de pescado que se sacan anualmente, la mayor parte se sala, seca o escabecha para la exportación.

PESCA EN TRAINERA.

En la actualidad salen de los puertos de Nueva Escocia traineras a vapor y de motor para la pesca del bacalao.

Las traineras que surcan las aguas canadienses son barcos de hélice a vapor y contruidos de acero, de 125 a 150 pies de longitud y con un andar medio de 10 nudos. Debido a su fuerte construcción pueden soportar el arrastre de la tralna y resistir las inclemencias glaciales. Estas traine-



Trawler "Baleine" of the Leonard Fisheries, Ltd., Halifax, N. S.
 Chalutier à vapeur "Baleine" de la Leonard Fisheries, Ltd., Halifax, N. S.
 Trainera "Baleine" de la "Leonard Fisheries Co., Ltd., Halifax, N. S.



Repairing the Net on a Steam Trawler.

Réparant le filet sur un Chalutier à vapeur

Reparando la red en una trainera a vapor.

to which the towing warps are attached. The foot-rope of the net's mouth is of wire with hardwood rollers or "hobbins" strung on it to prevent the gear snarling on rough bottom. The otter boards are furnished with shoes like sled runners and slide over the bottom on their edges. The cone, or small end of the net, is made of heavier mesh and is closed and opened with a sort of draw-string. This is known as the "cod end," and the fish caught in the net find their way into it and are retained there until the gear is lifted, the cod end hoisted aboard, and the draw rope pulled to dump the fish on the deck.

Fitted on deck forward of the midship house is the powerful steam trawl winch. Hundreds of fathoms of steel wire trawl warp are wound around the winch barrel and pass through leads and around bollards to the two galleys erected fore and aft on both sides of the ship. Before lowering away, the two trawl boards are hoisted up to each galley, and the net lays inside the rail between them.

To shoot the gear, the crew heave the net overboard and the winch man pays away on the trawl warps while the vessel steams slowly ahead. When the gear reaches the bottom, a considerable length of warp is paid out and the vessel steams full speed ahead and tows the trawl astern—keeping the two warps fast alongside

du filet, est fait de mailles plus épaisses et est fermé et ouvert avec une sorte de ficelle à coulisse. On appelle cela le "tombeau de la morue" et le poisson qui y entre est retenu jusqu'à qu'à ce que le filet soit remonté et le poisson versé sur le pont.

Sur le pont, en avant du navire se trouve la puissante manivelle à vapeur du chalut. Des centaines de brassées de chaînes en fil d'acier pour le chalut sont enroulées autour du baril de la manivelle et passent par des conduits et autour de bollards jusqu'aux deux potences érigées à l'avant et à l'arrière sur les deux côtés du bateau.

Avant de baisser le chalut, les deux planches du chalut sont hissées à chaque gâchet et le filet placé à l'intérieur de la balustrade entre les deux.

Pour lancer le filet, l'équipage souève le filet par-dessus le bord et l'homme de la manivelle relâche les chaînes du chalut tandis que le bateau démarre lentement.

Quand le filet atteint le fond, une longueur considérable de chaîne est lâchée et le navire file à pleine vitesse et remorque à l'arrière le chalut gardant les deux chaînes attachées le long du vaisseau au quart, au moyen d'une chaîne tournevis et d'une boucle de sabord.

Après une remorque d'environ une heure et demie à deux heures, plus ou moins, le bateau est arrêté et le cha-

ras están dotadas de trainas tipo "Otter."

El aparejo de la trawna "Otter" se compone de una gran red en forma de cono con una entrada o boca de 80 pies de anchura, la cual se mantiene abierta durante el arrastre mediante puertas o tablas "Otter" colocadas a los lados de la entrada, donde van sujetos los cables de arrastre. La boca de la red es de alambre con rodillos de madera dura sujetos a la rellinga para impedir que el aparejo se enrede en fondos escollados. Las puertas "Otter" están dotadas de cañes deslizantes semejantes a los de los trineos y resbalan sobre el fondo. El cono, o sea la parte estrecha de la red, conocido por "cola de bacalao," está hecho de malla más resistente y se abre y se cierra por medio de un cabo corredizo. La pesca que entra en la red encuentra paso hasta el cono donde queda encerrada. Cuando se recoge el aparejo, se liza a bordo la "cola de bacalao," se tira del cabo corredizo y se vacía la pesca sobre la cubierta. En el entrepuente delantero va montado un potente cigüeñal o cabrestante a vapor. Cientos de brazos de calabrote de acero van enrollados al tambor del cigüeñal y pasan por motones hasta las galgas de popa a proa. Antes de largar, se izan las puertas de la trawna hasta las galgas y la red queda tendida dentro de la regala. Para largar el aparejo, la tripulación lanza la red al mar

the quarter of the vessel by means of a messenger warp and a shackle.

After towing for about an hour and a half to two hours, more or less, the ship is stopped and the gear hove up by the winch. When the otter boards come up to the gallows, all hands lay hold of the net and haul it up as far as they can; a strop is passed around the net and carried to the winch. The whole is then hove up by steam until the cod-end of the net comes over the rail by the fore-rigging, when the draw rope is pulled and the fish dumped into the pens on deck.

As soon as this is done, if the fishing is worth it, the gear is lowered away again, and night and day the work goes on without cessation. While the trawl is overboard, the crew dress down the fish and salt them in the hold in the same manner as on the schooner fishermen.

In steam trawling it is possible to fish in quite rough weather—weather which would prevent dories being

lut tiré par la manivelle. Lorsque les planches arrivent aux gibets, toutes les mains retiennent le filet et le mettent à bord comme elles peuvent; une élingue est passée autour du filet et rellée à la manivelle. Le tout est ensuite soulevé par la vapeur jusqu'à ce que la poche du filet arrive au centre par les manoeuvres de l'avant, alors que la corde est tirée et que le poisson est versé dans les espaces sur le pont.

Dès que ceci est fait, si la pêche est bonne le filet est lancé de nouveau, et nuit et jour le travail se continue sans arrêt. Pendant que le chalut est par-dessus bord, l'équipage apprête le poisson, le sale dans la cale de la même manière que les pêcheurs en guélette.

Avec la pêche au chalut à vapeur on peut pêcher même par gros temps, alors que les chaloupes ne peuvent être mis à la mer. Il n'y a pas à s'occuper d'amorce, d'hameçons et de lignes mais cette pêche est plus coûteuse que celle à la goélette et à la chaloupe et le s'frais d'entretiens et de répara-

mientras el contramaestre va arriando a medida que el barco marcha despacio. Cuando el aparejo dá fondo se larga una gran cantidad de calabrote y el barco marcha a toda velocidad, remolcando a popa la traína y manteniendo los calabrotos bien aparejados en la banda de la cuadra de popa.

Después de hora y media o dos horas de remolque, más o menos, se para el barco y el cabrestante iza el aparejo. Cuando las puertan llegan a las galgas todos los brazos sujetan la red y la suspenden cuanto pueden hasta pasarle un cabo alrededor, el cual se engancha al cabrestante, izando todo a vapor hasta que la "cola de bacalao" de la red pasa la regala. Una vez en cubierta se tira del cabo corredizo y la pesca se arroja en los depósitos o tinas de cubierta.

Tan pronto como se hace esta operación, si la pesca lo merece, se larga de nuevo el aparejo y el trabajo se continúa día y noche sin descanso. Mientras la traína está sobre cubier-



Hauling up a Bag of Fish on a Steam Trawler.

Tirant une prise de poissons sur un chalutier à vapeur.

Izando una red de pescado en una traínera a vapor.

worked. There is no bait, hooks or lines to bother about, but steam trawling is more expensive to operate than schooner and dory fishing and the cost of up-keep and repairs are heavy, so that it requires good trips and short spells at sea to make it pay. The crews work on the share system, similar to the method in vogue on the schooners.

tions sont élevés; aussi faut-il de bons voyages et de tours rapides pour que cette pêche soit avantageuse. Les équipages travaillent d'après le système de partage, semblable à la méthode en faveur parmi les goélettes

Nous vous adressons trois éditions de cette revue. renseignement.

ta, la tripulación limpia el pescado y lo sala en las bodegas como hacen los pescadores en las goletas. Las traineras a vapor permiten pescar en tiempo revuelto cuando no es posible usar botes. No se necesitan anzuelos, cebos ni líneas, pero en cambio el trabajo resulta más costoso que con goletas y botes, aparte de que los gastos de mantenimiento y reparación son mayores.

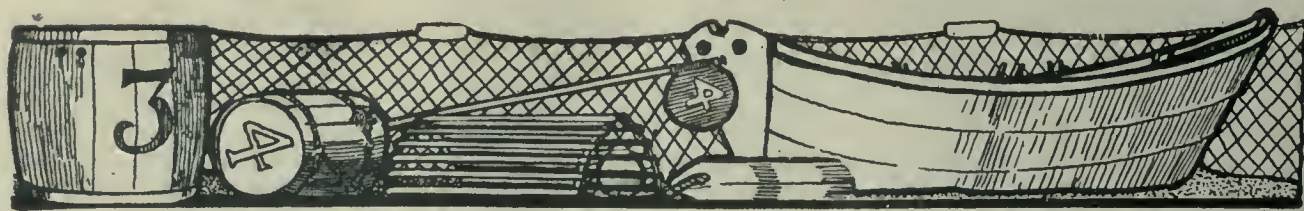
LA PROXIMA EDICION DE EXPORTACION DE "THE CANADIAN FISHERMAN" TRATARA DE LAS GRANDES PESQUERIAS Y DE LAS FABRICAS DE CONSERVA DE SALMON EN LA COLOMBIA INGLESA.—LA INDUSTRIA SARDINERA, LA PESCA DEL MERO Y LA CONSERVA DE LA LANGOSTA SE DESCRIBIRAN DETALLADAMENTE EN EDICIONES SUCESIVAS.



Fishing Vessels at the Docks.

Barco de pesca en el muelle.

Golette pêchante, au quai.



STATISTICS OF CANADIAN FISHERIES STATISTIQUES DES PECHERIES DU CANADA ESTADISTICAS PESQUERAS DEL CANADA

By J. J. COWIE, DEPT. OF MARINE AND FISHERIES

The total value of the Fisheries of Canada for 1917 amounted to more than \$52,000,000, which sum was \$13,000,000 in excess of the preceding year's total.

Great as the 1917 total is, that of 1918 is greater by several millions of dollars. But while the increased value in 1917 was due to larger catches combined with higher prices, the greater value in 1918 was due to higher prices alone; the catch of most of the chief kinds having been less, owing to a combination of some rather unusual circumstances; viz., the presence amongst the fishing fleets of an enemy submarine during two of the best cod-fishing months of the year; an epidemic of influenza which caused many fishing craft to be laid up during October; and abnormally cold and stormy weather, especially during the first quarter of the year.

The quantities of the principal kinds landed in 1918 were, approximately, salmon 147,306,300 pounds, from which were produced 80,000,000 of packed cans; 205,900 pounds of smoked; 656,900 of mild cured and 145,800 of pickled, while 22,820,600 pounds were shipped to market fresh or frozen.

Of lobsters, 25,470,000 pounds were caught from which in round figures 5,000,000 cans were packed, and 5,380,000 pounds shipped to market in shell.

The catch of cod was 180,000,000 pounds from which were produced 39,200,000 pounds of dried; 26,532,000 lbs. of pickled or green-salted, chiefly for conversion into boneless cod; while 16,800,000 pounds were shipped fresh to market.

La valeur totale des Pêcheries du Canada, en 1917, s'éleva à plus de \$52,000,000, somme qui excédait de \$13,000,000 le total de l'année précédente.

Tant considérable qu'aît été le total de 1917, celui de 1918 l'excède de plusieurs millions de dollars; mais bien que l'augmentation de la valeur de 1917 ait été due à une pêche plus abondante combinée avec des prix plus élevés, la plus grande valeur obtenue en 1918 n'est due qu'aux prix plus élevés, car la pêche de la plupart des principales espèces a été moindre, à cause d'une combinaison de circonstances assez rares: c'est-à-dire la présence, parmi les bateaux pêcheurs, d'un ennemi sous-marin, durant les deux meilleurs mois de la pêche de la morue; l'épidémie de l'influenza qui a atteint plusieurs des pêcheurs durant le mois d'octobre; ainsi que le temps froid et orageux, particulièrement durant les trois premiers mois de l'année.

La quantité des principales espèces prises en 1918, a été approximativement 147,306,300 livres; dont on a obtenu 80,000,000 boîtes de conserves; 205,900 livres de poisson fumé; 656,900 livres de poisson sec; et 145,800 livres en saumure; on a mis sur le marché 22,820,600 livres de poisson frais et de poisson gelé.

On a pris 25,470,000 livres de homard dont 5,000,000 ont été mis en conserves; on a expédié 5,380,000 livres de homard au marché, dans leur carapace.

La pêche de la morue a rapporté 180,000,000 livres dont on en a séché 39,200,000; et dont on a mis en saumure ou salé 26,532,000 livres, principalement pour en préparer la morue aossée; tandis que 16,800,000 livres de morue fraîche ont été expédiées sur le marché.

El valor total de la pesca del Canadá durante 1917 ascendió a más de \$52,000,000, o sea una suma de \$13,000,000 en exceso de la alcanzada el año anterior.

A pesar de ser tan grande el total de 1917, el de 1918 fué mucho mayor en varios millones de dollars, y aunque el aumento de valor en 1917 fué debido principalmente a los grandes copos o sacas de pescado, unido a precios más altos, el aumento de valor en 1918 se debió solamente al alza de precios; la pesca de las clases principales ha sido menor debido a una serie de circunstancias anormales, tales como la presencia de un submarino enemigo entre la flota pesquera durante los dos mejores meses para la pesca del bacalao; la epidemia de influenza, que impidió la salida de muchos barcos de pesca durante Octubre y un tiempo anormal, frío y borrascoso durante el primer trimestre del año.

Las cantidades de las clases principales de pescado en 1918 fueron aproximadamente como sigue: Salmón 147,306,300 libras, de las cuales 80,000,000 se dedicaron a conservas en lata; se ahumaron 205,900; se curaron 656,900 y se pusieron en salmuera 145,800, habiéndose enviado al mercado 22,820,600 en estado fresco y en congelación.

Se sacaron 25,470,000 libras de langosta, de las cuales se prepararon 5,000,000 de latas, cifra redonda, enviándose al mercado 5,380,000 libras al natural.

La pesca de bacalao produjo 180,000,000 de libras, de las cuales se secaron 39,200,00 libras; se salaron y pusieron en salmuera 26,532,000 libras. In mayor parte para convertirlas en bacalao sin espina, y se enviaron al mercado 16,800,000 en estado fresco.

La pesca de merluza se elevó a



CANADIAN SEA FISH

POISSON DE MER CANADIEN

PESCA DE MAR CANADIENSE



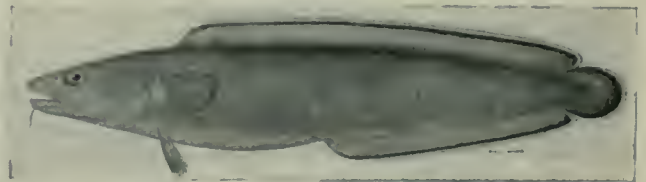
Pollock. Merlan. Merlán.



Tom Cod, or Frost Fish. Poulamon Bocacha



Smelt. L'Eperlan. Esperlán o pejerrey.



Cusk. Merluche. Cusk.



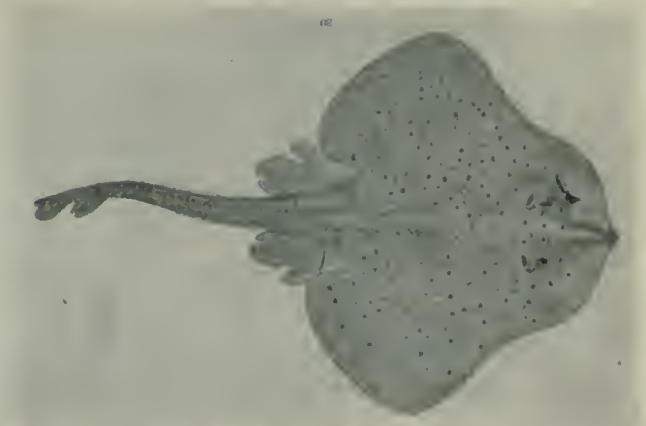
Flounder Carrelet. Linguado.



Plaice. Plie Platija.



Alewife. Gaspereau. Alufa.



Skate. Raic. Raya.

The haddock catch amounted to 55,200,000 pounds. From these were produced over 4,000,000 lbs. of smoked haddock; over 500,000 cans of both fresh and smoked haddock; almost 4,000,000 lbs. of pickled or green-salted, chiefly for conversion into boneless fish, and 6,168,300 lbs. of dried; while 19,200,000 lbs. were shipped to market fresh.

The catch of hake amounted to 25,600,000 lbs., from which were produced 2,600,000 lbs. of pickled or green-salted; 2,700,000 lbs. of dried, while 1,640,000 lbs. were shipped to market fresh.

There were 14,700,000 pounds of pollock landed, from which were produced 580,000 lbs. of pickled or green-salted, and 4,000,000 lbs. of dried.

The herring catch amounted to about 140,000,000 pounds, from it were produced almost 7,000,000 lbs. of both fresh and smoked in cans; 5,200,000 pounds of smoked; 130,000 barrels of pickled; 15,000,000 pounds of dry-salted, chiefly for the China market, while 13,000,000 lbs. were shipped fresh to market, and 28,000,000 lbs. were used as bait in the lobster, halibut, and cod, etc., fisheries.

The mackerel catch amounted to 18,600,000, from which were produced 28,300 barrels of pickled, 78,000 lbs. of canned, while almost 19,000,000 lbs. were shipped to market fresh.

The sardine catch amounted to 58,000,000 lbs., from which were produced over 18,000,000 quarter-pound cans. Most of the balance of the catch, amounting to about 50,000,000 lbs. was sold fresh to American buyers; for canning purposes, while part of it was sold for bait.

The smelt fishery produced 6,800,000 lbs., all of which was shipped fresh or frozen to market.

There were 12,600 barrels of oysters, 43,700 barrels of clams and 11,000 barrels of scallops taken during 1918.

The catch of pilchards amounted to 7,400,000 lbs. from which were produced over 2,000,000 of cans, while 1,500,000 lbs. were shipped fresh, and 1,000,000 lbs. used as bait.

More than 30,000 seals and over 300 whales were taken, from which in the aggregate, more than half a million gallons of oil were produced, in addition to over 1,000 tons of prepared fertilizing material.

La pêche de l'aiglefin a été de 55,200,000 livres; on en a fumé 4,000,000 livres; 500,000 livres d'aiglefin frais et d'aiglefin fumé ont été mises en boîtes; ou en saumure ou salé près de 4,000,000 livres pour poisson désossée, et 6,168,300 livres ont été séchées.

La pêche de la merluche s'est élevée à 25,600,000 livres dont 2,600,000 ont été mis en saumure ou salées; 5,700,000 livres desséchées, et 1,640,000 livres de merluche fraîche ont été mises sur le marché.

On a pris 14,700,000 livres de merlan dont on a mis en saumure ou salé 580,000 livres et séché 4,000,000 livres.

Le produit de la pêche du hareng s'est élevé à environ 140,000,000 livres, dont 7,000,000 livres, tant du hareng frais que du hareng fumé ont été mises en conserves; 5,200,000 livres, de poisson fumé; 130,000, de poisson en saumure; et l'on a séché et salé 15,000,000 livres, principalement pour le marché Chinois; tandis que 13,000,000 livres de poissons frais ont été expédiées au marché; 28,000,000 livres ont servi comme appât dans la pêche du homard, de l'aiglefin et de la morue, etc.

La pêche du maquereau s'est élevée à 18,600,000 livres, dont 28,300, ont été mis en saumure, 78,000 livres ont été mises en boîtes; tandis que près de 10,000,000 de livres de maquereau frais ont été expédiées au marché.

La pêche de la sardine a été de 58,000,000 livres; on en a mis 18,000,000, dans des boîtes d'un quart de livre; environ 50,000,000 livres de sardines fraîches ont été vendues à des commerçants américains, pour être mises en conserves; le reste a été vendu pour appât.

Les pêcherles d'éperlan ont produit 6,800,000 livres; tout ce poisson a été expédié frais ou gelé, au marché.

La pêche des huîtres, en 1918, a donné 12,600 barils; celle des palourdes, 43,700, celle des pétoncles, 11,000.

La pêche des sardines-pilchards s'est élevée à 7,400,000 livres dont 2,000,000 ont été mises en boîtes; 1,500,000 livres de poisson frais ont été expédiées au marché, et 1,000,000 livres ont servi comme appât.

Plus de 30,000 phoques et plus d'un demi-million de gallons d'huile et 1,000 tonnes d'engrais préparé.

55,200,000 libras de las cuales se ahumaron 4,000,000; se envasaron 500,000 libras en fresco y ahumado; se salaron y pusieron en salmuera casi 4,000,000 de libras, la mayor parte para convertirlas en pescado sin hueso, y se secaron 6,168,300 libras, embarcándose para el mercado, en estado fresco, 19,200,000.

El merlango rindió 25,600,000 libras de las cuales se salaron y se pusieron en salmuera 2,600,000; se secaron 5,700,000 y se enviaron al mercado en estado fresco 1,640,000.

Se pescaron 14,700,000 libras de merlán de las cuales se salaron y pusieron en salmuera 580,000 libras, secándose 4,000,000 de libras.

Los arenques produjeron 140,000,000 de libras, de las cuales se enlataron en fresco y ahumado 7,000,000; se ahumaron 5,200,000 libras; se prepararon en salmuera 130,000 barriles; se salaron en seco 15,000,000, la mayor parte para la China, y 13,000,000 de libras se embarcaron para el mercado en fresco, usándose 28,000,000 de libras, como carnada para la pesca del mero, langosta, bacalao, etc.

La pesca de la macarela ascendió a 18,600,00 libras, de las cuales se prepararon en salmuera, 28,300 barriles; se enlataron 78,000 libras y se mandaron al mercado 10,000,000 de libras en fresco.

La sardina produjo 58,000,000 de libras, de las cuales se envasaron 18,000,000 en latas de 1-4 de libra. La mayor parte del resto, cerca de 50,000,000 de libras, se vendió a compradores americanos para enlatar y parte se vendió como cebo o carnada.

El esperlón o pejerrey produjo 6,800,000 libras, las cuales se enviaron al mercado en estado fresco y en congelación.

Durante 1918 se recojieron 12,600 barriles de ostras; 43,700 barriles de almejas; y 11,000 de conchas o avilñeiras.

La pesca de sardina-arenque ascendió a 7,400,000 libras con las cuales se envasaron 2,000,000 de latas; se embarcaron 1,500,000 libras en estado fresco y se emplearon como cebo o carnada 1,000,000 de libras.

Más de 30,000 focas y más de 300 ballenas fueron pescadas, las cuales rindieron medio millón de galones de aceite y más de mil toneladas de material fertilizante preparado.

Kindly keep these editions as a source of reference regarding Canada's fisheries.

Veuillez garder ces éditions comme sources de renseignements sur les Pêcheries Canadiennes.

Tengan la bondad de conservar estas ediciones como referencia de las Pesquerías del Canadá.



FISH TRADE TERMS USED IN CANADA

EXPRESSIONS EMPLOYEES DANS LE COMMERCE DU POISSON EN CANADA

TERMINOS COMERCIALES PESQUEROS USADOS EN EL CANADA

(Prepared by the Canadian Trade Commission, Fish Section.)



The following list gives the business men's accepted definition of the technical terms used in the Canadian fish industry. These differ to some extent from the same terms used elsewhere, and for that reason this brief and handy form should be a welcome addition to the desk of the fish dealer and importer.

Salmon Industry.

SOCKEYES—Best grade of red salmon packed on the Pacific Coast desired because of their bright red color.

RED SPRINGS—A red salmon which runs early, few in number and of the same value commercially as the sockeye.

WHITE & PINK SPRINGS—Same as above only light in colour and not so high priced.

COHOES—A red fish, but not so bright in colour as the sockeye or red spring.

PINKS—A lighter coloured fish of excellent food value.

CHUMS—Light pink or white salmon, of excellent food value.

TALLS & POUND TALLS—Round cans which are higher than the diameter of the can; the standard can for salmon.

POUND FLATS—Round cans the height of which is less than its diameter.

½-POUND FLATS—Same as above, holding only one-half as much.

POUND OVALS—Oval shaped flat tins.

½-POUND OVALS—Same as above holding only one-half as much.

LABELLED—Meaning can bearing a label of the packer, such as label branded B.C. Salmon; packed by B.C. packers, net weight, etc.

UNLABELLED—The plain can without label, shipped in this manner to allow foreign importer to attach their own label.

La liste suivante donne la définition acceptée des hommes d'affaires quant aux expressions techniques employées dans l'industrie des pêcheries canadiennes. Ces expressions diffèrent jusqu'à un certain point de celles employées ailleurs, et pour cette raison, ce format abrégé et commode devrait être apprécié du commerçant de poisson et de l'importateur, et trouver place sur leur pupitre.

1.—Industrie du Saumon.

"SOCKEYES"—La meilleure qualité de saumon rouge mis en boîtes sur les côtes du Pacifique, désiré à cause de sa belle couleur rouge.

"RED SPRINGS"—Saumon rouge qui apparaît à bonne heure, peu nombreux et de même valeur commerciale que le "sockeye".

"WHITE AND PINK SPRINGS"—Comme les précédents, mais de couleur plus pâle et de prix moins élevés.

"COHOES"—Poisson rouge, mais de teinte moins vive que le "sockeye" ou "red spring".

"PINKS"—Poisson de couleur plus pâle, d'excellente valeur nutritive.

"CHUMS"—Saumon rose pâle ou blanc, d'excellente valeur nutritive.

BOITE HAUTE D'UNE LIVRE—Boîte ronde plus haute que le diamètre de la boîte; boîte-type pour le saumon.

BOITE PLATE D'UNE LIVRE—Boîte ronde dont la hauteur est moindre que le diamètre.

BOITE PLATE D'UNE DEMI-LIVRE—Comme la précédente, mais ne contenant que la moitié de la quantité.

BOITE OVALE—Boîte plate de forme ovale.

BOITE OVALE D'UNE DEMI-LIVRE—Comme la précédente, mais ne contenant que la moitié de la quantité.

ETIQUETEE—Signifiant boîte portant l'étiquette du fabricant, tel que l'étiquette marquée Saumon B. C., mis en boîte par B. C., fabricant de conserves alimentaires, poids net, etc.

NON-ETIQUETEE—La boîte nue, sans étiquette, expédiée de cette manière afin de permettre aux impor-

La siguiente lista da la definición de los términos técnicos que se usan en la industria pesquera canadiense tal como ha sido aceptada por los hombres de negocios. Se diferencia en algunos respectos de los términos usados en otros países, y por tal razón, esta clave ha de ser de gran utilidad en las oficinas de los comerciantes e importadores de pescado.

La Industria del Salmon.

Sockeye—La mejor clase de salmón rojo, envasada en la costa del Pacífico y muy apreciada por su color rojo brillante.

Primavera Rojo, Salmón primavera, rojo, escaso en número y del mismo valor comercial que el sockeye.

Primavera, blanco y rosado—Lo mismo que el anterior, color más claro y no tan caro.

Cohoés—También rojo, pero no tan brillante en color como el sockeye o el red spring.

Rosado—Más claro de color y de excelente valor alimenticio.

Chums—Salmón rosado claro o blanco, de gran valor alimenticio.

Altas, y altas de a libra—Latas redondas más altas que su diámetro; esta lata es el modelo adoptado para el salmón.

Planas de a libra—Latas redondas con menor altura que su diámetro.

Planas de a ½ libra—Lo mismo que las anteriores conteniendo la mitad.

Ovaladas de a libra—Latas planas ovaladas.

Ovaladas de a ½ libra—Lo mismo que las interiores conteniendo la mitad.

Con etiqueta—Latas con la etiqueta del fabricante, v.g. "B.C. Salmon, packed by B.C. Packers, net weight, etc." (Salmón de la Colombia Inglesa, envasado por los fabricantes de la Colombia Inglesa, peso neto, etc.).

Sin etiqueta—Latas sin etiqueta, las cuales se remiten de este modo, para que los importadores extranjeros pongan la suya propia.

Corleadas—Latas corleadas para impedir que se oxiden. Casi todo el salmón se envasa en latas corleadas.

LACQUERED.—The finish of lacquer placed on the outside of the tins to prevent rust. Practically all salmon is packed in lacquered cans.

CASE.—The standard package for salmon contains 48 one pound or 96 one-half pound tins.

GROSS SHIPPING WEIGHT. — The weight of, and space required for, all packed salmon, including cases, follows:

Case.		Cu. Ft.
1	48 talls	71 lbs. 1.64
1	48 flats.	74 lbs. 1.65
1	96 halves, flat.	80 lbs. 1.85
1	48 ovals.	72 lbs. 1.65
1	96 halves, oval	80 lbs. 1.83

2.—Dried Fish Industry.

Dried codfish, haddock, hake, pollock and cusk are packed in various sized barrels, referred to in the trade by the following names:

Butts	Containing	448	pounds net
Casks	"	448	"
Butts	"	432	"
Butts	"	400	"
Butts	"	200	"
Drums	"	128	"
Drums	"	112	"
Drums	"	100	"
Cases	"	100	"

Cases—Norwegian style, interlocking tongue and groove at the corner of the box to satisfy the requirements of the West Indian market, where the native has been educated to look for the tongue and groove corner box.

Different markets require different sizes and grades of dried fish; for instance, the Italian market, centering in Naples, has been educated to prefer the small, hard cured cod of a type found off the coast of Gaspe, while some of the West India mar-

tateurs d'y attacher leur propre étiquette.

LAQUEE—Laque dont on enduit la boîte à l'extérieur pour empêcher la rouille. Tout le saumon, pratiquement, est mis en boîtes laquées.

CAISSE—La caisse-type d'emballage pour saumon, contient 48 boîtes d'une livre ou 96 boîtes d'une ½ livre.

POIDS BRUT POUR TRANSPORT—Le poids de, et l'espace requis, pour tout saumon en calsse, y compris la caisse, sont indiquées ci-après:—

Caisse		Pd.	Car
1	de 48 boîtes hautes	71	1.64
1	de 48 boîtes plates	74	1.65
1	de 96 demies, plates	80	1.85
1	de 48 boîtes ovales	72	1.65
1	de 96 demies, ovales	80	1.83

2.—Industrie du Poisson Sec.

La morue sèche, l'aiglefin, la merluche, le merlan et le cusk sont mis en barils de diverses dimensions appelés dans le commerce:—

	Libres net
Baril—contenant	448
Barriques—contenant	448
Baril—contenant	432
Baril—contenant	400
Caisse (tambour)	200
Caisse (tambour)	128
Caisse (tambour)	112
Caisse (tambour)	100
Caisse (tambour)	100

CAISSE—Style norvégien, avec coin à tenon et mortaise emboîtés, afin de satisfaire les exigences du marché des Indes Occidentales, où les indigènes ont appris à rechercher la boîte avec coin à tenon et mortaise emboîtés.

Les différents marchés demandent du poisson sec de grosseur et de qualités différentes; par exemple, le marché italien, dont le centre est à Naples, a appris à préférer la petite morue salée de l'espèce que l'on trouve sur les côtes de la Gaspésie, tandis que quelques-uns des marchés des m-

Caja—El contenido de la caja, según el envase-patrón para el salmón es de 48 latas de a libra o 96 de a media libra.

El peso y espacio que se requiere para el envase del salmón, incluyendo las cajas, es como sigue—

	libras.	pies cúbicos.
1 caja		
48 altas.	71	1.64
48 planas	74	1.65
96 planas, medias libras	80	1.85
48 ovaladas.	72	1.65
96 ovaladas, medias libras	80	1.83

Pesca Seca.

El bacalao, la merluza, el merlango, el merlán y el cusk, en estado seco, se envasan en barriles de varios tamaños, conocidos en el comercio como sigue—

	Libras, neto.
Botas, contenido	448
Barriles, contenido	448
Botas, contenido	432
Botas, contenido	400
Botas, contenido	200
Cuñetes, contenido	128
Cuñetes, contenido	112
Cuñetes, contenido	100
Cajas, contenido	100

Cajas—Estilo noruego, con esquina ensamblada. Esta es la caja que satisface la demanda del mercado de las Antillas, donde los nativos ya están acostumbrados a buscar las cajas con esquinas ensambladas.

Otros mercados exigen diferentes tamaños y grados de pesca seca; el mercado italiano, por ejemplo, cuyo centro está en Nápoles, tiene preferencia por un bacalao pequeño muy curado, cuyo tipo se encuentra en la costa de Gaspé, mientras que algunos mercados de las Antillas prefieren el



Fishermen Baiting their Lines on a Fishing Schooner.
Pêcheurs amorçant les lignes sur une goélette.
Pescadores cebando las líneas en una goleta de pesca.

kets require the largest cod only and that mild salted, with no frost of salt showing on the surface.

The varieties known to the trade are:

Prime large Nova Scotia bank cod fish; also medium, white nape and black nape.

Choice large Nova Scotia shore codfish; also medium.

Prime large Nova Scotia shore codfish; also medium and small.

First quality Nova Scotia shore codfish; also second and third quality.

Choice dried merchantable hard cured Gaspe cod fish; also first quality, second quality and third quality.

Soft Nova Scotia bank cod fish; also shore codfish.

Choice dried merchantable Nova Scotia haddock; also prime.

Prime dried merchantable Nova Scotia Ling (hake); also first quality, second quality, and third quality.

Prime dried Nova Scotia Pollock.

Prime dried Nova Scotia cusk.

3.—Pickled Fish Industry.

PICKLED MACKEREL are packed in barrels on count, not weight. The count runs:

Nova Scotia Fall Fat	150
Nova Scotia Fall No. 1	140—160
No. 2.....	225—275
No. 3.....	325—375
No. 4.....	425—475
No. 5.....	500—600
Shore spring mackerel 100—130 and 140—160.	

des Occidentales ne veulent que la grosse morue saumurée, sans apparence de sel à la surface.

Les variétés connues dans le commerce sont:

La grosse morue de première qualité des bancs de la Nouvelle Ecosse; aussi, à nuque blanche et nuque noire de moyenne grosseur.

La grosse morue de choix des côtes de la Nouvelle Ecosse, moyenne grandeur.

La grosse morue des côtes de la Nouvelle Ecosse; la moyenne et la petite.

La grosse morue des côtes de la Nouvelle Ecosse; première deuxième et troisième qualités.

La morue de choix de la Gaspésie, séchée et salée pour le marché, de première, deuxième et troisième qualités.

La morue des bancs de la Nouvelle Ecosse; aussi la morue des côtes.

L'aiglefin de la Nouvelle Ecosse, de choix et de première qualité, séché et préparé pour le marché.

La ligne de la Nouvelle Ecosse, séchée et préparée pour le marché; (la merluche); de première, deuxième et troisième qualités.

Le merlan jaune, sec et de première qualité, de la Nouvelle Ecosse.

Le cusk, sec et de première qualité, de la Nouvelle Ecosse.

3.—Industrie du Poisson en saumure.

Le maquereau en saumure est mis en barils selon le nombre et non selon le poids.

En voici les nombres:—

Nouvelle Ecosse, d'automne gras.	
.....	150
Nouvelle Ecosse, d'automne, gras.	
No. 1	140-160

bacalao de gran tamaño, ligeramente salado sin que se note el rocío de la sal en la superficie.

Las variedades conocidas en el comercio son las siguientes:

Superior—Variedad de bacalao de los bancos de Nueva Escocia, tamaño grande; también lo hay mediano.

Esojido—Bacalao de la costa de Nueva Escocia, tamaño grande y regular.

Superior—Bacalao de la costa de Nueva Escocia tamaño grande, mediano y pequeño.

Primera—Bacalao de la costa de Nueva Escocia de primera calidad; también lo hay de segunda y tercera.

Esojido seco—Bacalao corriente de Gaspé bien curado también lo hay de primera, segunda y tercera calidad.

Blando—Bacalao de los bancos de Nueva Escocia y también de la costa.

Esojido seco—Merluza corriente de Nueva Escocia; también la hay de primera, segunda y tercera calidad.

Superior seco, Merlango corriente de Nueva Escocia; también lo hay de primera, segunda y tercera calidad.

Superior seco—Merlán de Nueva Escocia.

Superior seco—Cusk de Nueva Escocia.

Pesca en Salmuera.

Macarela en Salmuera—Se envasa en barriles al número y no al peso y el número corre como sigue—

Nueva Escocia Otoño, gordas ..	150
No. 1.....	140 a 160
No. 2.....	225 a 275
No. 3.....	325 a 375
No. 4.....	425 a 475
No. 5.....	500 a 600

Macarela, primavera, de la costa:

100 a 130 y de 140 a 160

Salmón en salmuera—En barriles



The Fishing Fleet at the Docks, Lunenburg, N.S.
 Une flotte pêchante au quai, Lunenburg, N.S.
 La flota pesquera en los muelles de Lunenburg, N. E.

PICKLED SALMON are in barrels of 200 pounds net and tierces of 300 pounds net and tierces of 300 pounds net.

PICKLED HERRING are in barrels of 200 pounds net and half barrels of 100 pounds net.

Grades—Split, large and medium; round, large and medium; Scotch cure, winter, large and medium; fall, large. Matfuls and Matties.

4.—Frozen Fish Industry.

Frozen cod and haddock packed on the Atlantic coast are shipped in cases containing 200 pounds net.

Frozen halibut and salmon packed on the Pacific coast are shipped in boxes, each containing measure and weight as follows:

Net Weight.	Measure.	Gross Weight.	
Lbs.		Feet.	Lbs.
315	46x26½x18¼"	12-87/100	380
375	54½x26½x18¼"	15-25/100	407
200	42x22x16"	8-55/100	265

Frozen halibut are designated by the following terms:

Large Halibut, weighing over 80 lbs.
 Medium Halibut, weighing under 80 lbs. (sometimes the weight is 15 to 80 lbs.)

Nouvelle Ecosse, d'automne, gras, No. 2	225-275
Nouvelle Ecosse, d'automne, gras, No. 3	325-375
Nouvelle Ecosse, d'automne, gras, No. 4	425-475
Nouvelle Ecosse, d'automne, gras, No. 5	500-600

Maquereau printanier des côtes 100-130 et 140-160.

Saumon en saumure mis en barils de 200 livres net et tierces de 300 livres net.

Hareng en saumure en barils de 200 livres net et demi-barils de 100 livres net.

Qualités:—Fendus, gras et moyen. Entiers. Salaison écossaise (d'hiver); gros et moyens; de l'automne, gros. (Matfuls and Matties.)

4.—Industrie du Poisson Gelé.

La morue et l'aiglefin gelés emballés sur les côtes de l'Atlantique, sont expédiés en caisses contenant 200 livres net.

Le flétan et la morue gelés emballés sur les côtes du Pacifique sont expédiés en boîtes mesurant et pesant chacune:—

de 200 libras, neto, y en tercios de 600 libras, neto.

Arenques en salmuera—En barriles de 200 libras, neto, y en medios-barriles de 100 libras, neto.

Clases.

Abierto, grande y mediano.
 Redondo, grande y mediano.
 Cura escocesa, invierno, grande y mediano.

Otoño, grande. "Matfuls and Matties" (Grandes y pequeños).

Pesca Congelada.

El bacalao congelado y la merluza que se envasa en la costa del Atlántico se exporta en cajas que contienen 200 libras, peso neto.

El mero congelado y el salmón que se envasa en la costa del Pacífico se exporta en cajas de la siguiente medida y peso:

Peso Neto.	Medida.	Cubicación.	Peso Bruto Libras.
315	46x26½x18¼"	12-87/100	380
375	54½x26½x18¼"	15-25/100	470
200	42x22x16"	8-55/100	265

El mero congelado tiene los siguientes nombres;

Grande—Con un peso de 80 libras.



Interior of a Freezing Room in a Fishery Cold Storage. Intérieur de la glacière pour garder les poissons. Interior de una cámara refrigeradora de pescado.

Chickens, less than 10 (15) pounds.
 The grades of frozen salmon are:
 Cohoe round (not dressed).
 Cohoe dressed.
 Qualla (the pink salmon) round and dressed.
 Red Spring, round and dressed.
 White Spring, round and dressed.
 Frozen cod, includes market cod (weighing less than 8 or 10 pounds) and steak cod (weighing over 10 pounds).

4.—The Sardine Industry.

Canadian little herring, canned in the style of French sardines, have been found on test to be of higher food value than the latter (see Bulletin 423 Dept. Trade & Commerce). These fish are packed in the following grades:

KEYLESS OIL QUARTERS.—Fish running six to ten to the can steam cooked, net weight 3½ or 3¼ ounces in cotton seed oil, without key opener.

KEYLESS MUSTARD QUARTERS
 —Same fish packed in mustard.

KEYLESS TOMATO QUARTERS
 —Same fish packed in tomato sauces.

KEY, OIL, MUSTARD, ETC., QUARTERS.—Same packed with key openers on can.

KEY, OILS FANCY.—Smaller fish running 10 to 16 to the can, some grades steam cooked and some fried. The fried fish often run 16 and over.

Poids net.	Mesure.	Pds. brut.	Poids brut.
Livres.		cubes.	Livres.
315	46x26½x18¼"	12-87/100	380
375	54½x26½x18¼"	15-25/100	470
200	42x22x16"	8-15/100	265

Le flétan est désigné ainsi:—
 Gros flétan, pesant plus de 80 livres.
 Moyen flétan, pesant de 10 à 80 livres, (quelquefois le poids est de 15 à 80 livres).
 "Chickens" moins de 10 (15) livres.
 Les variétés de saumon gelé sont:—
 "Cohoe, entier (non préparé).
 Cohoe préparé.
 "Qualla" (saumon rose) entier et préparé.

"Red Spring," entier et préparé.
 "White Spring," entier et préparé.
 La morue gelée comprend la morue du marché (pesant moins de 80 à 10 livres); les tranches de morue pesant moins de 10 livres.

5.—L'Industrie des Sardines.

Les petits harengs canadiens, mis en boîtes de la même manière que les sardines françaises; à l'essai, on a trouvé qu'ils étaient de valeur nutritive supérieure à ces dernières, (voir bulletin 423 du Ministère du Commerce.) Ces poissons sont mis en boîte comme suit:—

BOITE DE ¼ DE LIVRE—SANS CLEF—A L'HUILE.—De six à dix poissons par boîte, cuits à la vapeur, poids net 3½ ou 3¼ onces, dans l'huile de eoton, boîte sans clef.

BOITE SANS CLEF—A LA MOUTARDE.—Même poisson préparé à la moutarde.

BOITE SANS CLEF—AUX TOMATES.—Même poisson à la sauce aux tomates.

Mediano—De 10 a 80 libras. (El peso es algunas veces de 15 a 80 libras.)

Chicos—Menos de 10 (15) libras.
 Las clases de salmón congelado son como siguen:

Cohoe redondo, sin limpiar.
 Cohoe, limpio.
 Qualla (Salmón rosado), redondo y limpio.

Primavera rojo, redondo y limpio.
 Primavera blanco, redondo y limpio.

El bacalao congelado comprende la clase que se manda al mercado, cuyo peso es menor de 8 ó 10 libras, y el bacalao para filetes que pesa más de 10 libras.

Industria Sardinera.

El arenque chico, se envasa en latas al estilo de la sardina francesa, y según se ha podido comprobar tiene más valor alimenticio que la sardina. (Véase boletín 423 del Departamento de Comercio). Esta pesca se envasa como sigue:

Cuartos en aceite, sin llave.—Estas latas contienen de 6 a 10 pescados, cocinados a vapor y con peso neto de 3½ ó 3¼ onzas en aceite de algodón, no tienen llave.

Cuartos en mostaza, sin llave.—El mismo pescado preparado con mostaza.

Cuartos en tomate, sin llave. — El mismo pescado preparado en tomate.

Todas estas mismas clases se envasan con llave.

Con llave, presentación esmerada, en aceite.—Latas que contienen de 10 a 16 pescados, cocinados a vapor, y fritos. Las latas con pescado frito



*Yates
 Big
 1919*

Salting Fish in Barrels. La salaison du poisson. Salazón de pescado en barriles.

KEY OLIVE OIL—Small fish (16 and over) fried and packed in olive oil.

Fish of the 6 to 10 size are also packed 8 ounce square and 6¾ ounce oval tins in tomato sauce, but these are generally labelled herring.

6.—Canned Fish: General.

HERRING—One and half pound flats, one and half pound of fish, the same as salmon.

Pound talls,

Pound ovals,

PILCHARDS—A Pacific fish packed in one pound talls.

CHICKEN HADDIE—Canned haddock, boiled and boned before being placed in cans. Packed in pound flats 16 ounces net.

CODFISH FLAKES—Boiled canned codfish in pound flats, 16 ounces net.

FINNAN HADDIE—Haddock cured in this manner, packed in one pound flats.

FLAKED FISH—Hake, boiled and packed on one pound flats.

7.—Canned Lobsters.

Packed on the Atlantic coast in ¼ and ½ lb. flat cans, 8 doz. to the case, and ¾ lb. and 1 lb. flat cans, 4 doz. to the case.

8.—General Information.

NET WEIGHT means the weight of contents, which is placed on all cans. In the case of salmon it is one-half or one pound of fish and juice. In the case of "Chicken haddie" it refers to the weight of fish only, there being no juice.

BOITE A DECOLLAGE, D'UN ¼ DE LIVRE, HUILE, MOUTARDE. Etc. —Même poisson, boîte à décollage (clef.)

DECOLLAGE, HUILES, ETC., ETC. —De plus petits poissons 10 à 15 par boîte, quelques-uns cuits à la vapeur; d'autres, frits. Les frits, au nombre de 16 ou plus à la boîte.

DECOLLAGE (clef)—Huile d'Olive—Petit poisson (16 et plus) frits et préparés à l'huile d'olive. Les poissons de 6 à 10 sont aussi mis en boîtes carrées de 8 onces, et boîtes ovales de 6¾ —à la sauce aux tomates; généralement étiquetés: Hareng.

6.—Poisson en Conserve: Général

HARENG—Boîtes plates d'une livre ou d'une demi-livre, une livres et une demi-livre de poisson, comme pour le saumon. Boîtes hautes d'une livre. Boîtes ovales d'une livre.

PILCHARDS—Un poisson du Pacifique, mis en boîtes hautes d'une livre.

"CHICKEN-HADDIE"—Aiglefin (en boîtes, bouilli et désossé avant d'être mis en boîtes plates d'une livre—15 onces net.

POISSONS EN FLOCONS—Merluce bouillie et mise en boîtes plates d'une livre.

HOMARD en conserve—Emballé sur les côtes des l'Atlantique, dans des boîtes plates d'un ¼ de livre et d'une ½ livre, 8 douzaines à la caisse et dans des boîtes plates de ¾ et 1 livre, 4 douzaines à la caisse.

8.—Renseignément Général

Poids net signifie le poids du contenu, inscrit sur toutes les boîtes. Dans le cas du saumon, il est de moitié, c'est-à-dire, une livre de poisson et jus. Dans le cas du "Chicken Haddie" il se rapporte au poids du poisson seulement, car il n'y a pas de jus.

contienen algunas veces más de 16 pescados.

Con llave y aceite de oliva.—Pescados chicos (16 ó más), fritos y envasados en aceite de oliva.

El pescado de un tamaño de 6 a 10 se envasa también en latas cuadradas de 8 onzas y ovaladas de 6¾ onzas, con salsa de tomate. Esta clase generalmente lleva etiqueta de arenques.

Otros Pescados en Latas.

Arenques.—En latas planas de una y de media libra, con media o una libra de pescado como se envasa el salmón. Altas, de a libra. Ovaladas, de a libra.

Sardina arenque.—Pesca del Pacífico envasada en latas altas de una libra.

Merluza en lata, cocida y deshuesada antes de envasarla. Latas planas de a libra, 16 onzas neto.

Bacalao desmenuzado. — Cocido y envasado en latas planas de 16 onzas neto.

Merluza curada al estilo noruego "Finnan."—Latas planas de una libra.

Merlango desmenuzado.—Cocido y envasado en latas planas de una libra.

Langosta en Latas.

Envasada en la costa del Atlántico. Latas planas de ¼ y ½ libra. Ocho docenas por caja. Latas planas de ¾ y de 1 libra, 4 docenas por caja.

Información General.

Peso Neto.—El peso del contenido de las latas. En el caso del salmón representa media o una libra de pescado y jugo. En el caso de "Chicken Haddie" (Merluza cocida y deshuesada), significa el peso del pescado solamente, por no contener jugo.



Cod-fish Drying in the Sun, Lunenburg, N.S.
Morue séchant au soleil, Lunenburg, N.S. Bacalao secándose al sol, Lunenburg, Nueva Escocia.



PICKLED AND CANNED FISH PRODUCTS OF CANADA PRODUITS CANADIENS de POISSON en SAUMURE et de POISSONS en CONSERVE CONSERVACION DE LOS PRODUCTOS PESQUEROS DEL CANADA

By J. J. COWIE, Federal Department of Fisheries.

In a country such as Canada, with its population centred mostly far inland, the marketing of sea fish in a fresh state is a difficult problem, and while this difficulty is being gradually overcome by the use of refrigerator cars on express and fast freight trains, the quantity of fish taken annually is much greater, and will remain so for some time, than can be possibly consumed fresh. The work of preserving fish, therefore, by means of salting, smoking and cooking in cans constitutes the predominant part of the marketing end of the fishing industry, and gives employment to a great host of workers, both male and female, on shore.

Pickled Fish.

Fish such as herring, mackerel, gaspereaux or alewives, and salmon are salted and pickled in tight barrels, the greater proportion of which is prepared for export. Herring are found in great abundance on both the Atlantic and Pacific coasts of Canada. Over 100,000,000 pounds are landed annually in the proportion of about two-thirds on the Atlantic and one-third on the Pacific. About 100,000 barrels are cured in pickle, mostly in the form of what is known as "split herring." Curing in what is called the Scotch method has been practised on both coasts, however, in recent years. During the season of 1918 about 11,000 barrels were cured on the Atlantic coast, and about 14,000 barrels on the Pacific coast, in the Scotch style.

The mackerel fishery is of great importance on the Atlantic coast of Canada. These fish appear annually off the mouth of the Bay of Fundy about the middle of May, and at various points on the coast of Nova Scotia, as the season advances, until in June they swarm into the Gulf of St. Lawrence. From that time on they

Dans un pays comme le Canada dont la population, en grande partie, est établie plutôt au loin, vers l'intérieur, la vente du poisson de mer, à l'état frais, est un problème assez difficile; et, quoique cette difficulté puisse être surmontée graduellement par l'emploi des wagons frigorifiques sur trains à grande ou à petite vitesse, la quantité de poisson, pris chaque année est plus grande, et il en sera ainsi durant quelque temps, qu'il ne peut être consommé alors qu'il est frais. Le travail de la conservation du poisson, au moyen de la salaison, le fumage et la cuisson en boîtes, constitue donc la partie prédominante de l'industrie des pêcheries, en ce qui concerne sa préparation pour le marché, tout en procurant de l'emploi, sur la grève, pour un grand nombre de travailleurs; hommes ou femmes.

Poisson en saumure.

Les poissons, tels que le hareng, le maquereau, le gaspereau, et le saumon sont salés et saumurés en barils étanches, et sont préparés, en grande partie, pour l'exportation. Le hareng se trouve en grande abondance, tant sur les côtes canadiennes de l'Atlantique que sur celles du Pacifique. Plus de 100,000,000 livres sont débarqués sur les côtes chaque année, à proportion de 2-3 sur l'Atlantique, et 1-3 sur le Pacifique. L'on en saumure environ 100,000 barils; pour la plupart, du hareng. La salaison selon la méthode écossaise a cependant été en usage sur les deux côtes, ces dernières années. Durant la saison de 1918, environ 11,000 barils de poissons salés à la mode écossaise furent préparés, et environ 14,000 barils, sur la côte du Pacifique.

La pêche au maquereau, sur la côte canadienne de l'Atlantique est très importante. Ce poisson fait son apparition, chaque année, vers le milieu de Mai, à l'embouchure de la baie de Fundy et en divers endroits de la côte de la Nouvelle Ecosse; à mesure

En un país como el Canadá, con su núcleo de población tierra adentro, el transporte de la pesca de mar a los mercados, en buen estado de frescura es un difícil problema, y aunque esta dificultad se va venciendo gradualmente con el uso de wagones refrigeradores en trenes expresos y rápidos de mercancías, la pesca anual seguirá siendo por algún tiempo mayor que la cantidad de pescado fresco que se puede consumir. El trabajo de conservar el pescado por medio de la sal y del humo, y su preparación para envasarlo en latas, constituye el asunto predominante de la industria pesquera y facilita empleo a un verdadero ejército de hombres y mujeres.

Pesca en Salmuera

La pesca, tal como arenques, macarela, alufas y salmón se prepara en salmuera, en barriles ajustados para ser exportada en su mayor parte. El arenque se encuentra en gran abundancia en las costas canadienses del Atlántico y del Pacífico. Anualmente se pescan más de 100,000,000 de libras en una proporción de cerca de dos tercios en el Atlántico y un tercio en el Pacífico. La pesca en salmuera rinde 100,000 barriles, más o menos, la mayor parte en la forma conocida como arenque abierto. Sin embargo, en años recientes se ha venido practicando en ambas costas el método de cura que se llama "Escocés" y durante la estación de 1918, siguiendo este método se curaron 11,000 barriles en la costa del Atlántico y unos 14,000 en la del Pacífico.

La pesca de la macarela es de gran importancia en la costa Atlántica del Canadá. Esta pesca aparece todos los años en la boca de la Bahía de Fundy, aobre mediados de Mayo, y a medida que la estación adelanta, en varios puntos de la costa de Nueva Escocia, hasta el mes de Junio en que entra en el Golfo de San Lorenzo.

are found more or less abundantly until November when they disappear entirely from Canadian waters. The annual catch amounts to about 17,000,000 pounds. More than half the catch is cured in pickle and produces a pack of over 30,000 barrels annually.

Gaspereaux, commonly called alewives, belong to the herring family, but unlike the herring they enter rivers to deposit their spawn. They are very abundant during spring-time in the mouths of large rivers on the Atlantic coast. The annual catch amounts to about 9,000,000 pounds, two-thirds of the catch is cured in pickle, and yields a pack of 20,000 barrels annually.

The salmon catch of the Atlantic coast is marketed in a fresh or frozen state, except that part of it, which is landed at places that are as yet far removed from speedy means of marketing. The quantity preserved in pickle is, therefore, very small and amounts to not more than 300 to 400 barrels annually. On the Pacific coast, apart from the large spring sal-

que la saison avance, jusqu'en juin, il se dirige vers le golfe St. Laurent. A partir de ce temps, on le trouve en plus grande abondance jusqu'en Novembre, alors qu'il disparaît entièrement des eaux canadiennes. La pêche annuelle s'élève à 17,000,000 de livres dont on saumure plus de la moitié, et dont on obtient plus de 30,000 barils par année.

Les gaspereaux appartiennent à la famille du hareng, mais ils diffèrent du hareng en ce qu'ils entrent dans les rivières pour y déposer leurs oeufs. Ils sont très abondants durant la saison printanière dans les embouchures des grandes rivières, sur la côte de l'Atlantique. La pêche annuelle s'élève à environ 9,000,000 livres dont on saumure les 2-3, ce qui rapporte 20,000 barils, annuellement.

Le saumon de l'Atlantique se vend frais ou gelé, sauf celui qui doit être expédié en des endroits qui sont encore trop éloignés des marchés. La quantité de poisson que l'on saumure est donc minime et ne s'élève pas à plus de 300 ou 400 barils, par année.

Desde Junio en adelante se encuentra en mayor o menor abundancia hasta Noviembre en que desaparece enteramente de las aguas canadienses. La pesca anual asciende a cerca de 17,000,000 de libras, y más de la mitad se cura en salmuera y produce más de 30,000 barriles.

Los gaspereaux, pesca comunmente conocida por alufas, pertenece a la familia de los arenques, pero al contrario de lo que éstos hacen, las alufas entran en los ríos para depositar sus huevas. Esta pesca es muy abundante en la primavera en las bocas de los grandes ríos de la costa Atlántica y su pesca se calcula anualmente en unos 9,000,000 de libras. Dos tercios de esta pesca se curan en salmuera y producen un volumen anual de 20,000 barriles.

El salmón que se pesca en la costa Atlántica se manda fresco o congelado a los mercados, a excepción del que se descarga en lugares apartados de vías de comunicación. Por lo tanto, la cantidad conservada en salmuera es muy pequeña y no pasa de 300 a 400 barriles anuales. En la costa



Landing Pacific Herring, British Columbia.
Déchargeant le Hareng du Pacifique, Colombie Anglaise.
Desembarcando Arenques en el Pacifico, Colombia Inglesa.

mon that are mild cured, small quantities of the smaller grades are cured in pickle in the ordinary way.

Of each of these varieties of fish, far greater quantities could be cured in pickle and made available for exportation, provided the prices were sufficient to induce packers to increase their output. It is fully recognized, however, that before a packer can look for adequate returns, or, indeed, for any returns at all for pickled fish, there are four essential points in their preparation to which he must give the most careful attention: (1) that curing begins when the fish are still perfectly fresh; (2) that the fish are thoroughly cured, with a sufficient and uniform quantity of salt on each tier in each barrel; (3) that the fish are properly graded with respect

Sur la côte du Pacifique, à part le gros saumon du printemps lequel est mis en saumure, les qualités moindres sont salées selon la manière habituelle.

De plus grandes quantités de chaque espèce pourraient être marinées et préparées pour l'exportation, pourvu que les prix soient suffisants pour encourager les fabricants à augmenter leur rendement. Il est bien reconnu, cependant, qu'avant qu'un fabricant de conserves de poisson puisse espérer un bénéfice proportionné, ou de fait, aucun profit quelconque pour le poisson mariné, il doit considérer soigneusement quatre points essentiels: (1) que le poisson doit être salé lorsqu'il est parfaitement frais; (2) que ce poisson soit complètement salé avec une quantité suffisante et

del Pacífico aparte del salmón de primavera de gran tamaño, el cual se cura ligeramente, se curan también en salmuera, pequeñas cantidades de un tamaño inferior por el procedimiento ordinario.

De todas estas variedades de pesca se podía curar mucha mayor cantidad en salmuera y utilizarse para la exportación, con tal de que los precios garantizaran a los fabricantes el aumento de producción. Sin embargo, para que un fabricante pueda esperar precios remunerativos, o mejor dicho, algún resultado práctico de la pesca en salmuera, hay que tener en cuenta cuatro puntos esencialmente importantes en la preparación, a los cuales se debe prestar gran atención. **Primero.**—Que la cura emiece cuando el pescado esté completamente fresco. **Segundo.**—Que el pescado esté



Fishing for Herring, British Columbia.
Pêchant le Hareng, Colombie Anglaise. Pescando Arenques en la Colombia Inglesa.

to size and quality and (4) that strong, perfectly tight, standardized barrels are used for packing and transporting the fish to market in.

Very much attention has been given in recent years, by the Fisheries Branch of the Department charged with the administration of the Canadian fisheries, to the matter of improved curing and barrel making, and five years ago it secured legislation in the form of The Fish Inspection Act, which provides for the official inspection and branding of pickled fish and the barrels in which they are packed. The Act aims at bringing into general use a strong tight barrel of standard size, also, it aims at raising the standard of curing and grading the fish, so that the cured product may be bought and sold with confidence. Inspection is not compulsory.

uniforme de sel, sur chaque rang, dans chaque baril; (3) que le poisson soit convenablement classé quant à la grosseur et à la qualité, et (4) que l'on emploie des barils étanches pour l'emballage et le transport du poisson au marché.

Le Département des Pêcheries du Ministère en charge de l'administration des pêcheries canadiennes, s'est occupé ces dernières années, de la question du fumage du poisson et de celle de la fabrication des barils, et, il y a cinq ans, ils ont obtenu la Loi de l'Inspection du Poisson, laquelle pourvoit à l'inspection officielle du poisson salé et à ce que les barils dans lesquels ils sont emballés soient marqués au fer chaud. La loi a pour but de faire mettre en usage le baril fort et étanche, de grandeur réglementaire; de plus, elle a pour but de faire amé-

curado por igual, con una cantidad suficiente y uniforme de sal en cada capa que contenga el barril. **Tercero.**—Que el pescado esté debidamente escogido, respecto a tamaño y calidad, y **Cuarto.**—Que para el envase y transporte de la pesca al mercado se empleen barriles sujetos a un modelo fijo, fuertes, y perfectamente ajustados.

En los últimos años, la Sección de Pesquerías del Departamento Federal, encargada de esta industria, ha venido prestando gran atención a la cura y construcción de barriles, y hace cinco años se legisló decretando la inspección de la pesca, a fin de establecer la inspección oficial y la marca de la pesca en salmuera en los barriles que se empleaban como envase. El objeto de la Ley es implantar el uso general de un barril per-

however, and packers must decide for themselves whether they shall use the Government brand or not. When a packer submits his fish for inspection these, as well as the barrels, must, of course, fully comply with the requirements of the Inspection Act, in order to secure the brand. Competent Government inspectors carry out the provisions of the Act, and in addition, to inspecting such fish as are submitted to them for inspection, they act in the capacity of advisors or instructors to the packers and barrel makers. Regulations, in the form of detailed Instructions for the guidance of inspectors, barrel makers and packers in the construction and capacity of barrels and in curing, packing and grading fish, have been printed and distributed freely amongst all concerned, and a serious effort is now being made by many to produce barrels and fish of a quality in accordance with such regulations.

But the Act compels on one either to use a good barrel of proper size or to pack his fish in accordance with its requirements. While much has been accomplished in the way of securing the use of better barrels and more careful attention to curing, by means of persuasion and teaching, very much more remains to be done, and it is difficult to say if the end desired can be fully reached, except with the hearty co-operation of buyers and dealers at home and abroad. Such an official system of inspecting and branding must directly benefit all classes of buyers and those who deal with such fish in any way, and it should be duly appreciated that they can at once most assuredly improve the general conditions of this trade, and at the same time benefit themselves, by intimating to shippers and consigners of Canadian pickled fish that barrels showing the Government brand will be preferred to uninspected and unbranded ones.

Canned Fish.

The canning of fish is perhaps the most important single branch of the fishing industry in Canada. There are over 700 establishments on the Atlantic and Pacific coasts in which fish of various kinds are preserved in cans. On the Atlantic coast there are nearly 600 establishments engaged in the canning of lobsters, while herring are canned in 9 canneries; haddock in 10; cod in 6; albacore in 3; sardines in 3; salmon in 3; mackerel in 12, and clams in 15. On the Pacific coast, there are 90 canneries engaged in the canning of salmon; 18 in the canning

herrer la salaison et le fumage du poisson, comme le choix du poisson lui-même, afin que le produit de la salaison puisse être acheté et vendu en toute confiance. L'inspection n'est pas obligatoire, cependant, et les fabricants décideront eux-mêmes s'ils doivent employer ou non la marque du Gouvernement. Quand un emballleur soumet son poisson à l'inspection, le poisson et les barils doivent naturellement être conformes aux exigences de la Loi d'Inspection, afin d'obtenir la marque du Gouvernement. Des inspecteurs compétents, autorisés par le Gouvernement, voient à ce que les dispositions de la loi soient suivies; ils font l'inspection du poisson qui leur est soumis, et, de plus, ils agissent en qualité d'aviseurs et instructeurs envers les emballleurs et les fabricants de barils. Des règlements, sous forme d'instructions détaillées pour les inspecteurs, ont été imprimés et distribués gratuitement aux intéressés; et plusieurs s'efforcent de produire des barils de qualité conforme à ces règlements.

Mais la Loi n'oblige personne soit à employer les barils de grandeur réglementaire, soit à emballer le poisson conformément aux exigences. Quoique, par la persuasion et l'enseignement, on ait assez bien réussi à faire employer de meilleurs barils et à ce que la salaison soit faite plus soigneusement, il y a encore beaucoup à faire, et il est difficile de dire si le but désiré sera atteint parfaitement, à moins que ce ne soit avec la cordiale coopération des acheteurs et des commerçants, tant au pays qu'à l'étranger. Un système d'inspection officielle devra être tout à l'avantage des diverses classes d'acheteurs et de commerçants de poisson, et il faut reconnaître que ce sont eux qui pourront le plus sûrement améliorer la situation générale de ce commerce, tout en bénéficiant eux-mêmes, et ce, en faisant savoir aux exportateurs et consignateurs de poissons canadiens en saumure que les barils portant la marque du Gouvernement seront préférés à ceux qui n'auront pas été inspectés et ne porteront pas de marque.

Poisson en Boîte

La mise en conserve du poisson est la branche la plus importante de l'industrie des pêcheries, au Canada. Il y a au-delà de 700 établissements sur les côtes de l'Atlantique et du Pacifique où l'on met en boîtes les diverses espèces de poisson. Sur la côte de l'Atlantique, il y a près de 600 établissements employés à la fabrication des conserves de homard; le hareng est mis en boîtes dans 9 fabri-

fectamente ajustado, de un tamaño fijo, y al mismo tiempo mejorar el método empleado en la cura y escogida del pescado, a fin de que el producto curado se pueda vender y comprar con confianza. La inspección no es obligatoria y los fabricantes deben decidir si adoptan o no la marca del Gobierno. Cuando un fabricante presenta su pesca para ser inspeccionada, ésta, lo mismo que los barriles, tienen que ajustarse en todo a las reglas que marca la Ley de inspección para poder obtener la marca. Los Inspectores del Gobierno llevan a cabo las instrucciones de la Ley, y además de inspeccionar el pescado que se les presenta actúan como consejeros o instructores de los fabricantes y de los barrileros. Con este objeto se han venido distribuyendo gratis entre los interesados, reglas con instrucciones detalladas para inspectores, barrileros y fabricantes, tratando de la construcción y capacidad de los barriles y de la cura, envase y escogido de la pesca. Al presente se está haciendo un gran esfuerzo encaminado a producir barriles y pescado de una calidad que esté en todo de acuerdo con tales reglas.

La Ley, no obliga a nadie a usar un buen barril de tamaño apropiado ni a envasar la pesca con arreglo a lo dispuesto. Aunque se ha conseguido mucho, al efecto de implantar el uso de mejores barriles y prestar más atención a la cura de la pesca, usando medios de persuasión y enseñanza, todavía queda mucho por hacer, y es difícil predecir si se podrá realizar por completo el fin deseado, a menos que, se cuente con la leal y decidida cooperación de los compradores y comerciantes, tanto nacionales como extranjeros. Este sistema oficial de inspección y marca, tiene que beneficiar directamente a todas las clases de compradores y a cuantos comercian con la pesca en todas sus formas, y debe ser apreciado debidamente haciéndoles ver que ellos mismos, de momento, pueden sin duda alguna mejorar la condición general de este comercio, beneficiándose al mismo tiempo, con solo llamar la atención de los remitentes y consignatarios de pescado canadiense en salmuera, para que den preferencia a los barriles que tengan la marca del Gobierno.

Conservación de la Pesca en Latas.

La conservación de la pesca en latas es tal vez el ramo más importante de la industria pesquera del Canadá. En la actualidad existen más de 700 establecimientos en las costas del Atlántico y del Pacífico dedicados a preparar pescado de varias clases para conservarlo en lata. En la costa del Atlántico hay cerca de 600 estableci-

of herring; 3 in the canning of pilchards, and 2 in the canning of clams.

Along the Atlantic shores of Canada exist what may be truly called the most remarkable lobster fishing grounds in the world, and the great extent and the enormous supplies taken from them annually in the course of the last 40 or 50 years, are quite unmatched anywhere else. Previous to the beginning of lobster canning in Canada the fish was of no account whatever, and the finest lobsters could easily be purchased for fifty cents per hundred. Indeed, in the Bay Chaleur district lobsters were so abundant that farmers fertilized their fields with them. The advent of the preserving canneries in 1870 converted what hitherto had been wasted, into a remunerative article of commerce, even on the most remote parts of the coast. At the end of 20

ques; l'aiglefin, dans 10; la morue, dans 6; l'albacore, dans 3; les sardines, dans 3; le saumon, dans 3; le maquereau, dans 12; et les palourdes dans 15. Sur les côtes du Pacifique il ya quatre-vingt-dix fabriques de conserves engagées dans la mise du saumon en boîte; dix-huit s'occupent de la conserve du hareng; trois des "pilchards" et deux des palourdes. Il y a sur les côtes canadiennes de l'Atlantique un endroit remarquable entre tous, pour la pêche du homard, tant par son étendue que par les quantités énormes de homards qu'on y trouve. C'est un endroit de pêche incomparable. Avant que l'on eut commencé à mettre le homard en conserve, au Canada, ce poisson n'avait aucune importance, et l'on pouvait acheter le homard à cinquante sous du cent. En effet, le homard, dans le district de la Baie des Chaleurs était tellement abondant que les fermiers l'utilisaient comme engrais pour leurs champs. Les homarderies qui furent

mientos dedicados a la conserva de langosta; los arenques se preparan en 9 establecimientos; la merluza en 10; el bacalao en 6; la albacora en 3; las sardinas en 3; el salmón en 3; la macarela en 12 y las almejas en 15. En la costa del Pacifico, hay 90 fábricas que se dedican al salmon; hay 18 que se ocupan de los arenques; 3 de la sardina-arenque; y 2 de las almejas.

A lo largo de la costa Atlántica del Canadá se encuentran las que verdaderamente pueden llamarse las zonas más notables de pesca de langosta del mundo, y la gran extensión, y la enorme cantidad sacada de estas zonas anualmente, durante el transcurso de los últimos 40 ó 50 años, no ha tenido paralelo en la historia. Antes de pensar en la conservación de la langosta, esté crustáceo no tenía valor en el Canadá y las mejores langostas podían fácilmente comprarse a cincuenta centavos el ciento. En



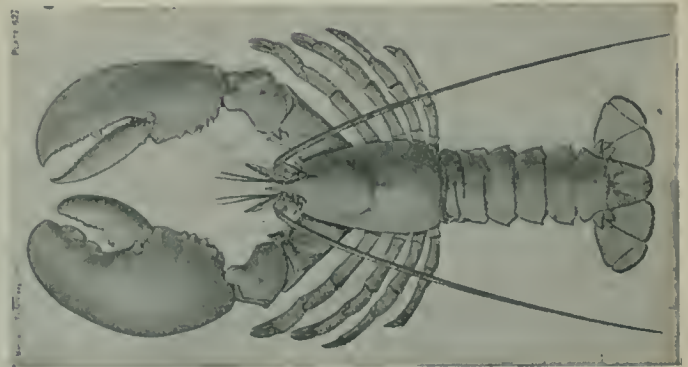
Packing Boneless Codfish.
Pactant la Morue sans Os.—Empaquetando bacalao sin espina

years there were 364 canneries in operation, and 10 years later, in 1900, the number increased to over 900. That was the highest mark reached. From that year onward there has been a great falling-off, and to-day there are rather less than 600 in operation. In the year 1870 there were 591,500 cans packed. In the year 1900 there were 11,559,984 cans packed, and in 1918 about 5,000,000 cans were packed. This shows a rather alarming decrease in the lobster fishery, but it is believed the decline has now been stopped by means of shortened fishing seasons and the preservation of seed lobsters.

Next to the lobster canning on the Atlantic coast comes the canning of sardines, of which about 18,000,000 cans were packed last year. Then

établies en 1870 transformèrent ce qui, jusque là, avait été gaspillé, en un article commercial rémunérateur, dans les endroits les plus éloignés de la côte. Vingt ans après, 364 homarderies fonctionnaient, et dix ans plus tard, en 1900, le nombre s'en élevait à plus de 900. C'est là le plus haut chiffre qui ait été atteint. Depuis, il y a eu une grande diminution; moins de 600 fabriques fonctionnent maintenant. En 1870, il y eut 591,000 boîtes d'emballées. En 1900, il y en eut 11,559,984, et en 1918, environ 5,000,000. Ceci démontre une diminution alarmante dans la pêche du homard. Cependant on a mis fin à la situation en abrégant la saison de la pêche, et par la conservation des œufs de homard.

A part de la fabrication des conserves de homard, sur la côte de l'Atlantique, il y a celle des sardines, dont



Lobster. — Langosta. — Homard.

el distrito de la Bahía Chaleur, por ejemplo, la langosta era tan abundante que los labradores fertilizaban sus campos con ellas. Con el establecimiento de las fábricas de conserva, en 1870, lo que hasta entonces se había desperdiciado se convirtió en un artículo de comercio remunerativo hasta en las partes más remotas de la costa, y 20 años después existían ya 364 fábricas en operación; 10 años más tarde, en 1900, el número aumentó a más de 900. Este número fué el más alto alcanzado. De entonces acá el número de fábricas ha venido disminuyendo, y hoy hay menos de 600 en operación. En el año 1870 se prepararon 591,984 latas. En 1900 se envasaron 11,559,984 latas y en 1918 alrededor de 5,000,000. Esto demuestra una disminución alarmante en la

come clams with 670,000 cans; haddock, both fresh and smoked, with 570,000 cans; herring, both fresh and smoked, with 480,000 cans, and macarel with 76,400 cans. A few thousand pounds of salmon and albacore are also canned on the Atlantic coast.

The canning of salmon is by far the most prominent feature of the fishing industry on the Pacific coast of Canada. The fact these fish abound in enormous numbers on the Pacific coast is so well-known throughout the world that nothing need be added here with regard thereto. The average annual pack amounts to over 70,000,000 cans. All varieties of the Pacific salmon are packed, but the better grades, such as sockeye, pinks and coho predominate. The canning of herring and pilchards, the latter one of the most delicious of canned fish, has very greatly increased in volume on the Pacific coast in recent years. During 1918 over 6,000,000 cans of herring and more than 2,000,000 cans of pilchards were packed. The pack of clams amounted to 288,000 cans. The output of canned herring and pilchards could be increased almost indefinitely.

Dealers and the general consuming public, both at home and abroad, will doubtless be pleased to learn that no canning establishment is allowed to operate in Canada except under a li-

environ 18,500 boîtes furent préparées l'an dernier. Viennent ensuite les palourdes dont on obtint 670,000 boîtes; l'aiglefin, frais et l'aiglefin fumé, 570,000 boîtes les harengs, tant les frais que les salés, 480,000 boîtes; le maquereau, 76,400 boîtes. Sur la côte de l'Atlantique, on a mis en conserve, quelques milliers de livres de saumon et d'albacore.

La fabrication des conserves de saumon est le trait caractéristique de l'industrie des pêcheries sur la côte canadienne du Pacifique. Il est connu partout que ce poisson abonde sur la côte du Pacifique, et nous n'avons rien à ajouter à ce sujet.

La production annuelle des saumons s'élève à plus de 70,000,000 boîtes. Toutes les espèces de saumon du Pacifique sont mises en boîtes, mais les meilleures qualités, telles que la "sockeye", la rose et la "coho" prédominent. La fabrication des conserves de harengs et des sardines-pilchards, ce dernier poisson, l'un des plus délicieux en conserve, a beaucoup augmenté sur la côte du Pacifique, ces dernières années. En 1918, on a emballé plus de 6,000,000 boîtes de hareng, et plus de 2,000,000 de boîtes de pilchards. La mise en conserve des palourdes s'élève à 288,000 boîtes. La fabrication de conserve de harengs et de pilchards pourrait augmenter presque indéfiniment.

Les commerçants et le public consommateur en général, au pays comme à l'étranger, apprendront sans doute

pesca de la langosta, pero se cree que tal baja ha sido ya remediada acortando la estación de pesca y conservando los criaderos.

Después de la conservación de la langosta, en la costa del Atlántico, viene la de la sardina, de cuyo pescacado se envararon 18,000,000 de latas el año pasado. A continuación sigue la de las almejas con 670,000 latas; la merluza, fresca y ahumada, con 570,000 latas; arenques, frescos y ahumados, con 480,000 latas y la macarela con 76,400 latas. También se envasan en la costa del Atlántico algunos miles de libras de salmón y albacora.

El envase de salmón es sin disputa la nota más saliente de la industria pesquera en la costa del Pacífico canadiense. El hecho de que este pescado se encuentra en gran abundancia en la costa del Pacífico, es tan bien conocido en todo el mundo, que no hay necesidad de extendernos sobre este tema. El envase medio anual, asciende a más de 70,000,000 de latas, y se envasan todas las variedades de salmón del Pacífico, predominando las clases superiores, tales como "sockeye," "pink," y "coho."

El envase de arenques y sardina-arenque, este último uno de los pescados de lata más deliciosos, ha aumentado considerablemente en la costa del Pacífico durante los últimos años. Más de 6,000,000 de latas de



Smoke-House of the National Fish Coy., Hawkesbury, N. S.
Maison à fumer de la National Fish Coy., Hawkesbury, N. S.
Ahumadero de la "National Fish Coy.," Hawkesbury, N. E.

conse issued by the Fisheries Branch of the Department of the Naval Service, on being assured of the suitability of the place for the canning of food. Further, that the Department under authority of the Meat and Canned Foods Act now maintains, through its outside staff of fishery officers, a systematic inspection and supervision of the sanitary conditions of fish canneries and the utensils used therein; of the employees, with respect to cleanliness; of the condition of the fish previous to canning, and the manner in which the product is handled generally. The Act provides, amongst other things: (a) for the inspection of all fish and shellfish packed in cans during the whole operation of packing; (b) the marking of cans for sale in Canada, with the full name and address of the packer or the first dealer who obtains them directly from the packer, and

avec plaisir qu'il n'est permis à aucune fabrique de conserve de poisson de fonctionner, en Canada, sauf sous licence émise par le Département des Pêcheries du Ministère du Service Naval, sur assurance que l'endroit est approprié pour la fabrication de conserves alimentaires. De plus, ce Ministère, autorisé par la loi, Loi des Viandes et Conserves Alimentaires, fait faire, par l'entremise de son personnel extérieur d'officiers de pêcheries, une inspection systématique et la surveillance de l'état sanitaire des fabriques et des ustensiles dont on y fait usage; des employés, quant à la propreté; l'état du poisson avant qu'il ne soit mis en boîtes; et la manière dont on manie le poisson généralement. La Loi pourvoit, entre autres choses; (a) à l'inspection de tout poisson et mollusque, durant le procédé de la mise en boîtes; (b) à ce que les boîtes pour la vente au Canada portent le nom et l'adresse du fabricant ou du commerçant qui les achètera directement du fabricant, ainsi qu'une description exacte de l'espèce et de la

arenques y más de 2,000,000 de sardina-arenque fueron envasadas en 1918. Las almiejas llegaron a 288,000 latas. La producción de arenques y sardina-arenque puede aumentarse casi indefinidamente.

Los comerciantes y los consumidores en general, tanto nacionales como extranjeros, sin duda alguna, verán con gusto, que en el Canadá no se permite funcionar a ningún establecimiento a menos que tenga licencia de la Sección de Pesquerías del Departamento del Servicio Naval, cuya licencia se expide sobre el convencimiento de que el local empleado para la conserva del pescado es perfectamente adecuado. Asimismo, que tal Departamento, autorizado por la Ley que gobierna la conservación de carnes y alimentos, mantiene al presente un personal ambulante de oficiales peritos en la pesca los cuales ejercen una inspección y supervisión sistemática de las condiciones sanitarias de las fábricas de conservas; de los utensilios que se emplean para la preparación del pescado; de la limpieza y aseo de los obreros; de la condición



Scottish Experts in Herring Packing, British Columbia.
 Expertas escocesas para envasar los arenques, Colombia Inglesa. Escocais experts à packer le Hareng, Colombie Anglaise.

with a true description of the kind of fish in, and the weight of the contents of, the cans; (c) the seizure of any unsound or unwholesome fish intended for canning purposes. All of which are rigidly enforced.

In conclusion let me add that the reputation of Canadian canned fish, as a whole, is deservedly good, but it is anticipated that through the agency of this inspection and supervision, the standard of packing will be raised to even a higher level, which is bound to react to the benefit of producer, dealer and consumer alike.

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pesanteur du poisson contenu dans la boîte; (c) la saisie de tout poisson gâté ou malsain destinés à être mis en boîtes. Toutes ces conditions sont de rigueur.

En terminant, permettez-moi d'ajouter que la réputation du poisson canadien n'est pas surfaite; cependant, nous croyons que grâce à cette inspection et à cette surveillance, il sera obtenu que le mode d'emballage soit encore amélioré, et le profit en reviendra également au fabricant de conserves, au commerçant et au consommateur.

Si cette revue n'est d'aucun intérêt pour vous, vous nous obligerez en la remettant à quelqu'un qui n'en aurait pas reçu d'empaire.

del pescado antes de prepararlo y, en general, de la manera en que el producto se maneja. La Ley, entre otras cosas, prevé; (a) La inspección de toda la pesca, moluscos y crustáceos envasados en latas, durante el proceso completo de envase; (2) La marca de latas para la venta en el Canadá, con el nombre completo y dirección del productor o del primer comerciante que las obtiene directamente del productor, con una descripción verdadera de la clase de pescado y peso que contiene la lata; (c) El embargo de cualquier pescado enfermo o en mal estado para su conservación. Todas estas reglas se observan estrictamente.

En conclusión, hemos de añadir que la reputación del pescado canadiense en conserva, merece el buen crédito que goza, pero se espera que debido a esta inspección y supervisión, el modelo de envase se mejorará en sumo grado y redundará igualmente en beneficio del productor, del comerciante y del consumidor.



Fish Wharves, Halifax, N. S.
Quai des pêcheurs, Halifax, N. E.
Los muelles de pescado, Halifax, N.E.

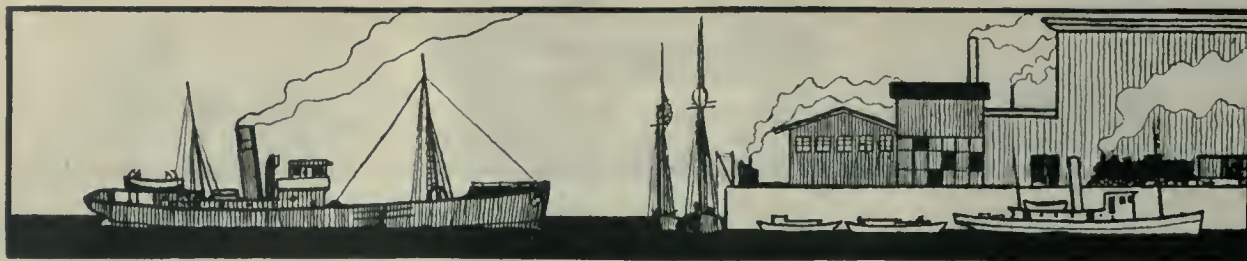


The photo on the left is that of a British Columbia Sturgeon caught in the Fraser River and which measured 13 feet 6 inches and weighed 905 pounds. The picture on the right is an Atlantic Halibut caught in the Gulf of St. Lawrence, which sealed 305 pounds.

La photographie à gauche est celle d'un Esturgeon de la Colombie Anglaise, pris dans la Rivière Fraser, lequel mesure 13 pieds 6 pouces et pèse 905 livres. La photographie à droite est celle d'un Flétan de l'Atlantique, pris dans le Golfe St. Laurent, lequel pèse 305 livres.

El grabado de la izquierda representa un esturión de la Colombia Inglesa, peseado en el rio Fraser. Mide 13 pies y 6 pulgadas y pesa 905 libras. El grabado de la derecha representa un mero del Atlántico, peseado en el Golfo de San Lorenzo, con un peso de 305 libras.





A Central Credit Organization To Foster Foreign Trade

By ERNEST B. ROBERTS.

In one of the most dramatic speeches that the Welsh Prime Minister, Mr. Lloyd George, ever made, when he pictured, with the vivacity of his matchless Celtic imagination, the beginning of a "better day" for the British labor man, he made use of a very simple little figure of speech. He said that among the mountains of Wales, long, long before the dawn broke in the valleys, a faint light from the East often touched the hill-tops with a strange glow and the Welsh shepherds greeted each other with an old Cymric phrase: "Gentlemen, it is going to be a fine day." It is that sort of light which is now discernible to the close observer on the hill-tops of international trade.

This new light in world business has gradually been becoming brighter during the eight months of the reconstructive period since hostilities closed. It would be difficult to define the trend of things that it partly reveals in a few words. It is something which had not been foreseen by the best trained and most astute financiers in any country. The numerous guesses which have gone wrong of some of the learned men should be proof enough of that—for guesses they have been in a greater measure than they would probably confess.

For the initiated, it might be enough to say that the trend lies in finding credits. "But why," the average man will ask, "should the world have to find credits?" Because it is necessary to carry on the exchange of goods in the highly complicated relations between the people. On this exchange of goods depends the prosperity of each country and in the last analysis on this depends the plain business of living for the individual.

The war consumed in its huge wastefulness an incalculable mass of wealth: it has left the world gaping for things which that wealth should have supplied. The majority of people have not yet grasped the fact that for 4½ years an extravagant wastefulness on an immeasurable scale could not take place without a deep and lasting economic effect. The problem, stated from a financial and economic standpoint, is that "there is not enough actual wealth in the world to go round." We must therefore call into immediate use our "potential wealth": we must turn into cash our confidence in civilization and trade upon our own hopes for the future.

These in broadest lines are the conditions of the curious position of the business world to-day. To make up the deficiency in wealth, financiers and economists have been put to it to devise something which shall

take the place of money, which shall have the same effect as cold cash in inducing men and women to go on working and producing for the sake of gain as they did before the world's great waste. Briefly therefore, the new trend is to establish credits on a great scale among the nations. In principle it might not be worth dignifying as new. It was undertaken extensively for war purposes, but its wide extension in peace time will give it characteristics which will be radically new. The Governments of several countries lead the way. For instance, since last March credits totaling \$125,000,000 have been established by the Canadian Government in Europe, but the time has come when it is felt that this is work outside the scope of a Government proper. It is now more a matter for collective banking and financial interests.

Perhaps the first clear statement of what would be required was made in Canada by Mr. Lloyd Harris, chairman of the Canadian Trade Mission in London, on his departure for England at the close of a visit to the Dominion

"I have been more and more convinced," he said, "that our public requires educating in the tremendous possibilities of trade with Europe. I am not in favor of granting further Government credits, as I think our banking and financial interests, with Government co-operation, could do the work more efficiently. These have the machinery and need only employ it. I believe a central organization could be formed which would make the necessary advances. They would take in return the securities from foreign governments, and in this way, the public could participate."

Such a method of procedure would have the direct effect of stimulating trade. "I consider," Mr. Harris added, "that a capital of \$300,000,000, if raised in this manner in Canada, would enable us to do trade up to perhaps five times this amount, if it was used as a kind of circulating credit."

A corporation of banks taking foreign securities in this way could issue debentures to the public, and thus enable the necessary money to be raised without recourse to the Government, though it is expected that the Governments will give their moral support and sanction.

So necessary is it to try to continue the world's work in spite of the lack of ready cash that even a system of barter on a great scale has been suggested for Southern Russia and Siberia where the currency

—at all times “a common drudge ’tween man and man”—has been made useless by the excesses of the Bolsheviki.

The subject of credit through the formation of a large corporation has been studied closely in the United States and so far as can be ascertained, is finding much favor.

Other features of this new trend in business are also being discussed there. One of the most persistent efforts being made to secure foreign trade is in popularizing the use of bank or trade acceptances. It is

while we have the opportunity, we teach ourselves how to use it.” Only since the beginning of the European war has there been a market for acceptances in the United States. This in itself is one of the strange anomalies of international commerce and finance.

What effect will this new internationalism in business have on the individual? Will it mean that he also will have to grant more credit to his customers? Will it mean longer terms, especially in foreign trade? The ultimate result can only be a matter of speculation

CANADIAN FISHERIES ADMINISTRATION OFFICIALS.
 OFFICIERS DE L'ADMINISTRATION DES PECHERIES CANADIENNES.
 OFICIALES DE ADMINISTRACION DE LAS PESQUERIAS CANADIENSE



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 Superintendente de Pesquerias.

strange that a great commercial country like the United States should hitherto practically have ignored the use of an instrument by which 75 per cent of the foreign commerce of the world is financed. In fact, one of the big New York financial houses recently found it necessary to issue an elementary book of 72 pages on the subject, in which the following significant statement is made: “We shall undoubtedly have a better basis for the extension of foreign credit than any other country in the world; but this resource will lie in our hands useless and without effect unless now,

now, yet the whole of the present condition of international relations seems to point to “big business” in a collective way. It is for the keen and far-seeing individual to judge for himself how this new trend can be turned to account. And, having decided, it is for the exporting Canadian to enter on his work with a stout heart and unflinching courage, remembering only that the prize is always to the bold.

For the light is on the hills of peaceful trade. —
 “Gentlemen, it’s going to be a fine day.”

FOOD VALUES OF CANADIAN FISH.

A government analysis of the food values of certain Canadian fish has just been completed at Ottawa, and the Canadian Trade Commission believes that if the results were widely known there would be a much greater demand for the products of our waters rather than for the foreign brands of

VALEUR ALIMENTAIRE DU POISSON CANADIEN

L'analyse de la valeur alimentaire de certains poissons canadiens faite par le Gouvernement à Ottawa, vient d'être terminée, et la Commission du Commerce du Canada croit que, si les résultats en étaient bien connus, il y aurait une plus grande demande de produits de nos rivières, de préférence à ceux de marques étrangères

VALOR ALIMENTICIO DEL PESCADO CANADIENSE.

El Gobierno del Canadá acaba de completar en Ottawa un análisis del valor alimenticio de ciertas clases de pescado canadiense, y dicho análisis ha confirmado la creencia de la Comisión de Comercio Canadiense de que si los resultados de tal análisis fueran debidamente divulgados, la pesca de nuestras aguas tendría mucha mayor

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Commissaire des Pêcheries.
Comisionado de Pesquerias.

fish, which have merely a wider advertisement to recommend them. For instance, in four classes of the much "hoisted" Norwegian sprats and bristlings packed as sardines, the calories given are 1,314, 1,640, 1,633, and 1,174. Canadian little herrings, our equivalent fish, also packed as sardines, contained 1,832, 1,720, 1,459 and 1,795 calories respectively.

qui n'ont pour les recommander qu'un peu plus de réclame. Ainsi, des quatre classes d'éperlans norvégiens tant vantés et lesquels sont mis en conserves comme la sardine, les calories obtenues sont 1,314, 1,640, 1,633, et 1,174. Les petits harengs canadiens, notre poisson équivalent, lesquels sont aussi mis en boîtes, comme la sardine, contiennent 1,832, 1,720, 1,459 et 1,795 respectivement.

demanda que la de marcas extranjeras la cual debe su gran venta a la incesante propaganda sostenida por el anuncio.

Como comprobación citaremos cuatro clases de los muy "cacareados" boquerones noruegos, envasados como sardinas, los cuales arrojan un valor alimenticio que contiene 1,314, 1,640, 1,633 y 1,174 calorías respectivamente. Los arenques chicos canadienses, nuestra

The same revelation is made in the case of herring—the Canadian variety stands out for its better food value. The best known British brand, packed in tomato sauce, contains only 775 calories, as compared with four leading Canadian varieties of 890, 1,061, 1,081 and 1,024 calories.

The "calorie" it may be mentioned, is the recognized measure of nutriment in foods, just as the pound is for

La même découverte a été faite pour le hareng—l'espèce canadienne a la plus grande valeur alimentaire. La meilleure marque anglaise de poisson préparé à la sauce aux tomates ne contient que 775 calories, comparativement aux quatre espèces principales canadiennes lesquelles donnent 890, 1,061, 1,081 et 1,024 calories.

La calorie, devrions-nous dire, est la mesure reconnue pour la nourriture dans les aliments, ainsi que la livre l'est pour le poids, et la verge, pour la longueur. Plus la calorie est

pesca equivalente, también envasada como sardinas, contienen 1,832, 1,720, 1,459 y 1,795 calorías respectivamente.

La misma revelación se ha hecho en el caso del arenque corriente, donde la variedad canadiense se hace notar por su mayor valor alimenticio. La mejor marca inglesa de arenque preparado con tomate, contiene solamente 775 calorías mientras que cuatro de las mejores variedades canadienses arrojan 890, 1,061, 1,081 y 1,024 respectivamente.

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Superintendent Fish Section, Canadian Trade Commission.
Superintendant, Section du Poisson, Commission du Commerce Canadien.
Superintende, Sección de Pesca, Comisión de Comercio.



COLONEL F. J. CUNNINGHAM,
Chief Fishery Officer, Pacific Coast Fisheries.
Officier en Chef des Pêcheries des Côtes du Pacifique.
Oficial Jefe de Pesquerías, Costa del Pacífico.

weight, and the yard for length. The higher the calorie for the same price, the better the value of the food.

élevée pour le même prix, plus grande est la valeur de l'aliment.

No está demás mencionar que la "caloría" es la unidad adoptada para expresar el valor nutritivo de los alimentos, lo mismo que el kilogramo expresa el peso y el metro la longitud. El valor del alimento es mayor cuanto mayor es el número de calorías que contiene.

If you are not interested in this magazine, kindly confer a favour upon us by passing it on to someone who has not received one.

Suplicamos a cuantos no estén interesados en esta revista que la hagan llegar a manos de quien pueda estarlo.

Proposed Sailings From Canadian Ports

Subject to change without notice.

FROM MONTREAL.

Montreal to Liverpool.

Melita, C.P.O.S. Line, about August 29; Rimouski, White Star-Dominion Line, about August 31.

Montreal to London.

Cornish Point, C.P.O.S.-Furness Line (Furness) about Aug. 25; Tunisian, C.P.O.S. Line, about Aug. 28; War Peridot, C.P.O.S.-Furness Line (C.P.O.S.), about September 5; Mattawa, C.P.O.S.-Furness Line (C.P.O.S.), about September 6; Dunbridge, C.P.O.S.-Furness Line (C.P.O.S.), about September 10.

Montreal to Antwerp.

War Beryl, C.P.O.S.-Furness-Line (C.P.O.S.), about September 10.

Montreal to Glasgow.

Montealm, C.P.O.S. Line, about August 29; Cabotia, Cunard Line, about Sept. 2; Scotian, C.P.O.S. Line, about September 10.

Montreal to Avonmouth Dock (Bristol.)

Monmouth, C.P.O.S. Line, about August 28; Verentia, Cunard Line, about August 30; Pretorian, C.P.O.S. Line about August 30.

Montreal to Manchester.

Manchester Division, Manchester Liners, about August 30; Manchester Importer, Manchester Liners, about September 4; Manchester Mariner, Manchester Liners, about September 14.

Montreal to Belfast.

Milmore Head, Head Line, about August 31, Ballygally Head, Head Line, about August 28.

Montreal to St. Nazaire (France.)

Cape Corso, Can.-French Line, about August 25.

Montreal to Havre (France.)

Wisley-Canadian-Transatlantique Line, about August 30.

Montreal to Buenos Aires and MonteVido. . .

A Steamer, Houston Lines, about September 15.

Montreal to South Africa.

Cape Town, Port Elizabeth, East London, Durban and Delago Bay.

Benguela, Elder-Dempster Line, about August 25.

Montreal to Australasian Ports.

Melbourne, Sydney, Auckland, Wellington, Lyttleton and Dunedin (Port Chalmers.)

Wangaratta, New-Zealand Shipping Co., about August 23.

Montreal to Barbadoes and Trinidad.

Canadian Warrior, Can. Govt. Merchant Marine Ltd., about August 26; Canadian Reeruit, Can. Govt. Merchant Marine Ltd., about September 16.

Montreal to Kingston (Jamaica) and Havana (Cuba.)

Canadian Trader, Can. Govt. Merchant Marine, Ltd., about August 27; Canadian Sailor, Can. Govt. Merchant Marine, Ltd., about September 13.

FROM HALIFAX.

Halifax to Bermuda, St. Kitts, Antigua, Monsterrat, Dominica, St. Lucia, Barbadoes, St. Vincent, Grenada, Trinidad and Demerara.

Caraquet, Royal Mail Steam Packet Co., about September 5. Chaleur, Royal Mail Steam Packet Co., about September 19.

FROM VICTORIA.

Victoria to Yokohama, Kobe, Manila and Hong Kong.

Protesilaus, Blue Funnel Line, about August 29; Tyndareus, Blue Funnel Line, about September 29.

Victoria to United Kingdom Ports.

Orator, Harrison Direct Line, about August 22.

Victoria to Yokohama, Kobe, Moji, Manila, and Singapore.

Chicago Maru, Osaka Chosen Kaisha, about August 23.

Victoria to Yokohama, Kobe, Nagasaki, Manila and Singapore.

Arabia Maru, Osaka Chosen Kaisha, about August 30.

Victoria to Yokohama, Kobe, Nagasaki, Shanghai and Hong Kong.

Katori Maru, Nippon Yusen Kaisha, about September 2.

FROM VANCOUVER.

Vancouver to Fiji, Australia, and New Zealand.

Makura, Canadian Australasian Royal Mail Line, about September 6; Niagara, Canadian Australasian Royal Mail Line, about September 16.

Vancouver to Yokohama, Kobe, Nagasaki, Shanghai, Manila and Hong Kong.

Empress of Asia, C.P.O.S. Line, about September 4.

CORRESPONDENCE WITH SPANISH FIRMS.

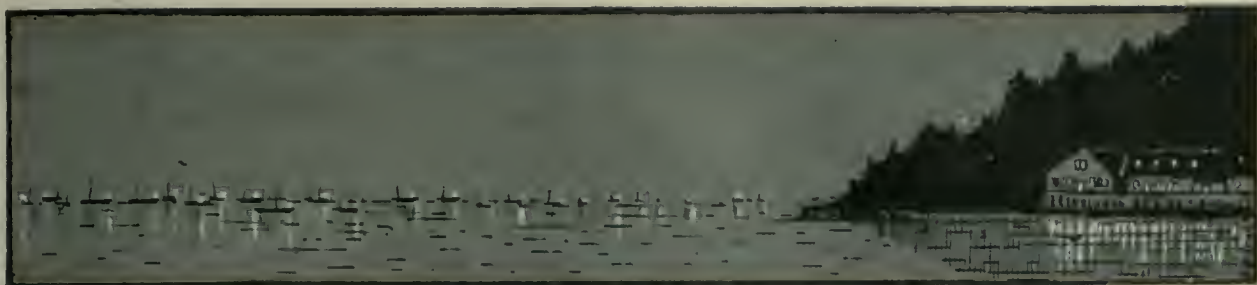
H.M. Commercial Secretary at Madrid still receives from Spanish firms the well-known complaint of past years that British firms refuse to quote c.i.f. prices in Spanish ports. One large and influential Spanish company which before the war had considerable relations with Germany, and is now endeavouring to trade with the United Kingdom, quotes the case of a British firm paying no attention to repeated requests for quotations c.i.f. Spanish port or even c.i.f. Gibraltar, prices being given f.o.b. Hull, which to the firm in question was useless.

The Spanish firm in question was even still more upset by the last paragraph of a letter which was worded as follows:—

“We shall be glad if in future you will correspond in English, French or German.”

This was interpreted by the firm to mean: “We hope you will be good enough to use any language in the world except Spanish.”

The Spanish firm would not in the least mind being asked to correspond in English, being the language of the writer of the letter, but is naturally offended if asked to use the language of a third nation, which is the language neither of the writer nor of the recipient. British firms would not hurt the feelings of Spaniards were they to ask them to correspond in English, if possible, but they do hurt their feelings when they ask them to correspond with them in French, German, etc. If British firms would endeavour to correspond in Spanish, even if it resulted in slight delay in the transmission of their post, it would certainly, in the long run, turn out to their material advantage.



PACIFIC CHUM OR "PALE" SALMON PACIFIQUE "CHUM" OU SAUMON ROSE PALE SALMON "CHUM" DEL PACIFICO SALMON ROSADO CLARO

The Pacific Chum Salmon, though not so well known as the Sockeye and Red Salmon, is nevertheless of high food value and of lower cost than the other celebrated grades.

The name "Chum" was a trade name adopted by Foster Bros., San Francisco, Cal., whose label bore a picture of two boys and the name "chums" above.

Food Value

Analysis in comparison with other fish shows that canned chum salmon has the highest protein constituent of any of the different varieties. This is shown by the following table which is the result of an analysis made by the United States Government:

	Water	Fats	Protel
Sockeye	62.44	15.17	20.25
Cohoe	69.97	7.81	20.40
Humpbacks (Pinks)	74.12	4.75	19.75
Chum Salmon ..	73.48	2.88	21.33

	Ash	Salt	gen.
Sockeye	2.50	0.79	.0403
Cohoe	2.58	1.09	.04965
Humpbacks (Pinks)	1.98	.50	.0404
Chum Salmon ..	2.57	.83	.0563

There is also shown in this analysis a very high comparison in food value in favor of the chum salmon when the cost of the canned chum is taken into consideration as compared with the high price of other varieties. Canned chum salmon is 100% cheaper than most red salmon on the market.

Color does not make nutriment or flavor in any fish. There has been an unwarranted prejudice against light colored salmon in many markets. When red meated salmon was first marketed there was a mistaken idea that the

Le Saumon Pacifique "chum" quelque pas aussi bien connu que le Sockeye et le saumon rouge, est néanmoins d'une haute valeur comme nourriture et coûte beaucoup moins cher que les autres grades célèbres.

Le nom "chum" est une marque de commerce adopté par les frères Foster, San Francisco, Calif., leur étiquette portant une image de deux garçons et le nom "chum" imprimé au haut.

Valeur de Nourriture. . . .

Les analyses en comparaison avec les autres poissons, montre que le saumon chum en conserve, a la plus haute protéine constituante d'aucune des différentes variétés. Ceci est démontré dans la table suivante, qui est le résultat d'une analyse faite par le Gouvernement Américain:—

	Eau.	Gras.	Protelne.
Sockeye	62.44	15.17	20.25
Cohoe	69.97	7.81	20.40
Humpbacks (rose)	74.12	4.75	19.75
Chum (saumon) ..	73.48	2.98	21.33

	Cent-	Nitro-
Sockeye	2.50	0.79
Cohoe	2.58	1.09
Humpbacks (rose)	1.98	.50
Chum (saumon) ..	2.57	.83

Cet analyse démontre aussi une haute comparaison en valeur de nourriture en faveur du saumon "chum", quand le coût du saumon chum en conserve est pris en considération, et comparé avec le prix des autres variétés. Le saumon "chum" en conserve est 100% moins dispendieux que la plupart des saumons rouges sur le marché.

La couleur ne produit aucun nutriment ou faveur, dans aucun poisson. Il y a eu faux préjudice contre le saumon de couleur pâle dans beaucoup de marchés. Quand le saumon a

Annque el Salmón "CHUM" del Pacifico no es tan conocido como el "SOCKEYE" o el (Rojo), no por eso es de menos valor alimenticio, y es más barato que las clases superiores.

El nombre "CHUM" es la marca adoptada por la firma "Foster Bros." de San Francisco de California, cuya firma usa una etiqueta en la que aparecen dos muchachos bajo el nombre de "CHUMS" (Camaradas).

Valor Alimenticio

Comparando el análisis de esta clase de salmón con el de otras variedades nos encontramos con que la clase "Chum" contiene mayor cantidad de proteína. La siguiente tabla especifica los resultados del análisis practicado por el Gobierno de los Estados Unidos de Norte America—

	Agua	Grasa	Protelna
Sockeye	62.44	15.17	20.25
Cohoe	69.97	7.81	20.40
Humpback (Rosado)	74.12	4.75	19.75
Salmón Chum .. .	73.48	2.88	21.33

	Centzas	Salas	genio
Sockeye	2.50	0.79	.0403
Cohoe	2.58	1.09	.04965
Humpback (Rosado)	1.98	.50	.0404
Salmón Chum .. .	2.57	.83	.0563

De este análisis también se desprende una interesante comparación del valor alimenticio, en favor del salmón chum, si se tiene en cuenta el precio de la conserva de este pescado en comparación con el de otras variedades. El precio del salmón Chum en conserva es un 100% más barato que la mayor parte del salmón rojo que se vende en nuestros mercados.

El color no influye para nada en el valor nutritivo ni en el gusto del pescado. En muchos mercados existe cierta prevención contra el salmón ligeramente colorado. Cuando el salmón

meat had been colored. As soon as this idea was disproved there was a great demand for red salmon.

The high cost of living would be materially reduced if the markets would use more canned chum salmon. It is good cheap meat and there will be no difficulty in supplying the demand.

In 1898 there were packed in the United States 43,584 cases of chum salmon. In 1906 in British Columbia 15,543 cases were packed and in 1918 2,218,606 cases were packed on the

vlande rouge fut mis sur le marché pour la première fois on eut une fausse idée que la viande avait été colorée. Aussitôt que cette idée fut prouvée fausse, il y eut une grande demande pour le saumon rouge.

Le coût élevé de la vie serait beaucoup réduit en matière, si les marchés faisaient usage de plus de saumon chum conservé.

C'est de la bonne viande peu dispendieuse et il y aurait aucune difficulté à produire la demande.

En 1898, dans les Etats-Unis, 43,584

de carne roja empezó a exportarse, la creencia general era de que el pescado se coloraba artificialmente, pero tan pronto como se desechó esta idea, se empezó a experimentar una gran demanda de esta clase de pescado.

Los excesivos precios que sufrimos hoy día se reducirían materialmente si los mercados importasen más cantidad de salmón Chum en lata. Se trata de una carne buena y barata para la que no hay dificultad en los abastecimientos aunque la demanda sea muy crecida.



A British Columbia Salmon Cannery. Une Conserverie du Saumon de la Colombie Anglaise. Fábrica de Conservas de Salmón, Colombia Inglesa.

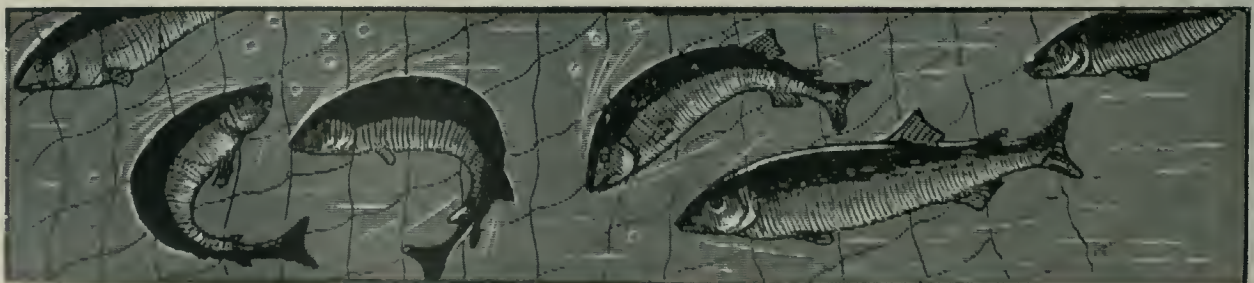
Pacific Coast of which 497,605 cases came from British Columbia. Out of this pack of 497,605 cases, 300,000 were left in the hands of the packers owing to their being no market for them, due to lack of transportation and the inability of the Dominion Government to arrange for their disposal to other allied Governments.

caisses de saumon "chum" furent pactés. En 1906, à la Colombie Anglaise, 15,543 caisses furent pactées, et en 1918, 2,218,606 caisses furent pactés sur la Côte du Pacifique, desquelles 497,605 caisses vinrent de la Colombie Anglaise.

Hors du pactage de 497,605 caisses 300,000 restèrent dans les mains des pacteurs, faute de leur trouver un marché due au manque de transportation et l'incapacité du Gouvernement du Dominion d'arranger pour les disposer aux autres Gouvernements Alliés.

En 1898 se envasaron en los Estados Unidos 43,584 cajas de salmón "chum". En 1906, la Colombia Inglesa solamente envasó 15,543 cajas y en 1918 se envasaron 2,218,606 cajas en la Costa del Pacífico, de las cuales 479,605 se envasaron en la Colombia Inglesa. De las 497,605 cajas quedaron en manos de los fabricantes 300,000 debido a la falta de mercado para colocarlas, a causa de los medios de transportes y a la imposibilidad del Gobierno del Canadá para colocarlas con otros Gobiernos de las naciones aliadas.

Se remitirán tres ediciones de esta revista, las cuales rogamos se conserven.





DIRECTORY OF CANADIAN EXPORTERS OF FISH PRODUCTS

ADRESSE DES EXPORTATEURS CANADIENS DE PRODUITS DE LA PECHE

DIRECTORIO DE LOS EXPORTADORES CANADIENSES DE PRODUCTOS PESQUEROS



Importers of Fish and Fish Products will find the following Directory of Canadian Fish Exporters a useful reference. The list will be revised and added to in the two succeeding numbers of the CANADIAN FISHERMAN EXPORT EDITION. The initials N.S., N.B., Que., etc., refer to the Provinces in which the firms are located. These Provinces are:—

British Columbia — abbreviated "B.C."

Alberta—abbreviated "Alb."

Saskatchewan — abbreviated "Sask."

Manitoba—abbreviated "Man."

Ontario—abbreviated "Ont."

Quebec—abbreviated "Que."

New Brunswick — abbreviated "N.B."

Nova Scotia — abbreviated "N.S."

Prince Edward Island—abbreviated "P.E.I."

Shipping Ports in Canada.

For overseas shipment on the Pacific, the port of VANCOUVER, B.C., has direct connections with Japan, China, Straits Settlements, New Zealand and Australia. Shipments can be made to any part of the world via United States Pacific ports, or by rail across Canada to Canadian and United States Atlantic ports.

For overseas shipment on the Atlantic, the port of MONTREAL is open from May to December with direct steamship connections to Great Britain, Europe, South Africa, South America, Australia and New Zealand. HALIFAX and ST. JOHN, N.B., are open all the year. When the port of Montreal is closed, the regular Canadian lines sail from Halifax and St. John. Direct connections with

Les Importateurs de Poissons et les Produits du Poisson pourront référer utilement à la liste des Exportateurs Canadiens de Poisson. Cette liste sera révisée et complétée dans les deux prochains numéros de l'Édition d'Exportation du Canadian Fisherman. Les initiales N. S., N. B., Qué., etc., se rapportent aux provinces dans lesquelles les maisons sont situées. Ces provinces sont:—

Colombie Anglaise — abrégée "B. C."

Alberta—abrégée "Alb."

Saskatchewan — abrégée "Sask."

Manitoba — abrégée "Man."

Ontario—abrégée "Ont."

Québec—abrégée "Qué."

Nouveau-Brunswick — abrégée "N. B."

Nouvelle-Ecosse — abrégée "N.S."

Ile du Prince Edouard—abrégée "P. E. I."

Ports d'Expédition du Canada

Pour les expéditions outre-mer sur le Pacifique Canadien, le port de Vancouver, B. C., est en relations directes avec le Japon, la Chine, les "Straits Settlements", la Nouvelle Zélande et l'Australie. Les envois peuvent être faits à n'importe quelle partie du monde via les ports des Etats-Unis sur le Pacifique, ou par chemin de fer traversant le Canada aux ports Canadiens et Américains sur l'Atlantique.

Pour les envois outre-mer sur l'Atlantique, le port de Montréal est ouvert de Mai à Décembre avec des services de navires directs pour la Grande Bretagne, l'Europe, le Sud-Africain, l'Amérique du Sud, l'Australie et la Nouvelle Zélande. Les ports d'Halifax et de St. Jean, N. B., sont ouverts toute l'année. Lorsque le port de Montréal est fer-

Los importadores de pescado y de productos pesqueros encontrarán de gran utilidad este directorio. La lista se revisará y aumentará en los dos números siguientes de la edición de exportación del "Pescador Canadiense." Las iniciales N. S., N. B., Que., etc., se refieren a las provincias en que están localizadas las firmas. Estas provincias son las de, British Colombia, abreviado "B. C." (en español, Colombia Inglesa, abreviado, "C. I.").

Alberta, abreviado, "Alb."
Saskatchewan, abreviado, "Sask."

Manitoba, abreviado, "Man."

Ontario, abreviado, "Ont."

Quebec, abreviado, "Que."

New Brunswick, abreviado, "N.B." (en español Nueva Brunswick.)

Nova Scotia abreviado "N.S." (en español Nueva Escocia "N. E.")

Prince Edward Island, abreviado, "P. E. I." (en español Isla de Príncipe Eduardo, "I. P. E.")

Puertos de embarques del Canadá

Para los embarques a ultramar por el Pacífico, el puerto de Vancouver, C. I., establece comunicación directa con el Japón, la China, el Estrecho de la Sonda, Nueva Zelanda y Australia. Los embarques pueden hacerse a cualquier parte del mundo, via Estados Unidos por los puertos del Pacífico, o por ferrocarril a través del Canadá a puertos canadienses y americanos del Atlántico.

Para embarques a ultramar por los puertos del Atlántico, el puerto de Montreal está abierto desde Mayo a Diciembre con conexiones directas de vapores a Europa, Africa del Sud, Sud-América, Australia y Nueva Zelanda. El puerto de Halifax, y

Great Britain, Europe, the West Indies and South America is maintained from these ports throughout the year. Direct shipments can also be made through New York, Boston, Portland, and Philadelphia.

Canadian Fish Weights.

The unit used in weighing fish in Canada is the pound of 16 ounces (written "lb." and "oz.") The kilogramme is equal to 2.2 pounds. A hundredweight (written "cwt.") is 100 pounds. A quintal of dried fish is 112 lbs.

Coinage.

Canadian coinage is the DOLLAR of 100 cents (written \$ and c.), and is the same value and denomination as that of the United States. The cent is equal to one-halfpenny British, and the Canadian dollar is approximately equal to four shillings and two pence British.

Banks.

Canada is well served with a number of responsible Banking institutions. The Bank of Montreal, Bank of Commerce, Royal Bank, Bank of Nova Scotia, Bank of Toronto, etc., have branches and correspondents throughout the world.

mé, les lignes régulières canadiennes partent d'Halifax et de St. Jean. Des services directs avec la Grande Bretagne, l'Europe, les Indes Orientales et l'Amérique du Sud sont en vigueur toute l'année de ces ports. Des envoies directs peuvent être faits par New York, Boston, Portland et Philadelphie.

Les Poids Canadiens pour le Poisson

L'unité employée pour peser le poisson au Canada est la livre de 16 onces (abréviation "lb." et "oz.") Le kilogramme équivaut à 2.2 livres. Un quintal (abréviation "cwt.") est de 100 livres. Un quintal de poisson séché est de 112 livres.

Monnaie

L'unité en monnaie canadienne est le Dollar de 100 sous (abrévés \$ et c.) et à la même valeur et denomination comme aux Etats-Unis. Le sou ou centin équivaut à demi penny anglais, et le dollar canadien est égal approximativement à quatre shillings et deux pence anglais.

Banques

Le Canada est bien déservi par un certain nombre d'institutions bancaires responsables. La Banque de Montréal, la Banque du Commerce, la Banque Royale, la Banque de Nouvelle Ecosse, la Banque de Toronto, etc., ont des succursales et des correspondants dans le monde entier.

el de San Juan de Nueva Brunswick están abiertos todo el año. Cuando el puerto de Montreal se cierra las líneas regulares canadienses salen de Halifax y de San Juan. Desde estos puertos se mantiene comunicación directa todo el año con Europa, las Antillas y Sud América. También se pueden hacer embarques directos por Nueva York, Boston, Portland y Filadelfia.

Peso de la Pesca Canadiense

La unidad de peso para pescado en el Canadá es la libra de 16 onzas (expresada "lb." y "oz."). El kilo equivale a 2 y 1-5 libras. El "hundredweight" abreviado, "cwt." (en español, quintal, abreviado "qtl") tiene 100 libras. Un quintal de pescado seco pesa 112 libras.

Moneda

La moneda canadiense y la Americana es el dollar de 100 centavos (expresado "\$" y "c."). El centavo equivale a a medio penique inglés y el dollar canadiense es casi igual a 4 chelines y dos peniques.

Bancos

El Canadá está perfectamente servido con gran número de instituciones bancarias, entre las cuales se cuentan el Banco de Montreal, Banco del Comercio, el Royal Bank, el Banco de Nueva Escocia y el Banco de Toronto, con sucursales y correspondientes en todo el mundo.

CANNED FISH - POISSON EN CONSERVE - PESCADO EN LATAS

Canned Salmon (Pacific) of all Varieties.

Saumon en Conserve (Pacifique) de Toutes Les Variétés.

Salmón en lata (Pacífico) de todas clases.

Gosse-Millerd Packing Co., Ltd., Vancouver, B.C.

Anderson & Miskin, Vancouver, B.C.

O'Loane, Kiely & Co., Ltd. Vancouver, B.C.

Wallace Fisheries, Ltd., Vancouver, B.C.

Everett Packing Co., Everett, Wash., U.S.A.

W. A. Ward & Co., Vancouver, B.C.

D. Connor, Vancouver, B.C.

Canadian Fishing Co., Ltd., Vancouver, B.C.

Canadian Fish & Cold Storage Co., Ltd., Prince Rupert,

Sidney Canning Co., Ltd., Vancouver, B.C.

Maritime Fisheries, Ltd., Vancouver, B.C.

B. C. Packers Association, Ltd., Vancouver, B. C.

J. H. Todd & Sons, Victoria, B.C.

H. Bell-Irving & Co., Ltd., Vancouver, B.C.

M. Desbrisay & Co., Vancouver, B.C.

Western Packers, Ltd., Vancouver, B.C.

Cassiar Canning Co., Ltd., Vancouver, B.C.

Rivers Inlet Canning Co., Vancouver, B.C.

R. V. Winch & Co., Vancouver, B.C.

Anglo-British Columbia Packing Co., Ltd., Vancouver, B.C.

British Columbia Canning Co., Ltd., Victoria, B.C.

Kildala Packing Co., Ltd., Vancouver, B.C.

St. Mungo Canning Co., New Westminster, B.C.

Levesons, Ltd., Vancouver, B.C.

Defiance Packing Co., Ltd., Vancouver, B.C.

Gulf of Georgia Canning Co., Steveston, B.C.

Evans, Coleman & Evans, Ltd., Vancouver, B.C.

F. Griffin & Co., Vancouver, B.C.

Glen Rose Canning Co., Ltd., Vancouver, B.C.

Great West Packing Co., Ltd., Vancouver, B.C.

C. L. Packing Co., Ltd., Vancouver, B.C.

Eagle Harbor Packing Co., Ltd., Vancouver, B.C.

Liverpool Canning Co., Ltd., Vancouver, B.C.

Skeena River Commercial Co., Ltd., Vancouver, B.C.

Port Edward Fisheries, Ltd., Vancouver, B.C.

McTavish Fisheries, Ltd., Vancouver, B.C.

Provincial Canning Co., Ltd., Vancouver, B.C.

Kincolith Fisheries, Ltd., Vancouver, B.C.

Western Salmon Packers, Ltd., Vancouver, B.C.

Portland Fisheries, Ltd., Vancouver, B.C.

Quathiaski Canning Co., Ltd., Vancouver, B.C.
 Draney Fisheries, Ltd., Vancouver, B.C.
 Preston Packing Co., Ltd., Vancouver, B.C.
 Clayoquot Sound Canning Co., Ltd., Vancouver, B.C.
 Nanaimo Canning & Packing Co., Ltd., Nanaimo, B.C.
 Redondo Canning & Cold Storage Co., Vancouver, B.C.
 Lummi Bay Packing Co., Ltd., Vancouver, B.C.
 Gulf Islands Packing & Canning Co., Ltd., Vancouver,
 B.C.
 Nootka Packing Co., Ltd., Vancouver, B.C.
 Puntledge Canning Co., Ltd., Vancouver, B.C.
 Kimsquit Fisheries, Ltd., Vancouver, B.C.
 Tallheo Fisheries, Ltd., Vancouver, B.C.
 Loekport Canning Co., Ltd., Vancouver, B.C.

Canned Salmon (Atlantic).

Saumon en Conserve (Atlantique).

Salmón en lata (Atlántico).

A. & R. Loggie, Ltd., Loggieville, N.B.
 W. S. Loggie & Co., Chatham, N.B.
 Dominion Fisheries, Ltd., Halifax, N.S.

Canned Lobsters.

Homard en Conserve.

Langosta en lata.

Neville Canneries, Ltd., Halifax, N.S.
 Banks, Ltd., Halifax, N.S.
 Roberts, Simpson & Co., Ltd., Halifax, N.S.
 Portland Packing Co., Charlottetown, P.E.I.
 J. W. Windsor, Montreal, Que.
 Fred Magee, Port Elgin, N.B.
 W. S. Loggie & Co., Ltd., Chatham, N.B.
 A. & R. Loggie, Ltd., Loggieville, N.B.
 Dominion Fisheries, Ltd., Halifax, N.S.
 R. O'Leary, Richibucto, N.B.
 Scotia Fisheries, Ltd., Halifax, N.S.
 O'Leary & Lee, Halifax, N.S.
 Tignish Packing Co., Tignish, P.E.I.
 Maritime Packers, Ltd., Montreal, Que.
 Matthews & McLean, Souris, P.E.I.
 Peerless Packers, Ltd., Halifax, N.S.
 E. F. Hart & Co., Ltd., Halifax, N.S.
 Edw. Chiasson & Sons, Etang du Nord, M.I., Que.
 C. H. Mitton, Port Elgin, N.B.
 R. J. Leslie Co., Ltd., Amherst Harbor, M.I., Que.
 A. MacInnes, Wallace Ridge, N.S.
 Herbert Journeaux, Port Daniel Centre, Que.

Canned Canadian Sardines (Atlantic).

Sardines Canadiennes en Conserve (Atlantique).

Sardinas Canadienses en lata (Atlántico).

Connors Bros., Ltd., Blacks Harbor, N.B.
 Booth Fisheries Company of Canada, Ltd., Toronto,
 Ont.

Canned Sea Trout.

Truite de Mer en Conserve.

Trucha de Mar en lata.

Gosse-Millerd Packing Co., Ltd., Vancouver, B.C.

Canned Herring (Atlantic).

Hareng en Conserve (Atlantique).

Arenques en lata (Atlántico).

Connors Bros., Ltd., Blacks Harbor, N.B.
 Booth Fisheries Company of Canada, Ltd., Toronto,
 Ont.
 Neville Canneries, Ltd., Halifax, N.S.
 J. S. Wells, Whitehaven, N.S.

Canned Herring (Pacific).

Hareng en Conserve (Pacifique).

Arenques en lata (Pacífico).

Wallace Fisheries, Ltd., Vancouver, B.C.
 Canadian Fishing Co., Ltd., Vancouver, B.C.
 W. A. Ward & Co., Vancouver, B.C.
 O'Loane, Kiely & Co., Ltd., Vancouver, B.C.
 D. Connor, Vancouver, B.C.
 Gosse-Millerd Packing Co., Ltd., Vancouver, B.C.
 Anderson & Miskin, Vancouver, B.C.
 Levesons, Ltd., Vancouver, B.C.

Canned Pilchards (Pacific).

Pilchards en Conserve (Pacifique).

Sardinas arenques en lata (Pacífico).

Wallace Fisheries, Ltd., Vancouver, B.C.
 Canadian Fishing Co., Ltd., Vancouver, B.C.
 W. A. Ward & Co., Vancouver, B.C.
 O'Loane, Kiely & Co., Ltd., Vancouver, B.C.
 Anderson & Miskin, Vancouver, B.C.
 Everett Packing Co., Everett, Wash., U.S.A.
 Levesons, Ltd., Vancouver, B.C.

Canned Chicken Haddie (Atlantic).

Merluza sin espina, cocida, en lata (Atlántico).

Maritime Fish Corporation, Ltd., Montreal, Que.

Canned Cod, Haddock, Mackerel (Atlantic).

Morue, Aiglefin, Maquereau, en Conserve (Atlantique).

Bacalao, Merluza y Macarela en lata (Atlántico).

Maritime Fish Corporation, Ltd., Montreal, Que.
 Connors Bros., Ltd., Blacks Harbor, N.B.
 W. S. Loggie & Co., Ltd., Chatham, N.B.
 A. P. Tippet & Co., Montreal, Que.
 Dominion Fisheries, Ltd., Halifax, N.S.
 J. S. Wells, Whitehaven, N.S.
 National Fish Co., Ltd., Halifax, N.S.
 Neville Canneries, Ltd., Halifax, N.S.

Canned Clams (Pacific and Atlantic).

Clams en Conserve (Pacifique et Atlantique).

Almejas en lata (Pacífico and Atlántico).

Connors Bros., Blacks Harbor, N.B.
 O'Loane, Kiely & Co., Ltd., Vancouver, B.C.

Canned Whale Meat.

La Viande de Baleine en Conserve.

Carne de Ballena en lata.

Consolidated Whaling Corporation, Ltd., Victoria, B.C.

**DRIED SALT &
PICKLED FISH****POISSON SECHE,
SALE ET EN SAUMURE****PESCADO SECO, SALADO
Y EN SALMUERA**

*Dry Salt and Pickled Cod, Haddock, Hake, Pollock,
Cusk (Atlantic).*

*Morue, Aiglefin, Merluche, Merlan, Cusk, Sèche, Sale
et en Saumure (Atlantique).*

*Bacalao, Merluza, Merlango, Cusk, Seco
Salado y en Salmuera (Atlántico).*

Robin, Jones & Whitman, Ltd., Halifax, N.S.

H. R. Silver, Ltd., Halifax, N.S.

Farquhar & Co., Ltd., Halifax, N.S.

A. M. Smith & Co., Ltd., Halifax, N.S.

A. N. Whitman, Ltd., Halifax, N.S.

Dominion Fisheries, Ltd., Halifax, N.S.

National Fish Co., Ltd., Halifax, N.S.

Maritime Fish Corporation, Ltd., Montreal, Que.

Leonard Fisheries, Ltd., Montreal, Que.

Lockeport Cold Storage Co., Ltd., Lockeport, N.S.

Canadian-American Fisheries, Ltd., Liverpool, N.S.

A. & R. Loggie, Ltd., Loggieville, N.B.

W. S. Loggie & Co., Chatham, N.B.

Yarmouth Fish Co., Yarmouth, N.S.

Gardiner & Doon, St. Andrews, N.B.

Zwicker & Co., Lunenburg, N.S.

Neville Canneries, Ltd., Halifax, N.S.

Matthews & Scott, Queensport, N.S.

Longmire Bros., Hillsburn, N.S.

A. W. Fader, Canso, N.S.

W. & C. H. Mitchell, Ltd., Halifax, N.S.

F. W. Bissett & Co., Ltd., Halifax, N.S.

Le Marquand & Sons, Newport, Gaspé, Que.

R. J. Leslie & Co., Ltd., Amherst Harbor, M.I., Que.

L. Hecht, Douglstown, Que.

E. Chiasson & Sons, Etang du Nord, M.I., Que.

Banks, Ltd., Halifax, N.S.

D. Hatton Co., Montréal.

McCormack & Zatzman, St. John, N. B.

Dry Salt and Pickled Pacific and Ling.

Morue et Ling Pacifique, Sèche, Salé et en Saumure.

*Pescado, Bacalao, Seco Salado y en Salmuera del
Pacífico.*

Canadian Fish & Cold Storage Co., Ltd., Prince Rupert,
B.C.

Canadian Fishing Co., Ltd., Vancouver, B.C.

B. C. Packers Association, Ltd., Steveston, B.C.

Western Packers, Ltd., Vancouver, B.C.

Pickled Herring and Mackrel (Atlantic).

Hareng et Maquereau en Saumure (Atlantique).

Arenques y Macarela en Salmuera (Atlántico).

Robin, Jones & Whitman, Ltd., Halifax, N.S.

Farquhar & Co., Ltd., Halifax, N.S.

Leonard Fisheries, Ltd., Montreal, Que.

National Fish Co., Ltd., Halifax, N.S.

Maritime Fish Corporation, Ltd., Montreal, Que.

H. R. Silver, Ltd., Halifax, N.S.

Dominion Fisheries, Ltd., Halifax, N.S.

Lockeport Cold Storage Co., Ltd., Lockeport, N.S.

Canadian-American Fisheries, Ltd., Liverpool, N.S.

Matthews & McLean, Souris, P.E.I.

A. & R. Loggie, Ltd., Loggieville, N.B.

W. S. Loggie & Co., Ltd., Chatham, N.B.

H. W. Moulton Co., Ltd., North Sydney, N.S.

Cleo Arsenan, House Harbor, M.I., Que.

Neville Canneries, Ltd., Halifax, N.S.

McCormack & Zatzman, St. John, N. B.

Pickled Herring (Pacific).

Hareng en Saumure (Pacifique).

Arenques en Salmuera (Pacífico).

Watson Bros., Vancouver, B.C.

Canadian Fishing Co., Ltd., Vancouver, B.C.

Wallace Fisheries, Ltd., Vancouver, B.C.

F. J. Hayward, Vancouver, B.C.

Butterfield, Mackie & Co., Vancouver, B.C.

Maritime Fisheries, Ltd., Vancouver, B.S.

O'Loane, Kiely & Co., Ltd., Vancouver, B.C.

Canadian Fish & Cold Storage Co., Ltd., Prince Rupert,
B.C.

Pickled Salmon (Pacific).

Saumon en Saumure (Pacifique).

Salmón en Salmuera (Pacífico).

Canadian Fishing Co., Ltd., Vancouver, B.C.

Wallace Fisheries, Ltd., Vancouver, B.C.

B. C. Packers' Association, Ltd., Vancouver, B.C.

Gosse-Millerd Packing Co., Ltd., Vancouver, B.C.

Canadian Fish & Cold Storage Co., Ltd., Prince Rupert,
B.C.

FROZEN FISH**POISSON GELE****PESCADO CONGELADO**

Salmon (Pacific).

Saumon (Pacifique).

Salmón (Pacífica).

B.C. Packers Association, Ltd., Vancouver, B.C.

Wallace Fisheries, Ltd., Vancouver, B.C.

Canadian Fishing Co., Ltd., Vancouver, B.C.

Canadian Fish & Cold Storage Co., Ltd., Prince Rupert,
B.C.

Gosse-Millerd Packing Co., Ltd., Vancouver, B.C.

Western Packers, Ltd., Vancouver, B.C.

Le

Halibut (Pacific).

Flétan (Pacifique).

Mero (Pacífico).

Canadian Fishing Co., Ltd., Vancouver, B.C.

B. C. Packers Association, Ltd., Vancouver, B.C.

Gosse-Millerd Packing Co., Ltd., Vancouver, B.C.

Canadian Fish & Cold Storage Co., Ltd., Prince Rupert,
B.C.

*Flounders, Soles, Brill, Skate, Cod (Pacific).
Plie ou Carrelet, Raie, Morue (Pacifique).
Lenguados, Soles, Rodaballo, Rayas, Bacalao
(Pacífico).*

Canadian Fish & Cold Storage Co., Ltd., Prince Rupert, B.C.

Canadian Fishing Co., Ltd., Vancouver, B.C.

B. C. Packers Association, Ltd., Vancouver, B.C.

Salmon (Atlantic).

Saumon (Atlantique).

Salmón (Atlántico).

A. & R. Loggie, Ltd., Loggieville, N.B.

W. S. Loggie & Co., Ltd., Chatham, N.B.

Leonard Fisheries, Ltd., Montreal, Que.

Dominion Fish & Fruit Co., Ltd., Quebec, Que.

D. Hatton Co., Montreal.

*Cod, Haddock, Halibut, Skate, Mackerel, Herring
(Atlantic).*

*Morue, Aiglefin, Flétun, Raie, Maquereau, Hareng
(Atlantique).*

*Bacalao, Merluza, Mero, Rayas, Macarela, Arenques
(Atlántico).*

Maritime Fish Corporation, Ltd., Montreal, Que.

Leonard Fisheries, Ltd., Montreal, Que.

National Fish Co., Ltd., Halifax, N.S.

A. & R. Loggie, Ltd., Loggieville, N.B.

Loekeport Cold Storage Co., Ltd., Loekport, N.S.

Canadian-American Fisheries, Ltd., Liverpool, N.S.

W. S. Loggie & Co., Chatham, N.B.

SMOKED FISH

POISSON FUME

PESCADO AHUMADO

Smoked Haddock (Finnan Haddie) Atlantique.

Aiglefin Fume (Finnan Haddie) Atlantique.

Merluza Ahumada (estilo "Finnan") Atlantico.

Maritime Fish Corporation, Ltd., Montreal, Que.

Leonard Fisheries, Ltd., Montreal, Que.

National Fish Co., Ltd., Halifax, N.S.

A. & R. Loggie, Ltd., Loggieville, N.B.

W. S. Loggie & Co., Ltd., Chatham, N.B.

Gardiner & Doon, St. Andrews, N.B.

Matthews & Scott, Queensport, N.S.

Loekeport Cold Storage Co., Ltd., Loekport, N.S.

Canadian-American Fisheries, Ltd., Liverpool, N.S.

*Smoked Herring (Kippers, Bloaters, Bone-less)
Atlantic.*

*Hareng Fumé (Kippers, Bloaters, "Sans os")
Atlantique.*

*Arenques Ahumados ("Kippers," "Bloaters," Sin
Espina) Atlantico.*

National Fish Co., Ltd., Halifax, N.S.

C. H. Mitton, Port Elgin, N.B.

Leonard Fisheries, Ltd., Montreal, Que.

Maritime Fish Corporation, Ltd., Montreal, Que.

Gardiner & Doon, St. Andrews, N.B.

Grand Manan Fish Co., North Head, Grand Manan,
N.B.

Canadian-American Fisheries, Ltd., Liverpool, N.S.

Loekeport Cold Storage Co., Ltd., Loekport, N.B.

Booth Fisheries Co., of Canada, Ltd., Toronto, Ont.

A. & R. Loggie, Ltd., Loggieville, N.B.

W. S. Loggie & Co., Ltd., Chatham, N.B.

R. J. Leslie & Co., Ltd., Amherst Harbor, M.I., Que.

McCormack & Zatzman, St. John, N. B.

Smoked Cod and Herrings (Pacific).

Morue et Hareng Fumé (Pacifique).

Bacalao y Arenques Ahumados (Pacífico).

Watson Bros., Vancouver, B.C.

Canadian Fishing Co., Ltd., Vancouver, B.C.

Canadian Fish & Cold Storage Co., Ltd., Prince Rupert,
B.C.

D. Hatton Co., Montreal.

FRESH WATER LAKE AND RIVER FISH PRODUCTS LES PRODUITS DES EAUX FRAICHES DE RIVIERE ET DE LAC PRODUCTOS PESQUEROS DE LAGOS Y RIOS DE AGUA DULCE

Western Canada Whitefish, Pickerel, Lake Trout.

Jack-Fish (Pike), Mulletts, Sturgeon.

*Poisson Blanc, Doré, Truite, Brochet, Mulet, Esturgeon
du Canada Ouest.*

*Albur, Lucio, Trucha de Lago, Esturión, Mujol, Barbos,
etc., del Oeste Canadiense.*

Northern Fish Company, Ltd., Selkirk, Man.

Armstrong Independent Fisheries, Ltd., Portage la
Prairie, Man.

W. J. Guest Fish Co., Ltd., Winnipeg, Man.

Booth Fisheries of Canada, Ltd., Toronto, Ont.

Athabasca Fish Co., Edmonton, Alberta.

Big River Consolidated Fisheries, Big River, Sask.

W. S. Campbell, Edmonton, Alberta.

Lake Superior Whitefish, Trout, Herring, Etc.

Poisson Blanc, Truite, Hareng du Lac Supérieure.

Albur, Trucha, Arenques, etc., del Lago Superior.

J. Bowman & Sons, Port Arthur, Ont.

Thomas Craigie, Fort William, Ont.

Lake Erie Whitefish, Herring, Pickerel, Etc.

Poisson Blanc, Hareng, Doré, etc., du Lac Erie.

Albur, Arenques, Lucio, etc., del Lago Erie.

Northern Fish Co., Kingsville, Ont.

Crewe Bros., Merlin, Ont.

B. J. Westcott, Kingsville, Ont.

William Bates, Ridgetown, Ont.

N. S. Cornell, Port Stanley, Ont.

Producer's Fish Co., Port Stanley, Ont.

Davis & Van Order, Port Burwell, Ont.

Port Dover Fish Co., Port Dover, Ont.

W. F. Kolbe & Co., Port Dover, Ont.

R. J. Goodison, Cedar Springs, Ont.



An Investigation Into the Question of Early Putrefaction of Eviscerated Fish in Which the Gills Have Been Left.

By LOUIS GROSS, M.D.

(Report No. 6 Hon. Advisory Council for Scientific Industrial Research.)

It is claimed by many fish dealers that eviscerated fish in which the gills have not been taken out putrefy more rapidly than those in which the gills are removed.

In order to determine whether there is a real foundation for this belief, several specimens of pollock and hake were eviscerated; in some the gills were allowed to remain, in others they were removed.

These fish were then exposed to the air in a fairly warm room.

The removed gills were also exposed to the air.

In forty-eight hours a strongly putrefactive odor came from the fish. This appeared to be somewhat more marked from the fish in which the gills were left.

The removed gills which were exposed to the air had dried and showed no evidence of putrefaction.

It seemed, therefore, that the moist gills left in the fish were the seat of fairly active putrefaction.

It remained now to determine the reason for this active putrefaction of eviscerated fish in which the gills are left.

An investigation into the method of eviscerating fish by the fishermen showed that the viscera are often carelessly removed by hand, the intestinal contents are smeared over the gills and the fish left for hours without proper cleaning before the dealers receive them.

The question whether the native flora of the gills is more extensive putrefaction of the gills due to the fact rest of the fish became unimportant, because the methods of the fishermen quickly insured a rich contamination of every part of the fish with diverse flora.

The problem seemed then to resolve itself into a question of culture medium.

Since every part of the fish was abundantly inoculated with similar bacteria, was the earlier and more extensive putrefaction of the gills due to the fact that gills form unusually good culture medium for the bacteria? Was it due to the fact that the bloodiness of the gills was conducive to more rapid growth?

To determine this, three sets of media were made:*

- (a) Fish meat medium (agar and broth.)
- (b) Gill medium (agar and broth.)
- (c) Blood medium (agar and broth.)

The following was the method of preparation:

500 gms. of minced fish meat was placed in a pot 500 cc. of distilled water in which was dissolved 26.5 gms. of sodium chloride, 0.75 gms. of potassium chloride and 3.25 gms. of magnesium chloride, were added to the minced fish meat. The whole was placed in a water bath and gently heated to 40°C for about

20 minutes. The temperature was now suddenly raised to boiling and kept thus for 10 minutes.

This mixture was next strained through butter muslin. Five grams of peptone were now stirred into the fish water and the whole heated at 100°C. for twenty minutes.

The mixture was again filtered and made up to the original 500 cc.

250 cc. of this medium was diluted with an equal volume of distilled water and tubed as fish meat broth.

To the other 250 cc., 4 gms. of agar were added and the mass tubed as fish meat agar for plating.

Another set of media was made in the same way with the exception that minced fish gills were substituted for fish meat. This constituted gill broth and gill agar.

Finally, another set of media in which fish blood was used instead of fish meat constituted blood broth and blood agar.

Thus the three sets of media were prepared in exactly the same way and different from one another only in the fact that in the first, fish meat was used; in the second, fish gills (together with their blood); in the third set, fish blood. (Haddock was used in the preparation of these media.)

As the same quantities of ingredients were used in each set it was thought reasonable to suppose that the relative cultural values of the various media would resemble those of these tissues in their native state.

Four strains of bacteria in pure culture from different parts of fish were obtained from Miss Eleanor Shanly. These we shall call for convenience sake A, B, C and D.*

In order to compare the relative cultural values of the media each set was plated with the four strains of bacteria. In each case the dilutions were made on the broth of the set. Thus A was diluted in fish meat broth and plated in fish meat agar. Similarly with B, C and D.

Next, bacterium A was diluted in gill broth and plated in gill agar. This was also done with B, C and D.*

It was then repeated with blood, broth and agar.

The object of plating was to compare the rate of growth of colonies originating from single bacteria in the different media.

Since the technique in plating was carried out with the greatest care, since four different bacteria were

*The method is described in Eyre's Bacteriological Technique, W. B. Saunders Co. 1916, p. 190.

used, and as the whole experimnt was done in dupli-
cate, it was felt that the rate of appearance of colonies
on the plate as well as the size and number of these
colonies could be safely interpreted as showing the

relative values of the media for cultural purposes.
The observations on the first series of plates after
seventy-two hours of cultivation at room temperature
are recorded in table A.

Table A.

Bacterium.	Fish Meat.	Gill.	Blood.
A	Numerous colonies. Medium size.	Numerous colonies. Medium size.	Numerous colonies. Medium size.
B	Very few colonies. Small size.	Large number of colonies. Medium size.	Large number of colonies. Medium size.
C	No visible growth.	Very numerous colonies. Medium size.	Large number of colonies. Medium size. Diffuse.
D	No visible growth.	No visible growth.	Fair number of colonies. Medium size.

*See Miss Shanly's report on the intestinal flora of the Sardine Herring, for 1919.
A corresponds to Miss Shanly's 1 gill. C corresponds to Miss Shanly's P. I. Liver.
B corresponds to Miss Shanly's P. I. Intestine. D corresponds to Miss Shanly's P. I. Stomach.

Table B.

Table B represents the results of a duplicate series of plates, i.e., using the same bacteria
and the same media.

Bacterium.	Fish Meat.	Gill.	Blood.
A	Numerous colonies. Medium size.	Numerous colonies. Medium size.	Numerous colonies. Medium size.
B	No visible growth.	Large number of colonies. Medium size.	Large number of colonies. Medium size.
C	No visible growth.	Very numerous colonies. Good size.	Numerous colonies. Medium and small size.
D	Few colonies. Medium size.	Very few colonies. Medium size.	Fair number of colonies. Medium size.

From the above it will be seen that bacterium A is
the only one that grows with equal facility on the
three media. Baeteria B and C shows a distinct pre-
ference for gill and blood media.

C shows a particularly good growth on gill medium.
D appears to grow best on blood medium.

After four days tiny colonies appeared on all the
fish meat plates showing that these were not sterile,
but that the rate of growth was slower on this medium
than on the others.

Thus it is seen that of four bacteria, commonly

found in fish, three show a distinct preference for
gills and blood as culture media, and as gills are
usually covered with blood and bacteria after the
incomplete evisceration that is now in common prac-
tice among the fishermen, it is probable that these,
i.e., gills and blood, become the seat of an early luxuri-
ant growth of putrefactive organisms.

Guided by these observations it is desirable to recom-
mend the removal of the gills and a thorough wash-
ing of the eviscerated fish in order to prevent, at least
to some degree, early putrefaction.



Plant of Leonard Fisheries, Ltd., Hawkesbury, N. S.
La Plante de la Pêcherie Léonard, Ltée., Hawkesbury, N.E. Planta Pesquera de Leonard, Ltd., Hawkesbury, N. E.



INFORMATION regarding Canada's Fisheries, Fish Products and Fish Producers will be readily given upon request by addressing the Secretary, Canadian Fisheries Association, Room 30B, Board of Trade Building, Montreal, Canada.

The Canadian Fisheries Association is composed of firms and individuals engaged in the Fishing Industry of Canada who are organized for the purpose of developing the great fishery resources of Canada upon the most modern lines.

The Association's members are the most progressive and reliable men in the Industry and the Association's ideals are to have Canada's fish products the best in the world.

DES INFORMATIONS, relatives aux Pêcheries, aux Produits de la Pêche et aux Producteurs de Poisson du Canada seront fournies gracieusement sur demande adressée au Secrétaire de l'Association des Pêcheries Canadiennes, Chambre, 30B, Edifice du Board of Trade, Montréal, Canada.

L'Association de Pêcheries Canadiennes est composée de maisons et personnes engagées dans l'industrie de la pêche au Canada et qui se sont organisées dans le but de développer les grandes ressources poissonnières du Canada suivant les méthodes les plus modernes.

Les membres de cette Association sont les hommes les plus dignes de confiance et animés du plus vif esprit de progrès de l'Industrie et les idéals de l'Association sont de rendre les produits de la pêche canadienne les meilleurs au monde.

CUALQUIER INFORMACION sobre las pesquerías del Canadá, productos pesqueros y productores de pesca, se facilitará a cuantos lo soliciten dirigiéndose al secretario de la Asociación de Pesquerías Canadienses, Oficina No. 30B, Edificio de la Cámara de Comercio, Montreal, Canadá.

La Asociación de Pesquerías Canadienses está formada de firmas y personalidades ocupadas en la Industria Pesquera del Canadá y se ha organizado con el propósito de desarrollar los grandes recursos pesqueros del Canadá, siguiendo los métodos más modernos.

Los miembros que componen la Asociación son personas de las más progresivas y reconocidas en esta Industria y el ideal de la Asociación es hacer que los productos pesqueros del Canadá no tengan rival en el mundo.

DOMESTIC SECTION.

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SCUTTLING THE SHIP

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If the development of Canada's fisheries depended entirely on our Parliamentarians, the industry would, by this time, be struggling along, stunted in growth, hesitant in action, and small-like in progress. An industry in which politicians take a patronizing interest may well tremble as did the Romans when the Greeks brought them presents.

The fishing industry of Canada has progressed wonderfully since the political jugglers kept their hands off it, but it is noticeable that whenever a movement to further augment the progress and development of the industry is started, there are always one or two politicians who throw sand in the gears and bring the industrial machine to a full stop.

Canada is making a supreme effort to recover her financial status in these post-bellum days by building up export trade in our natural resources. One of the resources which will aid very materially in paying off our debts is the fisheries. We have the fish in abundance, but in many of our fish products the curing and packing is not up to the best standards. With a view to bettering the quality of our Pickled Fish, the Pickled Fish Inspection Act of 1914 was framed and an effort was made in that year to have it made compulsory. The war came on then, and the Act was shelved as a compulsory measure, but the Government maintained a voluntary inspectorship of pickled herring, mackerel, etc., and packers who put up their fish in accordance with the Act could have their products branded by a Government Inspection mark.

In export trade, the various Canadian packers and curers recognized the value of Fish Inspection and the desirability of having our herring and mackerel packed in the best possible manner by the first handlers. This was brought home to us very forcibly during the war when our competitors in foreign markets were shut off. In 1915, the Fisheries Department was urged by the Canadian Fisheries Association to have the Act made compulsory, but, while the officials recognized and fully acquiesced in the necessity for compulsory inspection, yet the demands of war, and possibly the lack of an energetic minister, kept the Bill from being brought up.

During 1918, the trade became insistent that the Act be put into force. The Fisheries Committees of the Vancouver and Halifax Boards of Trade passed resolutions asking that the Act be made compulsory; the Canadian Fisheries Association also went on record as favoring the compulsory operation of the Act, and numerous firms handling pickled fish requested action in the matter. When the Trade Commission was formed, they too, favored compulsory inspection and branding, when foreign importers insisted on Canadian fish being inspected before they would do business.

The Fisheries Department were whole-heartedly in favor of the Act being enforced, and the present minister, the Hon. Mr. Ballantyne, consented to bring the

Bill before the House. The Department circularized some 125 handlers of pickled fish and received, we understand, over one hundred replies favoring compulsory inspection. When the Bill was introduced, several opposition members spoke against compulsory inspection as militating against the fishermen and Mr. D. D. McKenzie, leader of the Opposition, showed illuminating proof of his progressiveness in fishery matters when he stated that the "fisherman has been getting along first-rate, and those before him, for the last seventy-five or a hundred years, and he was not in favor of putting obligations on him unless there was a real necessity for it."

The Bill was referred to the Fisheries Committee of the House of Commons—a Committee of some forty or fifty members, but whose average attendance is a baker's dozen—and Messrs. McKenzie, Duff, Chisholm and other Opposition members "killed" the Bill on the grounds that it would work a hardship on their fishermen constituents. The rejection of this Bill will work a greater hardship to the fishermen than ever its passing would. Foreign importers of fish demand that our fish products be standardized and inspected and we are losing valuable trade every day because our fish products are not shipped on these conditions. Were the fisherman told these things and the larger aspect of his industry to foreign markets explained to him by the political bunglers who misrepresent his interests in Parliament, no opposition would come from the toiler at line and twine.

If ever standardization and Government Inspection of fish products is needed, it is now when we are making a bid for world trade. It is being forced on us by the demands of the Export Market. We have a great opportunity before us now to build up a large foreign trade in fish, but, unfortunately we are handicapped in progressive efforts by small calibred men who ignore the universal request of those who really built up Canada's fisheries. In the eyes of these legislators, it is good policy to play to the gallery of the greatest number (of votes) irrespective of its effect on the progress of the country's industry.

Though this Act is shelved for the present, yet the industry will not rest content until it is brought up again and extended to cover canned fish as well. In the meantime, it is up to the trade interested to find intelligent sponsors for its rehabilitation.

Newfoundland Improving Herring Pack Under Compulsory Regulations.

While our legislators are making a political football of our Fish Inspection Act, our Newfoundland friends are wide awake and making a bid for world trade by producing a high standard of pack under regulations framed by the Marine & Fisheries Department of Newfoundland. Read the following from the "Daily News" (N.F.):

Inspector E. G. Coyell reports that on his recent visit to Green Bay on herring inspection, he found a won-

derful improvement in quality, pack and packages over last fall and past years. All the packers of that district are certainly putting forth every effort to make this fishery a success, and are doing everything to the best of their ability to carry out all rules, regulations issued to them by the Department of Marine and Fisheries. He wishes to make special mention of Brighton, as the packers of that place have certainly improved wonderfully and deserve the greatest of praise for the pains they have taken this past winter and spring

in putting up such a beautiful article, as they have been very careful and attentive to all instructions. He also wishes to say that Triton East and West are falling into line with their next door neighbors. He also made special mention of the encouragement given those packers by leading suppliers of that district. Regarding the interest taken by all parties concerned there is no doubt left that the success of the future herring fishery in that district is fully assured.

Research In The Fishing Industry

By FRANK D. ADAMS, F.R.S.

The value and importance of research is now forcing itself upon the attention of all thinking men who are engaged in industrial pursuits. Its recognition has received an immense impetus through the war, owing to the very important results of the researches carried on by the great body of scientific men whose services were enlisted at the opening of the war by the British authorities and whose discoveries have in no small measure contributed to the success which the Allies have achieved. The narrative of these discoveries will form one of the most interesting chapters in the history of the war when this comes to be finally written.

But now we are back in the times of peace. Canada has a large debt to pay which can be liquidated only by greatly increased taxation. If, however, the production of the country can also be largely increased thus yielding a greater income, this taxation may be borne without adding seriously to our burdens.

To enlarge the production of our industries we must not only produce a larger quantity of goods but we must also secure an increased net revenue from these by stopping the waste which goes on in all directions, and also by improving our methods, thereby reducing costs. Our commercial rivals in all the leading countries of the world are being now thoroughly imbued with this necessity for increased efficiency, and those who have charge of our Canadian production must keep pace with them if Canada is not to fall behind in the intense competition which is bound to take place in the immediate future.

Industrial Research teaches us how to improve our methods and develop this efficiency. It is not a task for a school-boy or undergraduate, but to be successful, must be carried on by men who have had long and thorough training in the principles and practice of the science or sciences which bear upon the special problems which they are called upon to investigate.

It is, furthermore, of great advantage for anyone engaged in research to be able to conduct his work at some large centre where many other men are engaged in similar investigations, seeing that he is thus able readily to obtain information from them on the many points which arise in the course of any complicated investigation. It is also absolutely necessary for the research worker to be able to carry on his investigation at some centre where he has direct access to great libraries, in which he can, if he knows where to look for it—and this is a most important part of his

training—ascertain everything which is already known concerning the problems which he is called upon to investigate.

One of the very greatest research institutions in the world—the United States Bureau of Standards—is located in the city of Washington. There it conducts researches on almost the whole range of industrial processes. It might be urged that this location has been chosen on account of the fact that the Bureau of Standards is a Government institution and that it is, therefore, placed in the National Capital. But that this is not the only reason is shown by the fact that the American Cannery Association, which is engaged in carrying on investigations dealing with the preservation of canned materials and the processes of canning, have also located their large and important laboratory in Washington. They have done so on account of the great advantages which this situation offers owing to the immense volume of scientific work being carried on there by men in the various Government Departments and the great scientific libraries which are to be found in that city.

In the same way the Carnegie Research Institution, which is in no way connected with the Government of the United States, has located its headquarters in Washington and has one of its largest Research Bureaus in that city.

It is to be noted, however, that in the case of all these great Research Institutions located in Washington, when special researches are to be carried out which require special facilities which cannot be secured at Washington, branch stations are set up in other more suitable localities and these researches are conducted there. Thus the Carnegie Institution carried on its remarkable researches in connection with optical glass, for the American Government during the war, at the glass factories in Rochester and elsewhere, and the same institution is now carrying on researches in connection with the economic botany of the drier portions of the United States, at a special station at Tucson, Arizona.

In view of these facts and of the experience which has already been obtained in the United States, where conditions are somewhat similar to those in the Dominion of Canada, it seems clear that a Bureau of Standards and Research Institution when established should be located at some central point of great scientific activity in Canada, with, so far as it is necessary, branches in various other parts of the Dominion

for special investigations which cannot be conducted at the central institution. Such a centre in Canada is found in the city of Ottawa where an ever increasing volume of research work in many fields is being carried on in various Government Departments, and where large scientific libraries have been built up. Special investigations, such as that into the best methods of handling large quantities of fish waste, would of course be carried out in a special station on the sea coast, and this might best be located at some university if one can be found which is conveniently situated.

It must be remembered that fishing, while very important, is by no means the only industry in the Dominion, and that there are many other industries based on our great natural resources which are much larger and present even a greater number of problems which must be solved by research. The Central Bu-

reau must, therefore, take cognizance of problems presented by widely different industries, many of which, however, are closely correlated and could be investigated by the same body of research workers, provided these are supplied with the proper facilities.

To sum up then it would appear that a central locality such as Ottawa is the best situation for the proposed Bureau of Standards and Institution for Research, with subordinate stations under this Central Bureau located in various parts of the Dominion for the purpose of conducting special lines of investigation.

The view which has been expressed that such a Bureau when established should be placed under the Department of Trade and Commerce, rather than under the Council for Industrial and Scientific Research, is already in a way met by the fact that the Council is itself connected with the Department in question.

Technical Training For Hatchery Officers

A Practical Hatchery Man Takes Professor Prince to Task.

The Editor has received the following:

I have just read, in your issue of July, Prof. E. E. Prince's "Technical Training of Fish Hatchery Officers." As a fish hatchery man I am much interested in his subject. I recall a similar paper from his pen some years ago, that was less definite than the present one. In both, the Professor instances the "surprising fact" that a large proportion of those most prominent in the pioneer work were self taught and untrained men. . . . "Much that they did proved that they had little scientific knowledge and no familiarity with the biological conditions and laws of embryology, which are essential to complete success in this important work." He instances two "crude blunders of untrained men," in which he tells us that he has "seen many times hatchery officers put a handful of salmon eggs, covered with particles of mud into their mouths, in order to clean them, and that "for years I found that certain hatchery officers, had been instructed to take a glass tube and blow into cans of water, containing young fish during their shipment from hatcheries." These are the only two blunders he instances. He gives us no other changes in hatchery methods due to his instruction.

Now I have been engaged in the hatcheries for years and I never heard of either of these practices and would be interested if he would be more specific. Surely the first case can not have been common and the latter can be verified by a statement of how and by whom the "hatchery officers had been instructed."

But the point I wish to make is this. Why hasn't Professor Prince, who has been the Commissioner of Fisheries of Canada for twenty-five years, and who previous to coming to Canada had "ten years of scientific fishery training," issued a manual of fish culture for the guidance of hatchery men? Why, with his knowledge and opportunity, has he not made it possible for interested hatchery men to be aided by his superior knowledge? Surely it was his duty, and from his own statements it was most necessary. He now tells us, and for the first time, that hatchery

men must have a knowledge of "embryology, physiology, physics, chemistry, biology and pathology." He tells us that no hatchery man could "enter upon his work without some knowledge of these important matters," and that "every man who has responsible work in a hatchery should have instruction and training" in these subjects. This being true, and I do not question it, what instruction and training has Prof. Prince ever given to the hatchery men of the Dominion? What steps has he ever taken that enabled the men to gain this knowledge? Seeing the need of such instruction, and for a period of years having direct charge of the operations of the hatcheries, what steps did he take to see that the hatchery men were instructed and trained in any one of the subjects named? No manual of fish culture or bulletin has been issued by him and furnished the hatchery and none has yet been issued by the department. Surely, he, whom it is assumed, has mastered them all, should have been able to have produced summaries on these subjects and put them in convenient and available form for the use of the men whose "period for training will of course be limited." He tells us that "It would take a few months under competent instructors to give him (the hatchery man) a proper training. . . . A week or ten days would do a great deal, but from my long experience as assistant in one of the great universities of the world, and afterwards as Professor of Biology in Glasgow, I feel bound to conclude that it would take at least a whole summer vacation for such a theoretical and scientific course as I have indicated." Will he tell us why he has not taken action to secure to the hatchery men this opportunity, or why at least, he has not furnished us with a manual? There are men in the hatcheries of Canada that have had and still have the "enthusiasm essential" to a study of these questions. Some of them have been "digging" away, at the questions, without aid from him or his department, when he had one, or his biological board. Few of these men have been able to take even a summer course at any university. No invitations have been extended to them to study anything at any biological station in Canada. Will Professor Prince tell us why?

Will Professor Prince tell us now of any steps taken by him, or any one else in the Fishery Department, to see that the hatchery men of the Dominion get the instruction so essential. Do any of the men now possess the knowledge? Will he tell us what is "surprising about the fact" that the hatchery men are self-taught? How could it be otherwise? He, from his repeated statements, in his paper under discussion, and in everything else he has issued, is so learned that he could indicate the essential facts in embryology to pathology should have come to our aid. He has the knowledge and he held the position and authority to have given it out. It is not the fault of the "practical hatchery man," that he has not had the opportunities to master the essential in the subjects the Professor indicates. I for one feel bitterly on the subject. And there are others, who like myself, have done their best to master the subject of fish propagation. It is not our fault "that the work of fish-culture has been mainly carried on by what are called "practical" men, that is to say, men with little or no exact knowledge, and entirely without technical training, and whose success depended upon fortunate "rules of thumb," which they struck, and by the care, perseverance, enthusiasm, and self-sacrifice, which characterized all their labors." I submit that the men who "by their care, perseverance, endurance, and self-sacrifice, which characterized all their labors," should have had the support and aid of the man of all others in Canada who was obligated to give it to them, and who, from his own statements, was able to have given it to them.

The need is still great in the hatcheries of Canada. The Professor has done well to indicate it, though so tardily. In consequence is it asking too much of the "Canadian Fisherman" to publish these lines, notwithstanding that I can not sign my name to them other than as yours earnestly.

A PRACTICAL HATCHERY MAN.

NOTES ON FISHING FOR JUNE, 1919.

The weather was favorable on the Atlantic coast during the month, except on parts that are exposed to northeast wind, which at times was boisterous enough to interfere with operations and cause some damage to fishing gear. The results for the month, however, were not so good as those for June last year. Cod, haddock, hake and pollock in the aggregate fell short by over 50,000 cwts.; the quantities being 413,000 cwts. this year against 468,000 cwts. last year. The decrease is mainly due to diminished landings by the Lunenburg fleet in June of the present year. The herring catch also fell short by over 60,000 cwts. The catch of sardines amounted to 16,170 barrels against 21,625 barrels last year. This decrease is no doubt attributable to much lower prices and the consequent lack of incentive to land the fish in great quantities. The catch of mackerel was greater this year by over 23,000 cwts. In the whole of eastern Canada Salmon fishing, for some reason, was poor during the month. The catch did not amount to half the quantity taken in the month of June last year. The lobster fishery on the other hand gave quite satisfactory results. The catch for the month amounted to 90,000 cwts. against 86,000 cwts. for the same month last year. Since the

beginning of the canning season on March 1st to the end of June, 111,942 eases have been packed. Notwithstanding that canning commenced two and one-half months earlier last year the pack, up to the end of June, did not exceed 91,686 eases.

On the Pacific coast wet and somewhat stormy weather adversely affected salmon fishing, and resulted in the catch being slightly less than that for June last year. The quantity of halibut landed amounted to 11,707 cwts. against 26,289 cwts. last year. The smaller quantity landed was due to strikes and the lack of transportation, which caused a large number of the halibut boats to land their catches at Ketchikan, Alaska.

The total value of sea fish at the point of landing on both coasts was \$3,018,748 against \$3,763,427 for the same month last year, a decrease of \$744,679. The decreased total value is not altogether due to lessened production. The prices paid for some of the chief kinds was rather lower this year. For example: salmon realized \$11.26 against \$11.69; cod \$2.81 against \$3.42; haddock \$1.78 against \$2.76; halibut \$11.12 against \$13.72 per hundredweight, and sardines \$2.00 against \$5.00 per barrel.

A NEW HATCHERY FOR ONTARIO.

The Department of Game and Fisheries of the Ontario Government are following up their progressive policy of more hatcheries for the province by the building at once of a modern hatchery at Fort Frances. This will have a capacity of 75,000,000 whitefish and pickerel. With the completion of this plant the Department will have a total hatchery capacity of approximately 400,000,000, and when it is considered that in 1916 the only hatchery under the control of the Provincial Government was that at Mount Pleasant, with a capacity of 2,000,000, it will be seen that the Ontario Department of Game & Fisheries are fully seized of the importance of this branch of the fishing development of the province, and are taking means to secure adequate hatchery facilities.

ONE EDITOR HAS GOT THE FACTS!

An editorial in the Montreal Gazette of July 30, 1919, reads: Statistics published at Ottawa show that prices paid for fish are in many instances lower than last year, which is more gratifying to the consumer than to the fisherman. More fish is being consumed by Canadians than ever, a fact which is easily perceived in this city, where retail fish stores now abound. The prices are comparatively low and sales are, in consequence, great and growing. The campaign of the war days to eat more fish is having the desired effect and the condition is likely to remain.

Wife (examining day's catch)—Is it true that fish go about in schools?

Hubby—Yes, dear; why?

Wife—Oh, by the size of these, I should think you'd disturbed an infant class.—London Tit-Bits.

A Piscatorial Veteran

Mr. S. H. Davis, of the fish firm of Van Order & Davis, Port Burwell, Ont., is eighty-one years young and may justly aspire to the title of "Dean of the Lake Erie Fishermen." Mr. Davis started fishing in Lake Erie, Superior and Michigan in 1854, and is able to give interesting reminiscences of the lake fisheries in these early days when the work was done in sailing craft and steam tugs and steam net-lifters were



scarcely thought of. In 1868, Mr. Davis claims that he was the first lake fisherman to pan freeze fish and the first successful attempt was made by him in Detroit at that time.

This Grand Old Man of the Lakes is hale and hearty in spite of his exceeding the limit of man's allotted span by eleven years, and judging from his well-set figure and the virility of his actions and conversation, he is likely to reach the century mark. He attends to the business of his firm daily and a CANADIAN FISHERMAN representative was able to "snap" him at the company's plant.

French Encourage Fish Consumption

By COLIN McKAY.

In order to advertise fish as a diet "Les Peeheurs Reunis" of France, gave a banquet at Paris a short time ago, at which the menu was composed entirely of fish dishes. This unique function which was attended by some of the most prominent men of the Republic caused some hilarity among the Paris journals, but it is said the banqueters went away satisfied and with a proper feeling of having dined well. It is proposed to continue these banquets in Paris and other cities for the edification of the public. They are small fish eaters in the interior cities of France. One of the after dinner orators observed that it would be folly to attempt to intensify the fishing without first taking measure to develop an appetite and increase the consumption of fish in the inland cities.

In France much interest is being manifested in the enlargement and equipment of fishing ports, and in the establishment of cold storage plants at strategic points. And there, as in England, the question of railway transportation is a live one. The Minister in charge of the railways has arranged for periodic conferences with a committee of the wholesale dealers, with the idea of taking advice as to the best means of handling fish products.

Experiments in transporting fish by rail are now being carried on under the auspices of the Minister of Public Works, the Minister of Transports, and the Commission of Fishing Ports. Three types of cars are being experimented with. One is a light car with two ice chambers and a special aeration system, designed to move fish at high speed to cities within eight hours of the coast. Another is a heavier car in which the fish are packed directly on the ice; this is designed for trips of from eight to fifteen hours. A third type of car is equipped with mechanical refrigeration, operated by the movement of the wheels, and is designed for long trips.

The Fishing Section of the Vessel owners of France have adopted a resolution urging the government to operate fast trains from fishing ports to the big markets, and ameliorate in other ways the transport of fresh fish. It is claimed that rapid trains and special fish wagons are an essential condition of the development of the Maritime Fisheries of France. The Section also demanded that the naval authorities hand back the trawlers taken for war service, and allocate the German trawlers coming to France under the terms of peace. Another demand was that the government undertake to supply raw materials to French shipyards at a price which will permit the building of fishing vessels as cheaply as they can be built in other countries. The Fishery Department is making arrangements for quantity production of standardized fishing boats, equipped with auxiliary motors.

In Northern France the river fishing has been ruined. When the German soldiers wanted a mess of fish they exploded dynamite or a bomb under water, of course destroying the fry as well as the grown fish. A demand is now being made that Germany, which has carried fresh water fish culture to a high standard be compelled to restock the ruined French streams.

Professor Joubin will be one of France's two representatives at the conference in Rome to repartition the zones of influence of the countries interested in the fisheries of the Mediterranean. This is the first time a lady has been chosen for a responsible position on an International Fishing Convention.

Trap Haddock Fishing At Ingonish, N.S.

By P. L. WHITMAN.

In the spring of the year for six weeks, from about the first of May until the middle of June, is a very busy time at both North Bay and South Bay Ingonish, on the eastern side of Cape Breton Island. During that time there are large schools of Haddock making their way north along the coast, and the fishermen do their best to capture a good share of them.

This fishing is carried on by means of traps set along the shore, just south of Smoky Cape at the southern entrance to South Bay, along the northern shore of South Bay and on the eastern side of Ingonish Island. There are between twenty-five and thirty traps altogether. Each person, party or company is allotted a berth by the Fisheries' Officer, after getting the consent of two-thirds of the fishermen to fish at that place, and paying the license fee.

The traps are made of four inch mesh, fifteen or eighteen thread tanned twine, in three separate parts; the bowl, the bottom and the leader.

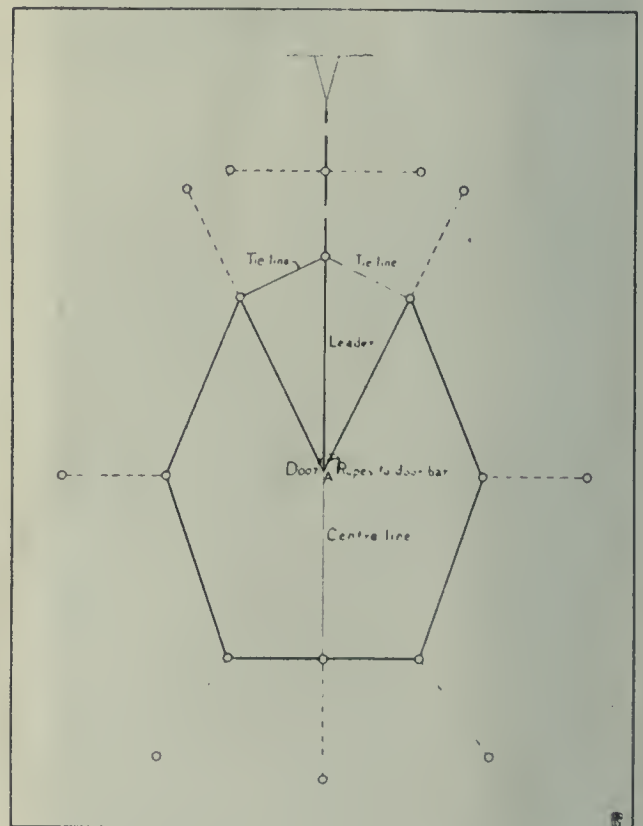
The bowl is a straight piece of twine between fifty and seventy fathoms long and eight to fourteen wide or deep, according to the depth of the water where the trap is going to be placed. A head rope, one left and one right rope, is attached around the top. These two ropes are bound together, but separate about every foot for the insertion of circular discs of cork around one of them. There is also a rope around the bottom to which it attached small lead weights every fifteen or twenty inches. The bowl is kept in position at the surface by seven keg buoys in turn held by as many anchors at the end of forty fathom ropes, as shown by the chain lines in the surface plan. From each of these anchors to small buoys on the surface are ropes used for setting and hauling purposes. The ends of the bowl at the surface are attached by ropes to a point (A on plan) on the centre line which runs from the leader to a buoy in the centre of the side of the trap opposite to the door.

The bottom is of hexagonal shape with a V shaped portion taken out of one side—that parallel to the shore. At the bottom of this V is tied the door-bar, an iron rod about seven feet long. To each end of this bar is attached a rope running to the surface where it is tied to the head rope of the V part of the bowl. By means of these ropes the door is opened and closed. The sides of the bottom are tied to the bottom rope of the bowl.

The leader is a sixty to eighty fathom length of twine tapering from eight to fourteen fathoms in depth at the door to three or four near the shore, according to the abruptness of the bottom. Like the bowl, the leader has a similar head and bottom rope. From the door end of the leader at the surface runs a rope—the centre line—to the buoy in the centre of the side opposite the door. Another rope runs from the other end to near the shore, where it bifurcates at a slight angle to the shore and is there made fast. The leader is further held in place by two anchors at the end of twenty fathom ropes at right angles to the leader, one on either side attached to the head rope midway

from the door to the shore and by tie lines from the buoys at the top of the V to the head rope. (See plan.)

The traps are hauled or "purse" twice a day—morning and afternoon. The crew, consisting of a trap-master and five or six other men, go out in a small auxiliary schooner, towing a trap boat and three or four dories. The northern shore of South Bay being more sheltered, large motor boats can be used, which can be taken right on the traps, whereas with the schooners they have to anchor away from it and go on with the trap boat and dories.



To "purse" the trap the crew all get in the trap boat and go to the door of the trap and make fast to the centre line by hauling it over the trap-boat and tying it to the same. The door-bar is then hauled up to the surface and made fast to the trap-boat. Then the twine is pulled up starting with the V's or wings gradually working around to the other side of the trap-boat—that is the side away from the door. As soon as the twine is hauled up from under the trap-boat, the door-bar is let down for there is now no outlet to the trap. This allows the trap-boat to be moved gradually away to one of the sides of the trap, after the twine is overhauled. In this way the pocket or "purse" is formed to one side of the trap, the head-rope of which is tied up over the side of one of the

We Buy and Sell



Nearly all classes of Lake and Sea Fish, in large or small quantities, provided only that the fish is strictly first class.

We cannot buy ALL the fish or from EVERYBODY, but if you have a proposition to offer or wish to buy, we invite correspondence.

You will at least be assured of a prompt and courteous reply.

THE F. T. JAMES CO.

LIMITED

FISH FOOD SPECIALISTS

TORONTO

CANADA

(Proprietors of BEACON BRAND)

dories. The fish are forked out and taken to the schooner in the dories. If there are only a few fish the trap-boat and dories only are filled.

The schooner then returns with her fare, anywhere from a few to ten thousand fish, to one of the dressing stages. The fish from the island traps are taken into North Bay, while all the others land on the stages in South Bay. At both these places the fish are dressed and salted or pickled—later on to be dried there or sent to other places for the same purpose, and finally some months later are consumed in the West Indies and Italy. Some few, however, are sent to the markets fresh and to cold storage plants.

LAKE ERIE POUND NET BOATS.

For many years past, the Lake Erie pound net fishermen have been using a flat-bottomed, square-sided boat for tending their nets. These pound-net tenders were built this way for hauling up on the beach in rough weather and a tunnel was made in the stern to facilitate the raising of the propeller when grounding. This type of boat is clumsy and not particularly sea-worthy and is being rapidly replaced by a new model which is designed and built by the Kingsville Boat Works of Kingsville, Ont. A CANADIAN FISHERMAN representative had heard of the new craft and when in Kingsville called upon Mr. L. H. Carley, proprietor of the boat-building firm. A boat of the new type was just being painted preparatory to launching and examination of the craft showed that she was a vastly better model than the old style. The Carley boat is built with round bilges and the bottom is flat enough to permit of hauling out just as readily as the old type. There is a nice tumble-home to the sides and enough flare to the bows to throw the sea. The stern is square and is equipped with a tunnel for raising the propeller and shaft. The boat examined was some 28 feet long and was constructed of the best of material. Oak is used for keel, stem-piece, garboard and shear strakes, and the whole boat is built to stand rough usage in lying alongside pound nets and in beaching. From the readiness in which the fishermen are taking to the Carley boat, we are safe in predicting that the Kingsville Boat Works will be kept busy filling contracts.

TO BOOST FISH INDUSTRY.

Aquariums of Native Fish Wanted at Exhibition.

At an executive committee meeting of the Canadian Fisheries Association at Montreal recently the view was expressed that a move should be made to establish aquariums of our native fish in the various cities of Canada. There are several such in the United States, but in Canada there is no permanent aquarium of any kind.

In the opinion of the association it was thought that a good start in this direction might be made by the directors of the Canadian National Exhibition as a permanent feature in Exhibition Park, and a committee was appointed to approach the directors on the subject. The matter will be discussed by the Exhibition directors at an early date.

Piscatorial Paragraphs

Lobster packers report a brisk demand for their product—many being unable to fill the orders received. Prices are away up.

New Brunswick weirmen have been selling sardine herring to Maine packers for \$5 per hogshead. Last season the regulated price was \$25.

On August 5th, a fire destroyed part of the warehouse of W. & C. H. Mitchell & Co., Fish Merchants, Halifax, N.S. The damage is estimated at \$10,000.

Owing to a poor fishery, there is a possibility that the Norwegian pack of sardines (bristling) will fail to fill demands. The outlook is good for the Canadian variety.

Mr. George Walls, Fishery Officer for Shelburne County, N.S., died suddenly at his home in Shelburne on August 3rd. Mr. Walls was 77 years of age and held office since 1912.

The new Lunenburg trawler "Jutland" landed 200,000 lbs. of salt fish at Halifax recently on her first trip. The new La Have trawler "Promotion" is now in commission and will run her fish fresh to Liverpool, N.S.

Owing to the fishermen's strike in Boston and other New England ports, large quantities of Canadian fish were shipped to fill the demands of the U. S. market. The strike is now reported as settled.

Nova Scotian fishermen from all reports do not evince any desire to join the Fishermen's Union and assist in the strike. Delegates who travelled from Boston to Nova Scotia to enlist the Nova Scotians in their cause were not successful.

Mr. Ward Fisher, Assistant Superintendent of Fisheries, Ottawa, has been appointed Chief Fishery Officer for the Maritime Province Division with head offices at Halifax. This is in pursuance of the new policy of the Department whereby the country is divided into Fishery Divisions with a responsible officer in charge of each.

A number of the striking American fishermen came to Montreal recently and shipped as crews for the U. S. Shipping Board vessels en route from the builder's yards on the lakes. It is reported that many fishermen are shipping in merchant vessels as seamen and will remain as such until the strike is settled. With the improved conditions for crews in the new U. S. Mercantile Marine there is every probability that these men will remain and not return to the fisheries.

Admiral Tirpitz says, "The Germans never understood the sea. In the nation's fateful hour the fleet was not used. I can only write the epitaph."

But the British did understand the sea. It is their father and mother too. And the British Navy wrote the German epitaph.



Hucking a Storm in the Berling Sea
Cannery tender "Empress," powered with a Frisco Standard engine, fighting her way to port with a cargo of fish in the teeth of a northern storm.

"THE GAS ENGINE THAT HAS PROVED ITSELF AS RELIABLE AS STEAM"

Awarded the Grand Prize at the Panama-Pacific International Exposition at San Francisco for the "Best Marine Engine" Against World-Wide Competition.

Absolute Power Plant Certainty

THE record of many years, the performance of thousands of boats, the success of many industries, prove that the "Frisco Standard" engine is the embodiment of gas engine perfection, an unailing, dead-certain, economical, practical source of power for heavy duty marine service.

Why, then, not deal in certainties, and know that your money is being spent not on experimenting, but on an absolutely proven, known quantity where merit is inevitable and satisfaction guaranteed?

YOU'LL BUY A 'FRISCO STANDARD ENGINE IN THE END, WHY NOT NOW?

Write for Latest Catalogues and Copy of "Book of Boats"

STANDARD GAS ENGINE CO.

OAKLAND, CAL.

GULF COAST—Arthur Duvic, 130 Chartres St., New Orleans, La.

EASTERN DEALERS—Standard Gas Engine Company.
ATLANTIC COAST—L. D. Lothrop & Son, T. Wharf, Boston, Mass.; L. D. Lothrop & Son, Gloucester, Mass.; Bowler, Holmes & Hecker, 259 Greenwich St., New York City
EASTERN CANADA—A. R. Williams Machinery Company, Toronto, Montreal and St. John, N.B.



THE UNIVERSAL ENGINE OF HEAVY DUTY SERVICE

"Wherever There's Heavy Work to Be Done, You'll Find the Frisco Standard."

"FRISCO STANDARD" engines are not only the most widely used motors for work boat service in America, but have a steady call in Europe, Peru, Chile, Samoan Islands, Society Islands, Greece, Columbia, Argentina, Siberia, Australia, New Zealand and many other countries. In America it is an important factor in the conduct of many of our most important industries. In more isolated portions of the world, it furnishes in many cases the only available means of transportation, being used in mail boats, passenger boats and freighters. In the Arctic, it has acted as a pioneer and explorer, having powered most of the boats that have penetrated into new polar regions or that annually fight their way through the ice-packs on trading expeditions. It is used more than any other in the world's fishing fleets and is operating successfully in sea-going schooners and freighters. In fact, in marine circles all over the world, wherever hard, strenuous service is required, you'll find the "Frisco Standard" in the thick of it, rendering the steady, dependable power that is necessary to drive boats under the most severe conditions of wind and weather.

Unloading Salmon From a Standard-Equipped Seine Boat
Many hundreds of these boats equipped with Frisco Standard engines are in service all along the Pacific coast fishing day after day and running thousands of miles without motor trouble of any kind.





PACIFIC COAST SECTION

"The Canadian Fisherman," Pacific Coast Branch, will be glad to have inquiries from any one who wishes information in any way connected with the fishing industry.

We want to hear from you. You will receive a prompt and full answer to any inquiry you may make. Help the "Canadian Fisherman" to make this a real live, up-to-date Section.

Address communications to F. E. Payson, Pacific Coast Manager, Industrial & Educational Press, Ltd., 507 Board of Trade Building, Vancouver, B.C., Canada.

THE SALMON HATCHERY QUESTION ON THE PACIFIC COAST.

One of the great controversies that has been argued pro and con by those well versed in the industry is now being publicly discussed.

In this issue we print the contention of one of the large canners of sockeye salmon, that a great harm is done to the industry by the maintenance of sockeye salmon hatcheries. The chief inspector of the Dominion Fisheries of British Columbia does not agree with this, and in our next issue we shall publish his ideas along this line.

This is an important question to all concerned in the industry and the opinion of those connected with the industry will be of interest to all.

The readers of the Canadian Fisherman will have the benefit of the opinions of men who have made a study of the sockeye salmon, both in a practical way and from a scientific standpoint, as the publishers are now securing all the information obtainable along these lines from all points on the Pacific Coast where the sockeye salmon run.

HATCHERIES INJURE THE SOCKEYE FISHING INDUSTRY.

Mr. F. E. Burke, General Manager of the Wallace Fisheries, Ltd., believes that the Government hatcheries for the sockeye do more harm than good.

This is not a snap judgment on Mr. Burke's part and as proof he cites the sockeye run on the Skeena River this year and four years ago. During the preceding cycle four seasons ago, the Skeena picked up in the catch of sockeyes, and has maintained the increase this year. Five or six years ago the hatchery at Stewart Lake was closed and the sockeye fishing has since improved.

Mr. Burke contends that if the Government would use the money which is now spent on sockeye hatcheries on cleaning the spawning grounds, it would be a real advantage to the industry. He does not contend that hatcheries in connection with the propagation of other varieties work an injury.

It was pointed out by Mr. Burke that in the big season of the last cycle four years ago, the British Columbia pack of sockeyes was 476,042 cases. He doubts if this season will exceed 260,000 cases. The Skeena, though doing well, is not exceptional this season. Four years ago the Skeena pack of sockeyes was 116,000 cases. This year they will do 100,000.

Other fishing ground show similar conditions is the information received by Mr. Burke. He states that when the Hon. Mr. C. C. Ballantyne, Minister of Marine and Fisheries, arrives on the coast, the latter part of the month that the matter of the injury to the industry by reason of the maintenance of sockeye hatcheries will be taken up vigorously with the Minister.

OUTLOOK GOOD IN NUMBER THREE DISTRICT.

Mr. E. G. Taylor, inspector for district No. 3 states the outlook is good for fall fishing, cohoes, pinks and chums, which are the principal fish in this district.

On the West Coast of Vancouver Island there are many spring salmon taken, but owing to storms during the early part of the season the catches were poorer, although since these conditions have been better.

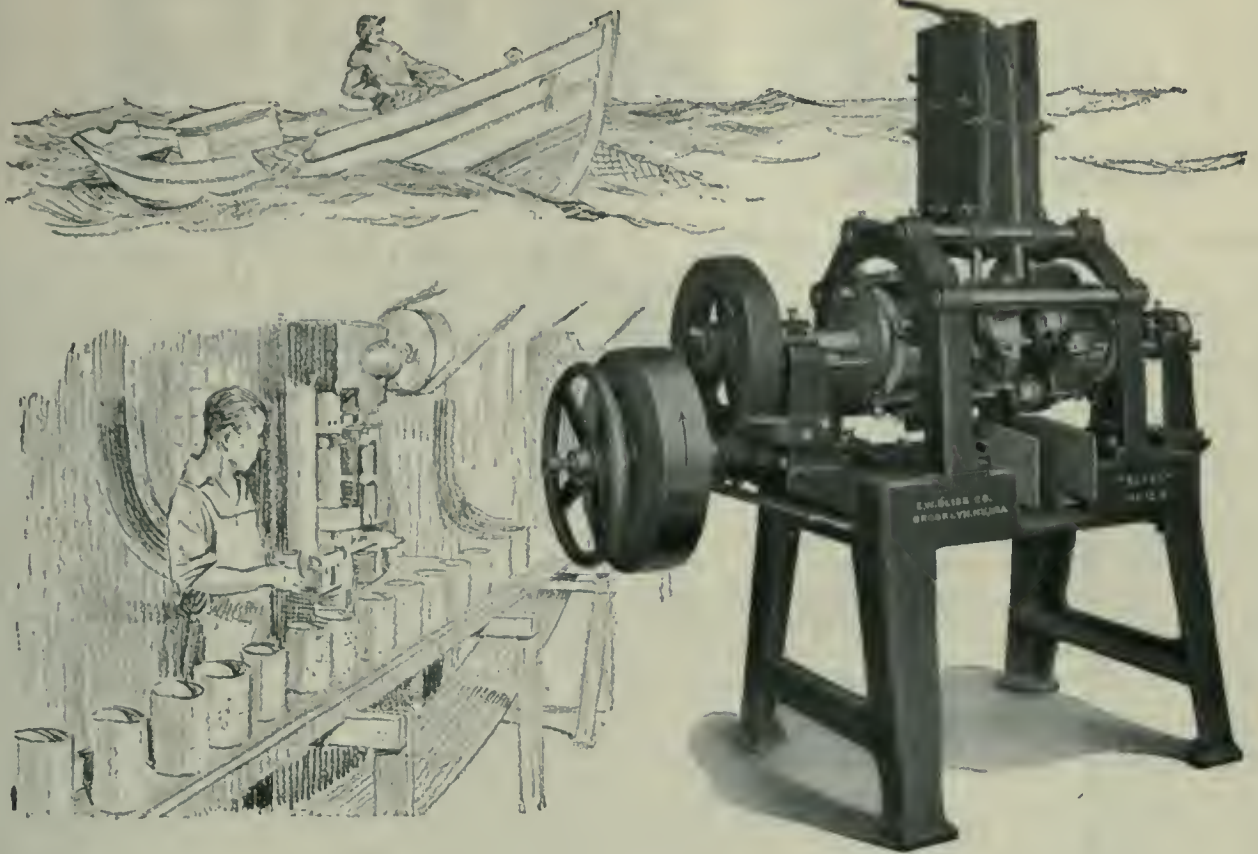
Mr. Taylor states that the fishing on the West Coast of the Island is more in the hands of the white fisherman this year than ever. Many trolling licenses were issued this year, mostly to white men. All the new seining licenses were granted to returned soldiers.

Pilehard fishing is being given considerable attention and these fish are being canned at Clayquot and Nootka.

NEW SALMON CANNERY AT SOOKE HARBOR, B.C.

The new salmon cannery of the Sooke Harbor Fishing and Packing Co., Ltd., situated at Sooke, on the West Coast of Vancouver Island, British Columbia, is now in operation.

This new cannery is up-to-date in every particular, has two lines of machinery, an Iron chink and Troyer Fox can filling machine. The output is 1,500 cases per day when running to capacity. The company expects to put up a good sized pack of pinks and chums



Modern Cannery Practice

Allows little time to elapse between the catch and the final operations on the pack. Prompt and continuous streams of all the elements necessary to make cans are depended upon to avert loss. and can makers in all parts of the world.

Clean cut, high quality output required of all "Bliss" Automatic Can Making Machinery, but steadily continued production at high speed is likewise a feature of importance. These things have been developed in The "Bliss" lines through nearly sixty years of experience and co-operation with canners

"BLISS" AUTOMATIC ROUND-CAN DOUBLE-END FLANGER, NO. 15-K.

This machine flanges both ends of can bodies simultaneously and is entirely automatic and continuous in operation. It produces flanges on 100 to 150 cans per minute and can be readily adjusted from one size to another.

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Main Office and Works; BROOKLYN, N.Y., U.S.A.

CHICAGO OFFICE
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1917

LONDON, S.E., ENGLAND, Pocock Street, Blackfriars Road PARIS, FRANCE, 100 Boulevard Victor-Hugo St. Quen

They mild cured 250 tierces of mild cured spring salmon this season, which were sold spot.

This firm are operating the traps formerly operated by Findlay, Durham and Brodie. Last year the catch was shipped to Sidney, and packed by the Sidney Canning Company, Ltd. The officials of the Sooke Harbor Fishing and Packing Co., Ltd., are: Mr. H. E. Sims, president; Mr. Peter Graigine, vice-president; Mr. Chas. F. Goodrieh, secretary.

Salt Sable Fish (Black Cod), 200 lbs.	22.00
Salt Sable Fish, 100 lb.	12.00
Salt Sable Fish, 50 lb. (Kit)	6.50
Salt Pink Salmon, 200 lb.	15.50
Salt Pink Salmon, 100 lb.	8.50
Salt Pink Salmon, 50 lb.	4.75
Salt Grey Cod, 50 to 200 lb. per lb.	10c

VANCOUVER WHOLESALE FISH MARKET.

Salmon are not any too plentiful. A few blue backs are in the market and some red springs. Sockeyes are noticeable by their absence.

A few summer smelt are in but quite full of spawn.

A few Point Gray herring are still showing up but no large catches. Halibut is more plentiful. Ling cod is plentiful, but no change in price as the fishermen hold out for their price.

Shell Fish.

Both L. Perrin & Co. and H. M. Fraser, the crab and clam dealers, say that crabs are way short in supply owing to the closed season in Washington and Seattle asking for supplies and they cannot fill orders as there are so many soft shell crabs now that they have to be put back. Clams are in good supply.

WHOLESALE FRESH FISH QUOTATION.

	Per lb.
Halibut	15c
Red Springs (heads off)	18c
White Springs (heads off)	10c
Bluebacks (heads off) (searce)	12c to 16c
Ling Cod (plentiful)	8c
Grey Cod (searce)	5c
Red Cod (round) (searce)	5c to 6c
Smelt (searce)	10c to 12c
Soles and Brills	6c to 7c
Herring	4c to 6c
Skate	4c
Perch	6c

Shell Fish.

Crabs (searce)	\$1.10 to \$1.20 per doz.
Shrimps	6c per lb.
Clams	2½c to 3c per lb.

Vancouver Prices Smoked and Salt Fish.

	Per lb.
Smoked Sable Fish (black cod, whole)	14c
Kippered Sable Fish	20c
Fillets, Sable Fish	17c
Smoked Pink Salmon (whole)	20c
Kippered Salmon	18c
Bloaters	7½c
Kippered Herring	9c
Eastern Haddie	16c
Western Haddie	10c
Herring Chicks in bundles of 5 boxes	18c

Per bbl.

Salt herring, medium 900 to 1,000 count, 250 lbs. net	\$ 8.50
Salt herring, medium 1,400 to 1,500 count, 250 lbs. net	7.50
Salt herring, large 200 lb.	8.50
Salt herring, large, 100 lb.	5.25
Salt herring, large 50 lb.	3.25

CANNED SALMON MARKET.

Sockeyes.

There are many inquiries and definite offers by British buyers at \$17.25 per case for half-pound flats. Recently a few cases that were left were cleaned up at this price. Pound flats have sold at \$15.75 to \$16.00.

Red Springs

have been selling from \$14 to \$15 per halves.

Cohoos

have been sold at \$13 for halves and \$11.50 for talls but there is a tendency not to close for entire packs at this price.

Pinks.

Half pound flats are strong at \$9.50. Talls have been selling for \$8.25. There is a tendency to advance owing to the popularity of this variety and the outlook in certain sections of a poor run.

Chums

are quoted at from \$6 to \$6.50 for 1919 pack.

Reports From Different Districts.

Rivers Inlet.

The sockeye run has been very poor and is away behind the 1918 pack. Up to Saturday night, July 26, there were between 25,000 and 40,000 cases packed in all the nine canneries.

Bella Coola and Kimsquit.

The sockeye run in both of these districts are practically failures.

Skeena River.

Although the run on the Skeena this year was better than last year it has been nothing exceptional. The general idea is that the pack will about equal that of five years ago when 130,000 cases were put up.

Fraser River.

Although there is a tendency among the packers on the Fraser to be rather pessimistic as to this year's run, at the same time it is rather early to make any predictions.

Vancouver Island.

A little early to make a report of this district as the only run so far has been the Springs on the West Coast and the bluebacks.

Naas River.

Up to date the run on the Naas is practically the same as 1918.

Outlying Districts.

It is too early to make a report covering these districts although the general idea is that the runs will be practically normal.

Puget Sound.

The pack in this district to date is a failure, and the outlook not at all good.

Alaska.

Estimated pack for all of Alaska is 60 per cent of last year. The Red Alaska pack is only 40 per cent of particular variety these figures are very close.

RELIABLE

TRADE MARK

Canadian Products



Certain in all Weather

Reliable Batteries, brimful of "pep." Sealed against moisture and weather.

On the trip to the fishing ground, when you encounter mists or squalls, the fat, hot spark from a Reliable Dry Battery puts the extra kick into your motor that keeps it purring steady and that means full power and less fuel expense.

Lively and Lasting

Reliable Batteries are made in Canada. There is no duty paid on any manufactured part. That is why, quality considered, the price of Reliable Batteries is very, very low.

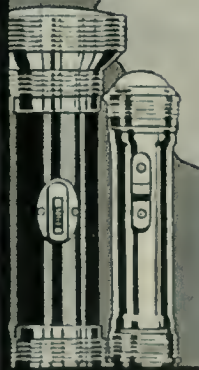
Because they do resist dampness, Reliable Batteries last longer, are stronger and give better satisfaction for your motor boat, for lighting or for any other purpose.

Reliable Flashlights are handy, dependable and durable. Invaluable for working around engine and on every occasion where a bright, safe light is needed. All standard types and sizes.

For sale by Dealers throughout the Dominion.

THE DOMINION BATTERY CO.,
LIMITED

TORONTO . . ONTARIO



NORTHERN B. C. FISHERIES.

Mr. A. S. Crosbie, general manager of the Northern B. C. Fisheries has just returned from an inspection trip of the companies canneries.

Mr. Crosbie reports that there is every indication of an all round fair pack, but not quite as heavy as last year. In one or two localities where there were heavy floods last year, it is feared that the beds where the pinks spawned have been washed out. If this is so, it means a heavy loss in these particular localities.

With the high cost of material and labor, the cost of the pack this year will equal that of last year.

Mr. Sidney Wilson has been appointed permanent liquidator of the Liverpool Canning Company, Ltd., with authority from the Court to dispose of the cannery to the best advantage for the interests of the creditors. At the present time there are several parties negotiating and the liquidator believes it will be only a question of a short time when the deal will be closed.

WHALING.

It is too early to give any idea of what the results of this year's operations will be.

The Consolidated Whaling Company can make no report at present.

The fertilizer market is firm and there is a certain amount of uncertainty regarding oil.

There is a campaign on in Eastern Canada to get the public to eat more whale meat and if continued will no doubt result in the ultimate demand for this low priced food.

ADDRESSING CORRESPONDENCE TO SOUTH AMERICA.

The importance of giving the full name on correspondence to South America is pointed out in Trade and Transportation Bulletin, published by La Salle Extension University, Chicago. The article states that many names of firms in South America end with an initial, as in the following examples:

Francisco Carbonell W.

Hernando de Castro P y Cia.

Business houses in the United States should use this initial always, as it is important for two reasons and serves a definite purpose.

The principal object is to avoid confusion of names and mail, telegrams, etc., caused by many persons having the same name, the initial serving to distinguish one family from another. This condition emanates from the fact that in the early times there were few wealthy families and these became interrelated by marriage, which accounts for the great number of similar surnames. Given names are also often similar, due to the custom of naming children for the saint whose fiesta day is approximate to the birthday. Also, very often family names are given children. Another factor is the pride of family connections found in all Latin-American countries. The last initial denotes the mother's surname, as for example:

Hernando de Castro P y Cia,

Hernando de Castro (Palacios) y Cia,
Hernando de Castro's mother's family name having been "Palacios." This matter is one of the small courtesies which make up a successful business relation.

THE CANADIAN AND AMERICAN FISHERIES, LTD., LIVERPOOL, N.S.

Considerable extensions are being made to the plant of the Canadian American Fisheries, Ltd., at Liverpool, N.S. Two of the present buildings will be connected up with a new two storey building, 120 ft. by 40 ft., now in construction. This building will be equipped with an elevator and fitted for drying fish on the roof. A new smoke house of 40,000 lbs. daily capacity is being built to augment their present smoking plant where bloaters, kippers and Digby Chickens are prepared for the Boston and West Indian markets. The Seldon wharf and buildings have been leased and the company will have ice-houses of 3,000 tons capacity for supplying fishermen and for their own trawlers.



MR. J. F. CLIFFORD.

The catches of the steam trawler "M. F. B." and the oil engine trawlers "Jutland" and "Promotion" are being handled by the firm and at the end of the year another trawler now building at the Nova Scotia Shipbuilding Company's plant will be added to the Liverpool fleet.

This company has recently been incorporated at \$150,000 capital stock and with the following directors: Bowman L. Rafuse, president, Bridgewater, N.S. Mr. Rafuse is a well known shipbuilder. Capt. J. E. Backman, vice-president. Capt. Backman is connected with the LaHave Fishing Company and the LaHave Outfitting Company. Capt. Milledge Parks, LaHave, N.S., treasurer, and J. F. Clifford, managing director. The Canadian Trade Corporation, Ltd., E. T. Bank Building, Montreal, are Canadian agents and J. S. Twombly, 110 State street, Boston, are U. S. agents.

GOODRICH

"HI-PRESS" Rubber Footwear



"Do you mean to say that they out-wear two pairs of any other make?"

The man that owns a pair of Goodrich "Hi-Press" Boots has solved his boot worries.

They don't cost a bit more than the other kind—

And they're wearing twice as long. The difference is in the rubber, and—

Goodrich "Hi-Press" Boots are made **IN ONE SINGLE PIECE**—no cracking, no peeling. You'll never need to half-sole them.

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When writing Advertisers, kindly mention the "Canadian Fisherman."

BACK FROM SERVICE.

Fishermen in many parts of Canada will be glad to know that Mr. J. W. McEwan, travelling representative of John Leekie, Ltd., Toronto, has returned from overseas and resumed his former vocation in supplying the needs of the commercial fishermen in nets and gear.



As a man who did his bit, we feel sure that Mr. McEwan will meet with the glad hand and successful business from his old customers in the fishing industry.

JOHN WALLACE DIES SUDDENLY

We regret to record that after dis-embarking from the steamer at Liverpool, England, Mr. John Wallace, of Vancouver, died suddenly on July 25th.

Mr. Wallace was born 67 years ago in Black Water Foot, Isle of Arran, Scotland. His brother is Mr. Peter Wallace of the Wallace Fisheries, Ltd.

John and Peter Wallace sent the first sturgeon from the Pacific Coast to Chicago, from their plant on the Columbia River, in 1887. The express charges were \$47.00 for 200 lbs. and they received 7c. per lb. for the sturgeon.

In 1891 they opened a branch at Bonaeord on the Fraser River. In 1898 they started mild curing on the Skeena River and in 1900 they opened a cannery and built a cold storage at Claxton. It may be mentioned here that the Wallaces built up a reputation for shipping the first frozen salmon and of the very finest quality to Scotland from British Columbia.

In 1910 they sold out to Wallace Fisheries, Ltd. The next year, 1911, John Wallace built the cannery on the Naas River, which he afterwards disposed of to H. Bell-Irving & Co., Ltd. In 1914 he built the cannery and cold storage at Butedale on the Princess Royal Island, Granville Passage. This was named after Bute, in which shire his birthplace Arran was located on the River Clyde.

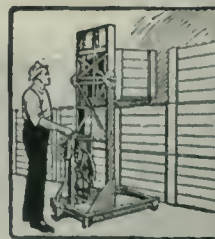
In 1917 he sold Butedale cannery and cold storage to the Western Packers, Ltd. Since then he has not been active in the cannery business but was active in an advisory capacity to the Canada Food Board.

John Wallace was a capable and farsighted business man who did much for the industry with which he was connected. He leaves a wife, son, two sisters and two brothers to mourn his loss.

BARTER.

Bills of exchange and sight drafts fade afar,
With tedious detail of the ocean trade;
And dreaming I can see past foam and bar,
Primeval barter; in this eastern raid
Essential oils and simsim seeds are spread
For gleaming cutlery and iron bars;
And eyes strain westward where the sun sinks red,
Seeking a market under alien stars.

Textiles are asked in trade for earaway,
And coriander for enameled kid;
In ardent Africa the merchants pray
For roaring motors; in their eager bid
They offer almonds and pistachio
And dates conveyed through distant desert haze
On patient camels rocking to and fro,
Through far, entrancing, slow Algerian days.
Thos. J. Murray, in the New York Times.

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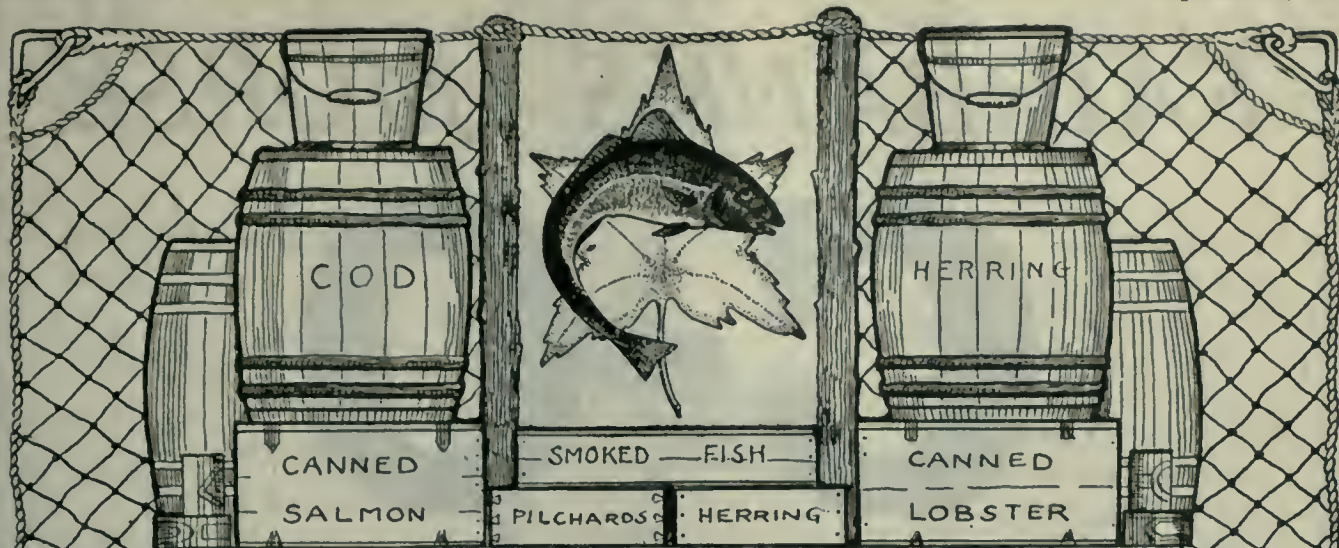
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THE CANADIAN FISHERMAN
 LE «PÊCHEUR CANADIEN»
 EL PESCADOR CANADIENSE

EXPORT EDITION
 EDITION D'EXPORTATION
 EDICION DE EXPORTACION

*Official Organ of the Canadian Fisheries Association.
 Organe Officielle de l'association des Pêcheries Canadiennes.
 Organo Oficial de la Asociación de Pesquerias Canadienses.*



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THE CANADIAN FISHERMAN

A MONTHLY JOURNAL DEVOTED TO THE COMMERCIAL DEVELOPMENT OF THE FISHERY RESOURCES OF CANADA, AND THE TECHNICAL EDUCATION OF THOSE ENGAGED IN THE INDUSTRY.

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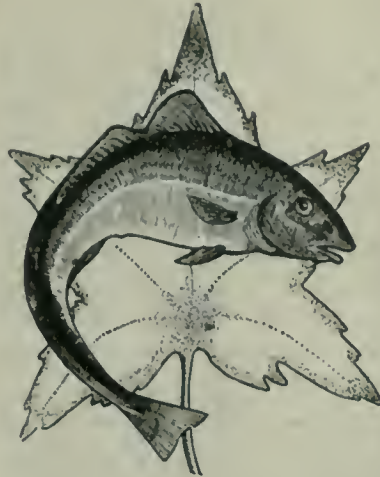
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FREDERICK WILLIAM WALLACE

EDITOR

Official Organ of the Canadian Fisheries Association and Affiliations

Vol. VI.

GARDEN CITY PRESS, St. Anne de Bellevue.

No. 9

ANNOUNCEMENT.

In this, the second of the three Export Editions of the CANADIAN FISHERMAN, we illustrate and describe in a brief manner three valuable phases of our commercial fisheries—the salmon industry of the Pacific Coast and the lobster and sardine industry of the Atlantic.

The salmon of British Columbia constitute our most valuable fishery asset—the annual catch amounting in value to seventeen million dollars. The lobster fishery of the Atlantic Coast is our third most valuable fishery with a catch amounting to five and a half million dollars in annual value. The sardine herring fishery of the Atlantic averages two million dollars in annual value, and ranks seventh in importance on the list of Canada's fishery products.

These three fisheries are of interest to our friends in the fish trade abroad by reason of the fact that they are specially suitable for export and the bulk of the catch of salmon, lobsters and sardine-herring is packed in cans for shipment to other countries.

Canadian canned salmon is unequalled anywhere in the world and the catching and canning of Canadian salmon is highly specialized industry on our Pacific Coast. The firms engaged in salmon canning industry employ the most modern equipment in

AVIS.

Dans cette seconde publication des trois éditions d'exportation du *Canadian Fisherman*, nous illustrons et décrivons d'une manière brève trois phases intéressantes de nos pêcheries commerciales—l'industrie du saumon de la côte du Pacifique et l'industrie du homard et de la sardine de l'Atlantique.

Le saumon de la Colombie Anglaise constitue notre plus riche actif de pêcheries—la pêche annuelle s'élevant à une valeur de dix-sept millions de dollars. La pêche du homard de la côte de l'Atlantique vient en troisième lieu au point de vue de la valeur productive, avec une pêche s'élevant à une valeur de cinq millions et demi de dollars annuellement. La pêche de la sardine-hareng de l'Atlantique a une valeur annuelle moyenne de deux millions de dollars et se range en septième lieu dans l'ordre d'importance des produits des pêcheries canadiennes.

Ces trois pêches ne peuvent manquer d'intérêt pour nos amis étrangers qui sont engagés dans le commerce du poisson, en raison du fait que ces poissons conviennent parfaitement pour l'exportation et que le gros de la pêche du saumon, des homards et des sardines-harengs est mis en boîtes pour être expédiés à d'autres pays.

Le saumon canadien en conserve est sans égal dans le monde entier et

AVISO.

En este número, segundo de las tres ediciones de exportación del "*Canadian Fisherman*," hacemos una breve descripción de las tres fases más importantes de la industria pesquera, referente a la conserva del salmón en la costa del Pacífico, y de la langosta y sardina en la costa del Atlántico.

El salmón de la Colombia Inglesa es el mayor activo de nuestra industria pesquera. El valor anual de la pesca de salmón se eleva a \$17,000,000 oro americano; la pesca de la langosta en la costa del Atlántico produce anualmente \$5,500,000 oro, y la pesca de la sardina, sardina-arenque y arenque, también del Atlántico, unos \$2,000,000 oro, término medio todos los años.

El salmón, la langosta y la sardina, son de gran interés para nuestros amigos de ultramar debido a que se prestan especialmente para la exportación. La mayor parte de la pesca de salmón, langosta y sardina, se prepara en conserva y se exporta al extranjero.

El salmón del Canadá no tiene rival en todo el mundo, y de su explotación se ha hecho una especialidad en la Costa del Pacífico. Las fábricas que preparan y conservan el salmón emplean los métodos más modernos tanto para la pesca como para la

fishing gear and canning machinery and the majority of them are long established concerns with world-wide reputations. The same can be said of the lobster canning industry of our Atlantic Coast where the firms engaged in the business are better known abroad than in Canada. The sardine-herring canning industry is confined to two or three firms at present and to a certain district of Canada's Atlantic Coast, but their products have been favourably received in foreign markets and have commanded the taste of the consumer in competition with the true sardine of the European waters.

In addition to being preserved in cans, Canadian salmon is frozen and exported in considerable quantities to Europe and Australia. It is also packed in a pickled state and thus exported. Canadian lobsters in a fresh state are shipped in great quantities to the United States where they find a steady market.

We desire to point out to our friends in the fish trade abroad that Canadian producers of fish and fish products are yearly devoting more attention to the requirements of the foreign markets and perfecting their machinery of production. In a young nation such as ours many pioneering difficulties had to be overcome—not the least of which was transportation. Of late years, two great transcontinental railroads have been constructed from the Atlantic to the Pacific—making three wonderful cross-country systems—and to these systems branch lines are being continually added with the object of linking up formerly inaccessible natural resources with markets and shipping ports. Overseas transportation has received the attention of the Canadian Government and this year sees numerous ships of the Canadian Government Merchant Marine plying between Canadian ports and the West Indies, Europe, South America, and Australia. This fleet is constantly being augmented and direct steamship services will be extended to all parts of the world as trade expands.

Private steamship services are numerous and are being continually extended and the time is not far distant when Canadian exporters will be able to ship goods to any part of the world via Canadian ports. At the present time Canada's great export trade in grain, timber, minerals, paper, agricultural produce and manufactured products bring many shipping lines to her ports and afford excellent transportation facilities for the shipment of fish and fish products to foreign markets.

To encourage ships to use our ports, the Government is sparing no ex-

la pêche et la mise en conserve du saumon canadien est la spécialité industrielle hautement réputée de notre côte du Pacifique. Les maisons engagées dans l'industrie du saumon en conserve emploient l'aménagement le plus modernes en gréments de pêche et en machinerie pour la mise en conserve et la plupart de ces maisons sont établies depuis de longues années et jouissent par tout le monde une réputation enviable. On peut en dire autant de l'industrie de la conserve de homards de notre côte de l'Atlantique ou les maisons engagées dans ce commerce sont mieux connues à l'étranger qu'au Canada. L'industrie de la conserve de la sardine-hareng est confinée à présent à deux ou trois firmes et à une certaine région de la côte canadienne de l'Atlantique, mais leurs produits sont favorablement accueillis sur les marchés étrangers et ont su plaire au consommateur en concurrence avec la véritable sardine des eaux européennes.

En outre de la conserve en boîtes de saumon canadien, ce dernier est gelé et exporté en quantités considérables en Europe et en Australie. Il est aussi mis en boîtes à l'état mariné et exporté ensuite. Les homards canadiens à l'état frais sont expédiés en grosses quantités aux Etats-Unis où ils ont un grand marché. Nous désirons faire remarquer à nos amis engagés dans le commerce du poisson à l'étranger que les producteurs canadiens de poisson et de produits du poisson apportent, d'année en année plus d'attention aux exigences des marchés étrangers et perfectionnent leur outillage de production. Dans une nation jeune comme la nôtre, de multiples difficultés d'établissement sont à surmonter, dont la moindre n'est pas celle du transport. Dans ces dernières années, deux grands chemins de fer transcontinentaux ont été construits de l'Atlantique au Pacifique—ce qui donne trois splendides systèmes de voies de communication d'un bout à l'autre du pays et à ces grandes voies des lignes auxiliaires sont continuellement ajoutées dans le but de relier des points de nos ressources naturelles autrefois inaccessibles avec les marchés et ports d'expédition. Les transports d'outre-mer ont été l'objet de l'attention du gouvernement canadien et l'on a vu cette année de nombreux vaisseaux de la marine marchande du gouvernement canadien sillonner les mers entre les ports canadiens et ceux des Indes Orientales, de l'Europe, de l'Amérique du Sud et de l'Australie. Cette flotte est augmentée constamment. Des services de navigation directe seront étendus à toutes les parties du monde pour l'expansion du commerce. Les services particuliers de navigation sont nombreux et se multiplient continuellement et le temps n'est pas éloigné où les exportateurs canadiens seront en mesure d'expédier leurs marchandises dans toutes les parties du monde, via les ports canadiens. A l'heure présente, le gros commerce canadien d'exportation en grain, bois de construction, minéraux, papier, produits agricoles et manufacturés attirent de nombreuses lignes de navigation à nos ports et nous fournissent d'excellentes facilités de transport pour l'envoi du poisson et

preparación de sus productos y debido a los muchos años que llevan en operación gozan de una reputación mundial bien merecida. Lo mismo puede decirse sobre la industria de la langosta en la costa del Atlántico, donde las fábricas que conservan este crustáceo son más conocidas en el extranjero que en el Canadá. La industria sardinera y la del arenque está confinada solamente a dos o tres fábricas de la costa del Atlántico, y los productos presentados por estas fábricas han recibido la mejor acogida en los mercados extranjeros ofreciendo una muestra de su bondad y satisfaciendo el gusto de los consumidores en competencia con la verdadera sardina de las aguas europeas.

El salmón del Canadá, se exporta también congelado en grandes cantidades a los mercados de Europa y Australia. También se exporta servado en salmuera.

La langosta del Canadá, en estado fresco, se exporta en grandes cantidades a los mercados de los Estados Unidos, donde siempre tiene gran demanda. Deseamos hacer presente a nuestros colegas que los fabricantes canadienses están poniendo una gran atención para satisfacer las exigencias de los mercados extranjeros, perfeccionando para ello sus maquinarias y producción hasta competir ventajosamente con sus rivales de Europa. Hay muchos problemas que resolver en una nación, que como la nuestra es relativamente moderna. Entre estos problemas uno de los principales es el de los transportes. Ultimamente se han construido dos grandes líneas más de ferrocarriles a través del Continente, las cuales unen el Atlántico con el Pacífico, y dotan al Canadá con tres grandes sistemas transcontinentales. A estas tres grandes redes se les está aumentando constantemente ramales que unen lugares de grandes recursos naturales con las líneas principales, y por lo tanto con los mercados y puertos de embarque. El Gobierno Canadiense está dando gran impulso y ayuda a los transportes de ultramar y al presente un gran número de barcos de la Marina Mercante Canadiense cruzan los mares con rumbo a Europa, Las Antillas, Sud-América y Australia. Esta flota se está aumentando incesantemente a fin de establecer líneas directas a todas partes del mundo donde el comercio lo requiera. Por otro lado, numerosas compañías particulares de navegación están aumentando sus flotas y no está muy lejano el día en que los exportadores canadienses podrán enviar sus productos a cualquier parte del mundo desde los puertos del Canadá. La gran exportación de granos, madera, minerales, papel, productos agrícolas y manufacturados del Canadá, obliga a las principales compañías de navegación del mundo a hacer escala en nuestros puertos, y esta ventaja también ofrece grandes facilidades para la exportación de la pesca y sus derivados a los mercados extranjeros.

El Gobierno Canadiense no omite gasto en la mejora de sus puertos para que la afluencia de barcos extranjeros sea mayor cada día, y en la actualidad muy pocos países con la misma población podrán jactarse de

pense in improving port facilities and even at present few countries of similar population can boast of such terminals as are to be found in the ports of Montreal, Halifax, St. John and Vancouver.

With the rapid development of our great natural resources, the Fishing Industry of Canada has kept pace — especially during the last five years. The Dominion Government maintains a Department of Fisheries under a responsible Minister and this organization's scope of activities are constantly being extended. Three of the Provincial Governments maintain Fisheries Bureaus for the administration and development of their own territorial fisheries, and those engaged in the industry formed the Canadian Fisheries Association in 1915 for the development of the fisheries in conjunction with the Government administrations.

The Dominion and Provincial Departments of Fisheries and the Canadian Fisheries Association will be glad to hear from importers of fish abroad and to co-operate in producing fish products suitable for their respective markets.

des produits du poisson aux marchés étrangers.

Pour encourager les navires à employer nos ports, le Gouvernement ne regarde à aucune dépense pour l'amélioration des accommodations de nos ports et même actuellement, peu de pays d'une population égale à la nôtre peuvent se vanter de posséder des points d'atterrissage comme les ports de Montréal Halifax St. Jean et Vancouver.

L'industrie de la pêche au Canada a suivi le rapide développement de nos grandes ressources naturelles, surtout pendant les cinq dernières années. Le Gouvernement du Dominion entretient un Ministère de Pêcheries sous la direction d'un ministre responsable et les activités de cette organisation s'élargissent sans cesse. Trois des Gouvernements provinciaux entretiennent des bureaux de pêcheries pour l'administration et le développement de leurs propres pêcheries territoriales et les intéressés dans l'industrie de la pêche ont formé en 1915, l'Association Canadienne des Pêcheries pour le développement des pêcheries en coopération avec les administrations du Gouvernement.

Les ministères fédéraux et provinciaux des pêcheries et l'Association Canadienne des Pêcheries se feront un plaisir de répondre aux demandes d'information des importateurs étrangers de poisson et de coopérer avec eux en consacrant leurs efforts à la production de poisson répondant aux besoins de leurs marchés respectifs.

tener unos puertos terminales tan excelentes y bien acondicionados como los de Montreal, Halifax, St John y Vancouver.

La industria pesquera del Canadá está al mismo nivel del rápido desarrollo de nuestros grandes recursos naturales. Este adelanto se ha manifestado especialmente durante los últimos cinco años. El Gobierno del Dominio, mantiene un Departamento de Pesquerías bajo la Dirección de un Ministro debidamente calificado en la materia y el radio de acción y las actividades de tal organización se extienden más cada día. Existen tres Gobiernos Provinciales que mantienen Oficinas de Pesquerías para la administración y desarrollo de las riquezas de sus aguas territoriales, y todos cuantos se dedican a la industria pesquera formaron en 1915 la Asociación Canadiense de Pesquerías para desarrollar sus industrias de común acuerdo con el Gobierno.

Los Departamentos de Pesquerías Provinciales y las Asociaciones Canadienses de Pesquerías, tendrán un sumo placer en recibir correspondencia de los importadores extranjeros y cooperar en cuanto sea posible para producir el pescado de acuerdo con las exigencias de sus respectivos mercados.



Catching Salmon by Drag Seine.

Prise du Saumon à l'Aide d'une Seine Tractionnée.



TO FOREIGN IMPORTERS OF FISH

Canada has been exporting fish to the value of from twenty-five to thirty million dollars annually. There is no substantial reason why she should not in the future export several times the quantity. She has fisheries of unsurpassed excellence in quality, variety and abundance. The fishing banks are adjacent and short distance from her coasts so that a maximum quantity of fish can be landed in a minimum time. She can, consequently, produce fish cheaply, and so she is in a position to take a large share in supplying the cured and canned fish markets of the world.

Also Canadian producers are now in a position to prepare their fish so as to fully meet the requirements of any particular market, and the Canadian Fisheries Administration stands ready to assist in seeing that this is done.

Foreign Importers who have not already tried Canadian fish are invited to do so, and in submitting their orders to prescribe the class of curing they desire.

Yours truly,

C. C. BALLANTYNE,
Minister of Fisheries.

Aux Importateurs de Poisson à l'Étranger.

Le Canada exporte annuellement du poisson pour une valeur de 25 à 30 millions de dollars. Il n'y a aucune raison plausible pour qu'à l'avenir cette quantité ne puisse être considérablement augmentée. La qualité, la variété et l'abondance de ses pêcheries sont insurpassables. Les centres de pêche sont situés à proximité des côtes ce qui permet d'amener à terre une quantité maxima de poisson dans un minimum de temps. En conséquence cette contrée peut fournir le poisson à bon marché et est en position de concourir pour une large part dans l'approvisionnement de poisson salé ou conservé sur les marchés du monde.

De plus les producteurs Canadiens sont à même de préparer leur poisson pour répondre aux exigences de n'importe quel marché particulier et l'Administration des Pêcheries canadiennes est toujours prête à surveiller l'exécution du travail.

Les importateurs étrangers qui n'ont pas encore essayé le poisson canadien sont invités à le faire et en soumettant leurs ordres, ils sont priés d'indiquer le genre de salaison qu'ils désirent.

Votre dévoué,

C. C. BALLANTYNE,
Ministre des Pêcheries.

A LOS IMPORTADORES EXTRANJEROS DE PESCADO.

El Canadá a venido exportando pescado por valor de veinticinco a treinta millones de dólares anualmente, y no hay razón para que en el futuro las exportaciones no alcancen un total mucho mayor.

Este país posee pesquerías sin rival en todo el mundo por su excelente calidad, variedad y abundancia. Los Grandes Bancos están adyacentes a sus costas y debido a ello se puede conseguir una gran cantidad de pesca en un tiempo relativamente corto. Como resultado de tan gran ventaja se obtiene una producción barata, la cual coloca al Canadá en condiciones de abastecer en gran escala los mercados consumidores en todo el mundo.

Los fabricantes de conservas canadienses preparan la pesca con arreglo a las exigencias de todos los mercados importadores y por su parte, la Administración de Pesquerías del Canadá, tiene buen cuidado de que se cumplan las disposiciones de la Ley, y presta su ayuda para que los fabricantes puedan satisfacer los deseos de los compradores.

Solicitamos las ordenes de los importadores extranjeros que todavía no hayan probado las excelencias de la pesca canadiense, rogándoles que al hacer sus pedidos manifiesten la clase de cura que desean en la preparación de la pesca.

C. C. BALLANTYNE,
El Ministro de Pesquerías.



Canada's Pacific Salmon Fisheries Les Pêcheries du Saumon du Pacifique Pesca del Salmon en el Pacifico Canadiense



The rocks of the mountains and the river beds of the Provinces of British Columbia and Yukon are rich in that most alluring and romantic of metals—gold, and vast fortunes have been, and are being wrested from the earth of that fortunate portion of Canada, but our far western country is blessed by yet another wonder of nature, called by a famous author—the "silver horde." Not the silver of the rocks, but the silver of the sea—the wonderful millions of silver scaled salmon which, at certain seasons of the year, swarm in from the unknown spaces of the vast Pacific Ocean to the channels, inlets and rivers of Canada's Pacific coast—there to spawn a new generation.

British Columbia, Yukon, Alaska, and a part of Eastern Siberia are the world's greatest salmon areas. It is the King Fish of the North Pacific. Millions of dollars are invested in equipment for its capture and preparation for market: hundreds of thousands of men and women are engaged in the industry, and the whole world is the consumer of the canned and cured salmon of the Pacific. The empty salmon can, with "Canada" stamped on the ends of the tin, will be found around the alleys of London and Paris and Rome; the beaches of the Pacific Islands; in the Australian bush; half buried in the sands of Egypt; in a native kraal in Africa; on the caravan trails of Turkestan—in fact everywhere above, below and on the equatorial belt. The discarded lacquered tin is Canada's greatest visiting card and mute evidence of the salmon's popularity as food with people of every race and clime.

British Columbia's indented coast line of 7,000 miles is the habitat of the salmon in countless numbers and during 1918 the weight of salmon caught by Canadian fishermen amounted to 147,306,300 lbs.—an amount which would load ten 7,000 ton ships. The greater proportion of this catch is packed in cans and during 1918, eighty million such cans were packed and shipped in Canada. Packed end to end, 1918 pack of Canadian canned salmon would measure about 6,300 miles and

Les rochers des montagnes et les lits des rivières des provinces de la Colombie Britannique et du Yukon sont riches en or, ce métal séduisant entre tous et d'immenses fortunes ont été et sont encore tirées du sol de cette portion privilégiée du Canada, mais notre contrée du "Far West" est encore favorisée par une autre merveille de la nature qu'un auteur célèbre a appelée "la horde d'argent". Non pas l'argent du minerai, mais l'argent de la mer—Les innombrables millions de saumons aux écailles argentées qui, à certaines saisons de l'année, arrivent en bandes des espaces inconnus du vaste océan Pacifique vers les détroits, les anses et les rivières de la Côte du Pacifique canadien pour y procréer une génération nouvelle.

La Colombie Britannique, le Yukon, l'Alaska et une partie de la Sibérie orientale sont les plus grands producteurs de saumon du monde. C'est le roi des poissons du Pacifique septentrional. Des millions de dollars sont engagés dans la pêche et la préparation de ce poisson pour sa mise sur le marché, des centaines de milliers d'hommes et de femmes sont employés dans cette industrie et le monde entier consomme le saumon conservé et salé du Pacifique. La boîte de saumon vide avec le mot "Canada" imprimé dans le fer se trouve dans les rues de Londres, de Paris et de Rome, sur les rives des lacs du Pacifique, dans les broussailles de l'Australie, à demi-enterrée dans les sables de l'Égypte, dans les gourbis de l'Afrique, sur les sentiers des caravanes du Turkestan..... en un mot partout en-dessous, en-dessous ou sur la ligne de l'Équateur. La boîte vide jetée au rebut est la plus grande carte de visite du Canada et la preuve muette de la popularité du saumon comme aliment chez les peuples de toutes les races et de tous les climats.

La côte accidentée de la Colombie Britannique sur une longueur de 7,000 miles est l'habitat d'un nombre incalculable de saumons et pendant l'année 1918 le poids des saumons pêchés par les pêcheurs canadiens a

Las rocas de las montañas y los lechos de los ríos en las provincias de la Colombia Inglesa y del Yukón encierran una inmensa riqueza del más atractivo y romántico metal-el oro, el cual ha producido vastas fortunas. Pero, la parte más occidental de estas provincias tiene otra bendición mayor todavía, llamada por un famoso autor la "horda de plata." No nos referimos a la plata de las rocas sino a la plata del mar, a los millones de salmones escamados de plata, que en ciertas épocas del año, afluyen desde las inmensidades del Pacífico a pulular los canales, ríos y entradas de la costa de este mar para desovar una nueva generación.

Las mayores zonas pesqueras de salmón del mundo son las de la Colombia Inglesa, el Yukon, Alaska y la parte Oriental de Siberia. El salmón es el Rey de los Peces en el Norte del Pacífico. Millones de dólares se han invertido en equipo para su captura y preparación para el mercado: cientos de miles de hombres y mujeres se ocupan en la industria y el salmón en conserva, y curado, del Pacífico se consume en todo el mundo. La lata de salmón vacía, con el nombre "Canada" estampado en sus extremos, lo mismo se encuentra en los Pasajes de Londres, París y Roma que en las playas de las islas del Pacífico; en los bosques de la Australia; medio enterradas en las arenas de Egipto; entre las tribus africanas o en los trayectos de las caravanas del Turquestán. En todas partes del mundo, la lata corleada de salmón del Canadá es el anuncio mayor de tan sabroso producto, y evidencia la gran popularidad que como alimento tiene en los pueblos de todas las razas y climas.

La accidentada costa de la Colombia Inglesa, en una extensión de 7,000 millas, es el "mundo" del salmón, el cual pulula estas aguas en cantidades fabulosas. Durante 1918, el peso del salmón sacado por pescadores canadienses ascendió a 147,306,300 libras. Este peso cargaría diez barcos de 7000 toneladas cada uno. La mayor parte de esta pesca se conserva en latas, de las cuales se prepararon

would stretch from Vancouver to Auckland, New Zealand.

Ninety canneries are engaged in the canning of salmon on the Pacific Coast of Canada and the average value of the yearly salmon catch is \$17,000,000. Packed for shipment in cases containing 48 or 96 tins, the pack for 1918 amounted to 1,616,167 cases.

History of Salmon Canning

The salmon have swarmed to the Pacific Coast as far back as Indian legends can compute. With the bear, the whale and the eagle, the salmon, has adorned the ancient totem poles of the Pacific Indian tribes. "When," as Indian legends relate, "the wife of the great Tyee (Chief) was a little girl; when the world was young and small; when the Fraser River was young and small (It is now two miles wide at the mouth) the salmon crowded its throat just as they do now and the Indian caught and salted and smoked the fish just as they have

atteint le chiffre de 147,306,300 livres, de quoi charger dix bateaux de 7,000 tonnes chacun. La plus grande partie de cette pêche est mise en conserve et pendant l'année 1918 quatre vingt millions de boîtes ont été ainsi emplies et expédiées dans le Canada. Mises bout à bout ces boîtes couvriraient une distance d'environ 6,300 milles et s'étendraient de Vancouver à Auckland en Nouvelle Zélande.

Quatre-vingt-dix fabriques sont occupées à la mise en conserve du saumon sur la côte canadienne du Pacifique et la valeur moyenné de la pêche annuelle est de \$17,000,000. Emballée en caisses de 48 ou 96 boîtes la production de 1918 s'est montée à 1,616,167 caisses.

La Mise en Boîtes.

Le saumon a pullulé sur la Côte du Pacifique de tout temps, comme le prouvent les plus anciennes légendes indiennes. Avec l'ours, la baleine et l'aigle, le saumon a orné les anciens

80,000,000 en 1918 para ser embarcadas. Colocando estas latas, una junto a otra, medirían 6,300 millas y podrían cubrir la distancia que separa a Vancouver de Auckland, Nueva Zelanda.

En la costa del Pacífico canadiense hay establecidas noventa fábricas de conservas de salmón y el valor medio de la saca o copo de esta pesca es de \$17,000,000 todos los años. En 1918 se embarcaron en el Canadá 1,616,167 cajas de 48 a 96 latas cada una.

Historia de la Conserva de Salmón.

El salmón ha venido pululando la costa Norte del Pacífico desde tiempo inmemorial. Lo mismo que el oso, la ballena y el águila, el salmón ha servido de adorno y trofeo a los grandes pilares de las tribus indias del Pacífico. Según las leyendas indias, "Cuando la esposa del gran "Tyee" (Jefe) era una niña; cuando el mundo empezaba y era más pequeño; cuando el río Fraser era un arroyuelo (ahora mide dos millas en la boca)



Spawning Salmon in Fraser River.

Saumon Frayant dans la Rivière Fraser.

Salmón haciendo el desove, Rio Fraser.

done this year and just as they always will do." The Fraser River of legendary days still remains as the great passageway for the silver hordes of salmon swarming in from the sea to the headwaters to spawn, but the Indian in his dug-out seeks the migrating salmon in company with a vast fleet of modern fishing craft. The scattered Indian villages of olden days along the river shore have been replaced by large canneries: the quiet of the river is disturbed by the roar of gasoline boats, the hum of machinery and the shriek of whistles, while the darkness of the night is dissipated by the glare of the electric lights at the busy packing plants.

Thus it will be found all along the British Columbia Coast. The canneries are everywhere on the rivers and inlets. One can sail for miles through quiet winding channels flanked by heavily wooded mountains, and

"totem poles" des tribus indiennes du Pacifique. Comme le disent les légendes indiennes, "Quand la femme du grand Tyee (chef) était petite fille, quand la rivière Fraser était jeune et petite (elle a maintenant deux milles à son embouchure) le saumon y abondait tout comme aujourd'hui et les Indiens le pêchaient, le salaient et le fumaient tout comme ils le font cette année et comme ils le feront toujours." La rivière Fraser, de légendaire mémoire, demeure toujours le grand passage des hordes argentées de saumons venant de la mer pour remonter aux sources pour y frayer, mais l'Indien dans sa hutte recherche le saumon migrateur en compagnie d'une vaste flotte de pêcheurs modernes. Les villages Indiens des anciens jours dispersés le long de la rivière ont été remplacés par d'immenses usines, la quiétude de la rivière est troublée par le bruit

el salmón obstruía su garganta lo mismo que ahora y los indios lo pescaban, lo salaban y ahumaban como en nuestros días y como seguirán haciéndolo en el futuro. El río Fraser, de tiempos legendarios, todavía sigue sirviendo de paso a las hordas plateadas de salmón que lo pululan desde el mar, remontándolo hasta sus fuentes para depositar el desove. Pero los indios, desde sus viviendas se lanzan en pos del salmón empleando una enorme flota de barcos de pesca modernos. Aquellas diseminadas aldeas de otros días, a lo largo del río, se han convertido en grandes fábricas de conserva; la tranquilidad del río se vé turbada por las detonaciones de los motores de gasolina, por el chirrido de las máquinas y por la estridencia de los pitos, mientras que las sombras de la noche se disipan con el resplandor de las luces eléctricas en las fábricas.



A Salmon Cannery Wharf During the Fishing Season. Le quai d'une Saumerie durant la saison de Pêche. Muelle de una fábrica de conservas durante la estación de pesca.

glide along in the dark in a "silence you most could hear." Suddenly you swing around a point where a cannery illuminates the blackness with myriad lights, steam and smoke; where boats loaded with fish are coming in out of the dark to the wharves and where the shouts of men, the hiss of steam, the hum of machinery and the drum fire of gasolene engines dissipate the silences of the primeval mountains and forests.

The lure of gold first brought man's attention to the El Dorado of the Sea. Among the miners who flocked to the Sacramento River, California, in 1849,

des canots automobiles, le bourdonnement des machines et le cri des sirènes. L'obscurité de la nuit est dissipée par l'éclat des lampes électriques des usines affairées.

C'est ce que l'on rencontre tout le long de la côte de la Colombie Britannique. Les usines de conserves se trouvent partout sur les rivières et dans les anses. On peut voguer pendant des milles à travers de tranquilles détroits flanqués de montagnes fortement boisées et glisser dans la nuit au milieu du plus grand silence. Tout à coup vous arrivez à un point où une usine illumine l'obs-

Así es como hoy se encuentra toda la costa de la Colombia Inglesa. Las fábricas se levantan por doquiera en los ríos y en sus entradas. Cualquiera puede navegar millas y millas por canales abrigados del viento por grandes cadenas de espesas y bien pobladas montañas y deslizar las aguas en medio de una claridad sombría y un silencio sepulcral. De repente, al volver una punta, la oscuridad se ve disipada por millares de luces, vapor y humo de una fábrica de conservas; muy pronto empiezan a verse gran número de botes cargados de pesca, camino de los muelles, donde las voces



Chum Salmon. Saumon "Chum".
Salmón "Chum"



Sockeye Salmon. Saumon "Sockeye".
Salmón "Sockeye"

was a William Hume. Hume came from Augusta, Maine, and when a youth, fished with his father for salmon on the Kennebec River. While mining along the banks of the Sacramento, he noticed the schools of salmon swarming in from the sea to spawn, and it occurred to him that if they could be packed in cans similar to what was being done on the Atlantic Coast, a lucrative industry might be developed. Communicating with a friend of his—a Mr. Hapgood who had experience in canning lobsters on the Atlantic Coast—Hume induced him to come out to the Pacific Coast and the two men installed a cannery at Collinsville on the Sacramento River, Although the cans were filled by hand and packed in a very crude

curité de myriades de lampes, de vapeur et de fumée, où des bateaux chargés de poissons sortent de l'ombre pour arriver aux quais, et où les cris des hommes, le sifflement de la vapeur, le bourdonnement des machines et le ronflement des moteurs à gazoline dissipent le silence des montagnes et des forêts.

L'appât de l'or a tout d'abord attiré l'attention de l'homme vers l'El Dorado de la mer. Parmi les mineurs qui vinrent en foule vers la rivière Sacramento, Californie, en 1848 se trouvait un certain William Hume, qui venait d'Augusta, Maine. Dans sa jeunesse il pêchait le saumon avec son père sur la rivière Kennebec. En allant travailler aux mines le long de la rivière Sacramento,

de los hombres, el siseo del vapor, el ruido de la maquinaria y los escapes de los motores a gasolina rompen el silencio virgen de las montañas y los hosques.

Primeramente fué el oro el que atrajo a los hombres a "El Dorado" del mar. entre los mineros que en 1849 invadieron el río Sacramento, en California se encontraba William Hume. Este hombre vino de Augusta, Maine, Estados Unidos, y cuando muchacho pescaba salmón con su padre en el río Kennebeck. Mientras exploraban minas a lo largo de los bancos del Sacramento, notó los grandes enjambres de salmón que entraban del mar para hacer el desove, y se le ocurrió que si pudiese conservar el salmón en latas, como se hacía en la costa del



Gosse-Millerd" Cannery, Skeena River, B. C. La Saumonnerie Gosse-Millerd, Rivière Skeena, C. A.
Fabrica de conservas "Gosse-Millerd", Skeena River, C. I

manner, yet they were successful in preserving the fish in good edible condition.

In 1863-4, Messrs Hapgood & Hume formed a partnership and moved to the Columbia River where the salmon were much more plentiful than in the Sacramento, and erected a commercial cannery at Eagle Cliff, about forty miles above Astoria, Oregon. Their pack for the first year amounted to about 2,000 cases which were shipped to Australia and sold for \$12 per case. Thus began a great industry.

It was not until 1876 that the possibilities in Canadian waters were taken advantage of. At that time Alexander Ewen built a cannery on the Fraser River near New Westminster, B. C. Others followed and gradually operations were extended to other points on the coast notably to the Naas and Skeena Rivers, Rivers Inlet and Northern British Columbia. Every year the number of canneries has grown until in 1918, there were 90 canneries employing 16,500 people.

Il remarqua les banes de saumon qui venaient de la mer pour frayer et il lui sembla que si on les mettait en boîtes comme en le faisait sur la côte de l'Atlantique, on pourrait créer une industrie lucrative. Il communiqua avec un de ses amis, un M. Hapgood qui avait acquis une certaine expérience dans la conserve des homards sur la côte de l'Atlantique. Hume l'engagea à venir sur la côte du Pacifique et les deux hommes installèrent une usine de conserve à Collinsville sur la rivière Sacramento. Bien que les boîtes fussent remplies à la main et que l'empaquetage se fit d'une façon très primitive, ils réussirent à conserver le poisson en bonne condition comestible.

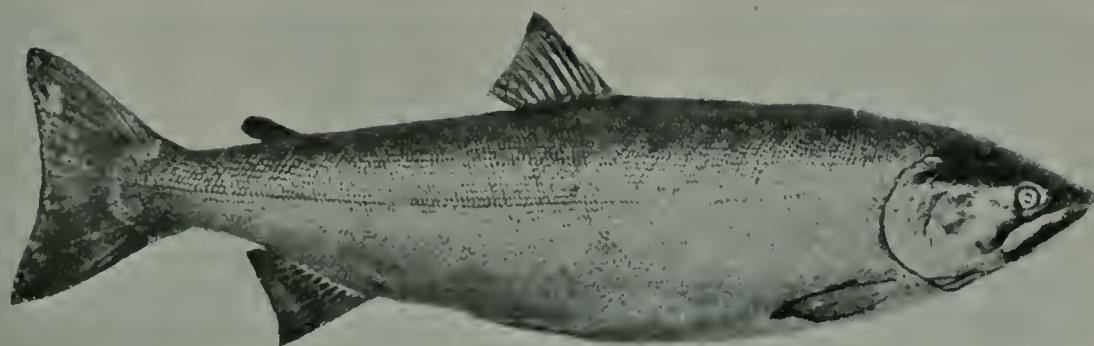
Voici la description que donne du saumon du Pacifique, M. John Pease Babcock, Commissaire provincial des Pêcheries:

"Nous avons dans les eaux de notre contrée les cinq espèces connues du genre *Oncorhynchus* dénommé le saumon du Pacifique. Ces poissons

Atlántico, podría desarrollar una industria muy lucrativa. Escribió a un amigo, llamada Hapgood, que trabaja en una fábrica de conservas de langosta del Atlántico y le indujo a venir al Pacífico, y entre los dos montaron una fábrica en Collinsville, sobre el río Sacramento. A pesar de que las latas se llenaban a mano y se preparaban muy rudimentariamente, les fué posible conservar el pescado en buen estado para el consumo.

En 1863, formaron la Compañía Hapgood & Hume y se establecieron en el río Fraser, donde el salmón era más abundante, montando una fábrica en Eagle Cliff, a unas cuarenta millas de Astoria, Oregon. El primer año prepararon 2,000 cajas y las exportaron a Australia a \$12 por caja. Así empezaron esta gran industria.

Hasta 1876 no empezó la verdadera explotación de las aguas canadienses. En aquella época, Alexander Ewen, levantó una fábrica en el río Fraser, cerca de New Westminster, C. I. Después siguieron otros y otros, y las



"Coho" Salmon. Saumon "Coho". Salmón "Coho"

The Pacific Salmon.

The Pacific salmon is thus described by Mr. John Pease Babcock, Provincial Commissioner of Fisheries:—

"We have in our waters the five known species of the genus *oncorhynchus*, termed the Pacific salmon. They are distinct from the salmon of the Atlantic, which are the genus *salmo*. Indeed, the word salmon does not by right belong to any fish found in the Pacific, it having first been applied to a genus found in Europe. The settlement of the Atlantic Coast of America was made by a people familiar with the European form, who at once recognized this fish as running in the rivers of their newly-acquired territory. They naturally and by right gave it the name salmon, for it is identical with the European form. With the advent of people from the Atlantic States to the Pacific Coast, they found running in all the main rivers a fish similar in form and colour, and of apparently similar habits, and they naturally called them salmon. Structurally these fish are but slightly different, but their life history is totally dissimilar, and they are distinctly and positively placed. The greatest difference is presented

sont différents du saumon de l'Atlantique qui est le véritable saumon. En fait le nom de saumon ne s'applique à aucun des poissons que l'on rencontre dans le Pacifique, car il a été donné à l'origine à un genre trouvé en Europe. La colonisation de la côte américaine de l'Atlantique a été faite par des gens qui connaissaient ce genre de poisson européen et qui ont reconnu la même espèce dans les rivières de leur nouveau territoire. Tout naturellement et à juste raison ils donnèrent à cette espèce le nom de saumon, puisqu'elle est identique au type européen. Lorsque les colons des provinces de l'Atlantique arrivèrent sur la côte du Pacifique, ils trouvèrent dans toutes les rivières importantes un poisson de même forme et de même couleur, et de moeurs apparemment semblables, et naturellement ils l'appellèrent saumon. Physiquement ces poissons ne diffèrent que peu du saumon, mais leur vie est totalement différente et ils se classent positivement à part. La différence la plus frappante que l'on remarque chez toutes les espèces trouvées dans les eaux du Pacifique, c'est qu'elles meurent peu de temps après avoir frayé une fois. Ceci est vrai pour les deux

operaciones se fueron extendiendo gradualmente a otros puntos de la costa, especialmente hacia los ríos Naas y Keena, las bocas de los mismos y hacia el norte de la Colombia Inglesa. El número de fábricas ha venido aumentando hasta 1918 que había un total de noventa, con 16,500 operarios.

El Salmón del Pacífico.

Mr. John Pease Babcock, Comisionado Provincial de Pesquerías, hace la descripción del salmón del Pacífico como sigue:

"En nuestras aguas tenemos las cinco especies que se conocen del género *oncorhynchus*, de salmón del Pacífico. Estas especies son diferentes de las del Atlántico, conocidas como *genus salmo*. En verdad, la palabra salmón no pertenece por derecho a ningún pez del Pacífico, por haberse dado primeramente a un género encontrado en Europa. La colonización de la costa Atlántica de América, la hizo un pueblo familiarizado con las costumbres europeas, el cual inmediatamente reconoció esta pesca en los ríos de su nuevo territorio. Naturalmente, y con todo derecho, le dieron el nombre de salmón por ser idéntico en forma al europeo. Cuando la gente de la costa Atlántica empezó

in the fact that all the species found in Pacific waters die shortly after spawning once. This is true of both sexes. This remarkable characteristic, when first brought to the attention of some Atlantic and European authorities, was discredited, as they did not then generally know that the Pacific salmon was different from and not identical with the *salmo-salar*, which does not die after spawning, and generally returns to salt water after depositing its ova. While our Pacific fish are not salmon in a scientific sense, they are now the salmon of the world, because of their abundance and their fine canning qualities, which permit them to be offered in the markets of the civilized world.

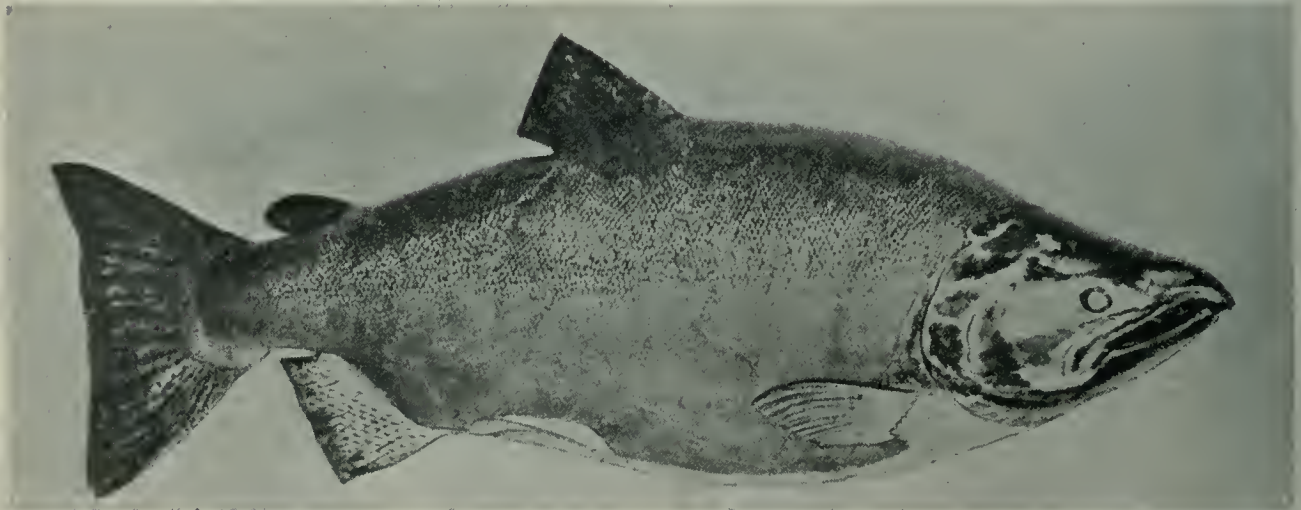
"Taken in the order of their commercial importance in the Province, they are known as:—(1) The Sockeye or Blueback (*Oncorhynchus nerka*); (2) the Spring or Quinnat (*O. tshawytscha*); (3) the Coho or Silver (*O. kisutch*); (4) the chum (*O. keta*); (5) the Humpback (*O. gorbuscha*).

sexes. Cette caractéristique remarquable lorsqu'elle fut signalée à l'attention des autorités de l'Atlantique et d'Europe, fut tout d'abord mise en doute, car ces autorités ne savaient pas alors que le saumon du Pacifique était différent et nullement identique au "*Salmo-salar*" qui ne meurt pas après le frai et qui retourne généralement vers l'eau salée après avoir déposé ses œufs. Bien que nos poissons du Pacifique ne soient pas des saumons au sens scientifique du mot, ils sont aujourd'hui les saumons que l'on trouve dans le monde entier, à cause de leur abondance et de leur bonne qualité qui permettent de les offrir sur les marchés de tout le monde civilisé.

Voici les noms de ces cinq genres dans l'ordre de l'importance de leur commerce dans la province:

- (1) Le Sockeye ou Blueback (*Oncorhynchus nerka*.)
- (2) Le Spring ou Quinnat (*Oncorhynchus tshawytscha*.)
- (3) Le Coho ou Silver (*Oncorhynchus kisutch*.)
- (4) Le Chum (*Oncorhynchus keta*.)

a trasladarse a la del Pacífico, se encontraron con una pesca muy parecida, que migraba en los ríos en grandes cantidades, y como esta pesca tenía las mismas características en forma, color, etc., también la llamaron salmón. Estos peces difieren algo en su estructura pero en cambio su vida e historia es completamente diferente y no hay relación posible entre unos y otros. La mayor diferencia se encuentra en que todas las especies del Pacífico mueren poco tiempo después de hacer el desove, lo cual es un hecho probado en ambos sexos. Cuando se llamó la atención de esta notable característica a las autoridades de Europa y del Atlántico en general, no se le prestó atención ni se le dió crédito, debido a la creencia de que el salmón del Pacífico no se diferenciaba del *salmo-salar* cuya especie no muere después del desove y generalmente vuelve al mar después de depositar las huevas. Aunque científicamente hablando nuestro salmón no puede calificarse como tal, lo cierto es que hoy día es el salmón de todo el mundo debido a su abundancia y las inme-



"Spring Salmon. Saumon "Spring" Salmón "Spring" (Primavera)

The Sockeye.

"(t) The Sockeye weighs from 3 to 10 pounds, though specimens of 17 pounds in weight are recorded. They are in form and colour considered the most beautiful of their family.

"The bluish backs and silvery sides, which so distinguish them in salt water, give place in the headwaters, at spawning time, to a deep carmine, while the head and tails become a deep olive green, the male and female being equally highly coloured in the specimens found in the extreme headwaters of the Province.

The flesh of the sockeye is of a deep and unfailling red. They enter the Fraser River as early as April. They are not taken until July 1st. The main run in the Fraser is looked for toward the latter part of July. The run is at its height during the first ten days of August.

(5) Le Humpback (*Oncorhynchus gorbuscha*.)

Le "Sockeye".

"Le Sockeye" varie de 3 à 10 livres, quoique l'on en rencontre certains spécimens pesant 17 livres. Pour leur forme et leur couleur ils sont considérés comme les plus beaux de leur famille.

Le dos bleuâtre et les côtés argentés qui les distinguent si bien dans les eaux salées, sont remplacés au moment du frai dans les eaux douces par un carmin foncé, tandis que la tête et la queue prennent une teinte vert olive foncé. Les mâles et les femelles sont également bien colorés dans les spécimens trouvés aux sources mêmes des rivières de la province.

La chair du "Sockeye" est infailliblement d'un rouge foncé. Ils entrent dans la rivière Fraser dès le mois

de juillet, dans les conditions en que se conserve para servir de regalo en todos los mercados del mundo civilizado.

Expresando por el orden de importancia comercial en sus respectivas provincias, las clases de salmón se clasifican como sigue: (1) El "Sockeye" o "Blueback" (*Oncorhynchus nerka*); (2) El "Spring" o "Quinnat" (*O. tshawytscha*); (3) El "Coho" o "Silver" (*O. kisutch*); (4) El Chum (*O. keta*); (5) El "Humpback" (*O. gorbuscha*.)

El "Sockeye."

(1) El "Sockeye" pesa de 3 a 10 libras, aunque se han encontrado ejemplares de 17 libras. Por su color y figura está considerado como el más hermoso de su familia.

El hermoso azul de su espalda y el plateado de los lados, que tanto le distinguen en el agua salada, los pierde en el agua dulce al tiempo de hacer el

"The sockeye run in all our Mainland rivers, and in some of the rivers, of the west coast of Vancouver Island, and in the Nimkish River, near the head of the east coast of that Island. In the rivers of the north-west Mainland coast they run a month earlier than in the Fraser.

"The abundance of sockeye in the Fraser varies greatly with given years; there are years known as 'the big years' and as 'the poor years.' Their movement appears to be greatest every fourth year, and the run is the poorest in the year immediately following. The causes which may have led up to this most remarkable feature have given rise to much speculation, and many theories have been advanced on account for them, but none are sufficiently satisfactory to be

d'Avril. On ne les prend pas avant le 1er juillet. La migration la plus importante se fait vers la fin de juillet, et elle est à son maximum pendant les dix premiers jours d'août.

Le "Sockeye" remonte dans toutes nos rivières du continent et dans quelques rivières de la côte occidentale de l'île de Vancouver et dans la rivière Nimkish, près de l'extrémité de la côte orientale de cette île. Dans les rivières de la côte continentale nord-ouest la migration a lieu un mois plus tôt que dans la rivière Fraser.

L'abondance du "Sockeye" dans la rivière Fraser varie beaucoup suivant les années. Il y a les bonnes années et les années pauvres. La migration paraît être à son maximum tous les quatre ans et être ensuite la plus faible dans l'année suivante. Les

desove, y se cambian a un vivo carmín en todo le cuerpo menos en la cabeza y en la cola que toman un tinte de verde-oliva oscuro. El macho y la hembra tienen los mismos colores cuando se encuentran en las cabeceras de los ríos.

La carne del "Sockeye" es de un rojo oscuro y permanente. Este pez entra en el río Fraser en Abril y no se pesca hasta Julio. La migración principal tiene lugar a últimos de Julio, y alcanza su período álgido en la primera decena de Agosto. El "Sockeye" migra en todos los ríos principales de tierra firme, en algunos de la costa occidental de la Isla de Vancouver y en el río Nimskish, de la costa oriental de Vancouver. La migración en los ríos de tierra firme tiene lugar un mes antes que en río Fraser.



Salmon Fishing at the Mouth of the Fraser River.

La Pêche du Saumon à l'Embouchure de la Rivière Fraser.

Pesca de Salmón en la boca del río Fraser.

generally accepted. This periodicity in the run of sockeye, which is so pronounced in the Fraser, has no marked counterpart in any other river in the Province or on the Coast.

"The spawning period of the sockeye extends from August, in the headwaters, to as late as October and November in the waters nearest the sea. They usually spawn in lake-fed or in lake-feeding streams, the first of their run seeking the extreme headwaters. Very little is known of the life of the young or the length of time they live in fresh waters before seeking salt water. Nothing is known of their feeding grounds in salt water, as they are never found in the bays and inlets

causes probables de ce fait des plus remarquables ont donné lieu à de nombreuses études et plusieurs théories ont été émises à ce sujet, mais aucune n'a été assez satisfaisante pour être acceptée généralement. Cette périodicité de la migration du sockeye qui est si prononcée dans la rivière Fraser n'a pas de pendant marqué dans aucune autre rivière de la province ou sur la côte.

La période du frai du sockeye s'étend depuis août pour les régions des sources jusqu'en octobre et novembre pour les eaux plus près de la mer. Ils frayent ordinairement dans des cours d'eau qui alimentent un lac ou qui sont alimentés par un lac, remontant tout d'abord jusqu'à la source.

La abundancia de "Sockeye" en el río Fraser es según los años; hay años, conocidos como "grandes años" y otros como "años pobres." El movimiento migratorio parece ser mayor cada cuatro años y la pesca es pobre al año siguiente. Las causas no han podido explicarse y han dado lugar a muchas conjeturas, pero ninguna de ellas tiene fundamento bastante para ser tomada en consideración. Esta periodicidad, tan característica en el río Fraser, no es tan notable en otros ríos de la provincia ni en toda la costa.

El período de desove del "Sockeye" se extiende, desde Agosto en las aguas altas, hasta Octubre y Noviembre en aguas cercanas al mar. Por regla

which distinguish our coast, and where the spring and coho are so common. It is thought that their feeding ground must be in the open sea.

The Spring Salmon.

"(2). The Spring or Quinнат Salmon (O. tshawytscha) ranks second in importance in the waters of the Province. This species is known in Alaska as the King or Tyee salmon; in British Columbia as the Chinook, the King or Quinнат; in California as the Sacramento or Quinнат salmon. It was the first and for many years the only salmon used for canning. It has an average weight of from 18 to 30 pounds. Specimens weighing from 60 to 100 pounds have been reported. The head is rather pointed and of a metallic lustre. The back is of a dark green or bluish colour; below the lateral line it is silvery. The spring salmon are the most powerful swimmers which seek our rivers, usually going to the extreme head of the watershed which they enter. They seem to prefer the most rapid moving streams, and apparently avoid the lake-fed tributaries. The colour of their flesh in our waters is from deep red to a very light pink, at times almost white. Owing to the uncertainty of its colour, it is less generally used for canning, and all specimens are examined by the canners before accepting them from fishermen. It is stated that the 'early run' fish are the most reliable in colour. It has also been stated that these pale pink or white-meated salmon are not any less rich in flavour or oil than the red-meated ones; but as the English market demands a red-

On connaît peu la vie des jeunes et on ignore le temps qu'ils demeurent dans l'eau douce avant de rechercher l'eau salée. On ne connaît rien de leur ressources d'alimentation dans les eaux salées, car on ne les trouve jamais dans les baies et les anses qui distinguent notre côte et où le spring et le coho sont si communs. On suppose qu'ils recherchent leur nourriture en pleine mer.

Le Saumon "Spring."

Le Saumon "Spring" ou Quinнат (O. tshawytscha) est le second en importance dans les eaux de la province. Cette espèce est connue en Alaska sous le nom de King ou Tyee, en Colombie britannique sous le nom de Chinook, King ou Quinнат, en Californie sous le nom de Sacramento ou Quinнат. C'est le premier saumon qui a été employé pour la conserve et pendant de nombreuses années c'est le seul que l'on a mis en boîtes. Le Saumon Spring a un poids moyen variant de 18 à 30 livres. On a trouvé cependant quelques specimens pesant de 60 à 100 livres. La tête est plutôt pointue et a un reflet métallique. Le dos est vert foncé ou bleuâtre, au-dessous de la ligne latérale il est argenté. Les saumons "Spring" sont les plus puissants nageurs de nos rivières qu'ils remontent ordinairement jusqu'à leur source. Ils semblent préférer les courants rapides et évitent apparemment les tributaires des lacs. La couleur de leur chair dans nos rivières varie du rouge foncé jusqu'à un rose très tendre et est même parfois presque blanche. En raison de cette couleur incertaine, il est moins généralement employé pour la conserve et tous les specimens sont exa-

general hacen el desove en las arroyos que vierten en los lagos que forma el río, y su primer curso de migración llega hasta las fuentes de los ríos. Muy poco se sabe acerca de la vida de las crías, ni del tiempo que viven en agua dulce antes de salir al mar, pues nunca se encuentran en las bahías o estrechos que tanto abundan en nuestras costas y donde el "Spring" y el "Cohoe" son tan comunes. Se cree que las crías se alimentan mar adentro.

El Salmón "Spring" (Primavera.)

(2) El salmón "Spring" or "Quinнат" (O. tshawytscha) viene en segundo lugar de importancia en las aguas de la provincia. Esta especie se conoce en Alaska como el Salmón Rey o Salmón "Tyee" (Jefe). En la Colombia Inglesa se conoce como "Chinook". En California, como "Sacramento" o Salmón "Quinнат". Por mucho tiempo fué el único salmón que se conservaba. El salmón de primavera tiene un peso medio en todas las aguas de 18 a 30 libras, habiéndose encontrado ejemplares de 60 a 100 libras. La cabeza es más bien puntiaguda y de un lustre metálico. La espalda tiene un verde oscuro o azulado, y tiene el abdomen plateado. Este salmón es un formidable nadador y remonta nuestros ríos hasta sus fuentes salvando obstáculos insuperables. Tiene preferencia por las rompientes de los ríos y al parecer evita los tributarios de los lagos. El color de su carne en nuestras aguas varía desde un rojo hasta un rosa muy pálido, a veces casi blanco. Debido a la incertidumbre en su color se usa poco para conservarlo y todas las especies se examinan antes de aceptar la pesca para su



Kildonan Cannery, Wallace Fisheries, Ltd.,

Fabrique de Conserve—Wallace Fisheries, Ltd.
Fabrica en Kildoran, Wallace Fisheries, Ltd., C. I.



Gosse-Millerd Cannery, Bella Bella, B.C.

Fabrique de Conserve Gosse-Millerd, Bella Bella, C. A.
Fabrica de conservas "Gosse-Millerd", Bella Bella, C. I.

meated salmon and refuses to accept anything else, they are rejected by the packers.

"The spring fish enters the Fraser early in the spring, and the run continues more or less intermittent until July. There is no pronounced run in the fall.

In recent years considerable quantities of spring salmon have been mild cured.

The Coho.

"(3). The Coho (*O. kisutch*), or Silver or Fall Salmon, is found in all of the waters of the Province, and of late years have become a considerable factor in the canned product. This species on an average weighs from 3 to 8 pounds. Heavier specimens are not uncommon. In colour these fish are very silvery, greenish above, with a few black spots on the head and fins. These fish run in August and September in the rivers on the north-west coast, and in September and October in the Fraser. Like the sockeye, they travel in compact schools. They do not seek the extreme headwaters, and frequent both the streams and lakes to spawn.

Chum Salmon.

"(4). The Chum Salmon (*O. keta*) run in most of the rivers and Coast streams late in the fall. They average from 10 to 12 pounds in weight; much larger specimens are not unusual in most of our waters. In Provincial waters, they spawn close to the sea, ascending almost every one of even the minor Coast streams.

The Humpback.

"(5). The Humpback Salmon (*O. gorbuscha*) is the smallest of the species found in our waters, averaging from 3 to 6 pounds. These fish run in abundance only every other year, coming in with the last of the sockeye run.

minés par les fabricants avant de les accepter des pêcheurs. Il a été remarqué que le premier flot de migration de l'année est le meilleur comme couleur. On a également constaté que le saumon à chair rose ou blanche est tout aussi savoureux et aussi huileux que celui à chair rouge, mais comme le marché anglais exige un saumon à chair rouge et refuse tout autre chose, les fabricants de conserves rejettent cette espèce.

Le saumon Spring entre dans la rivière Fraser au commencement du printemps et sa migration continue d'une façon plus ou moins intermittente jusqu'en juillet. Il n'y a pas de mouvement prononcé à l'automne.

Dans ces dernières années des quantités considérables de saumons Spring ont été légèrement marinés.

Le "Coho".

Le "Coho" (*O. kisutch*) ou saumon "Silver" ou "Fall" se trouve dans toutes les rivières de la province et dans ces dernières années a été considérablement employé pour la conserve. Cette espèce pèse en moyenne de 3 à 8 livres. Des specimens plus lourds ne sont pas rares. Ces poissons sont très argentés, verdâtres sur le dessus, avec quelques taches noires sur la tête et sur les nageoires. Ces poissons apparaissent en août et septembre dans les rivières du nord-ouest et en septembre et octobre dans la rivière Fraser. Comme les sockeyes, ils voyagent en rangs compacts. Ils ne recherchent pas les sources et fréquentent les cours d'eau et les lacs pour frayer.

Le Saumon "Chum".

Le saumon "Chum" (*O. keta*) se trouve dans la plupart des rivières et des cours d'eau de la côte à la fin de l'automne. Il pèse en moyenne de 10 à 12 livres. On rencontre parfois de plus gros specimens dans la plupart

conserva. Se dice que los primeros peces en migrar son los que tienen la carne más roja. Ya hemos manifestado que las clases de color pálido o blanco, son tan ricas en gusto y aceite como las de color más subido, pero como el mercado inglés exige salmón de carne roja y rechaza la pesca de color pálido los fabricantes no quieren conservas de esta clase de salmón.

El "Spring" entra en el río Fraser en la primavera temprano, y su migración continúa, más o menos intermitente, hasta Julio. No hay migración notable en el otoño. En los últimos años se ha preparado una gran cantidad de este salmón, curándolo ligeramente, con muy poca sal.

El Salmón "Coho".

(3) El salmón "Coho" (*O. kisutch*), conocido también por "Silver" o "Fall" (plateado, y otoño) se encuentra en todas las aguas de la Provincia, y en los últimos años ha llegado a ser un factor principal para la conserva. Estas especies arrojan un peso medio de 3 a 8 libras, y con frecuencia se consiguen de más peso. El color de estos peces es de un plateado verdusco en la espalda con pintas negras en la cabeza y en las aletas. La migración tiene lugar durante Agosto y Setiembre en los ríos de la costa Noroeste, y en Setiembre y Octubre en el río Fraser. Lo mismo que el "sockeye" viaja en grandes enjambres. Nunca busca las cabeceras de los ríos y prefiere los afluentes y los lagos para hacer el desove.

El Salmón "Chum".

(4) El salmón "Chum" (*O. keta*) migra en la mayor parte de los ríos y arroyos de la costa a fines del Otoño. Su peso medio fluctúa entre 10 y 12 libras; existiendo ejemplares de más peso. En las aguas de la Colombia Inglesa, este pez hace el

A well known authority on Pacific Salmon, Dr. C. McLean Fraser of the British Columbia Biological Station, states:—

Since the sockeye, the humpback and the chum salmon quit feeding when they leave the open ocean, they cannot be caught with hooks under ordinary circumstances but as they form large schools on the way to the mouths of rivers, or in the case of the chum salmon more particularly, just near the mouth of the river up which they go to spawn, they are readily caught in large numbers with traps and nets of various kinds and hence they are more suitable for canning as far as convenience is concerned.

The sockeye is, par excellence, the fish for canning as the flesh is firm so that it stands up well in the can and it is better supplied with oil than other species. On the other hand it is not so suitable as a pan fish and

de nos rivières. Dans les rivières de la province, ils frayent tout près de la mer et remontent presque tous les cours d'eau de la côte, même les plus petits.

Le "Humpback."

Le saumon "Humpback" (*O. gorboscha*) est la plus petite de toutes les espèces que l'on rencontre dans nos cours d'eau. Son poids ne dépasse guère de 3 à 6 livres. Ces poissons ne se rencontrent en abondance que tous les deux ans et arrivent avec la fin de la migration du "Sockeye."

Une autorité bien connue en matière de saumon du Pacifique, le Docteur C. McLean Fraser, de la station biologique de la Colombie Britannique dit:

Attendu que le Sockeye, le humpback, et le chum cessent de s'alimenter lorsqu'ils quittent la haute mer ils ne peuvent pas être pris à l'hameçon de la manière ordinaire, mais lorsqu'ils se forment en larges bancs pour des-

desève cerca del mar, entrando en todos los riachuelos de la costa, para hacerlos.

El Salmón "Humpback".

(5) El salmón "Humpback" (*O. gorboscha*) es la especie más pequeña de nuestras aguas, con un peso medio de 3 a 6 libras. Este pez migra en abundancia un año sí y otro no, y entra en los ríos con la última migración de "Sockeye."

El Dr. C. McLean Fraser, de la Colombia Inglesa, y una reconocida autoridad en materia de Salmón del Pacífico manifiesta:

"Como quiera que las clases de salmón conocidas por "Sockeye," "Humpback" y "Chum" dejan de comer cuando salen de mar adentro, en circunstancias ordinarias no pueden pescarse con anzuelo, pero como se agrupan en verdaderos enjambres cuando se dirigen a las bocas de los ríos, o como particularmente sucede en el caso del "Chum" que se localiza muy cerca de



Salmon ready for Canning.

Saumon Prête pour la mise en conserve.
Salmón listo para prepararlo en conserva.

hence it is never likely to appear extensively in the fresh fish market. The supply is not great enough to meet the demand for the canned fish market and since even now there is a diminution in the catch in some areas most noticeably in the Fraser River, some other species must be substituted.

The humpback or pink salmon, when caught out in the open sea, is, without doubt, the finest flavor of all the Pacific salmon, as a pan fish. It also makes a good canned product.

The chum salmon has not had a good reputation possibly because of the fact that in some of the earlier packing of the salmon, care was not taken in selecting the fish and some very poor material was put up in

condre vers l'embouchure des rivières, et plus particulièrement pour le chum juste à l'embouchure des rivières où il va pour frayer, ils sont facilement pris en grande quantité avec des pièges et des filets de toutes sortes et sont ainsi plus faciles à mettre en boîtes.

Le sockeye est le poisson par excellence pour la conserve car sa chair est ferme de sorte qu'il se tient bien en boîte et elle est plus huileuse que celle des autres espèces. D'un autre côté il convient moins bien pour la poêle, c'est pourquoi on ne le trouve guère en grande quantité sur le marché du poisson frais. L'approvisionnement de cette espèce ne suffit pas à satisfaire les demandes du marché de la conserve et même depuis qu'il

las entradas de la parte alta de los ríos para hacer el desove, se capturan en gran número por medio de trampas y redes de varias clases y fácilmente pueden utilizarse para conservas.

El salmón "Sockeye" es por excelencia el mejor pescado de conserva debido a la firmeza de su carne que la mantiene perfectamente en la lata, y es más rica en aceite que las demás especies. Por otro lado no se presta para la sartén y por lo tanto no es probable que nunca tenga buena salida en el mercado de pesca fresca. Las existencias no dan abasto a la gran demanda existente en el mercado, y como se nota una disminución en la pesca de esta clase, especialmente en el río Fraser, tiene que ser sustituido por otras especies.

cans. The chum salmon while lacking in color and also to a slight extent in the oil content as compared with the sockeye of the first grade, falls very little short of that species in flavor and food value.

Each of the five species of Pacific salmon varies much in different localities and at different times in the same locality. Generally speaking, any salmon is at its best just before the sexual products begin to mature rapidly. In the case of the sockeye, the humpback and the chum salmon, there is no probability that any will be caught much before that time arrives. With the spring and coho it is somewhat different. The majority of the spring salmon mature in their fourth or fifth years. Some of them are caught in their third, second or even in the first year. These although they are well-flavored and are quite

y a une diminution dans la pêche de certaines régions, principalement dans la rivière Fraser, on est obligé d'y substituer quelques autres variétés.

Le humpback ou saumon rose, lorsqu'il est pris en pleine mer, est sans aucun doute le plus fin de tous les saumons du Pacifique comme poisson à frire. Il donne également un excellent produit en conserve.

Le chum n'a pas une bonne renommée probablement parce que dans les débuts on n'a pas pris assez de soin pour choisir le poisson et on a mis en boîtes de la marchandise de qualité bien inférieure. Le chum, bien que moins riche en couleur et en huile que le sockeye de première qualité, ne le cède pas beaucoup à cette espèce pour le goût et la valeur nutritive.

Chacune des cinq variétés de saumons du Pacifique varie beaucoup

El "Humpback" o salmón rosado, cuando se pesca mar adentro es sin duda alguna la flor del salmón del Pacífico, tanto para guisarlo como para conservarlo.

El salmón "Chum" no tiene tanta fama tal vez debido a que cuando se empezó a preparar en conserva no se puso suficiente cuidado en escoger la pesca y se preparó con un material muy inferior. Esta clase de salmón, aunque le falta color, y contiene menos aceite que el sockeye tiene sin embargo casi el mismo valor alimenticio y el mismo gusto de las otras especies.

Las cinco especies de salmón del Pacífico varían mucho, según la localidad, y a veces hasta en la misma localidad. Hablando en general el salmón, no importa la especie, está en las mejores condiciones poco tiempo



Salmon Carrier Receiving Salmon From Boats.
Portador de Salmón Recibiendo Carga de los Botes.
Transbordement du Saumon des Bateaux de Pêche sur le
Navire Collecteur.

suitable for consumption when used very soon after they come out of the water, have not the firm flesh of the older fish and spoil much more rapidly. Similarly the coho, which matures in the third year, is sometimes caught in large numbers in the spring of that year, when they are very soft fleshed but they are not suitable for canning until later in the summer, when the fish make a first grade product.

In earlier years, cannery men (the development of the fresh fish, cold storage and mild cure trade is of later growth) did not fully recognize that there were such differences in these fish. Only sockeye and spring salmon were canned and the methods at times were crude and unsanitary. This can scarcely be said of the cannery men of to-day. They are fully cognizant

de las diferentes localidades y de las diferentes épocas en cada localidad. De una manera general, el salmón es siempre el mejor en el momento de su madurez. Para el sockeye, el humpback y el chum, no hay posibilidad de que se capture mucho antes de ese tiempo. Con el spring y el coho, es algo diferente. La mayoría del salmón "Spring" viene a madurez en su cuarto o quinto año. Algunos vienen a madurez en su tercer año, e incluso en su primer año. Algunos, bien que no sean tan ricos en color y en aceite como el sockeye de primera calidad, no le ceden mucho a esta especie en cuanto al sabor y el valor nutritivo.

antes de que el producto sexual llegue al período árido. En el caso del sockeye, del humpback y del chum, no es muy fácil atraparlos antes de que llegue tal época. Con el spring y con el coho sucede algo diferente. La mayor parte del salmón "spring" llega al desarrollo en cuatro o cinco años. A veces se atrapa cuando tiene tres años y en raras ocasiones se puede atrapar también de dos y hasta de un año. Esta clase, aunque gustosa y adaptable para el consumo, si se emplea al poco tiempo de sacarla del agua, no tiene la carne tan firme como la de los pescados de más edad y se descompone más rápidamente. Lo mismo sucede con el "coho," que se desarrolla al tercer año y algunas veces se atrapa en gran número en la primavera del tercer año, cuando la carne está muy blanda y no se adapta para la conserva hasta casi

of the necessity for keeping fish of the same grade together so that the fish that is given any particular label need in no sense be confused with any other grade of fish in the same locality or in other localities. Furthermore, no manufactured food product that is put on the market is handled with greater care as to cleanliness and sanitation. The fresh fish, cold storage and mild cure trade, although of more recent growth, has come well up to the standard in this regard as well.

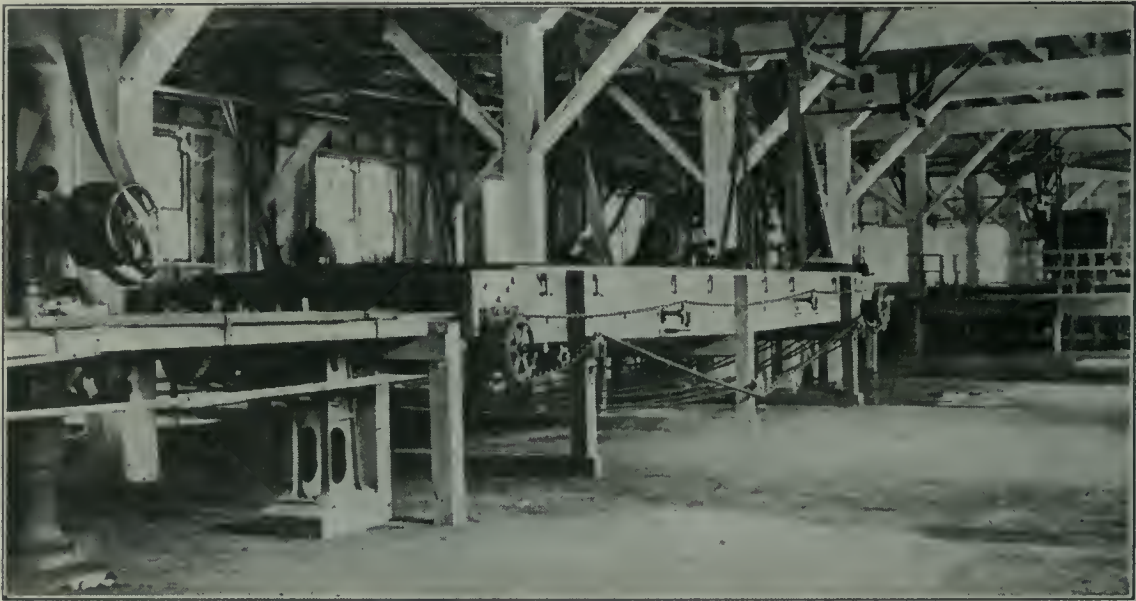
Even now the red-fleshed fish cannot supply the market demand. If Pacific salmon is to be obtained, the white-fleshed product must be used. Why not? The cheaper salmon if it is properly put up gives greater value for the money spent than the dearer salmon, even allowing for a margin to meet the consumer's prejudice. These food prejudices in the case of salmon as well as in other food

tité au printemps de cette année, alors que la chair est très tendre, mais ils ne sont pas bons pour la conserve avant la fin de l'été, où la chair est ferme et donne un produit de première qualité.

Dans les premières années, les fabricants de conserves (le développement du commerce du poisson frais, de l'entrepôt frigorifique et de la saison n'est venu que plus tard) ne s'étaient pas pleinement rendu compte de ces différences qui existaient parmi ces poissons. On ne mettait en conserves que le sockeye et le spring et les méthodes du temps étaient primitives et anti-hygiéniques. Voilà un reproche qu'on ne peut guère adresser aux fabricants actuels. Ils reconnaissent pleinement la nécessité de garder ensemble le poisson de la même qualité de façon à ce que le poisson fourni sous une certaine étiquette ne puisse en aucune façon être confondu avec toute autre qualité de poisson dans la même localité

pasado el verano en cuyo tiempo se convierte en pesca de primera clase.

Años atrás, los fabricantes (el auge de la pesca fresca, cámara frigorífica y cura ligera, se ha verificado posteriormente) no se daban cuenta de que existían tales diferencias en las condiciones de la pesca. Solamente se conservaba el sockeye y el spring, y los métodos de preparación dejaban mucho que desear. Esto no puede decirse hoy de ningún fabricante. Todos conocen la necesidad de mantener la misma calidad de producto a fin de que la pesca que se prepare con cierta etiqueta no se pueda confundir con ninguna otra clase de pescado de la misma u otra localidad. Se puede asegurar que el salmón es uno de los productos en conserva que van al mercado perfecta e higiénicamente envasado. El comercio de la pesca fresca, el uso de la cámara frigorífica y la cura ligera, aunque de implantación más reciente, han llegado a un



Interior of British Columbia Salmon Cannery.
Interior de una fábrica de salmón,—Colombia Inglesa.
Vue intérieure d'une usine de conserve du saumon en Colombie Anglaise.

products are greater than any other single factor in keeping up the high cost of living."

Salmon Fishing and Canning.

The canneries are closed during the winter months and usually commence operations in the spring or early summer. Cannery hands and fishermen journey to the district they intend to operate in; supplies consisting of tin-plate, provisions, coal, fishing gear, etc., are shipped out to the plant, and the cannery crews prepare the machinery and boats, traps and nets for the season's fishing. About ten thousand men engage in the salmon fishing during the season and some six thousand men and women are employed in the canneries. The money invested in the British Columbia salmon canneries amounts to \$6,500,000.

Salmon are captured by means of gill nets, traps and by trolling with hook and line. The fishermen are

ou dans d'autres localités. De plus, il n'y a pas un produit alimentaire sur le marché qui soit manipulé avec plus de soin au point de vue de la propreté et de l'hygiène. Le commerce du poisson frais, frigorifié ou mariné malgré ses progrès plutôt récents, a atteint la perfection à cet égard.

Même à l'heure actuelle le poisson à chair rouge ne suffit pas aux demandes du marché. Si l'on veut absolument avoir du saumon du Pacifique, il faudra employer du poisson à chair blanche. Pourquoi pas? Le saumon bon marché, s'il est convenablement préparé, est en comparaison du prix, plus profitable que le saumon cher, même en faisant une réduction pour valner le préjugé du consommateur. Ces préjugés en matière d'alimentation sont les plus grands facteurs qui concourent à maintenir le coût de la vie élevé.

Pêche et Conserve du Poisson.
Les usines de conserves sont

nivel de perfección que no deja nada que desear.

Hoy día la conserva de salmón rojo no da abasto a la gran demanda de los mercados y si se ha de seguir comiendo salmón del Pacífico no habrá más remedio que emplear y consumir la carne blanca. Y por qué no? El salmón barato, preparado como se debe, dá mayor rendimiento al dinero gastado que el que se obtiene con las clases caras y esto aun teniendo en cuenta cierto margen para contrarrestar el prejuicio del consumidor. Estos prejuicios de alimento, en el caso del salmón, al igual que en otros productos, son los causantes de mantener los altos precios que originan la carestía de la vida.

Pesca y Conserve del Salmon.

Las fábricas están cerradas durante los meses de invierno, y generalmente empiezan a funcionar en la primavera, o a principios de verano. Los obreros y los pescadores se trasladan al dis-

Off for the Salmon Fishing, Skeena River, B. C.

Départ pour la Pêche au Saumon, Rivière Skeena, C. A.

En busca del Salmon, Rio Skeena, C.I.



A Salmon Trolling Boat.
Bote Para Pescar Salmón.
Bateau à Saumon-Seine Trainante.



Six foot Spring Salmon, B. C.
Un Saumon Spring de 6 Pieds de Long.
Salmón "Spring", seis pies de longitud.



At the Edge of the Forest—A Typical Salmon Cannery.

Une Saumonnerie Typique au bord de la Forêt.

Al borde del bosque, Vista Tipica de una Fabrica de Conservas.

whites, Japanese and Indians. The cannery hands are largely Indians, working under white superintendents.

The gill net fishermen operate from small open boats fitted with masts and sails. These craft are from 18 to 30 feet long and two men, as a rule, go in each. The nets are set in the evening at the mouths of the rivers and inlets while the salmon are running in to spawn and the fishing continues all night.

The work is arduous and calls for unusual toughness on the part of the fishermen who have to haul and set their nets in all kinds of wet and boisterous weather. In their small boats they have no shelter other than a small screen or canvas tent in the bow barely sufficient to accommodate two men.

During the "runs" when the salmon are coming into the rivers from the sea, it is a wonderful sight to watch

fermées pendant les mois d'hiver et ordinairement elles commencent leurs opérations au printemps ou au début de l'été. Les ouvriers et les pêcheurs se rendent vers le district où ils ont l'intention de travailler. On expédie à l'usine du fer-blanc, des provisions, du charbon, des articles de pêche, et l'équipage des usines prépare les machines, les bateaux, les pièges et les filets pour la saison de pêche. Dix mille hommes environ sont employés à la pêche du saumon pendant la saison et environ six milles hommes et femmes sont employés dans les usines. Le capital engagé dans les fabriques de conserve de saumon de la Colombie Britannique atteint le chiffre de \$6,500,000.

Les saumons sont capturés au moyen de filets, de pièges ou d'hameçons. Les pêcheurs sont des blancs, des Japonais et des Indiens. Les ouvriers sont pour la plupart des Indiens travaillant sous le contrôle de surveillants blancs.

trito del trabajo y en las fábricas se acumulan los materiales necesarios, tales como hojalata, provisiones, carbón, aparejos de pesca, etc., etc. Las brigadas de las fábricas ponen las máquinas en orden, y preparan los botes, trampas, redes, etc., para la estación de pesca. Alrededor de 10,000 hombres se dedican a la pesca del salmón durante la estación y más de 6,000 hombres y mujeres trabajan en las fábricas. El dinero invertido en fábricas de conserva de salmón en la Colombia Inglesa, asciende a \$6,500,000.

El salmón se captura por medio de redes de agalla, trampas y con caña y anzuelo. Los pescadores son blancos, japoneses e indios. Los obreros de las fábricas son, en su mayor parte indios, y trabajan bajo las órdenes de superintendentes blancos.

Los pescadores con red utilizan pequeños botes abiertos, arbolados con velas. Estos botes miden de 18



Interior of British Columbia Salmon Cannery.
Interior de Una Fábrica de Conservas en la Colombia Inglesa.
Vue intérieure d'une Saumonerie en Colombie Anglaise.

the great fleet of fishing boats setting their nets for the fish. At the mouth of the Fraser during the Sockeye run, the hundreds of lanterns marking the boats and the ends of the nets at night, appear like the lights of a great town.

No fishing in the world equals the salmon fishery for strenuous activity. The netters come in, in the morning, with their catches of silvery fish and deliver them on the cannery wharf; gasoline carriers arrive in from outside points and the fish are shot into the cannery and washed. A wonderful machine, called the "Iron Chuk" takes the fish, beheads, spits, cleans and shoots them out on to a table dressed and ready for slicing. Another machine then takes the salmon and with one operation cuts it into slices; women pack the slices into tins—either ½, or 1 pound—and the filled can is passed along to be

La pêche au filet se fait sur des petits bateaux à voiles, de 18 à 30 pieds de long avec un équipage de 2 hommes ordinairement. Les filets sont tendus le soir à l'embouchure des rivières et des arsens lorsque le saumon y arrive pour frayer et la pêche se continue toute la nuit.

Le travail est dur et demande une endurance peu ordinaire de la part des pêcheurs qui doivent poser et retirer leurs filets par tous les temps, humides ou orageux. Sur leurs petits bateaux ils n'ont d'autre abri qu'un petit écran ou une tente en toile à peine suffisante pour contenir deux hommes.

Pendant la migration, lorsque le saumon venant de la mer entre dans la rivière, c'est un tableau merveilleux de voir la grande flotte de bateaux de pêche tendre ses filets. A l'embouchure de la rivière Fraser pendant la migration du sockeye, les centaines de lanternes indiquant les

a 30 pies de longitud y van tripulados por dos hombres. Las redes se colocan al anochecer en las bocas de los ríos y en los estrechos, mientras que el salmón remonta la corriente para hacer el desove. La pesca se continúa toda la noche.

El trabajo es árduo y requiere una fortaleza extraordinaria por parte de los pescadores que tienen que sacar y volver a echar la red en toda clase de tiempo, expuestos a la lluvia y a la intemperie. El único abrigo de los botes consiste en una pequeña lona lo suficiente para guarecer dos hombres.

Durante las "corridas" o sea cuando el salmón entra en los ríos desde el mar, se disfruta de un maravilloso panorama contemplando la gran flota de botes lanzando sus redes al agua. En la boca del río Fraser, durante la "corrida" del "Sockeye" los cientos de linternas señalando los botes, en

weighed automatically. If it is above or below weight, the machine ejects it. If correct, it is automatically conveyed to another machine which clamps the lid on. On conveyors, an unceasing stream of filled cans pass into a steam box for the first cooking, after which they are placed in iron trucks and wheeled along rails into steam retorts where they are finally cooked. They are then placed in the cooling room and inspected for "blown" cans — or cans with air in them and liable to cause decomposition. The final operation is labelling and packing them in boxes for shipment.

A modern salmon cannery is a marvel of cleanliness. Machinery does almost everything, and the fish are seldom touched by hand. The packing of the salmon into the cans is

bateaux est les extrémités des filets semblent les lumières d'une grande ville.

Aucune pêche du monde n'égale la pêche au saumon pour son activité extraordinaire. Les pêcheurs au filet arrivent le matin avec leur cargaison de poisson argenté et les apportent au quai de l'usine, des chariots à gazoline arrivent de l'extérieur et le poisson est entré à l'usine et lavé. Une machine merveilleuse appelée le "Iron Chink" prend le poisson, l'étête, l'écaille, le nettoie et l'envoie sur une table prêt à être coupé. Une autre machine prend alors le saumon et en une seule opération le découpe en tranches, des femmes mettent les tranches en boîtes de une demi ou de une livre et les boîtes pleines passent plus loin pour être pesées automatiquement. Si elles dépassent le poids ou si elles ne l'at-

los extremos de las redes, hacen la ilusión de las luces de una gran ciudad.

No hay pesca en el mundo que iguale en actividad a la del salmón. Los pescadores regresan por la mañana con su copo de plateado salmón y lo descargan en el muelle de la fábrica, donde continuamente llegan transportes a gasolina trayendo el pescado capturado fuera. El pescado inmediatamente se entra y deposita en los lavaderos de la fábrica.

Una maravillosa máquina llamada "Iron Chink" (tajadora) recibe el pescado, lo decapita, lo abre, lo limpia y lo transporta a una mesa, donde otra máquina, de una sola vez corta el salmón entero en lonchas; las mujeres colocan las lonchas en latas de media o de una libra, y una vez llenas, las latas siguen su camino hasta el peso automático. Si la lata tiene



Cooling-Room, British Columbia Salmon Cannery.
Chambre Frigorifique d'une Saumonerie de la Colombie Anglaise.
Cuarto-enfriadero de una Fábrica de conservas, Colombia Inglesa.

about the only operation in which the fish are handled, and the women who usually do this, wear white cotton gloves which are issued to them every morning. The inside of the buildings are whitewashed and lit with electricity. The floors and tables are constantly sluiced with water.

In addition to being caught by gill nets, salmon are also caught by trolling from canoes, row and gasoline boats. This method of fishing is usually done outside in the salt water where the fish can see the bait. In gill netting at the river mouths, the muddy condition of the water and the darkness prevents the salmon seeing the nets—otherwise they would avoid them. A troller will have three or four handlines or rods with baited hooks out and towing astern as the boat goes slowly ahead. Many fish, especially Spring and Coho salmon are caught in this method. Another

telignent pas, la machine les rejette. Si le poids est exact, la boîte est amenée automatiquement à une autre machine qui y pose le couvercle. Sur des chariots roulants une file interminable de boîtes pleines passe dans une boîte de vapeur pour la première cuisson, après quoi ces boîtes sont placées sur des wagonnets de fer et transportées par rails dans des étuves à vapeur où la cuisson est terminée. Elles sont alors placées dans la chambre de refroidissement et inspectées pour constater les boîtes "blown", c'est-à-dire les boîtes qui contiennent de l'air et sont ainsi susceptibles de décomposition. L'opération finale consiste en la pose de l'étiquette et la mise en caisses pour l'expédition.

Une fabrique moderne est un modèle de propreté. Presque tout se fait à la machine et le poisson est rarement touché par les mains. La mise en boîte est peut-être la seule

más o menos peso que el requerido, la misma máquina la separa. Si el peso es exacto las latas pasan automáticamente a otra máquina que ajusta las tapas herméticamente. Los transportadores, con su línea interminable de latas van dejando éstas en grandes tinajas donde sufren la primer cocción a vapor, después de lo cual se colocan en vagonetas de hierro sobre raíles y se arrastran hasta las retortas del vapor donde se completa la cocción. Después se llevan a los enfriaderos y se inspeccionan para separar las "infladas," que como se sabe se descomponen rápidamente. Por último se les pone etiqueta y se encajonan para el embarque. Las fábricas modernas de conservas de salmón son maravillas de limpieza. Casi todo se hace a máquina y rara vez se toca el pescado con la mano. Solamente al llenar las latas es cuando se usan las manos, y para ello, las mujeres llevan

method is by means of traps—a great net fixed to stakes driven down in the water. A "lead" or fence of netting extends for a considerable distance out into the water and the salmon in their passage are diverted along the lead to find themselves entrapped in the pound of the trap. The pound is brailled up by hand or windlasses and the captured fish emptied into the scows which are in turn towed to the canneries. The trap method is used extensively by American fishermen at the mouth of the Columbia, in Juan de Fuca Straits, and in the Alaska salmon fisheries. In British Columbia the gill net and trolling is the universal method of catching salmon.

During the big runs, the canneries are working night and day to put up the "pack." A well equipped cannery will pack 40,000 cases in a season.

opération exigeant qu'on y mette les mains et les femmes qui font ce travail portent des gants de coton blanc qui leur sont distribués tous les matins. L'intérieur des bâtiments est blanchi et éclairé à l'électricité. Les planchers et les tables sont constamment arrosés d'eau.

Outre la pêche au filet, on prend aussi le saumon à la ligne dans des canots, barques ou bateaux à gazoline. Ce genre de pêche se fait ordinairement en eau salée où le poisson peut voir l'appât. Dans la pêche au filet à l'embouchure des rivières l'eau vaseuse et l'obscurité empêchent le poisson de voir les filets, autrement, il les éviterait. Un pêcheur à la ligne a trois ou quatre lignes avec des hameçons amorcés tendues à l'arrière du bateau qui avance lentement. On prend ainsi beaucoup de poissons, surtout le Spring et le Coho. Une autre méthode est celle de la trappe,

guantes blancos de algodón, los cuales se reemplazan todas las mañanas. El interior de las fábricas está todo encalado y alumbrado por electricidad. Los suelos y las mesas se lavan continuamente con agua hirviendo.

El salmón se pesca con red de agalla y con caña y sedal desde los botes a remo, canoas y botes-motores. La pesca en bote se hace en el mar, donde el salmón puede ver el cebo. En la pesca con red de agalla, en las bocas de los ríos, el estado cenagoso del agua, y la obscuridad, impide que el salmón vea la red, pues de otro modo la evitaría. Los botes llevan tres o cuatro sedales o cañas con anzuelos cebados, remolcados a popa, a velocidad moderada. Con este método se pesca mucho salmón "Spring" y "Coho". Otro método consiste en colocar garlitos, o sea una gran red que se fija con estacas. Después se



Canneries and Salmon Fishing Boats on the Fraser River.
Saumerie et Bateaux de Pêche sur la Rivière Fraser.
En el Río Fraser Botes y Pescadores de Salmón.

As the cannery is often located in an isolated part of the Coast, it is practically a community in itself. Shacks for the cannery hands and their families have to be built adjacent to the factory; bunk houses and mess rooms are provided for the white and Japanese fishermen working for the establishment; boats and gear are often the property of the cannery owners and are hired out to the fishermen; a well stocked store is always part of the plant, and the place must contain everything necessary to repair machinery and equipment. The fishermen and shore staff attach themselves to the establishment for the season only and return to the cities and villages when the canning season is over. The plant is closed down in the Fall and left in charge of a watchman.

un grand filet fixé à des pieux plantés dans l'eau. Un "lead" ou clôture de filet s'étend assez loin dans l'eau et les poissons à leur passage sont dirigés le long de la clôture et se trouvent pris dans la trappe. Le filet est cargué ensuite à la main ou au moyen d'un treuil et le poisson ainsi pris est vidé dans des récipients qui sont ensuite transportés à l'usine. La pêche à la trappe est beaucoup employée par les pêcheurs américains à l'embouchure de la rivière Columbia, dans le détroit de Juan de Fuca et dans les pêcheries de saumon de l'Alaska. En Colombie Britannique la pêche se fait ordinairement au filet ou à la ligne.

Pendant la grande migration, les usines travaillent jour et nuit pour la mise en boîtes. Une usi-

extiende una hilera de la red a considerable distancia dentro del agua y al pasar el salmón se encarrila a lo largo de la "hiera" hasta que se encuentra acorralado en la red. La red se recoge a mano o usando un molinete y el pescado se vacía en gabarras que se remolcan a la fábrica.

La pesca con garlito está muy generalizada entre los pescadores americanos en las bocas de los Estrechos de Columbia y de San Juan de Fuca, la mismo que en las pesquerías de Alaska. En la Colombia Inglesa se ha adoptado el método de la red de agalla y la pesca con caña y sedal desde la popa y en marcha.

En la época de migración las fábricas trabajan día y noche. Una fábrica bien equipada envasa y prepara 40,000 cajas en la estación de pesca.

Market Salmon.

In addition to being caught for canning purposes, salmon is also extensively marketed in a fresh, fresh frozen, dry salted, mild cured, smoked and pickled state. The statistics for season 1917 show the market value of these varieties as follows:—

	Cwts.	
Salmon fresco . . .	262,067	\$2,550,274
Dry salted	12,670	125,979
Mild cured	8,611	111,945
Smoked	1,418	23,222

The fresh salmon is marketed in a fresh or frozen state in Canada, and is exported frozen to Great Britain and the Continent. Canadian frozen salmon has been exported to Great

ne bien installée peut empaqueter 40,000 caisses dans une saison.

Comme l'usine est souvent située dans un endroit isolé de la côte, elle forme pratiquement une communauté. Des bâtiments doivent être construits à proximité de l'usine pour les ouvriers et leur famille, on installe des dortoirs et des réfectoires pour les pêcheurs blancs ou japonais qui travaillent pour l'établissement, les bateaux et l'attirail sont souvent la propriété de l'usinier et sont loués aux pêcheurs, un magasin bien assorti fait toujours partie de l'usine et on doit trouver tout ce qui est nécessaire pour réparer les machines et l'installation. Les pêcheurs et le personnel du qual ne sont engagés que pour la saison et ils retournent à leurs villes ou villa-

Sucede que algunas fábricas están en partes aisladas de la costa y forman comunidades propias, construyendo barracas para los operarios y sus familias junto a las fábricas. Los operarios blancos y los japoneses disponen de caacerones con comedores; los hotes, aparejos y enseres casi siempre son propiedad de la fábrica y se alquilan a los pescadores. Las fábricas tienen un buen almacén con un aurtido, tan completo como es posible, para reparar las máquinas y equipo. Los pescadores y los operarios de tierra solo trabajan durante la estación de pesca y vuelven a sus hogares cuando el trabajo se termina. Las fábricas se cierran en el otoño y quedan a cargo de los conserjes.



Interior of a Freezer Where Salmon and Halibut are Frozen.
 Vue Intérieure d'un Frigorifique où l'on se Congela el Salmón y el Mero.
 Interior de una Cámara Frigorífica, don fait Geler le Saumon et le Flétan.

Britain and Europe for many years past and the care in freezing and packing has succeeded in creating an excellent demand abroad. The facilities for transporting salmon from the Pacific Coast to Europe are improving yearly. Special refrigerator cars attached to fast transcontinental trains convey the fish to the seaports on the Atlantic and the salmon is loaded direct from the cars to the refrigerated chambers of the transatlantic ships. Cold storages are located in most Atlantic ports and should shipments miss connections with the steamer, the fish can be taken care of until shipment. It is now possible to transport frozen salmon from the North Pacific to Liverpool in 14 days and the fish can be

lorsque la saison de la conserve est terminée. L'usine est fermée en automne et laissée à la surveillance d'un gardien.

Le Saumon sur le Marché.

Outre sa mise en conserve le saumon est également vendu frais, fraîchement gelé, salé et mi-salé, fumé et mariné. Les statistiques de la saison 1917 indiquent les chiffres suivants:

	Cwts.	
Salmón fresco . . .	262,067	\$2,550,274
Salé sec	12,670	125,979
Mi-salé	8,611	111,943
Fumé	1,418	23,222

Le saumon frais se vend frais ou frigorifié au Canada et est exporté frigorifié en Angleterre et sur le continent. Le saumon canadien frigo-

El Mercado del Salmón.

El salmón no solo se pesca para conservarlo sino que se consume en abundancia en estado fresco, congelado, salado seco, ligeramente salado, ahumado y en salmuera. La siguiente estadística, de 1917, indica el valor que alcanzó el salmón en el mercado según la variedad del mismo:

	Quintales.	Pesos Oro
Salmón fresco . . .	262,067	\$2,650,274
Seco salado	12,670	125,979
Ligeramente curado	8,611	111,943
Ahumado	1,418	23,222

El pescado fresco se consume en el Canadá. El congelado se exporta a Inglaterra y al resto de Europa. La exportación de salmón congelado a Europa se viene haciendo por muchos

kept in a continuous low temperature from the time it is caught until it is sold to the consumer in Europe. Dry salted and pickled salmon is largely exported to the Orient. The mild cured—lightly salted—is packed in barrels and exported to Europe and other markets.

Food Value of Canned Salmon.

In no form in which fish is cooked are the essential oils and juices so thoroughly preserved as in the modern method of canning salmon. The methods employed in the cooking retain in the flesh all the delicate flavors and nutriment. This means that the consumer secures, in a can of salmon, food that contains the most nutriment in relative food value when compared with other foods as shown by the following table which is composed by the U. S. Department of Agriculture:

rifié a été exporté en Grande Bretagne et en Europe depuis de nombreuses années et le soin apporté à la frigorification et à l'emballage a réussi à créer une excellente demande à l'étranger. Les facilités de transport de la Côte du Pacifique en Europe s'améliorent tous les ans. Des wagons réfrigérateurs spéciaux attachés aux trains rapides transcontinentaux apportent le poisson aux ports de l'Atlantique et le saumon est chargé directement des wagons dans les chambres frigorifiques des paquebots transatlantiques. Dans la plupart des ports de l'Atlantique il existe des entrepôts frigorifiques dont on peut faire usage si un envoi manque le bateau. Il est possible actuellement de transporter le saumon gelé depuis le nord du Pacifique jusqu'à Liverpool en 14 jours et le poisson peut être conservé à une température basse constante depuis le temps où il est pêché jusqu'à ce qu'il soit vendu au consommateur en Europe. Le saumon salé et mariné est surtout exporté en Orient. Le mi-salé est mis en barils et exporté en Europe ou sur les autres marchés.

años y el cuidado que se ha puesto en la congelación y envase ha resultado en crear una gran demanda en el exterior. Las facilidades para trasportar el salmón del Pacífico a Europa mejoran de día en día. Los trenes rápidos transcontinentales llevan vagones refrigeradores cargados de pesca para los puertos del Atlántico y el salmón se trasporda directamente a las cámaras frigoríficas de los trasatlánticos. En casi todos los puertos principales del Atlántico existen depósitos frigoríficos para los casos en que la mercancía llega después de la salida del barco. El pescado congelado del Norte del Pacífico se transporta hoy en 14 días hasta Liverpool, pudiendo mantenerse a una temperatura baja hasta que se vende al consumidor en Europa. El salmón seco salado y en salmuera se exporta en su mayor parte a Oriente. El ligeramente curado o poco salado se manda en barriles a Europa y a otros mercados.

Valor Alimenticio del Salmón en Conserva.

En ninguna clase de pescado, propio para la cocina, se encuentran los



Typical Salmon Carriers, British Columbia.
Transbordeurs Typiques de Saumon en Colombie Anglaise.
Portadores de Salmón, Colombia Inglesa.

Canned Salmon	21.8
Sirloin Steak	16.5
Sugar Cured Ham	14.2
Macaroni	13.4
Eggs	13.1
Spring Chicken	12.0
White Bread	09.0

Propagation.

At different points in British Columbia the Government has established hatcheries for the propagation of the different varieties of salmon. Some of these have been established many years ago, others are comparatively new. In one or two instances cannery firms operate hatcheries which are established in their own district.

In addition to this there is a biological station on Vancouver Island, British Columbia, which carries on research work in connection with

Valeur Nutritive du Saumon en Boîte

De quelque façon qu'on cuise le poisson, jamais les huiles essentielles et le jus ne sont aussi bien conservés que par la méthode moderne de mise en boîte du saumon. Les méthodes employées pour la cuisson du poisson conservent à la chair son goût délicat et toute sa valeur nutritive. Ce qui veut dire que le consommateur obtient, dans une boîte de saumon, un aliment qui contient la plus grande valeur nutritive comparé aux autres aliments comme le montre le tableau suivant établi par le Ministère de l'Agriculture des Etats Unis:

Saumon en boîte	21.8
Steak de surlonge	16.5
Jambon mariné au sucre	14.2
Macaroni	13.4
Oeufs	13.1
Poulet de printemps	12.0
Pain blanc	09.0

Reproduction.

En différents endroits de la Colombie Britannique le gouvernement a

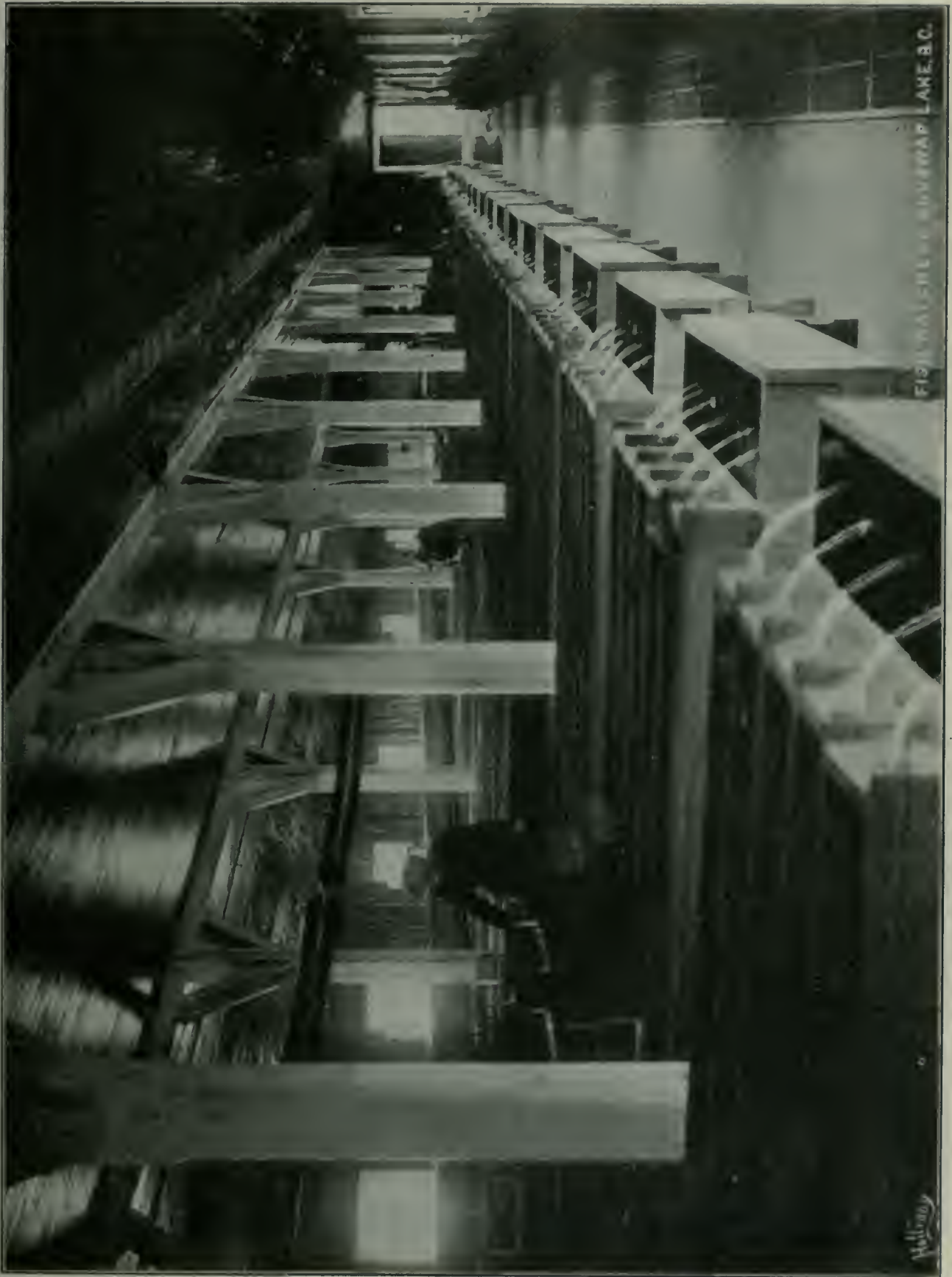
aceites esenciales, y los jugos, tan bien retenidos como en las conservas de salmón preparadas a la moderna.

Los métodos que se emplean en la cocción hacen que el pescado retenga en su carne todo su gusto y nutrimento. Esto significa que el consumidor obtiene, en una lata de salmón un alimento con mayor proporción de nutrimento que la de otros productos, lo cual se demuestra en la siguiente tabla preparada por el Departamento de Agricultura de los Estados Unidos:

Salmón en conserva	21.8
Carne (solomillo)	16.5
Jamón curado con azúcar	14.2
Macarrones	13.4
Huevos	13.1
Pollos	12.0
Pan Blanco	9.0

Propagación.

En varios puntos de la Colombie Inglesa ha establecido el Gobierno criaderos para la propagación de las diferentes variedades de salmón. Al-



Interior of a British Columbia Salmon Hatchery.
Interior de Una Incubadora de Salmón, Colombia Inglesa.
Vue Intérieure d'une Bâtisse où se Fait l'Incubation du Saumon en Colombie Anglaise.

FISHERMAN'S ADVERTISING LANE, B.C.

food fishes and particular attention is paid to salmon.

By this it will be seen that the future of the canned salmon industry is being looked after by all those interested in its advancement and maintenance.

Colour Prejudice.

The salmon fisheries of the Canadian Pacific Coast are capable of greater expansion in those species of salmon which are at present in low demand because of their colour. The demand in the world's markets has been for the red fleshed salmon and the species of red meated fish caught are not sufficient in number to fulfil the market's requirements. Analysis has proven the pink and white-fleshed salmon to be every bit as fine in quality, flavor and nutritive value as the red variety and the only means of overcoming the prejudice against the light colored fish is by educating the distributor and consumer. A time there was when the deep red salmon of the Pacific was looked upon with disfavor, but this prejudice has been dissipated until the preference has turned against the light colored fish. Importers of canned salmon in foreign countries would be well advised to give some attention to overcoming the prejudice against light colored salmon in their respective markets as the time is coming when the supply of red salmon will fail to fill the yearly increasing demand and the exacting requirements for this special fish will tend to bring it into the luxury class both as to price and quantity available. Canada is in a position now to supply pink and light colored salmon in great quantity and at reasonable prices.

établi des centres pour la propagation des différentes variétés de saumon. Quelques-uns ont été établis il y a de nombreuses années, d'autres sont relativement récents. En un ou deux cas les usines de conserve ont installé elles-mêmes de ces centres de reproduction dans leur propre district.

Il y a aussi une station biologique dans l'île de Vancouver, C. A. qui fait des travaux de recherches sur les poissons comestibles et qui apporte un soin particulier à l'étude du saumon.

On voit donc que l'avenir de l'industrie de la conserve du saumon est bien surveillée par tous ceux qui sont intéressés à son progrès et à sa conservation.

Préjugés de Couleur.

Les pêcheries de saumon de la côte canadienne du Pacifique sont susceptibles d'une plus grande expansion dans les genres de saumon qui sont actuellement peu demandés à cause de leur couleur. Tous les marchés du monde demandent le saumon à chair rouge et la pêche de ce genre de poisson ne suffit pas à répondre aux besoins de ces marchés. L'analyse a prouvé que le saumon à chair rose ou blanche est de tout aussi bonne qualité et a la même saveur et la même valeur nutritive que la variété à chair rouge. Le seul moyen de combattre le préjugé qui existe contre le poisson à chair pâle est de faire l'éducation du vendeur et du consommateur. Il fut un temps où le saumon rouge foncé du Pacifique était en défaveur, mais ce préjugé a été dissipé et se renouvelle maintenant à l'égard du poisson à chair pâle. Les importateurs de saumon en boîte à l'étranger seraient bien avisés de chercher à combattre le préjugé qui existe contre le saumon à chair pâle sur leurs marchés respectifs, car le temps n'est pas loin où l'approvisionnement de saumon rouge ne suffira plus à la demande toujours croissante et cette demande exagérée finira à faire de ce poisson un article de luxe tant au point de vue du prix que de la quantité qu'on pourra obtenir. Le Canada est actuellement capable de fournir du saumon rose ou pâle en grande quantité et à des prix raisonnables.

gunos de estos criaderos ya hace muchos años que están establecidos y otros son relativamente modernos. Existen algunas fábricas que tienen criaderos propios en sus mismos distritos.

En la isla de Vancouver se encuentra la estación biológica, donde constantemente se hacen estudios para mejorar y conservar las especies. Por lo que antecede se verá que el futuro de esta industria se está asegurando y promete ser muy floreciente y duradero.

Prejuicio de Color.

Las pesquerías de salmón de la costa del Pacífico pueden aumentar su producción grandemente en las clases que al presente tienen poca demanda a causa de su color. La demanda en todos los mercados del mundo ha sido siempre para el salmón de carne roja y las especies de esta clase de salmón no dan abasto para satisfacer las necesidades del mercado. Los análisis químicos han demostrado que el salmón de carne rosada y blanca es tan fino en calidad sabor y nutrimento como el de carne roja y lo único que hace falta es el que el público sobreponga el prejuicio que tiene la carne de color pálido mediante una campaña que demuestre al comprador y al consumidor lo infundado de sus creencias. Hubo un tiempo en que el salmón de color rojo oscuro se miraba con prevención, pero esta aprensión ha desaparecido desde que se ha dado preferencia al salmón de color más claro. Los importadores de salmón en el extranjero deben penetrarse de esta verdad y hacer los posibles por desterrar tales prejuicios contra el salmón de carne pálida pues no tardará mucho en llegar el tiempo en que las existencias de salmón rojo no darán abasto para llenar la creciente demanda existente y el salmón rojo pasará a ser un artículo de verdadero lujo debido a su escasez y precio. El Canadá puede ahora abastecer los mercados con salmón de carne rosada y pálida en grandes cantidades y a precios muy razonables.



Nootka Cannery, Nootka Sound, B. C.
Fábrica de Conservas, Nootka Sound, C. I.
Saumonerie Nootka, Détroit de Nootka, C. A.

PREPARING GROUND FOR CANNERY, BRITISH COLUMBIA

This illustration gives an idea of the roughness of the country where salmon canneries are built in British Columbia. Lumber and equipment have to be transported long distances by steamers. Where the shore is hilly as in this instance, the canneries are built on piles and the

PREPARATION DU TERRAIN POUR LES FABRIQUES DE CONSERVES DE SAUMON DANS LA COLOMBIE ANGLAISE

Cette gravure donne une idée de l'aridité du pays où l'on construit les fabriques de conserves de saumon, dans la Colombie Anglaise. Le bois de construction et le matériel doivent être transportés à de longues distances par navires. La côte y est très accidentée. Dans ce cas-ci, les fabri-

PREPARANDO TERRENO PARA FABRICAS DE SALMON, COLOMBIA INGLESIA

Este grabado ofrece una idea de la aspereza del terreno donde se construyen las fábricas para la conserva del salmón, en la Colombia Inglesa. La madera y el equipo se transportan a largas distancias en vapores. Donde la orilla es montañosa, como en este caso, las fábricas se levantan sobre



whole undertaking runs into a very heavy expense. This picture was taken early in 1919 when there was snow on the ground.

Canneries are built as close to the fishing grounds as it is possible to get thereby saving extra handling of the fish and insuring the fish being in first class condition when canned.

ques sont construites sur des pilotis, et toute l'entreprise est très dispendieuse. Cette photographie a été prise au commencement de 1919, alors qu'il y avait de la neige sur le terrain.

On construit les fabriques aussi près que possible des stations de pêche, afin d'éviter ainsi une trop grande manipulation du poisson, et pour s'assurer que le poisson soit en bon état lorsqu'il est mis en boîtes.

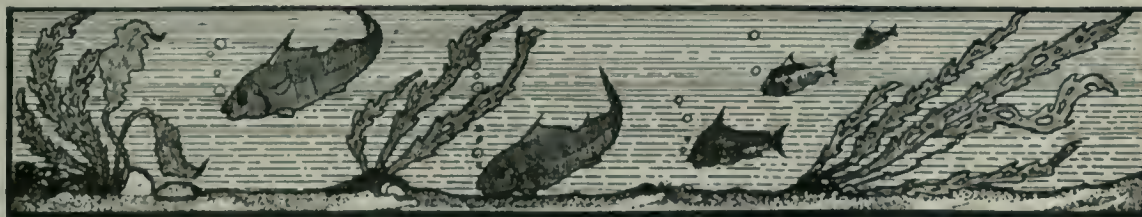
pillares y la obra es excesivamente costosa. Esta fotografía fué tomada a principios de 1919, cuando todavía había nieve en el suelo.

Las fábricas se construyen todo lo más cerca posible de las zonas pesqueras, a fin de evitar el excesivo manoseo del pescado y poderlo conservar en condiciones de primera clase, cuando se enlata.

Kindly keep these editions as a source of reference regarding Canada's fisheries.

Veuillez garder ces éditions comme sources de renseignements sur les Pêcheries Canadiennes.

Tengan la bondad de conservar estas ediciones como referencia de las Pesquerías del Canadá.



**TYPE OF BOAT USED ON THE
SKEENA FOR CATCHING SAL-
MON BY THE USE OF
DRIFT NETS**

These boats usually manned by two fisherman are towed to the head of the drift and then throw out their

**GENRE DE BATEAU EMPLOYE
SUR LA RIVIERE SKEENA
POUR CAPTURER LE
SAUMON A L'AIDE
MANETS**

Ces bateaux sont généralement mon-
tés par deux pêcheurs qui se font re-
morquer jusqu'au haut du courant, y

**TIPO DE BOTE USADO EN EL
"SKEENA" PARA PESCAR SAL-
MON CON REDES DE
CORRIENTE**

Estos botes, generalmente mane-
jados por dos pescadores, se remolcan
hasta la cabeza de la corriente y en-



**Salmon Boats Being Towed to Fishing Grounds.
Remorquage des Bateaux à Saumon sur les Lieux de Pêche.
Botes de Salmón, Remolcados a las Zonas de Pesca.**

nets which drift with the outgoing stream, and as the salmon work upstream against the current they are caught in the nets. The meshes are large enough to allow the head of the fish to pass through but the fish cannot get out as it is then caught by the gills. The nets are called gill-nets and the boats skiffs.

**THE BROKER IN THE CANNED
SALMON INDUSTRY.**

Primarily the broker is a salmon salesman. In the canned fish business he is more than just the agent or salesman. His many duties in the handling of the canned salmon are such that he is Inspector, financial agent and shipper, and in many instances even labels the cans. Not that he attends to all these duties personally, but for the very nominal commission which he receives, the canned salmon broker attends to many matters in the interests of his clients. When selling for export, he looks after the interests of the customer in every possible way, by inspecting the fish, taking care of all shipping details, insurance and other matters in completing a finished transaction.

Firms in foreign countries in opening correspondence with reliable Canadian brokers may rest assured that their interests will be well taken care of.

jettent leurs filets qui descendent avec le courant; et, comme le saumon se dirige contre le courant, il est capturé dans les filets dont les mailles sont assez grandes pour permettre à la tête du poisson de passer à travers, mais le poisson n'en peut sortir, car il est pris par les ouïs. Ces filets s'appellent "manets" et les bateaux sont les chaloupes.

**LE COURTIER DANS L'INDUSTRIE
DU SAUMON EN BOITE.**

En principe le courtier est un vendeur de saumon. Dans le commerce du poisson en boîte il est un peu plus que l'agent vendeur, car il a de nombreuses attributions: C'est lui l'inspecteur, l'agent financier et l'expéditeur, parfois même c'est lui qui étiquette les boîtes. Non pas qu'il fasse personnellement ces diverses opérations, mais en échange de la très faible commission qu'il reçoit, le courtier en saumon en boîte veille à ces divers points dans l'intérêt de ses clients. Dans les ventes pour l'exportation il surveille les intérêts de son client de toutes les façons possibles, en inspectant le poisson, en s'occupant de tous les détails de l'expédition, etc., et en parachevant la transaction.

Les maisons étrangères qui sont en correspondance suivie avec des courtiers canadiens recommandables peuvent être certaines que leurs intérêts seront bien sauvegardés.

tonces los pescadores tiran la red dejándola arrastrar por la corriente, y a medida que el salmón remonta el cauce contra la corriente, queda cogido en la red, el punto de la cual permite que la cabeza del pescado pase sin que pase el cuerpo, quedando el salmón cogido por las agallas.

Estas redes se llaman redes de agalla y los botes esquifes.

**EL CORREDOR Y LA INDUSTRIA
DEL SALMON EN CONSERVA.**

Primeramente, el Corredor es un vendedor de salmón. En el negocio de la conserva de pescado, el corredor es más importante que el agente y el vendedor. Sus muchos deberes en el manejo del salmón en conserva, lo califican como Inspector, Agente Financiero y Remitente. En muchos casos, el Corredor pone las etiquetas en las latas. No quiere decir que el Corredor atienda personalmente a todos estos detalles, sino que debido a la comisión nominal que recibe, se ve obligado a atender todos estos asuntos en beneficio e interés de los clientes. En las ventas para la exportación el Corredor tiene que defender los intereses del comprador hasta donde sea posible, inspeccionando el producto, y atendiendo a todos los detalles de embarque, seguro, etc., hasta completar la transacción final.

Las casas extranjeras que dirijan su correspondencia y pedidos a los Corredores de buen nombre, pueden tener la seguridad de que sus intereses estarán bien defendidos.



THE CANADIAN CANNED SARDINE AND HERRING INDUSTRY

L'INDUSTRIE CANADIENNE DES SARDINES ET DU HARENG EN CONSERVE

INDUSTRIA CANADIENSE DE LA CONSERVA DE LA SARDINA Y DEL ARENQUE



Among the firmly established branches of the fishing industry in Canada is the canning of herring and Canadian sardines in containers of the shape and sizes well known to the trade. The former are packed on both Atlantic and Pacific Coasts, while the latter is confined to a district along the Western shore of the Bay of Fundy in the Province of New Brunswick. Fish in various oils and sauces to suit the demands of all markets are produced by the canners of Canadian sardines.

Tests by scientists in the government laboratories at Ottawa, show Canadian packed sardines to have the highest food value of any canned fish product. (The full report appears in bulletin No. 423 Meat and Fish Products, Department of Trade and Commerce.)

While the sardine of the Mediterranean has coarse scales, which are often found in the finished product, the small fish of Canada are almost without scales. But the principal factor favouring the Canadian product over all others is its high food value.

To establish a demand for standard sized packages the canners have adhered to the single type of can known throughout the trade as "quarter" both in key opening and plain cans without keys. These cans hold from $3\frac{1}{4}$ to $3\frac{1}{2}$ ounces of fish and sauce. The number of grades and variety of pack, however, is not limited. For the low priced grades cotton seed oil is used and for the finer fish pure imported olive oil. There is a wide variety in size of fish which enables the packers to supply very small fish, running as high as 24 to the quarter pound can or large with only six to the can.

Parmi les branches de l'industrie Canadienne de la pêche fermement établies au Canada, il faut noter la conserve du hareng et des sardines Canadiennes dans des récipients de formes et de grandeurs bien connues du commerce. Le hareng est mis en boîte aussi bien sur la côte de l'Atlantique que sur celle du Pacifique, tandis que les sardines sont confinées à un district le long de la côte ouest de la Baie de Fundy dans la Province du Nouveau Brunswick. Ces poissons mis dans différentes huiles et sauces pour convenir aux demandes de tous les marchés sont produits par les fabricants de conserves de sardines Canadiennes.

Les examens faits par les savants des laboratoires du Gouvernement à Ottawa, montrent que les sardines Canadiennes en conserve possèdent la plus haute valeur nutritive de tous les produits du poisson conservés. (Le rapport complet a paru dans le bulletin No. 423 sur les produits de viandes et de poissons, Département du Commerce et de l'Industrie.)

Tandis que la sardine de la Méditerranée a des écailles épaisses qu'on trouve souvent dans le produit fini, les petits poissons du Canada sont presque sans écailles. Mais le facteur principal en faveur du produit Canadien sur tous les autres est sa haute valeur nutritive.

Pour obtenir une demande pour des boîtes de dimensions courantes, les fabricants de conserve ont adopté le simple modèle de boîte connu dans tout le commerce sous le nom de "quarter" (quarter) soit avec ouverture à clef soit la boîte simple sans clef. Ces boîtes contiennent de $2\frac{1}{4}$ à $3\frac{1}{2}$ onces de poisson et sauce. Le nombre de qualités et de variétés de boîtes n'est d'ailleurs pas limité. Pour les qualités à bas prix, l'huile de graine de lin est employée et pour le meilleur poisson, l'huile d'olive pure importée. Il y a une grande variété de grosseurs de poisson qui permet aux fabricants de conserve de fournir de très petits poissons pouvant contenir au nombre de 24 dans une boîte d'un quart de livre, ou de gros poissons ne faisant que six à la boîte.

Entre los varios ramos de la industria canadiense, firmemente establecidos, se cuenta el de la conserva de sardinas y arenques, en latas del tamaño y figura que generalmente usan todos los mercados. Los arenques se preparan en el Pacífico y en Atlántico, mientras que las sardinas están confinadas a un distrito que se extiende a lo largo de la costa occidental de la Bahía de Fundy, en la Provincia de Nueva Brunswick. Las fábricas de conservas canadienses preparan la pesca con varios aceites y salsas de acuerdo con la demanda de todos los mercados.

Los ensayos practicados por los químicos de los laboratorios del Gobierno canadiense, en Ottawa, han demostrado que las sardinas canadienses en conserva contienen más valor nutritivo que todos los demás pescados en conserva. (El informe completo de los análisis aparece en el boletín No. 423 de productos de carne y pesca del Departamento de Comercio.)

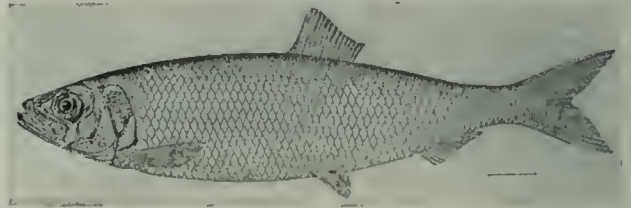
La sardina del Mediterraneo tiene las escamas muy duras y a menudo las escamas se encuentran en las latas. La sardinita canadiense apenas si tiene escama. Sin embargo, la verdadera ventaja de la sardina canadiense está en su mayor valor alimenticio.

Para establecer demanda en envases de un modelo-patrón, los fabricantes han adoptado el único tipo de lata que se conoce en todo el mundo como "cuartos," con llave y sin ella. Estas latas contienen de $3\frac{1}{4}$ a $3\frac{1}{2}$ onzas de pescado y salsa. Sin embargo, el grado de calidad y el envase no tienen límite. Para las clases más ordinarias se emplea aceite de algodón mientras que para las finas se importa y se usa el aceite de oliva. La inmensa variedad en el tamaño del pescado, permite a los fabricantes abastecer los mercados preparando latas de un cuarto de libra con un contenido de 6 a 24 sardinas según el tamaño.

La sardina canadiense en aceite de oliva es un manjar delicioso, preferido por las personas de gusto refinado. Las latas preparadas de este modo contienen de 12 a 24 sardinas según



A Sardine-Herring Weir.
 Une Trappe pour la Prise de la Sardine-Hareng.
 Presa para Pescar Sardina-Arenque.



The Canadian Herring.
 Arenque Canadiense.
 Le Hareng Canadien.

Views of Machinery
 Used in Preparing
 Sardine-Herring
 for Canning.

Vue d'une Machine
 Servant à la Mise en
 Conserve des Sar-
 dines-Hareng.

Vista de la Maquina-
 ria empleada en la
 Conserva de la
 Sardina-
 Arenque.





Retorts for Cooking Sardine-Herring, New Brunswick Cannery
 Cornues pour Cuire la Sardine-Hareng, dans une Fabrique au Nouveau Brunswick.
 Retortas par Cocer la Sardina-Arenque en una Fábrica de Nueva Brunswick

Canadian sardines in olive oil are a delicacy suitable for the best trade. The count ranges from 12 fish to the can to 24 to suit requirements of various markets, the smallest fish being generally conceded to be the finest quality. The numerous brands in cotton seed oil include those ranging from 16 fish and up in the best grade in key cans, down to six fish in cans without keys. The last mentioned, i.e., keyless quarters in cotton seed oil is the best known low-priced article in many markets. It is of high food value, is popular as a filler for sandwiches with all classes, and is a staple in native trade in Southern markets.

Les sardines canadiennes dans l'huile d'olive sont un mets délicieux qui convient à la meilleure clientèle. Le nombre en varie de 12 à la boîte à 24 pour convenir aux exigences des différents marchés, les plus petits poissons étant généralement reconnus comme étant de la plus belle qualité. Les nombreuses marques dans l'huile de graine de coton comprennent celles variant de 16 petits poissons et plus dans les meilleures qualités, en boîtes à clef, jusqu'à celles de six poissons en boîtes sans clef. Les dernières mentionnées, c'est-à-dire les quarts sans clef, dans l'huile de graine de coton sont l'article à bas prix le mieux connu sur nombre de marchés. Il est d'une haute valeur nutritive, est populaire pour la confection des sandwiches parmi toutes les classes de gens et est un produit courant dans le commerce natif sur les marchés

las exigencias del mercado. La sardina chica tienen mayor aceptación y se considera de mejor calidad. Las innumerables marcas preparadas con aceite de algodón incluyen latas que contienen 16 y más pescados en las clases superiores con llave, y latas sin llave que solamente contienen 6 pescados. Esta última clase, "cuartos sin llave, en aceite de algodón" es la clase ordinaria corriente más conocida y barata en muchos mercados. Es de gran valor alimenticio y muy popular para hacer sandwiches (emparedados), habiéndose convertido en un comercio de gran importancia en los mercados del Sur.

Se preparan varias clases de sardinas en salsa, con abrildor y sin él. Las preparadas con tomate son las más populares en los mercados donde se ha cultivado este gusto y son muy solicitadas. Para suplir la demanda



Where the Sardine Cans are Sealed.
 Scellement Hermétique des Boîtes à Sardines.
 Sellando latas de Sardinas.

Of sardines in sauces there are several grades in keyless and key opening cans. Those packed in tomato sauce are popular in markets where the taste for such sauces have been cultivated and are considered an especial delicacy. To supply the demand for sardines in mustard, fish of various sizes are packed in a prepared sauce composed of mustard, vinegar, cayenne, pepper and salt colored with tumeric.

At present smoked sardines are not packed in Canada, but this subject is now receiving the attention of the canners.

While the canning of sardines is a well known industry there are many details of the operation not known to importers which are here set forth for their information.

Sardine fishermen are known to the trade as "weirmen" because instead of catching the fish in nets they are caught in weirs built along the coast in the path usually followed by these small fish which travel in schools or shoals. Thousands of fish bunch together and swim so closely that they show in the water and they can be plainly seen entering the weir, the gates of which are then closed.

The next step is to put out a seine or net long enough to secure the school within the weir and deep enough to reach the bottom, usually fif-

du Sud. Il y a plusieurs qualités de sardines avec sauces dans des boîtes à clef ou sans clef. Celles conservées dans la sauce aux tomates sont populaires sur les marchés où le goût pour ces sauces a été cultivé et sont considérées comme un mets particulièrement délicieux. Pour répondre à la demande pour sardines à la moutarde, les poissons de différentes grosseurs sont mis en conserve dans une sauce préparée composée de moutarde, de vinaigre, de cayenne, de poivre et de sel coloré avec du tumeric. Actuellement les sardines fumées ne sont pas préparées au Canada, mais ce sujet attire en ce moment l'attention des fabricants de conserves.

Bien que la mise en conserve des sardines soit une industrie bien connue, il y a beaucoup de détails d'opération que les importateurs ignorent et dont ils ne peuvent obtenir d'information qu'ici.

Les pêcheurs de sardines sont connus dans le commerce sous le nom de barreurs (weirmen) parce qu'au lieu de capturer le poisson dans des filets ils le pêchent dans des réservoirs ou barrages construits le long des côtes sur le chemin que suivent ordinairement ces petits poissons qui voyagent par bandes. Des milliers de poissons se réunissent et nagent si étroitement serrés les uns contre les autres qu'on les voit parfaitement dans l'eau et qu'on les distingue lorsqu'ils entrent dans le réservoir dont on peut ensuite refermer les portes.

L'opération qui suit est de lancer une seine (ou filet) assez longue pour englober la bande dans le réservoir et assez profonde pour atteindre le fond; ordinairement de quinze à vingt huit pieds. Les cordes qui sont en

de sardinas en mostaza, la pesca de varios tamaños se prepara con una salsa de mostaza, vinagre, pimentón, pimienta y sal.

En la actualidad no se preparan sardinas ahumadas en el Canadá, pero los fabricantes están prestando a este asunto la mayor atención.

Aunque la conserva de la sardina es una industria muy conocida, existen muchos detalles ignorados de los importadores y en obsequio de los mismos a continuación hacemos una reseña de esta industria.

Los pescadores de sardinas se conocen en el oficio por el nombre de "Weirmen" (Preseros) porque en vez de usar redes para la pesca, construyen presas a lo largo de la costa, por los lugares donde generalmente pasan las manchas o ribazones de sardinas. Miles y miles de peces se agrupan en una de estas manchas y nadan tan juntos que a simple vista pueden verse en el agua cuando entran en la presa. Tan pronto como entran se cierran las puertas e inmediatamente hay que extender una red barredera para contener la mancha dentro de la presa, lo bastante profunda para llegar al fondo, que generalmente alcanza de quince a veintiocho pies. Las cuerdas de la parte superior de la red y las del fondo se recojen poco a poco, formando una gran boisa donde se va reconcentrando la pesca hasta formar una masa compacta. A la señal de los pescadores acuden las lanchas sardineras, que miden cuarenta a cincuenta pies de longitud y empiezan el trabajo de cargarlas. La pesca se trasborda a las lanchas en grandes nasas. Cuando



Interior of Sardine Cannery, New Brunswick.
Intérieur d'une Usine aux Sardines, Nouveau Brunswick.
Interior de una Fábrica de Conservas de Sardina, Nueva Brunswick.

teen to twenty-eight feet. The cords which are at the top and bottom of the seine are gradually drawn in, forming the big net into the shape of a purse, until the fish are forced into an almost solid mass.

Sardine boats from forty to fifty feet long, come out from the cannery in response to signal by the fishermen and the work of loading the small fish from the net into the boats is begun. The fish are dipped into the boat with a large dip-net. When the weir is some distance from the cannery the fish are transferred from the small boats which enter the weir to larger carriers waiting outside.

The catch of fish varies greatly, sometimes as low as five hogsheds and on lucky catches up to three hundred hogsheds. (A hogshed holds four barrels.)

Sardine boats are equipped with gasoline engines and as soon as loaded leave for the cannery where the fish are transferred from boat to pier by tub-hoist. On the pier there is a sluice which floats the fish into the cleaning room, after which they again are placed in a sluice for washing on their way to brine tanks, in which they receive a final cleansing. From these tanks the fish are carried upward to the second floor by a hopper or endless wire belts, which at length deposits the sardines on a large wheel-shaped apparatus which spreads the fish evenly upon large wire trays known as "Flakes." These flakes on which the fish have been

haut et en bas de la seine sont tirées graduellement dans la forme d'une bourse jusqu'à ce que le poisson se trouve serré presque comme une masse solide. Des bateaux à sardines longs de quarante à cinquante pieds arrivent de la fabrique de conserve au signal donné par les pêcheurs et le travail de déchargement du petit poisson du filet dans les bateaux commence. Le poisson est plongé dans le bateau avec une grande épui-sette. Lorsque le barrage est à une certaine distance de la fabrique le poisson est transbordé des petits bateaux en de plus gros qui attendent à côté. La pêche du poisson varie grandement, parfois étant seulement de cinq barriques et par pêches heureuses de trois cents barriques. (Une barrique contient quatre barils.)

Ces bateaux à sardines sont munis de moteurs à gazoline et aussitôt qu'ils sont chargés ils s'en vont à la fabrique où les poissons sont transférés du bateau au qual par des élévateurs tubulaires. Sur le qual se trouve une écluse qui entraîne les poissons dans la salle de nettoyage, après quoi ils sont à nouveau placés dans une écluse pour lavage dans leur acheminement aux cuves à saumure où ils reçoivent un nettoyage final. De ces cuves les poissons sont montés au second étage par des courroies à fil sans fin qui de distance en distance déposent les sardines sur un grand appareil en forme de roue qui étale le poisson uniformément sur de grands treillis connus sous le nom de "couches" (flakes). Ces couches sur lesquelles les poissons ont été étendus sont placées en rateller comprenant vingt-cinq couches ou approximativement quatre cents livres.

A ce point de l'opération deux formes de mises en conserve sont possibles. Dans l'une les ratellers à poissons sont plongés dans de l'huile très chaude et frits plusieurs minutes,

la presa está lejos de la fábrica la pesca se pasa de las lanchas que entran en la presa a otros lanchones que esperan fuera para transportarla.

La saca, o copo, de la sardina varía grandemente y fluctúa entre cinco "hogsheds" (medida inglesa de capacidad equivalente a 2½ hectolitros) una tarea mala, y trescientos en una buena. (Cada hogshed, equivale a cuatro barriles).

Las lanchas sardineras llevan motor a gasolina y tan pronto como cargan vuelven a la fábrica y descargan el pescado en los muelles con tinajas izadas mecánicamente. En los muelles hay una compuerta por donde el pescado se desliza hasta la nave de limpieza, desde donde pasa por otra compuerta a los lavaderos y a los tanques de salmuera para hacerle la última limpieza. Desde estos tanques pasa la pesca al segundo piso por medio de elevadores de transmisión continua que depositan la sardina en un aparato circular, que a su vez desparrama la pesca por igual sobre grandes bandejas de alambre llamadas "tongas" o tongadas.

Estas tongas sobre las que se extiende el pescado se colocan en armaduras que contienen veinticinco tongas, o cuatrocientas libras aproximadamente.

Quando las operaciones llegan a este punto se pueden emplear dos formas de envase. La primera consiste en sumergir la pesca en aceite hirviendo y freirla durante algunos minutos. En la segunda, la pesca se coloca en un recipiente a vapor y se deja cocinar durante doce minutos. Después de frita o cocinada se traslada a un secadero y se somete a una corriente de aire caliente durante una hora, o



Packing Room, Sardine-Herring Cannery, New Brunswick.
Chambre d'Emballage, Conserve de Sardines-Harengs, Nouveau Brunswick.
Cuarto de envase en una fábrica de conservas, Nueva Brunswick.

spread are placed in racks holding twenty-five flakes or approximately four hundred pounds.

At this point in the operation two forms of packing are possible. In one the fish racks are dipped into very hot oil and fried several minutes, in the other they are placed in a steam chest and left to cook for twelve minutes. After steaming or frying the fish are removed to a dry room and subjected to a blast of hot air for an hour or more after which they are taken to the packing room where girls transfer them from trays to cans with amazing rapidity.

Cleanliness is the slogan in all of Canada's sardine canneries and considering the large size of the pack and rapid work necessary, these factories compare favourably with those in any other branch of the food packing industry.

dans l'autre ils sont placés dans un coffre de vapeur et laissés à cuire pendant douze minutes. Après qu'ils ont été étuvés ou frits les poissons sont transportés à une salle sèche et sujette à un jet d'air chaud pendant une heure ou plus; après quoi, ils passent à la salle de mise en boîtes où les jeunes filles les transvasent des plateaux dans des boîtes avec une rapidité vertigineuse.

La propreté est le mot d'ordre de toutes les fabriques de conserves de sardines du Canada et si l'on considère la grosse quantité de la conserve et la nécessité du travail rapide, ces usines peuvent être comparées favorablement à celles de toute autre branche de l'industrie de la conserve alimentaire.

De la salle de mise en boîtes, les plateaux chargés de boîtes, pleines à présent de poisson, sont portés sur des trucks aux machines à huller. Le plateau est placé dans la machine et la pression du levier verse la quantité d'huile qu'il faut dans toutes les

más, después de lo cual pasa al cuarto de envase donde las muchachas las pasan de las bandejas a las latas con rapidez prodigiosa.

El lema de todas las fábricas canadienses de conservas es la limpieza, y teniendo en cuenta el enorme envase que se hace y la rapidez que se requiere en el trabajo, nuestras fábricas comparan muy favorablemente con las de cualquier clase de conservas en todo el mundo.

Desde el cuarto de envase, las bandejas con las latas llenas de pesca, pasan al cuarto del aceitado donde se van colocando las bandejas en una máquina que bajo presión de palanca vierte la cantidad de aceite necesaria en todas las latas al mismo tiempo. Inmediatamente se ponen las tapas sobre las latas y se colocan sobre una armadura giratoria que las transporta a la máquina selladora. Al principio



Packing Room, Sardine-Herring Cannery, New Brunswick.
Chambre d'Emballage, Conserve de Sardines-Harengs, Nouveau Brunswick.
Cuarto de envase en una fábrica de conservas de Sardina-Arenque, Nueva Brunswick.

From the packing room the trays laden with cans, now full of fish, are carried on trucks to the oiling machine. The tray is placed in the machine and the pressure of the lever pours the right amount of oil into all the tins at once. Covers are then laid on the cans and they are placed in a moving rack which automatically carries them into the sealing machine. These covers were formerly soldered on, but now the sealing machine hermetically seals them at the rate of thirty per minute. It is from the use of these sealing machines that sardines are now available at a much lower price to the consumer than in the days of hand soldering.

From the sealing machines the cans are then placed in huge vats where they are boiled for two hours, dipped

boîtes en une seule fois. Les couvercles sont ensuite posés sur les boîtes et ils sont placés dans un ratelier mouvant qui les porte automatiquement dans la machine à sceller. Ces couvercles étaient soudés autrefois, mais à présent, la machine à sceller en ferme automatiquement trente à la minute. C'est grâce à l'emploi de ces machines à sceller que les sardines peuvent être obtenues à présent par le consommateur à des prix bien au-dessous de ceux du temps de la soudure à la main.

En sortant des machines à sceller, les boîtes sont placées dans des cuves énormes où elles sont bouillies pendant deux heures, plongées avec des nets à chaîne, séchées dans la sciure de bois et envoyées par une coulisse dans la salle d'emballage où elles ont le loisir de se refroidir entièrement avant l'inspection et l'empaquetage.

La enisse régulière de sardines ca-

se soldaban las tapas, pero ahora, la máquina selladora las cierra herméticamente a una velocidad de treinta por minuto. Debido a estas máquinas se pueden conseguir hoy las sardinas mucho más baratas que cuando las latas se soldaban.

Desde las máquinas selladoras pasan a grandes tinas donde se hierven durante dos horas, y se sacan con redes de cadena, secándolas en serrín y deslizándolas por último al cuarto de embarque donde se dejan enfriar antes de inspeccionarlas y encajonarlas.

La caja adoptada como modelo para la sardina, contiene 100 latas de un cuarto de libra.

CONSERVA DEL ARENQUE.

Las fábricas de Nueva Brunswick también conservan arenques en latas

out with chain dip-nets, dried in saw-dust and slid down a sluice into the shipping room, where they are allowed to cool thoroughly before inspection and packing.

The standard case of Canadian sardines contains 100 quarter pound cans.

CANNED HERRING.

New Brunswick canneries also pack herrings in half pounds square, half pound oval and pound oval tins. There are several grades, including fresh herrings plain and in tomato sauce, kippered herrings plain and in tomato sauce, and herrings French style in tomato sauce. The half pound squares contain eight ounces of fish while the half pound ovals contain six and a

nadiennes contient 100 boîtes d'un quart de livre.

Le Hareng en Conserve.

Les fabriques de conserves du Nouveau Brunswick mettent aussi en conserve les harengs en boîtes de demi livres carrées et en boîtes ovales de une demi livre et d'une livre. Il y a plusieurs sortes comprenant les harengs frais nature, et à la sauce aux tomates, les harengs saurs nature et à la sauce aux tomates, et les harengs style français à la sauce aux tomates. Les boîtes carrées d'une demi livre contiennent huit onces de poisson, tandis que les boîtes ovales d'une demi livre contiennent six onces et demi et les boîtes ovales d'une livre quatorze onces poids net.

Sur la côte du Pacifique, les harengs sont mis en boîtes dans toutes les sortes ci-dessus mentionnées, en boîtes d'une demi livre et d'une livre.

Des récentes comparaisons de qualités et de cations des produits ca-

cuadradas y ovaladas de media libra y ovaladas de una libra. Los arenques se preparan al natural y en tomate; escabechados al natural y en tomate, y al estilo francés, también en tomate. Las latas cuadradas de media libra contienen ocho onzas de pescado mientras que las ovaladas contienen seis y media onzas. Las de una libra ovaladas contienen catorce onzas, peso neto.

En la costa del Pacífico se preparan los arenques de todas las maneras en latas redondas de media y de una libra.

Recientes comparaciones de calidad y precio de los productos canadienses han demostrado que los fabricantes del Canadá están en condiciones de competir con las fábricas más antiguas de Europa, pudiendo garantizar



Making Boxes for Packing Canned Fish.
Fabrication des boîtes pour l'emballage du Poisson en conserve.
Haciendo las cajas para las latas de pescado.

half ounces and the one pound ovals fourteen ounces net weight.

On the Pacific coast herrings are packed in all of the grades above mentioned in half pound and one pound round tins.

Recent comparison of quality and quotations of Canadian goods indicate that the packers of Canada are in a position to compete with the long established industry in Europe and to many markets can guarantee quicker delivery. Importers of herring who are near the Pacific coast of Canada will find it to their advantage to order from Vancouver houses, while those on the Atlantic shipping routes can secure supplies via Montreal, St. John or Halifax.

nadiens indiquent que les fabricants de conserve du Canada sont en position d'entrer en concurrence avec cette industrie établie depuis longtemps en Europe et peuvent garantir à bien des marchés des livraisons plus rapides. Les importateurs de hareng qui sont près de la côte canadienne du Pacifique auront avantage à commander aux maisons de Vancouver, tandis que ceux sur les côtes d'expédition de l'Atlantique peuvent s'assurer des approvisionnements via Montréal, St. Jean ou Halifax.

Développement de la Pêche Canadienne des Sardines-Harengs.

La valeur totale de la pêche canadienne de la sardine-hareng en 1918, était de \$2,539,000.

La pêche des harrages canadiens en 1918, était de 285,000 barils.

una pronta entrega a los mercados consumidores. Los importadores de arenques cercanos a la costa del Pacífico canadiense encontrarán grandes ventajas haciendo sus pedidos a Vancouver mientras que los del lado del Atlántico, pueden obtener la mercancía vía Montreal, San Juan o Halifax.

Desarrollo de la Pesca de la Sardina-Arenque en el Canadá.

El valor total de la pesca de sardina-arenque en el Canadá ascendió a \$2,539,000 en 1918. El copo de pesca en las presas fué de 285,000 barriles en 1918.

Las fábricas canadienses de conservas prepararon 42,000 barriles de sardinas en 1918.

DEVELOPMENT OF CANADIAN SARDINE HERRING FISHERY.

Total value of Canadian sardine herring fishery, 1918, \$2,539,000.

Catch of Canadian weirs, 1918, 285,000 barrels.

Packed by Canadian Canneries, 1918, 42,000 barrels.

Sold to United States canneries, 1918, 243,000 barrels.

Value of sardines used as bait and sold as smoked herring, \$50,000.

Canadian sardine pack in 1908, 45,000 cases.

Canadian sardine pack in 1918, 182,000 cases.

Value of Canadian pack in 1908, \$144,000.

Value of Canadian pack in 1918, \$1,274,000.

Value of sardines sold to United States canneries, 1918, \$1,215,000.

Value of Canadian sardines packed in Canadian and United States canneries, 1918, \$2,489,000.

Les fabriques canadiennes de conserve mirent en boîtes, en 1918, 42,000 barils.

Il fut vendu en 1918, aux fabriques de conserves des Etats Unis, 243,000 barils.

La valeur des sardines employées comme appât et vendues comme hareng fumé, fut de \$50,000.

La mise en conserve de la sardine canadienne, en 1908 était de 48,000 caisses.

La mise en conserve de la sardine canadienne, en 1918, était de 182,000 caisses.

La valeur de la mise en conserve canadienne, en 1908, était de \$144,000.

La valeur de la mise en conserve canadienne en 1918, était de \$1,274,000.

La valeur des sardines vendues aux fabriques de conserves des Etats Unis, en 1918, était de \$1,215,000.

La valeur des sardines canadiennes mises en conserve dans les fabriques de conserves du Canada et des Etats Unis, en 1918 s'élevait à \$2,489,000.

A las fábricas de los Estados Unidos se vendieron 243,000 barriles de sardinas en 1918.

El valor de las sardinas utilizadas como cebo, y el de las vendidas como arenque ahumado, subió a \$50,000 en 1918.

El Canadá preparó 48,000 cajas de sardinas en 1908 y en 1918 preparó 182,000 cajas.

El valor de las sardinas fué de \$144,000 en 1908 y de \$1,274,000 en 1918.

Las sardinas vendidas a las fábricas de los Estados Unidos produjeron \$1,215,000 en 1918.

El valor de la sardina canadiense preparada en las fábricas del Canadá y de los Estados Unidos ascendió a \$2,489,000 en 1918.



A School of Stranded Black Fish, Nova Scotia.
Un lot de Poissons noirs échoués, Nouvelle Ecosse.
Cardúmen de peces negros, Nueva Escocia.



THE CANADIAN CANNED LOBSTER INDUSTRY

L'INDUSTRIE CANADIENNE DU HOMARD EN BOITE

INDUSTRIA CANADIENSE DE LA CONSERVA DE LANGOSTA



By WARD FISHER, Chief Fishery Officer, Atlantic Division.

The lobster fishery of the Canadian Atlantic coast is practically the "last stand" from which the epicurean taste of the world for this delightful shellfish must be supplied.

While there has been much uneasiness that the industry would seriously suffer from over-fishing, the great productiveness of the fishery is astonishing, when it is remembered that it has been exploited with increasing activity during the past seventy-five years. To-day, the value of the fishery ranks third in the fishing industry of the country, being surpassed in value only by the salmon fishery of the Canadian Pacific coast and the cod fishery of the Atlantic coast.

The world's total lobster catch is about 100,000,000 by count each year. Of this number the annual catch of Great Britain and the Continent is about 5 million. The catch for the United States is estimated at about 10,000,000, and Newfoundland at about 6,000,000. The Canadian catch will average about 80,000,000, or about eighty per cent of the world's total catch each year. It is, therefore, quite evident that the Canadian fishery must supply the world's market. This is particularly true of the canned lobster trade, for, with the exception of Newfoundland, where about 10,000 cases of 48 pounds are produced each year, the world's supply must be secured from Canada, as no other country is in a position to supply this trade. The catch of the United States, and the practically inconsequential catch of Great Britain and the continent, is used in a fresh state.

The total number of cases of 48 pound cans put up in Canada, range from 160,000 to 200,000 cases of 48 pound cans each year, about 80 per cent of which finds a ready export market.

It is quite apparent from the above, that every care should be exercised not only to safeguard the fishery from depletion of over-fishing, but to supervise the canning industry, in or-

Les pêcheries de homard de la côte Canadienne de l'Atlantique sont réellement la dernière réserve capable de satisfaire le goût épicurien de l'univers pour ce délicieux crustacé.

Bien qu'on ait grandement craint que cette industrie souffrirait sérieusement de la surproduction, l'immense rendement de cette pêche est extraordinaire, si l'on pense surtout que l'activité de cette industrie n'a cessé de croître depuis 75 ans. Aujourd'hui le homard vient en troisième rang pour sa valeur dans l'industrie de la pêche au Canada et il n'est surpassé que par le saumon de la côte du Pacifique et la morue de la côte de l'Atlantique.

La pêche annuelle totale comprend environ 100,000,000 de homards. Sur ce nombre la Grande Bretagne et le Continent en fournissent à peu près 5 millions. La pêche des Etats Unis est évaluée à environ 10,000,000 et celle de Terre Neuve à environ 6,000,000. La pêche canadienne atteint donc en moyenne 80,000,000 soit environ 80% de la pêche totale annuelle de l'univers. Il est donc bien évident que ce sont les pêcheries canadiennes qui doivent approvisionner les marchés du monde entier. Ceci est particulièrement vrai pour le commerce du homard en boîte, car, à l'exception de Terre-Neuve qui produit chaque année environ 10,000 caisses de 48 livres, la fourniture mondiale doit provenir du Canada parce qu'aucun autre pays au monde n'est capable d'approvisionner ce commerce. La pêche des Etats-Unis et celle pour ainsi dire insignifiante de la Grande Bretagne et du continent sont vendues à l'état frais.

La quantité totale de caisses de 48 boîtes d'une livre produites en Canada varie de 160,000 à 200,000 par an, dont 80 pour cent environ trouve un facile débouché pour l'exportation.

Il résulte donc de ce qui précède qu'il est de toute nécessité d'apporter un soin particulier à éviter le dépérissement par une pêche excessive et de surveiller attentivement l'indus-

La pesca de la langosta en la costa Atlántica canadiense puede considerarse como el "último recurso" disponible para complacer el refinado gusto de los amantes de tan delicioso crustáceo.

Si bien es verdad que se han abrigado temores de que la industria pudiera sufrir seriamente a causa del exceso en la pesca, estos temores desaparecen ante la asombrosa productividad de la misma, y más si se tiene en cuenta que esta industria se ha venido explotando con actividad creciente durante los últimos setenta y cinco años. En la actualidad, esta industria figura en tercer lugar entre las industrias pesqueras del Canadá, siendo sobrepasada solamente por la industria salmoneera de la costa del Pacífico canadiense y por la del bacalao en la costa del Atlántico.

El número total de langostas pescadas anualmente en todo el mundo se calcula en unos 100,000,000. De este número, Europa saca 5,000,000; los Estados Unidos de Norte América, unos 10,000,000, y Terranova cerca de 6,000,000. La pesca o saca en el Canadá se calcula en 80,000,000, término medio, o sea, un ochenta por ciento de la pesca mundial, siendo evidente que la pesca de este crustáceo en el Canadá está llamada a abastecer los mercados del mundo. Esto es particularmente cierto tratándose del comercio de langosta en conserva, pues, a excepción de Terranova, donde se preparan unas diez mil cajas anuales, el abastecimiento del mundo tiene que hacerlo el Canadá, por ser el único país que se encuentra en condiciones de hacerlo. La saca que se hace en los Estados Unidos, lo mismo que en Europa se consume en estado fresco.

El número total de cajas de 48 latas de a libra que se prepara en el Canadá, fluctúa entre 160,000 y 200,000 todos los años, de las cuales, más de la mitad, tienen mercado listo en la exportación.

De lo que antecede se desprende la necesidad de ejercer gran cuidado no



Off for the Lobster Grounds with Traps.
En route avec les Trappes pour la Pêche du Homard.
En busca de la langosta,—Pesca con trampa.

der that the product may be of the very best quality and put up under sanitary conditions of the most exacting character.

The heavy growing demand for the canned product and the limited supply, with the consequent increase in the value of the fishery to Canada, has not been unnoticed by the Canadian Government, which has supervision of the fishery and the canning industry. The regulation of the industry is definite in its terms, and strictly enforced. In order not only to prevent over-fishing and the destruction of the breeding lobster, but to assure that the fish taken shall be in the best condition for canning,

trle de la conserve pour que le produit puisse être de toute première qualité et offert dans des conditions hygléniques des plus satisfaisantes.

La demande constamment croissante des produits en boîtes et leur production limitée ainsi que l'augmentation correspondante de la valeur des pêcheries du Canada, n'ont pas échappé à l'attention du Gouvernement Canadien, qui a la surveillance des pêcheries et de l'industrie de la conserve. Cette industrie est soumise à une réglementation bien définie qui est strictement appliquée. Pour éviter une pêche exagérée qui entraînerait la destruction du homard pour la reproduction, aussi bien que pour

solo para evitar la desaparición de la pesca, si se explota con abuso, sino para supervisar las operaciones de las conservas a fin de que el producto sea de la mejor calidad y se envase en condiciones estrictamente higiénicas.

La creciente demanda de esta conserva y las existencias limitadas de la misma, juntamente con el aumento en valor de la pesca en el Canadá, no ha pasado inadvertido para el Gobierno canadiense el cual está ejerciendo una estricta vigilancia en la pesca y su conservación. Las reglas que rijen esta industria son absolutas y se observan con todo rigor. Para evitar el excesivo abuso



A Typical Lobster Fishing Village, Nova Scotia.
Un Village Typique où l'on fait la Pêche du Homard en Nouvelle Ecosse.
Vista típica de una aldea de pescadores de langosta, Nueva Escocia.

it is provided that the fishing seasons shall be only during such periods when the fish are in best condition. To illustrate, the meat of the lobster is soft and watery during and immediately following the process of moulting or shedding the shell. The meat, therefore, during such periods, is not as desirable for canning as it is when the new shell has developed, and the flesh has an opportunity to develop into the firm fibrous condition best adapted for canning. The regulations are, therefore, designed to prevent, as far as possible, the catching of lobsters during the moulting, and also during the hatching season.

In the early days of the industry when the fish were found in extraordinary abundance, no closed seasons were provided, with the result that there was a rapid depletion. Under the present regulations, the fishing periods are confined to a few months each year, the periods ranging with the conditions prevailing along the coast waters. This provision is a wise one, and not only safeguards the fishery from depletion, by over-fishing, but results in a better quality of meat being secured for the canning industry than by permitting lobsters to be caught at unseasonable periods.

The sanitary conditions under which the canned product is prepared, has received the closest attention. Canning operations are permitted in such licensed canneries as comply with a definite "Standard of Requirements," which provide,—

1.—Lobster canning operations shall not be conducted except in a building maintained exclusively for the purpose of canning lobsters, fish, shell-fish, meat or berries, and the manufacture of cans; but during the time that lobster canning is not being conducted the building may be used for storage or other purposes not inimical to its use as a lobster cannery, subject to the approval of the Inspecting Officer.

2.—All washing boxes, or vessels for holding lobster meat in process of packing, shall be of agateware, porcelain, zinc or galvanized iron, or shall be lined with such, and all packing tables shall be covered with plate glass, marble agateware, porcelain, zinc or galvanized iron.

3.—Coolers shall be covered with galvanized iron or zinc, or shall be provided with removable open slats, allowing of thorough cleaning and sterilization, and shall have sufficient slope for drainage.

4.(a) Billed lobsters may not be allowed to remain on the coolers over night, nor may lobster meat be permitted to remain on the packing tables or in an unpacked condition over night, except as provided for in subsection (b) hereafter.

5.—All lobster canneries must have suitable receptacles for lobster bodies and offal and all such receptacles must be emptied and thoroughly cleaned and limed each day.

6.—All such canneries must have an abundant supply of water, so that the floors, tables, etc., may be thoroughly washed or flushed through hose.

s'assurer que la poisson pêché est dans les meilleures conditions possibles pour le mettre en boîte, il est prévu que la saison de pêche ne doit comprendre que les périodes où le poisson se trouve dans les meilleures conditions. Ainsi, la chair du homard est molle et aqueuse pendant la mue et immédiatement après. La chair n'est donc pas aussi bonne pour la conserve pendant cette période qu'elle ne l'est lorsque la nouvelle carapace est formée et que la chair peut facilement devenir ferme et fibreuse et être ainsi en la meilleure condition pour la conserve. Les règlements sont donc faits pour interdire, autant que possible, la pêche du homard pendant la mue ou pendant le frai.

A l'origine de cette industrie, lorsqu'on trouvait le homard en abondance extraordinaire, il n'y avait aucune réglementation pour la fermeture de la pêche, aussi en résulta-t-il un dépeuplement rapide. Avec les règlements actuels les périodes de pêche sont limitées à quelques mois par an, et sont fixées suivant les conditions des eaux le long de la côte. Cette restriction est rationnelle, car elle permet non-seulement d'éviter le dépeuplement par suite de pêche exagérée, mais aussi de procurer à l'industrie de la conserve une chair de meilleure qualité que si l'on permettait de pêcher le homard hors de saison.

Les conditions hygiéniques dans lesquelles les produits en boîtes sont préparés ont été l'objet de la plus grande attention. Les opérations de la mise en boîte ne sont permises que dans des usines licenciées soumises à une série définie de règlements qui comprennent:

(1) La mise en boîte du homard ne peut être faite que dans un bâtiment exclusivement réservé à la mise en boîte des homards, poissons, crustacés, viandes ou fruits et à la fabrication des boîtes, mais lorsque la mise en boîte du homard est arrêtée, le bâtiment peut être employé comme entrepôt ou pour tout autre objet qui en soit pas préjudiciable à son emploi comme usine à homards, après approbation par l'officier inspecteur.

(2) Toutes les cuves de lavage ou les récipients pour contenir la chair du homard pendant l'opération de la mise en boîte, doivent être en agate, en porcelaine, en zinc ou en fer galvanisé, ou doivent être doublés avec un de ces matériaux. Toutes les tables d'emballage doivent être couvertes en glace, en marbre, en agate, en porcelaine, en zinc ou en fer galvanisé;

(3) Les réfrigérateurs doivent être couverts en fer galvanisé ou en zinc, ou doivent être munis de plaques mobiles pour faciliter le nettoyage et la stérilisation, et doivent avoir une inclinaison suffisante pour permettre l'écoulement;

(4) (a) Les homards cuits ne doivent pas rester sur les refroidisseurs pendant la nuit, et la chair de homard ne doit pas rester sur les tables ou sans être emballée pendant la nuit, excepté dans les conditions prévues à la section (b) ci-dessous.

(6) Toutes les usines de ce genre doivent avoir des récipients convenables pour les déchets et ces ré-

en la pesca y la destrucción de la cría de langosta, y tener al mismo tiempo la seguridad de que la pesca empleada para la conserva está en la mejor condición posible, se han limitado las estaciones de pesca a las épocas en que este crustáceo se encuentra en perfecto estado de formación. Para dar una idea, debemos manifestar que la carne de la langosta es blanda y acuosa durante el tiempo en que se forma y cambia de caparazón o carapacho, y aun por algún tiempo después, y durante dicho tiempo la carne no es utilizable hasta que la nueva concha se ha endurecido y la carne se ha desarrollado de un modo firme y fibroso que es cuando está en punto de conservación. De modo que estas reglas se han establecido para evitar en lo posible que se pesque langosta durante dichas épocas y durante el tiempo de la cría.

En los primeros días de la industria, cuando la pesca era enormemente abundante, no había vedas establecidas, lo cual trajo por resultado un rápido agotamiento. Bajo el nuevo reglamento, los periodos de pesca se limitan a ciertos meses del año, y estos periodos se fijan de acuerdo con las condiciones que prevalezcan en las costas. Estas reglas son muy acertadas y evitan el agotamiento de la pesca dando por resultado que la carne, sea de mejor calidad al tiempo de conservarla.

Se ha tenido especial cuidado en las operaciones sanitarias que deben llevarse a cabo en la preparación de la pesca.

Las operaciones de envase solo se permiten a aquellas fábricas de conservas que cumplen estrictamente las disposiciones de la Ley en lo que se refiere a uniformidad de producción y métodos de envase, las cuales son como sigue:

1.—Las operaciones de envase de langosta se llevarán a cabo solamente en locales construídos especialmente para conservar langosta, pescado, marisco, carne o bayas, en cuyos establecimientos también podrá fabricarse la latoría necesaria para tales conservas. Durante el tiempo en que no se verifique la conserva de langosta, dichos locales podrán emplearse para almacenes u otros propósitos inherentes a su uso como fábrica de conservas de langosta, previa la autorización del Inspector del Gobierno.

2.—Los lavaderos o recipientes que contengan carne de langosta para su conservación, serán de porcelana, esmaltados, o bien de zinc o hierro galvanizado, y las mesas de empaquetado y envase estarán cubiertas de cristal, mármol, porcelana, zinc o hierro galvanizado.

3.—Los enfriaderos deben estar cubiertos con hierro galvanizado o zinc, debiendo estar provistos de suficientes espacios y aberturas para permitir una efectiva ventilación y esterilización en todas sus partes, teniendo además el declive necesario para vaciar las aguas o residuos.

4.—(a) Las langostas cocidas no podrán permanecer en los enfriaderos por la noche, ni tampoco la carne de langosta podrá dejarse sobre las mesas de envase de un día para otro, a menos que se observen las reglas que se expresan en el siguiente inciso (b).

5.—Todas las fábricas de conserva

7.—Packing tables, utensils and coolers shall be thoroughly washed with boiling water each day, and the floor thoroughly washed at least once each day. The floor shall also be limed or washed with a solution of soda and water at least three times each week during the time the cannery is in operation.

8.—All lobster canneries shall be provided with proper drainage, subject to the approval of the Inspecting Officer.

9.—All canneries shall have efficient ventilation underneath, as well as in the cannery itself.

Fishery Officers will be required to visit each cannery frequently during the time it is in operation, and

ciplents doivent être vidés et soigneusement nettoyés et chaulés chaque jour;

(6) Toutes les Usines de ce genre doivent être largement approvisionnées d'eau pour pouvoir laver ou arroser à la lance les planchers, tables, etc.;

(7) Les tables d'emballage, les ustensiles et les refroidisseurs doivent être soigneusement lavés à l'eau bouillante chaque jour et le plancher doit être soigneusement lavé au moins une fois par jour. Le plancher doit également être chaulé ou lavé avec une solution de soda et d'eau au moins trois fois par semaine pendant que l'usine opère.

(8) Toutes les usines de conserves de homard doivent être pourvues d'un système de drainage convenable,

de langosta deben estar dotadas de suficientes receptáculos para los desperdicios y dichos receptáculos deberán vaciarse todas las noches y lavarse con cal todos los días.

6.—Todas las fábricas de conservas deberán tener aguas abundantes para poder lavar con manga diariamente los suelos mesas, etc., del local.

7.—Las mesas de preparación y envase, los útiles de trabajo y los enfriaderos, deberán lavarse diariamente con agua hirviendo lo mismo que los suelos. Para los suelos deberá usarse cal o una disolución de potasa tres veces a la semana, por lo menos, durante el tiempo que la fábrica esté funcionando.

8.—Todas las fábricas de conservas de langosta deberán tener un alcantarillado apropiado, sujeto a la aproba-

OFFICERS CANADIAN FISHERIES ASSOCIATION.



A. H. BRITTAIN, ESQ.,
(Montreal)
President C. F. A.



A. L. HAGER, ESQ.
(Vancouver)
Vice-President C. F. A.

report to the department conditions found to obtain there.

In addition to the above provisions, every care is taken that the fish from the moment they are removed from the traps by the fishermen, until the canned product is ready for the market, receives the closest possible supervision.

The traps in which the fish are caught are drawn up each day, and the fish immediately conveyed to the cannery where they are carefully sorted for cooking. The fish are placed in large steam boilers, where they receive the first cooking process. They are then placed upon cool-

approuvé par l'officier inspecteur;

(9) Toutes les usines de conserve doivent avoir une bonne ventilation souterraine ainsi que dans l'usine elle-même.

Les fonctionnaires du département des pêcheries sont chargés de visiter fréquemment toutes les usines pendant le temps de leur exploitation et de faire rapport au département des conditions dans lesquelles il les ont trouvées.

En outre des précautions ci-dessus, le plus grand soin est apporté pour que le poisson soit l'objet de la plus étroite surveillance possible depuis le moment où il est retiré des pièges par les pêcheurs jusqu'au moment où le

ción del Inspector del Gobierno.

9.—Todas las fábricas deberán tener ventilación suficiente tanto en el subsuelo como dentro de los locales.

Los Inspectores del Gobierno visitarán con frecuencia las fábricas de conservas mientras estén en operación, y rendirán informes periódicos al Gobierno sobre el estado y condiciones de las mismas.

Aparte de estas reglas se tiene buen cuidado de que la pesca esté debidamente supervisada desde el momento que se saca de las trampas de los pescadores hasta que se envasa y se deja lista para el mercado.

Las trampas con que se pesca la langosta se sacan del agua todos los

ers, constructed with proper drainage, until they are sufficiently cool to expeditiously handle. Expert operators quickly break off the large claws and the tail, the meat of which is utilized for canning, and are then passed to a second set of operators, who crack the shells so as to permit the rapid extraction of the meat, which process is done by a third set of operators. The meat is immediately passed on clean trays to a fourth set of operators, who conduct the first canning process by carefully placing in the cans, which are lined with

produit en boîte est prêt à être livré au marché.

Les pièges où l'on prend le poisson sont relevés chaque jour et le poisson est immédiatement transporté à l'usine o. Il est soigneusement assorti pour la cuisson. Les homards sont placés dans de grandes chaudières à vapeur où ils subissent leur première cuisson. Ils sont ensuite placés sur des refroidisseurs ayant un écoulement convenable, jusqu'à ce qu'ils soient suffisamment refroidis pour être rapidement manipulés. Des ouvriers experts brisent vivement les

días y la pesca se transporta inmediatamente a las fábricas donde se escoje con cuidado para cocerla. Las langostas se colocan en grandes calderos a vapor donde reciben la primer cocción. Después se pasan a los enfriaderos, construidos con suficiente desague, hasta que están suficientemente frías para manejarlas rápidamente. Los expertos, rompen las grandes patas o garfas, y las colas, utilizando la carne de ambas partes para la conserva, después de lo cual, las langostas pasan a otras manos que parten los carapachos y una vez partidos los pasan a



Female Lobster Ready to Spwn.
Homard Femelle sur le point de pondre ses Oeufs
Langostas hembras en condiciones de hacer el desove.

specially prepared paper, the proper quantity of meat required for each can. The cans are then placed in the steam or water bath for the final cooking process. On removal from the bath, they are carefully examined to ascertain whether each can has been properly processed, and that no faulty cans, such as "Swells" or "Blows" are permitted to be packed for sale or export.

The whole process from the water to the case is completed as expeditiously as possible. In the event that a larger quantity of lobsters are landed at any factory than can be

grandes pinces et la queue dont la chair est employée pour la conserve et le homard passe ensuite à une autre équipe d'ouvriers qui brisent la carapace pour permettre l'extraction rapide de la chair qui est faite par un troisième groupe d'ouvriers. La chair est immédiatement passée sur des plateaux propres à un quatrième groupe d'ouvriers qui accomplissent la première opération de l'emboitage en plaçant avec soin dans les boîtes, garnies d'un papier spécial, la quantité voulue de viande exigée pour chaque boîte. Les boîtes sont alors placées dans un bain de vapeur ou d'eau bouillante pour la cuisson finale. A

otros operarios que extraen la carne que queda en ellos. La carne se coloca en bandejas y pasa a otro grupo de operarios que ejecutan el envase colocando en las latas, forradas de un papel especial, la cantidad suficiente en cada una de ellas. Una vez llenas, se ponen al vapor o al baño de Maria para la cocción final. Cuando se sacan del baño se examinan detenidamente para que no haya faltas en el cerrado y apearar las "Infladas" o deformés.

Los procedimientos que se siguen desde que la pesca se extrae del agua hasta que se completan las cajas, se

packed each day, the residue must be placed alive in floating cans, where they are cared for until boiled. All meat must be canned within the day it is removed from the shell. These precautions are necessary to guard against any bodies of dead or otherwise unfit lobster being boiled, and to prevent any contamination of the meat.

The inspection of the cannery and processing is strict. The Act in this regard provides, among other requirements

1.—Any inspector may at any time stop the canning of any particular fish or shellfish, or of any variety of fish or shellfish which he considers unfit for human food.

2.—All fish and shellfish used for canning shall be sound, wholesome and fit for human food, and any unsound or unwholesome fish or shellfish may be seized on view by any inspector or otherwise dealt with as may be provided by the regulations.

3.—In the event of the provisions of this Act or of any regulations made thereunder or the lawful instructions of inspectors not being complied with in any fish or shellfish cannery, the Minister may refuse to allow the inspection of the fish or shellfish canned therein, and may order the fish or shellfish cannery to be closed.

4.—No person shall offer or accept for export or shall export any fish or shellfish subject to inspection under this Act, unless the requirements of this Act, and of the regulations regarding inspection and marketing have been complied with, and every person offering any fish or shellfish for export or exporting the same shall furnish such proof with respect to inspection and marking as is required by the regulations, whether the fish or shellfish so offered for export or exported are subject to inspection or not.

It is safe to say that the canned lobster trade under the regulations referred to in this article, is assured that the canned product is put up under the best possible sanitary conditions. It is also quite evident that under the present fishing regulations, which limits fishing to a brief period this year, no very great increase in production can be looked for. Orders for canned lobster should be placed with the dealers as early in the season as possible.

Among the problems awaiting solution, in connection with the industry is the invention of an expeditious method of removing the meat from the bodies and small claws, which contain the choicest meat for salads. While a small quantity of this meat is now tediously extracted in a few of the canneries, the usual practice is to extract only such meat as is contained on the two large claws and the tail. The waste of the body and small claw meat is a serious loss to

la sortie du bain, elles sont soigneusement examinées pour s'assurer que toutes les boîtes ont été convenablement apprêtées et qu'aucune boîte "Swell" ou "Blow" n'est empaquetée pour la vente locale ou l'exportation.

Toute la préparation, depuis la sortie de l'eau jusqu'à la mise en caisse, est accomplie aussi rapidement que possible. Lorsqu'une fabrique reçoit une plus grande quantité de homards qu'elle ne peut en emballer dans la journée, le surplus doit être placé vivant dans des bassins où on les conserve jusqu'à ce que l'on puisse les faire bouillir. Toute la chair doit être mise en boîte dans la journée où elle a été sortie de la carapace. Ces précautions sont nécessaires pour éviter de faire bouillir des animaux morts ou autrement impropres à la consommation et pour empêcher toute contamination de la chair.

L'inspection de l'usine et de son travail est des plus strictes. La Loi prévoit, à ce sujet, les règles suivantes:

(1) Tout inspecteur peut, en aucun temps, arrêter la mise en boîte de tout poisson ou crustacé ou de toute variété de poisson ou crustacé qu'il considère impropre à l'alimentation;

(2) Tout poisson ou crustacé mis en boîte doit être sain, salubre et propre à l'alimentation, et tout poisson malsain ou insalubre peut être saisi sur-le-champ par tout inspecteur ou peut être traité suivant qu'il peut être prévu par les règlements;

(3) Au cas où une usine de conserve de poisson ou crustacé ne se conformerait pas aux termes de cette loi ou à tout règlement qui en découle ou aux instructions légitimes des inspecteurs, le ministre peut refuser l'inspection du poisson ou du crustacé qui y est mis en conserve et ordonner la fermeture de l'usine;

(4) Aucune personne ne peut offrir ou accepter pour l'exportation ou exporter tout poisson ou crustacé soumis à l'inspection d'après cette loi, sans que les termes de cette loi et les règlements concernant l'inspection et la mise en vente aient été observés et toute personne offrant pour l'exportation du poisson ou des crustacés ou qui exporte ces marchandises doit fournir la preuve qu'elles ont été soumises à l'inspection et marquer suivant les règlements si le poisson ou le crustacé ainsi offert pour l'exportation ou exporté est sujet ou non à l'inspection.

On peut donc dire qu'avec les règlements cités dans cet article le commerce du homard en boîte est assuré de présenter son produit dans les meilleures conditions hygiéniques possibles. Il est aussi évident qu'avec la réglementation actuelle de la pêche qui limite la pêche à une courte période de l'année, on ne peut compter sur une grande augmentation de la production, car les homards en boîtes doivent être livrés aux marchands aussitôt que possible dans la saison.

Parmi les problèmes non encore résolus ayant trait à cette industrie on peut compter l'invention d'une méthode expéditive pour retirer la chair du corps et des petites pinces, qui contiennent la chair la plus appréciée pour les salades. Quoique une petite quantité de cette chair soit actuellement extraite avec d'infinies diffi-

hace con la mayor rapidez posible. Cuando hay mayor cantidad de langostas que la fábrica puede conservar en un día, las que sobran se ponen vivas en unas jaulas flotantes y se tienen en el mar hasta el día siguiente. Nunca se deja carne de un día para otro. Estas precauciones son necesarias para evitar el empleo de langostas muertas o que pudiesen estar en malas condiciones para el consumo y poder prevenir al mismo tiempo cualquier contaminación de la carne.

La inspección de las fábricas y sus operaciones se lleva a cabo rigurosamente. La Ley a este respecto, dicta las siguientes medidas:

1.—Cualquier inspector podrá en cualquier tiempo suspender las operaciones de una fábrica que emplee para sus conservas cualquier clase de pesca que se considere en mal estado para su consumo como alimento.

2.—Toda clase de pesca que se use para preparar conservas tendrá que estar en buen estado al tiempo de su preparación y cualquier inspector podrá embargar toda clase de pesca que a su juicio no reúna las condiciones marcadas por la Ley.

3.—En caso que las disposiciones de esta Ley, o las órdenes de los inspectores no fuesen cumplidas por cualquier fábrica de conserva de pescado, el Ministro de Pesquerías denegará la inspección de dicha fábrica y ordenará el cierre inmediato de la misma.

4.—Ninguna persona ofrecerá ni aceptará para la exportación ninguna clase de pesca que esté sujeta a la inspección que marca esta Ley, sin que los requisitos de dicha Ley, tocante a preparación, envase, etc., hayan sido cumplidos con todo rigor; cualquier persona o personas que ofreciesen pesca en conserva para la exportación deberán presentar pruebas de haber cumplido las disposiciones sobre inspección, marca, etc., aunque la pesca ofrecida para la exportación esté o no esté sujeta a las disposiciones que fija esta Ley.

Se puede asegurar que el comercio de exportación de conserva de langosta se hace con arreglo a las disposiciones que marca el artículo precedente y por lo tanto esta clase de conserva se prepara con la mayor higiene posible. Es, también, evidente, que bajo la Ley actual, que limita la pesca a un corto período del año, se puede esperar un aumento de producción bastante importante. Las órdenes de compra de langosta en conserva deben hacerse tan pronto como sea posible todos los años.

Entre los problemas que hay que resolver para explotar debidamente esta industria, se requiere la invención de algún aparato o método que facilite la extracción rápida de la carne de los troncos y pequeñas garfas de la langosta, donde está alojada la carne más selecta para ensaladas. Al presente se extrae una pequeña cantidad de esta carne, pero la operación es muy tediosa y resulta cara. Por regla general, las fábricas solo extraen la carne de las grandes garfas y de la cola. El desperdicio del cuerpo o tronco y de las patas es una seria

the industry, as only about 40 pounds of meat is taken from each 200 pounds of lobsters. In a pack of 160,000 cases of 48 pounds each, about 32,000,000 pounds of boiled lobsters are used. Only about 7,000,000 pounds of meat are extracted under the present prevailing practice. It is quite apparent that there is a great loss of the best quality of salad meat, which, under present methods, cannot be expeditiously extracted from the cellularly constructed bodies and from the claws or legs.

Spanish Translation of this edition by F. H. Sanguesa, B. A.

cultés dans quelques rares usines, il est d'usage courant de n'extraire que la chair contenue dans les deux grandes pinces et la queue. Le rejet du corps et des petites pinces cause une perte sérieuse à cette industrie, car on ne retire environ que 40 livres de chair dans 200 livres de homard. Pour obtenir 160,000 caisses de 48 livres chacune, il faut employer environ 32,000,000 de livres de homards cuits. On ne retire environ que 7,000,000 de livres de chair avec les méthodes actuelles. Il est donc évident qu'on perd une grande quantité de la chair la mieux qualifiée pour la salade, qui avec les méthodes en vigueur, ne peut être rapidement retirée des cellules du corps et des pinces ou des pattes.

pérdida para la industria, puesto que de 200 libras de langosta solo se obtienen unas 40 libras de carne. Para preparar 160,000 cajas de 48 libras de a libra se requirieron 32,000,000 de libras de langostas cocidas, de las cuales se extraen solamente 7,000,000 de libras de carne. El gran desperdicio salta a la vista y es de sentir por tratarse de la carne más gustosa para ensaladas, la cual no puede utilizarse mientras se empleen los actuales procedimientos para extraer la carne de las células del cuerpo y de las pequeñas patas.

CANADIAN FISHERIES ADMINISTRATION OFFICIALS.



JOHN P. BABCOCK, ESQ.
Assistant Commissioner of Fisheries, British Columbia.



WARD FISHER, ESQ.
Chief Fishery Officer, Atlantic Division.



INFORMATION regarding Canada's Fisheries, Fish Products and Fish Producers will be readily given upon request by addressing the Secretary, Canadian Fisheries Association, Room 30B, Board of Trade Building, Montréal, Canada.

The Canadian Fisheries Association is composed of firms and individuals engaged in the Fishing Industry of Canada who are organized for the purpose of developing the great fishery resources of Canada upon the most modern lines.

The Association's members are the most progressive and reliable men in the Industry and the Association's ideals are to have Canada's fish products the best in the world.

DES INFORMATIONS, relatives aux Pêcheries, aux Produits de la Pêche et aux Producteurs de Poisson du Canada seront fournies gracieusement sur demande adressée au Secrétaire de l'Association des Pêcheries Canadiennes, Chambre, 30B, Edifice du Board of Trade, Montréal, Canada.

L'Association de Pêcheries Canadiennes est composée de maisons et personnes engagées dans l'industrie de la pêche au Canada et qui se sont organisées dans le but de développer les grandes ressources poissonnières du Canada suivant les méthodes les plus modernes.

Les membres de cette Association sont les hommes les plus dignes de confiance et animés du plus vif esprit de progrès de l'Industrie et les idéals de l'Association sont de rendre les produits de la pêche canadienne les meilleurs au monde.

CUALQUIER INFORMACION sobre las pesquerías del Canadá, productos pesqueros y productores de pesca, se facilitará a cuantos lo soliciten dirigiéndose al secretario de la Asociación de Pesquerías Canadienses, Oficina No. 30B, Edificio de la Cámara de Comercio, Montreal, Canadá.

La Asociación de Pesquerías Canadienses está formada de firmas y personalidades ocupadas en la Industria Pesquera del Canadá y se ha organizado con el propósito de desarrollar los grandes recursos pesqueros del Canadá, siguiendo los métodos más modernos.

Los miembros que componen la Asociación son personas de las más progresivas y reconocidas en esta Industria y el ideal de la Asociación es hacer que los productos pesqueros del Canadá no tengan rival en el mundo.



DIRECTORY OF CANADIAN EXPORTERS OF FISH PRODUCTS

ADRESSE DES EXPORTATEURS CANADIENS DE PRODUITS DE LA PECHE

DIRECTORIO DE LOS EXPORTADORES CANADIENSES DE PRODUCTOS PESQUEROS



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 Anglo-British Columbia Packing Co., Ltd., Vancouver,
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 Evans, Coleman & Evans, Ltd., Vancouver, B.C.
 F. Griffin & Co., Vancouver, B.C.
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 Great West Packing Co., Ltd., Vancouver, B.C.
 C. L. Packing Co., Ltd., Vancouver, B.C.
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 Sound, B. C.
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 Port Edward Fisheries, Ltd., Vancouver, B.C.
 McTavish Fisheries, Ltd., Vancouver, B.C.
 Provincial Canning Co., Ltd., Vancouver, B.C.
 Kincolith Fisheries, Ltd., Vancouver, B.C.
 Western Salmon Packers, Ltd., Vancouver, B.C.

Portland Fisheries, Ltd., Vancouver, B.C.
 Quathiaski Canning Co., Ltd., Vancouver, B.C.
 Draney Fisheries, Ltd., Vancouver, B.C.
 Preston Packing Co., Ltd., Vancouver, B.C.
 Clayoquot Sound Canning Co., Ltd., Vancouver, B.C.
 Nanaimo Canning & Packing Co., Ltd., Nanaimo, B.C.
 Redondo Canning & Cold Storage Co., Vancouver, B.C.
 Lummi Bay Packing Co., Ltd., Vancouver, B.C.
 Gulf Islands Packing & Canning Co., Ltd., Vancouver,
 B.C.
 Nootka Packing Co., Ltd., Vancouver, B.C.
 Puntledge Canning Co., Ltd., Vancouver, B.C.
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Homard en Conserve.

Langosta en lata.

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 Roberts, Simpson & Co., Ltd., Halifax, N.S.
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 Fred Magee, Port Elgin, N.B.
 W. S. Loggie & Co., Ltd., Chatham, N.B.
 A. & R. Loggie, Ltd., Loggieville, N.B.
 Dominion Fisheries, Ltd., Halifax, N.S.
 R. O'Leary, Richibucto, N.B.
 Scotia Fisheries, Ltd., Halifax, N.S.
 O'Leary & Lee, Halifax, N.S.
 Tignish Packing Co., Tignish, P.E.I.
 Maritime Packers, Ltd., Montreal, Que.

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Trucha de Mar en lata.

Gosse-Millerd Packing Co., Ltd., Vancouver, B.C.

Canned Herring (Atlantic).

Hareng en Conserve (Atlantique).

Arenques en lata (Atlántico).

Connors Bros., Ltd., Blacks Harbor, N.B.
Booth Fisheries Company of Canada, Ltd., Toronto,
Ont.

Neville Canneries, Ltd., Halifax, N.S.
J. S. Wells, Whitehaven, N.S.

Canned Herring (Pacific.)

Hareng en Conserve (Pacifique).

Arenques en lata (Pacífico).

Wallace Fisheries, Ltd., Vancouver, B.C.
Canadian Fishing Co., Ltd., Vancouver, B.C.
W. A. Ward & Co., Vancouver, B.C.
O'Loane, Kiely & Co., Ltd., Vancouver, B.C.
D. Connor, Vancouver, B.C.
Gosse-Millerd Packing Co., Ltd., Vancouver, B.C.
Anderson & Miskin, Vancouver, B.C.
Levesons, Ltd., Vancouver, B.C.

Canned Pilchards (Pacífico).

Pilchards en Conserve (Pacifique).

Sardinas arenques en lata (Pacífico).

Wallace Fisheries, Ltd., Vancouver, B.C.
Canadian Fishing Co., Ltd., Vancouver, B.C.
W. A. Ward & Co., Vancouver, B.C.
O'Loane, Kiely & Co., Ltd., Vancouver, B.C.
Anderson & Miskin, Vancouver, B.C.
Everett Packing Co., Everett, Wash., U.S.A.
Levesons, Ltd., Vancouver, B.C.

Canned Chicken Haddie (Atlantic).

Merluza sin espina, cocida, en lata (Atlántico).

Maritime Fish Corporation, Ltd., Montreal, Que.

Canned Cod, Haddock, Mackerel (Atlantic).

Morue, Aiglefin, Maquereau, en Conserve (Atlantique).

Bacalao, Merluza y Macarela en lata (Atlántico).

Maritime Fish Corporation, Ltd., Montreal, Que.
Connors Bros., Ltd., Blacks Harbor, N.B.
W. S. Loggie & Co., Ltd., Chatham, N.B.
A. P. Tippet & Co., Montreal, Que.
Dominion Fisheries, Ltd., Halifax, N.S.
J. S. Wells, Whitehaven, N.S.
National Fish Co., Ltd., Halifax, N.S.
Neville Canneries, Ltd., Halifax, N.S.

Canned Clams (Pacific and Atlantic).

Clams en Conserve (Pacifique et Atlantique).

Almejas en lata (Pacífico and Atlántico).

Connors Bros., Blacks Harbor, N.B.
O'Loane, Kiely & Co., Ltd., Vancouver, B.C.
Shaw & Ellis, Pocologan, N. B.

Canned Whale Meat.

La Viande de Baleine en Conserve.

Carne de Ballena en lata.

Consolidated Whaling Corporation, Ltd., Victoria, B.C.

**DRIED SALT &
PICKLED FISH**

**POISSON SECHE,
SALE ET EN SAUMURE**

**PESCADO SECO, SALADO
Y EN SALMUERA**

*Dry Salt and Pickled Cod, Haddock, Hake, Pollock,
Cusk (Atlantic).*

*Morue, Aiglefin, Merluce, Merlan, Cusk, Sèche, Sale
et en Saumure (Atlantique).*

*Bacalao, Merluza, Merlango, Cusk, Seco
Salado y en Salmuera (Atlántico).*

Robin, Jones & Whitman, Ltd., Halifax, N.S.
H. R. Silver, Ltd., Halifax, N.S.
Farquhar & Co., Ltd., Halifax, N.S.
A. M. Smith & Co., Ltd., Halifax, N.S.
A. N. Whitman, Ltd., Halifax, N.S.

Dominion Fisheries, Ltd., Halifax, N.S.
National Fish Co., Ltd., Halifax, N.S.
Maritime Fish Corporation, Ltd., Montreal, Que.
Leonard Fisheries, Ltd., Montreal, Que.
Lockeport Cold Storage Co., Ltd., Lockeport, N.S.
Canadian-American Fisheries, Ltd., Liverpool, N.S.
A. & R. Loggie, Ltd., Loggieville, N.B.
W. S. Loggie & Co., Chatham, N.B.
Yarmouth Fish Co., Yarmouth, N.S.
Gardiner & Doon, St. Andrews, N.B.
Zwicker & Co., Lunenburg, N.S.
Neville Canneries, Ltd., Halifax, N.S.

Matthews & Scott, Queensport, N.S.
 Longmire Bros., Hillsburn, N.S.
 A. W. Fader, Canso, N.S.
 W. & C. H. Mitchell, Ltd., Halifax, N.S.
 F. W. Bissett & Co., Ltd., Halifax, N.S.
 Le Marquand & Sons, Newport, Gaspe, Que.
 R. J. Leslie & Co., Ltd., Amherst Harbor, M.I., Que.
 L. Hecht, Douglstown, Que.
 E. Chiasson & Sons, Etang du Nord, M.I., Que.
 Banks, Ltd., Halifax, N.S.
 D. Hatton Co., Montréal.
 McCormack & Zatzman, St. John, N. B.

Lockeport Cold Storage Co., Ltd., Lockeport, N.S.
 Canadian-American Fisheries, Ltd., Liverpool, N.S.
 Matthews & McLean, Souris, P.E.I.
 A. & R. Loggie, Ltd., Loggieville, N.B.
 W. S. Loggie & Co., Ltd., Chatham, N.B.
 H. W. Moulton Co., Ltd., North Sydney, N.S.
 Cleo Arsenau, House Harbor, M.I., Que.
 Neville Canneries, Ltd., Halifax, N.S.
 McCormack & Zatzman, St. John, N. B.

Dry Salt and Pickled Pacific and Ling.
Morue et Ling Pacifique, Sèche, Salé et en Saumure.
Pescado, Bacalao, Seco Salado y en Salmuera del
Pacífico.

Canadian Fish & Cold Storage Co., Ltd., Prince Rupert, B.C.
 Canadian Fishing Co., Ltd., Vancouver, B.C.
 B. C. Packers Association, Ltd., Steveston, B.C.
 Western Packers, Ltd., Vancouver, B.C.

Pickled Herring and Mackerel (Atlantic).
Hareng et Maquereau en Saumure (Atlantique).
Arenques y Macarela en Salmuera (Atlántico).

Robin, Jones & Whitman, Ltd., Halifax, N.S.
 Farquhar & Co., Ltd., Halifax, N.S.
 Leonard Fisheries, Ltd., Montreal, Que.
 National Fish Co., Ltd., Halifax, N.S.
 Maritime Fish Corporation, Ltd., Montreal, Que.
 H. R. Silver, Ltd., Halifax, N.S.
 Dominion Fisheries, Ltd., Halifax, N.S.

Dry Salt and Pickled Herring (Pacific).
Hareng Sèche Salé et en Saumure (Pacifique).
Arenques Seco Salado y en Salmuera (Pacífico).

Watson Bros., Vancouver, B.C.
 Canadian Fishing Co., Ltd., Vancouver, B.C.
 Wallace Fisheries, Ltd., Vancouver, B.C.
 F. J. Hayward, Vancouver, B.C.
 Butterfield, Mackie & Co., Vancouver, B.C.
 Maritime Fisheries, Ltd., Vancouver, B.S.
 O'Loane, Kielv & Co., Ltd., Vancouver, B.C.
 Canadian Fish & Cold Storage Co., Ltd., Prince Rupert, B.C.
 C. O. Julian & Co., Vancouver, B. C.

Pickled Salmon (Pacific).
Saumon en Saumure (Pacifique).
Salmón en Salmuera (Pacífico).

Canadian Fishing Co., Ltd., Vancouver, B.C.
 Wallace Fisheries, Ltd., Vancouver, B.C.
 B. C. Packers' Association, Ltd., Vancouver, B.C.
 Gosse-Millerd Packing Co., Ltd., Vancouver, B.C.
 Canadian Fish & Cold Storage Co., Ltd., Prince Rupert, B.C.

FROZEN FISH - POISSON GELE - PESCADO CONGELADO

Salmon (Pacific).
Saumon (Pacifique).
Salmón (Pacífico).

B.C. Packers Association, Ltd., Vancouver, B.C.
 Wallace Fisheries, Ltd., Vancouver, B.C.
 Canadian Fishing Co., Ltd., Vancouver, B.C.
 Canadian Fish & Cold Storage Co., Ltd., Prince Rupert, B.C.
 Gosse-Millerd Packing Co., Ltd., Vancouver, B.C.
 Western Packers, Ltd., Vancouver, B.C.

Canadian Fishing Co., Ltd., Vancouver, B.C.
 B. C. Packers Association, Ltd., Vancouver, B.C.

Salmon (Atlantic).
Saumon (Atlantique).
Salmón (Atlántico).

A. & R. Loggie, Ltd., Loggieville, N.B.
 W. S. Loggie & Co., Ltd., Chatham, N.B.
 Leonard Fisheries, Ltd., Montreal, Que.
 Dominion Fish & Fruit Co., Ltd., Quebec, Que.
 D. Hatton Co., Montreal.

Halibut (Pacific).
Flétan (Pacifique).
Mero (Pacífico).

Canadian Fishing Co., Ltd., Vancouver, B.C.
 B. C. Packers Association, Ltd., Vancouver, B.C.
 Gosse-Millerd Packing Co., Ltd., Vancouver, B.C.
 Canadian Fish & Cold Storage Co., Ltd., Prince Rupert, B.C.

Cod, Haddock, Halibut, Skate, Mackerel, Herring
(Atlantic).

Morue, Aiglefin, Flétan, Raie, Maquereau, Hareng
(Atlantique).

Bacalao, Merluza, Mero, Rayas, Macarela, Arenques
(Atlántico).

Flounders, Soles, Brill, Skate, Cod (Pacific).
Plie ou Carrelet, Raie, Morue (Pacifique).
Lenguados, Soles, Rodaballo, Rayas, Bacalao
(Pacífico).

Canadian Fish & Cold Storage Co., Ltd., Prince Rupert, B.C.

Maritime Fish Corporation, Ltd., Montreal, Que.
 Leonard Fisheries, Ltd., Montreal, Que.
 National Fish Co., Ltd., Halifax, N.S.
 A. & R. Loggie, Ltd., Loggieville, N.B.
 Lockeport Cold Storage Co., Ltd., Lockeport, N.S.
 Canadian-American Fisheries, Ltd., Liverpool, N.S.
 W. S. Loggie & Co., Chatham, N.B.

SMOKED FISH - POISSON FUME - PESCADO AHUMADO

Smoked Haddock (Finnan Haddie) Atlantie.

Aiglefin Fume (Finnan Haddie) Atlantique.

Merluza Ahumada (estilo "Finnan") Atlántico.

Maritime Fish Corporation, Ltd., Montreal, Que.
Leonard Fisheries, Ltd., Montreal, Que.
National Fish Co., Ltd., Halifax, N.S.
A. & R. Loggie, Ltd., Loggieville, N.B.
W. S. Loggie & Co., Ltd., Chatham, N.B.
Gardiner & Doon, St. Andrews, N.B.
Matthews & Scott, Queensport, N.S.
Lockeport Cold Storage Co., Ltd., Lockeport, N.S.
Canadian-American Fisheries, Ltd., Liverpool, N.S.

C. H. Mitton, Port Elgin, N.B.

Leonard Fisheries, Ltd., Montreal, Que.

Maritime Fish Corporation, Ltd., Montreal, Que.

Gardiner & Doon, St. Andrews, N.B.

Grand Manan Fish Co., North Head, Grand Manan, N.B.

Canadian-American Fisheries, Ltd., Liverpool, N.S.

Lockeport Cold Storage Co., Ltd., Lockeport, N.B.

Booth Fisheries Co., of Canada, Ltd., Toronto, Ont.

A. & R. Loggie, Ltd., Loggieville, N.B.

W. S. Loggie & Co., Ltd., Chatham, N.B.

R. J. Leslie & Co., Ltd., Amherst Harbor, M.I., Que.

McCormack & Zatzman, St. John, N. B.

Smoked Herring (Kippers, Bloaters, Bone-less) Atlantic.

Hareng Fumé (Kippers, Bloaters, "Sans os") Atlantique.

Arenques Ahumados ("Kippers," "Bloaters," Sin Espina) Atlántico.

National Fish Co., Ltd., Halifax, N.S.

Smoked Cod and Herrings (Pacific).

Morue et Hareng Fumé (Pacifique).

Bacalao y Arenques Ahumados (Pacífico).

Watson Bros., Vancouver, B.C.

Canadian Fishing Co., Ltd., Vancouver, B.C.

Canadian Fish & Cold Storage Co., Ltd., Prince Rupert, B.C.

D. Hatton Co, Montreal.

FRESH WATER LAKE AND RIVER FISH PRODUCTS LES PRODUITS DES EAUX FRAICHES DE RIVIERE ET DE LAC PRODUCTOS PESQUEROS DE LAGOS Y RIOS DE AGUA DULCE

Western Canada Whitefish, Pickerel, Lake Trout, Jack-Fish (Pike), Mulletts, Sturgeon.

Poisson Blanc, Doré, Truite, Brochet, Mulet, Esturgeon du Canada Ouest.

Albur, Lucio, Trucha de Lago, Esturión, Mujol, Barbos, etc., del Oeste Canadiense.

Northern Fish Company, Ltd., Selkirk, Man.
Armstrong Independent Fisheries, Ltd., Portage la Prairie, Man.

W. J. Guest Fish Co., Ltd., Winnipeg, Man.

Booth Fisheries of Canada, Ltd., Toronto, Ont.

Athabasca Fish Co., Edmonton, Alberta.

Big River Consolidated Fisheries, Big River, Sask.

W. S. Campbell, Edmonton, Alberta.

Lake Superior Whitefish, Trout, Herring, Etc.

Poisson Blanc, Truite, Hareng due Lac Supérieure.

Albur, Trucha, Arenques, etc., del Lago Superior.

J. Bowman & Sons, Port Arthur, Ont.

Thomas Craigie, Fort William, Ont.

Lake Erie Whitefish, Herring, Pickerel, Etc.

Poisson Blanc, Hareng, Doré, etc., du Lac Erie.

Albur, Arenques, Lucio, etc., del Lago Erie.

Northern Fish Co., Kingsville, Ont.

Crewe Bros., Merlin, Ont.

B. J. Westcott, Kingsville, Ont.

William Bates, Ridgetown, Ont.

N. S. Cornell, Port Stanley, Ont.

Producer's Fish Co., Port Stanley, Ont.

Davis & Van Order, Port Burwell, Ont.

Port Dover Fish Co., Port Dover, Ont.

W. F. Kolbe & Co., Port Dover, Ont.

R. J. Goodison, Cedar Springs, Ont.



DOMESTIC SECTION



National Fish Day

At a meeting of the Executive Committee of the C. F. A., it was decided to hold the National Fish Day on Tuesday, November 11th.

The Association's Publicity Committee will issue posters to the trade throughout Canada and will supply the press with suitable copy.

The National Fish Day last year was a wonderful success and it was estimated that 2,500,000 lbs. of fish were consumed in Canada on that day alone.

Suggested plans for the campaign are:—

(1) All wholesalers should circularize their customers and inform them of National Fish Day and urge them to make a special display of fish on that day and advertise in their local papers.

(2) Wholesalers and distributors should have a rubber stamp made with suitable wording such as:—

**REMEMBER
TUESDAY, NOVEMBER ELEVENTH,
Canada's National Fish Day.
Eat Fish and Reduce the H. C. of L.**

This should be stamped upon every circular, letter, envelope and invoice leaving your office. Stickers might also be used to advantage.

(3) In former National Fish Days the slogan was to "Save Meat for the Soldiers." As the War is over, probably the best arguments to advance are to "Eat fish and reduce the high cost of living." "Eat fish and develop our fisheries that they may be a source of wealth and revenue to Canada" "Eat fish for health's sake" etc. There are plenty of similar slogans that might be used. It might be pointed out that if Canadians would eat more fish, employment would be given to more of our citizens in the fishing industry, also that prices would be lower and transportation facilities improved.

(4) In Montreal, the local newspapers will call on the trade and make up advertising pages with suitable reading matter. The trade will announce the National Fish Day in their advertisements from now on. President Britain and Mr. J. A. Paulhus are giving a Silver Cup and two prizes of \$15 and \$10 for the best window display among Montreal retailers. This might be done in other cities.

(5) The Trade located in the larger cities should get together and carry out a local campaign. Posters should be printed for use on delivery wagons and street cars; slides might be exhibited in moving picture houses and advertising carried for a few days in local papers. A Fish Dinner or Luncheon should be held on National Fish Day and the press and public functionaries invited.

The above suggestions can be carried out wholly or in part by the Trade throughout Canada. National Fish Day is an established institution now and it has succeeded in putting Tuesday on the calendar as a weekly fish day. The value of the Annual Fish Day cannot be over-estimated as a publicity factor in increasing fish consumption generally, and it should be boosted wholeheartedly by all interested. November 11th is also commemorative of the signing of the Armistice and is an auspicious date for our National Fish Day of 1919.

Get together now and make the National Fish Day of 1919 the best ever.

OUR EXPORT EDITIONS.

During the five years' existence of the CANADIAN FISHERMAN we have refrained from that pardonable fault of many journals, viz.: displaying the bouquets thrown at us. We like to receive praise for our efforts to produce a magazine worthy of the great natural resources we represent, and for the benefits which have accrued to the Industry through our policy and representations, we have received a good deal of encouragement and numberless letters of good-will. But we shrink from publishing them. We feel that we

don't have to in order to keep in the field, as the members of the Industry in Canada and elsewhere know that we are alive to all that is going on and we can be safely trusted to lead the way in progressive movements.

The August number was an unusually heavy journal and took considerable time to print—in consequence, it was late in being mailed. A flood of letters from subscribers reached us and "Haven't received the August Fisherman" was the universal complaint. That was a complaint we were glad to receive. It was superlative praise to our mind, and showed that we were appreciated. It is good to know that we are looked for and expected. It is good to know that we are missed if we don't turn up at the usual time. A worthless article is never missed.

The August Export Edition of the CANADIAN FISHERMAN brought forth a great deal of complimentary comment from the Trade and others interested and we take this opportunity of expressing our thanks to them. As a means of putting Canada's fisheries before the fish importers of the world, we feel that it is the most ambitious project we have so far attempted.

MARITIME PROVINCE FISHERMEN RETURNING.

There is an old sailor's yarn of a young lad who was sent by his father to the wood-shed on a cold winter's night to bring in a back-log for the fire. The youngster detested this particular nightly task and the spirit of revolt against an inexorable parent culminated in his walking past the wood-shed on the night in question and down to the wharf where he shipped as a cabin-boy aboard a barque bound foreign. Seven years later he landed back in his own home town again and a longing for home and parents possessed him. Proceeding to the oft-detested wood-shed, he picked up a back-log and entered his father's kitchen. The old man was sitting in front of the fire as of yore, smoking his pipe, while the mother sat by the table knitting. Both looked up as the prodigal entered—the mother amazed; the father unmoved. "Father," said the wanderer, "I've brought the back-log you sent me for." The old gentleman removed his pipe for a moment and growled: "Well, put it on the fire, son. Ye've bin a h—l of a long time gittin' it!"

This is by way of an illustration to the reports coming from the Maritime Provinces that our Canadian fishermen are returning from the United States feeling that they can do better in our own fisheries. For years past, the best fishermen of our Provinces by the sea have been shipping out of Boston, Gloucester and Portland in American fishing craft and by their skill and ability have practically built up the fisheries of these ports. The native born American has drifted away from the fisheries into other less arduous pursuits and American fishing craft have depended upon crews hailing from Canada and Newfoundland.

The work of these Canadians was lost to Canada—especially in the salt fishery—and while they possibly made more money out of American ports up to the last year or two, the conditions at present apparently show that fishermen out of Lunenburg and other Canadian ports have done better than the emigrants. The cost of living and operation is possibly lower in the Maritime Provinces than the States; sales of fish are not cut to minimum prices prices by exacting culls, and our fishermen are free from labor disputes which keep vessels tied to the docks with consequent idleness among the crews.

We are anxious to see our fisheries developed by our own fishermen. We do not like to see our fishermen having to go to the States in order to make a living, and we do not like to see the fisheries at our own doors being harvested by the fishing craft of other nations. We should fish them ourselves and keep the revenue from these adjacent resources within the country.

We reprint the following interesting interview secured by the Yarmouth, N.S. "Herald" from a Canadian fishing skipper who has commanded vessels for Boston and Gloucester concerns:

"He also freely expressed the opinion that the day of the Gloucester and Boston fishing fleet is rapidly waning and the dawn of a great boom is just beginning in the Nova Scotia fisheries. He claims most emphatically that the time is not far distant when men will not have to go to the United States to man the fishing vessels of that country and states he is personally acquainted with men along the south shore who during the past season have fished from Lunenburg and other ports and have made as large and a more satisfactory share than the men out of the United States ports. This fisherman has already started the formation of a company to build a vessel of about 100 tons to be ready, if possible, to engage in the spring salt fisheries, and he already has a goodly proportion of the stock subscribed."

This is indicative of the times we are now living in. We are beginning to get the idea of developing our own fisheries, but like the boy in the story aforementioned "we have been a long time getting it!" The home industry is the best after all, and in a country like Canada there should be no need for any Canadian to leave the Dominion to better himself. We have potential sources of wealth and industry unexcelled by any other country, but our great fault has been our slowness in getting on to that fact.

The formation of individual vessel companies is to be encouraged where skipper and crew have a share in the vessel and outfit, and with conditions as they are at present, the Government might well look into the matter and evolve some scheme of assistance whereby fishermen can secure a vessel on favorable terms. Returned soldiers are being assisted with farms, implements and stock. Could not a similar plan be applied to building up our own fishing industry and keeping our fishermen at home?

Whatever happens, we feel that a new era is coming for our Maritime fisheries but we do not want to be seven years bringing it along.

It is reported that Norton Lilly & Co., Produce Exchange Bldg., New York, N. Y., who are agents for a line of freight steamers, will start monthly sailings beginning in October from Seattle and San Francisco for Marseilles and Genoa.

PISCATORIAL PARAGRAPHS.

A recent circular of the American Fisheries Society to its members states that at the convention in Louisville, Ky., Oct. 8th to 10th, there would be present "Administrators, Anatomists, Aquaculturists, Authors, Carcinologists, Chemists, Conehologists, Commercialists, Conservators, Cuisines, Cytologists, Economists, Embryologists, Entomologists, Ichthyologists, Herpetologists, Laymen, Limnologists, Mammalogists, Metabologists, Naturalists, Ornithologists, Practicalizers, Sportsmen, Students and indiscriminate friends, otherwise, of fishes."

Wow! Outside of "piscatorialists" that's the toughest named outfit we've heard of in a dog's age. Who would have thought that plain common "fish" could be responsible for such a gathering. Go to it, brothers, we wish you every success.

The catch of the Lunenburg salt bank fleet will average about 250,000 quintals for the season. The price will be lower than last year but the greater amount of fish landed will bring the revenue up as high as 1918. The opening price will be about \$10 per qtl.

The Department of Fisheries are interesting themselves in a campaign to market chum salmon in Canada. The Department will undertake the publicity work and endeavor to find home consumers for the large over pack in canners' hands. This cheap and palatable canned fish can do a lot to knock out the H.C.L.

Imports of canned and cured fish into France (except lobsters) for 1918 show that the United States leads with 56,604 metric quintals net. Canada comes second with 27,944 met. qtls. In lobsters Canada exported 3,518 met. qtls., while Great Britain exported 9,973 met. qtls. to France. Some of the latter must be Canadian or Newfoundland products re-exported from Great Britain.

The Department of Fisheries are advertising for a Publicity and Transportation expert at an increased salary. The salary offered previously (\$1,950) failed to draw many capable men, and the position has been made a little more lucrative at \$2,200 plus bonus. There is a good chance here for a bright young man and an opportunity for someone to be of real service to the Industry.

Prince Rupert fishermen will regret to learn of the recent death of Capt. Robert Whetten, formerly with the Canadian Fish & Cold Storage Co's fleet. Capt. Whetten died from heart failure at sea on board the line drifter "Clara Chapman" of Grimsby, Eng.

Retail Canned salmon prices fixed by the British Ministry of Food in England are as follows:—Grade 1, Soekeye, Red Spring, Blue-back, Chinook, 1/8½d. Grade 2, Red, Coho, Steelhead, Pink, 1/2½d. Grade 3, Chums, 7½d.

A GOOD OPPORTUNITY FOR SOMEONE.

A Publicity and Transportation Division is being added to the Fisheries Branch of the Department of the Naval Service. The Civil Service Commission is now advertising for applications for the position of head of this division.

Candidates must possess a comprehensive knowledge of the fishing industry, and a fair knowledge of the fisheries of the country. They should have experience in newspaper and publicity work, and ability to prepare concise publicity bulletins, pamphlets and advertisements, and to address public meetings in connection with the value of fish as food, and on the fishing industry of Canada. They should have a knowledge of the existing marketing and transportation conditions, and also of needed transportation facilities in connection with the fishing industry.

The initial salary attached to the position is \$2,200 per annum, plus the bonus provided for this fiscal year, and any bonuses that may hereafter be provided by Parliament. Applications for the position should be sent to the Secretary of the Civil Service Commission, Ottawa, so as to be there not later than October 6th. Forms of application may be had by writing to the Secretary of the Commission for such.

RECENT FISHERIES LEGISLATION.

July 7th, 1919. Annual fee for salmon cannery license \$500 and addition of four cents for each case of 48's sockeye, and three cents per case on other salmon species packed in cannery during term of license. Fee for salmon curing establishment, \$50 annually.

July 9th, 1919. Alberta and Saskatchewan and Northern territories amended Fishery regulations, empowering fishery officers to stop fishing on lakes if fish cannot be marketed or placed in cold storage.

July 9th, 1919. Manitoba Fishery regulations amended requiring angling permit for non-residents or aliens. Fee \$5 annually.

THE CHAMPION ANGLER OF ONTARIO

It has always been recognized that the genial president of the Lake Erie Fisheries Association, A. S. Brown, was a "top-notch" in the commercial fisheries on his home lake, but his many friends will be surprised to know that as a sportsman, Mr. Brown is in a fair way to be proclaimed the Champion of the Anglers for 1919. In company with Mrs. Brown he recently visited the Northern Ontario Lakes, and, as a result, has the record for the largest trout caught there this season. He is now leading for the Canadian National Railways' "Nipigon Lodge Shield." The trout weighed 6¾ pounds, and Mr. Brown assures us he had as much difficulty in landing his prize as a net full of the Lake Erie whitefish.

RUPERT COLD STORAGE EXTENDED.

The Canadian Fish & Cold Storage Co., Ltd., Prince Rupert, B.C., are completing extensions to their plant which will give them nearly 100 per cent increased capacity for the freezing and storing of fish and the manufacture of ice. The company will thus be able to take care of all the demands made upon them for ice and cold storage space for the storage of public goods.

RECENT FISHING VESSEL LOSSES.

Two unfortunate disasters befel our fishing fleet recently. On Aug. 23rd the schooner "Nelson A." of Yarmouth, N.S., was run down and sunk on La Have by the steamer "Lord Downshire" and Capt. Percy Ross and five fishermen were drowned. On Sept. 1st, the La Have trawler "Promotion" was run down and sunk 125 miles S.E. of Halifax by the French liner



"La Lorraine," but fortunately all hands were saved and carried to France on the liner. The "Nelson A." was a 93 ton schooner. The "Promotion" was a brand new otter trawler of 155 feet in length, built of wood, and engaged in fresh fishing for a Liverpool, N.S., firm. Both disasters occurred in fogs. The Canadian Fisheries' Association have asked that strict inquiry be made into the circumstances of the "Nelson A." disaster.

SALMON PACK ON COLUMBIA RIVER HAS AVERAGED WELL.

August 26 brought to a close the spring and summer fishing on the Columbia River. The pack was only 15 per cent below that of 1918 although the catch during June and July was exceptionally light. The pickled and cold storage output is larger than last year.

The canned pack on the river is estimated at about 530,000 cases "as they run". This is conservative and is equivalent to about 357,750 full cases of 48 lbs. each, and represents 21,465,000 pounds of raw salmon. The cold storage output consists of 24,242,500 pounds of fish cured at the canneries and cold storage plants.

This means that since the season opened on May 1, the gill-netters, trollers, seiners, purse seiners and trappers have altogether been paid the sum of \$2,706,280 for their catches. This is worked out at the ruling price of 11¼ cents a pound and does not include other large sums expended for labor. Figuring \$13 a case for the canned salmon and 18 cents a pound for the pickled fish, the output of the Columbia River fisheries during the season is worth \$5,403,000.

VANCOUVER WHOLESALE MARKET.

September 12, 1919.—Salmon are not at all plentiful at the present time. Very few cohoes, chum or pinks are to be had in the fresh fish markets. Cohoes are much smaller sized fish than in previous years. This applies to both Fraser River, Campbell River and Bute & Toba Inlets.

Codfish has been very scarce for some weeks past, most of the fishermen having gone salmon fishing. A very small supply of local smelt are on the market.



The Sardine Fisheries

By Doris Hemming.

Fortune's pendulum has moved swiftly from side to side in the last year, and the fishing community of Passamaquoddy Bay, N. B., have had many opportunities to ruminate on the chances of trade which leave one man a fortune and rob his impecunious neighbour even of that which he hath. The forces of tide and wave and the unexplained habits of the wary sardine always invest the fishing industry of the Bay with a sporting element of chance, but never in the memory of the present generation have market conditions played such an important part in the making or breaking of a season's success. The dead level of the life of the islands has been broken abruptly. One simple-minded fisherman, living quietly on the North Road at Campobello, counts his earnings for the season 1918 and finds himself the possessor of \$30,000 in cold cash as the result of a few month's work. His neighbour across the bay in the American fishing town of Lubec talks retrenchment to his wife when he reflects on the fact that he has paid as high as \$60, \$70 and even \$80 a hogshead for the sardines that now lie on his hands unsaleable, canned and boxed for a market that isn't there. A fictitious prosperity invaded the sparsely settled islands of the Bay last summer, owing to the insatiable demand for sardines to feed the armies of the Allies. Inexorable as the aftermath of a real estate boom, dull times have returned this year, bringing labor troubles, dissatisfaction and all the other ailments of the "morning after the night before." The fisher folk of Passamaquoddy Bay have been inordinately prosperous. Now they are suffering from headache and peevishness as the reaction sets in.

Last summer the catch of sardines was good and high prices spurred on the fishermen to increase the supply to the ultimate limit. When the news of a thousand-dollars from a weir for a single week was noised abroad everyone rose early in the morning and built temporary weirs where space could be found, or repaired old ones that had been abandoned for years. Twenty-five dollars a hogshead was the current price paid by the canneries, but at certain times when the herring refused to run, a man with a boatload could hold out for double or even treble that sum. Quite a change from the preceding years when fishermen were glad to work for \$2 a hogshead.

Everyone profited by the lavish spirit of the times. The factory girls demanded an increase in wages and got it. Instead of working intermittently their services were almost constantly in demand, with pay envelopes accordingly heavier. Big salaries meant fine clothes, so the stores ordered hats and ribbons in abundance and everyone danced to the tune of "Gather ye roses while ye may." The fishermen invested heavily in gear, repaired their weirs after the ravages of the ice of the inclement winter of 1918, and built additional boats. It was all more like a carnival than a war.

But times have changed. Last year the canners went ahead regardless of the future, confident that the American Government would take whatever they produced at fancy prices. There has been a slip in the machinery somewhere and instead of facing a continued demand this summer they started a new season with piles of costly cases still in store from last year. In addition to this the price of oil has increased and the cost of tin not less so.

"There is no money in canning under such circumstances," they said in unison, "we should be just as well off if we closed down for a year. Five dollars a hogshead is positively all we are going to pay for sardines."

Consternation among the fishermen across the Bay! To drop from \$25 to \$5 was unheard of! Far rather would they too go out of business and smoke their pipes in idleness for the duration of the summer. The canners should be taught a lesson. Here they were selling sardines at \$4.85 a case, and out of that amount only 20c. went to the fishermen who got up in the morning and did all the work. Their whole attitude was preposterous.

A strike was accordingly called by the fishermen of the Bay, who formed themselves into a trade union. Every high tide saw these determined men sitting atop the entrance to their weirs, lifting their net to allow the herring to run in and dropping it again before the catch of the preceding day could escape. No fish were seined for two weeks, and every weir developed into a fair-sized aquarium. Meanwhile the canners were obdurate. They didn't care how many fish were imprisoned in the weirs. They had offered lower wages to the factory girls who could take them or leave them, and many returned to their homes on Grand Manan, not finding enough work to keep going.

The upshot of much discussion was the acceptance by the fishermen of the \$5 rate for the summer. Those who had not joined the association felt pleased with themselves but the strikers were inclined to be surly as they moralized on the fortunes of war. Finally they released their pent up fish, and consoled themselves by hauling abnormal quantities to the factories for which they received over double what they had taken early in the war.

Now at the close of the summer the industry has again settled down to normal. According to their custom the herring sometimes run and sometimes don't. At Chumcock the Booth factory is closed down owing to lack of raw material, while at Eastport business goes merrily ahead, although many of the Campobello weirs are barren for the summer. And ever and anon the battered schooners carry off a cargo of sardine cases, in which the actual value of the fish is only four per cent.



Fish Meal as a Live Stock Food

By E. S. ARCHIBALD,

Dominion Animal Husbandman.

This is a foodstuff as yet little known in Canada and the United States, but which is used extensively and most satisfactorily in Scotland, England, France, Norway, Germany and other European countries. Undoubtedly the thrifty condition of cattle and swine consuming fish waste in countries where fishing is one of the main industries first attracted agricultural investigation on this subject. However, it was found that sheep, swine and calves fed on raw fish and fish wastes produced meats of a yellow color and strong flavor unless the fish was boiled or cooked with potatoes. The application of this knowledge to the growing fish industry is responsible for the manufacture of fish meal feeds, which industry is rapidly reaching large proportions in these countries.

Fish meal should not be confounded with "fish scrap," "guano" or "pomace" or other forms of fish by-products used as fertilizers. The fish meal used as a foodstuff is more carefully treated and includes, or should include, only fresh, sound fish or fish offal. When rancid fish are used the resulting meals contain too much oil, which, in its rancid state, causes digestive troubles as well as off-flavored meats, milk and eggs. The oil extraction is not only a profitable process, but much improves the value of the meal. Any fresh untainted fish or fish wastes will make a fair meal, the value depending on the richness of the flesh and the parts of the fish used. Although usually made from herring, cod, dogfish or other salt water fish, yet when the supply is sufficient, fresh water fish are used. The enormous supply of dogfish on the Atlantic coast, the great salmon industries on the Pacific coast and the sardine or other fish industries wherever they exist offer great opportunities for the manufacturing of fish meal.

Fish meal varies in composition, depending on its source. The richest meal is made from whole fish, while the poorest meal is made from such wastes as heads, tails and fins. One good brand of fish meal made from fresh whitefish showed an analysis of 61.5 per cent. protein, oil 3 per cent. and 19.8 per cent. phosphate of lime. It will be seen that the protein content of this meal was nearly twice as great as that of average cottonseed meal or linseed oil meal as commonly found on the Canadian market.

The feeding value of fish meal depends on its very high content of digestible protein which renders it most suitable for combination with foods such as roots, potatoes, hay, straw and the starchy cereal grains and their by-products such as corn, corn bran, barley, etc., all of which contain a low percentage of protein.

Experience has shown that so long as the quantities fed were not too large, fish meal has proven a valuable

food for horses, cattle, swine and poultry. From many feeding trials the quantities per day which may be fed with a starchy ration have been suggested:—

Cattle—2 pounds per 1,000 pounds live weight.

Swine— $\frac{1}{4}$ to $\frac{1}{2}$ pound per animal.

Sheep—1-10 to 1-5 pound per 100 pounds live weight.

However, it must be remembered that, as in the case of other rich meals, the animals must be brought up to these rations gradually. It should also be remembered that the manure from animals fed on this meal has a very high value in view of the large amount of nitrogen and phosphates in this food.

Fish Meal for Swine.

This meal may be fed at the rate of $\frac{1}{4}$ to $\frac{1}{2}$ pound per pig per day. It should be introduced into the ration very gradually. It is best used with young and fattening pigs, but it stimulates the appetite of pigs of all ages. Being rich in phosphates it stimulates the growth of bone in young stock.

Finishing Hogs.

At the Central Experimental Farm, Ottawa, Ont., an experiment to illustrate the value of fish meal for finishing swine was made in 1915. Although, owing to the fact that it took some time to accustom the pigs to this feed, very slow gains were made at first, yet the gains were, on the whole, most satisfactory.

Lot 6 fed a meal mixture of shorts 400 pounds, barley 400 pounds, fish meal (Grimsby brand) 85 pounds required 287 pounds of the meal mixture and 554 pounds skim-milk for 100 pounds gain.

Lot 1 fed a mixture of shorts 400 pounds, barley 400 pounds, corn 200 pounds required 239 pounds meal mixture and 467 pounds milk for 100 pounds gain.

Lot 2 fed the same mixture as Lot 1, but with gluten feed in place of corn, required 229 pounds meal and 439 pounds milk per 100 pounds gain.

The above trial was brief and definite conclusions can scarcely be drawn therefrom. However, although the fish meal did not give quite as good returns as gluten feed or ground corn, yet the pigs made excellent and cheap gain thereon. With corn and gluten feed at present prices, fish meal would thus be worth over \$48 per ton. Finally, it was not expected that fish meal would show as advantageously in this ration as one containing more meals and grains of a higher starch content.

F. S. Ashbrook, U. S. Department of Agriculture, reports on finishing hogs. An addition of 1 part tankage or fish meal to 9 parts corn showed the tankage lot requiring 462 pounds grain and the fish lot only 393 pounds grain per 100 pounds gain.

Keenan reports in 1910 that fish meal sharpens the

appetite and produces the same gains as a high grade meat meal.

The Seale-Hayne Agricultural College report trials showing fish meal as an addition to a grain ration composed largely of corn as being responsible for extra gain of $\frac{1}{4}$ to 2-3 pound per pig per day.

For Growing Shoats.

Another experiment at the Central Experimental Farm, Ottawa, was conducted with younger shoats and using a "hog meal" containing 65 per cent. fish meal, as prepared by the Conservation Commission, Ottawa.

Lot 1 fed a meal mixture composed of shorts 400 pounds, corn 400 pounds, "hog meal" 100 pounds required 270 pounds meal and 310 pounds skim-milk per 100 pounds gain.

Lot 2 fed the same meal mixture without milk required only 290 pounds meal per 100 pounds gain. This lot made greatest gains of all lots.

Lot 3 fed a meal mixture composed of short 200 pounds, corn 200 pounds, dried distillers' grains 100 pounds required 160 pounds meal and 330 pounds milk per 100 pounds gain. This lot made the slowest gains, and at the completion of the trial the pigs were poorest grown and in the poorest condition to start the finishing period.

In this trial again fish meal as contained in the special "hog meal" showed cheap and economical production. The excellence of the fish meal as a milk substitute was most pronounced. All pigs on fish made the greatest gains and were in the best condition.

For Weaning Pigs.

At the same Farm an experiment was conducted with young pigs weaned in June, the same "hog meal" containing 65 per cent. fish meal being used. A standard grain ration composed of equal parts corn, shorts and oats was used in all lots.

Lot 1 fed standard grain ration and skim-milk required 151 pounds meal and 520 pounds milk per 100 pounds gain. This lot made greatest gains.

Lot 2 fed standard grain and 10 per cent. tankage and milk required 150 pounds meal and 560 pounds milk per 100 pounds gain.

Lot 3 fed the same as Lot 2, but with the "hog meal" replacing tankage made almost exactly the same gains and on the same quantities of both meal and milk.

In this trial, the addition of either fish meal or tankage to a well balanced grain ration fed with milk showed no increase in gains for meal consumed. However, with the present scarcity and high prices of oats, shorts and even skim-milk, fish meal, if available, might well be used as a partial substitute.

F. S. Ashbrook, U. S. Department of Agriculture, reports on trials with growing hogs. As an addition of 1 part tankage or fish meal to a ration of corn, 4 parts, and wheat middlings, 4 parts, the tankage lot required 362 pounds grain, and the fish meal lot 365 pounds grain per 100 pounds gain. This trial again showed fish meal and tankage of about equal value.

Klein also reports fish meal an excellent substitute for milk.

The above figures show that a high grade fish meal may be economically used in balancing rations for all ages of feeding hogs. It will give about the same results as tankage for growing pigs, and makes an equally good substitute for skim-milk. It is fully equal to tankage for finishing hogs and does not impart any fishy odor or flavor to either the fresh pork or lard.

Fish Meal for Dairy Cattle.

This feed may be given to beef or dairy cattle up to 2 pounds daily per 1,000 pounds live weight, but the animals must be accustomed to it very gradually. Many European and American investigators report its value in milk production, showing its superiority over an equal weight of cottonseed and linseed oil meal in milk produced and that no flavors were imparted to the milk or fat.

At the Experimental Farm, Ottawa, Ont., in 1916, an experiment was conducted comparing fish meal with other concentrates in the production of milk. In this trial "Grimsby brand" fish meal was used, and after the first few feeds it was eaten with increasing relish and the appetite of the animals increased perceptibly.

For this work the basis of the meal mixture throughout the experiment was a mixture of wheat bran 400 pounds, gluten feed 200 pounds, ground oats 200 pounds. The additions to this basic meal ration during the various periods were: 1, fish meal, 10 per cent. addition; 2, gluten feed 24 per cent. addition, 3, cottonseed meal 15 per cent. addition, 4, linseed oil meal 21 per cent. additional, and 5, peanut oil meal 13 per cent. addition.

The results of this trial, in brief, are as follows:—

Compared with gluten feed (23 per cent. protein), fish meal required 1.1 pounds meal mixture less per 100 pounds milk produced and 39 pounds meal mixture less per 100 pounds fat produced. The cows increased in production on fish meal and dropped very perceptibly when again placed on gluten. A very noticeable feature was the greatly stimulated appetites and the increased weights of all cows when on fish meal.

On a basis of milk production in these trials the following meal equivalents are seen:—

1. 110 pounds fish meal plus 45 pounds bran plus 22 pounds oats equal 215 pounds gluten.
2. 166 pounds cottonseed meal plus 50 pounds bran plus 24 pounds oats equal 215 pounds gluten.
3. 188 pounds linseed oil meal plus 3 pounds bran plus 2 pounds oats equal 215 pounds gluten.
4. 147 pounds peanut oil meal plus 51 pounds bran plus 25 pounds oats equal 215 pounds gluten.

As an example of cash value, giving a value per ton of \$60 for gluten, \$70 for oats and \$35 for wheat bran, then this brand of fish meal has a value of \$89 per ton for milk production alone when fed in this proportion.

During this trial the cows made a most noticeable gain in weight on fish meal, namely, 37 pounds per animal in 14 days, and at the same time more than maintaining a normal milk flow. Judging from this, a good brand of fish meal should be excellently suited to the feeding of beef animals.

Another trial with fish meal was made in 1917 with a "Fish Meal Cattle Feed" supplied by the Canada Commission of Conservation. This feed contained 67 per cent. fish meal. Owing to some very unexplainable quality the cows persistently refused this feed when given as a 5 per cent. addition to the regular ration, hence no definite results as to its food value were obtained.

Generally speaking, a good brand of fish meal, when judiciously fed, is not only a most profitable feed in milk or meat production, but it also a splendid appetizer and has not detrimental effect on the flavor of the meat or milk. This is surely a time in Canadian history when this product should be generally ap-

preciated, manufactured and utilized to best advantage.

Summary.

The waste of fish and fish scrap in Canada is enormous. Here is a supply of cheap feed as yet but little appreciated or developed.

Concentrated meals are scarce and often not available. Fish meal, where available, is a suitable concentrate for cattle, and especially for hogs.

Fish meal is very rich, containing 55 per cent. to 60 per cent. of protein and over 15 per cent. phosphate of lime.

If of good quality and properly fed with other meals and with roughages, it is fairly palatable, wholesome, and a good feed for young, growing stock and also for milk production, having no injurious effects on the meat or milk.

The greater demand for this valuable feed would greatly stimulate its manufacture.

When given a fair trial and used in proper proportions it should become one of the most popular and profitable protein supplements for swine feeding.

THE RETURN OF THE CAPE BRETON HIGHLANDER, 1919.

I am home from the wars,
Back to the well-remembered hills
Of my beloved Isle.

Back from the hate of men,
Sick of the hideousness of war
I'm home—to rest awhile.

But some—they come not home!

I'll smell again the spruce.
This spring I'll see the roses blow,
And the wild iris bloom.

I'll seek the lily pool,
And stray along the kelp-strewn beach
Where the white combers boom.

Boom on the shores I love!

The fire that filled our veins
When we heard our far clansmen call,
Grows hotter at the sight

Of scenes we saw in sleep—
Uneasy sleep—in stinking trench,
While star-shells lit the night,

We dreamed of loch and ben.

And some across the seas
Dead on the field of honor lie,
Who over Canso came.

They faced the foeman there,
And thinking on this Isle they loved,
Died for the Highland name.

Their sons will not forget!

Cologne has heard our pipes;
Hard by the Hohenzollern Gate,
And the steep Dragon Rock.
Proud Caesar's legions quailed
When the mad pibroch shrilled the charge,
And we came to the shock.

The Rhine has heard our pipes,
And we are home from France!

—F. W. Gray.



A PRODUCT OF THE MARITIMES.

The handsome tern schooner shown herewith is the "Amy G. McKean" of 465 tons built by the McKean Shipbuilding Co., Dartmouth, N. S., and which loaded deals and sailed for England recently. The schooner was rigged from truck to pin rails with "Lion" Brand

cordage manufactured but a few yards away from where the "McKean" was built. In addition to running rigging, Lion Brand hawsers will moor the schooner at the ports where her freights take her. The "Amy G. McKean" is one of many similar types built recently in the Maritime Provinces and which are being rigged with gear of the "Lion" Brand.

THE FRASER RIVER SOCKEYE TREATY.

As one outcome of the International Conference that was appointed last year to consider a settlement of outstanding fishery questions between Canada and the United States, there was signed at Washington on the 2nd instant a Treaty for "The Rehabilitation and Protection of the Sockeye Salmon Fishery of the Fraser River System." The treaty was signed on behalf of Canada by the Acting-Ambassador, Hon. R. C. Lindsay, and Hon. Sir Douglas Hazen, K.C.M.G., former Minister of the Naval Service, and on behalf of the United States by Hon. Robert Lansing, the United States Secretary of State. It must yet be ratified by the United States Senate before it will become effective.

The signing of this treaty raises high the hand of hope that by earnest and competent co-operation by the two countries this potentially greatest of salmon rivers on the Pacific coast will be brought back, slowly though such is sure to be, to a maximum state of productivity, and thus finally remedy the existing pitiful condition, which the lack of such co-operation was mainly responsible for bringing about, by the permission of grossly excessive fishing.

The sockeye of the Fraser are predominantly four year fish. That is they reach maturity and return to the river to spawn and die when they are four years old; but a curious phenomenon of this river, that has occurred at least since the earliest records, over a hundred years ago, has been an exceedingly heavy run of fish every fourth year followed by three seasons of small runs. Hence the years have come to be known as "big years" and "off years." Without going into the conjectural causes of this phenomenon, experience shows that while the catches during the "big year" runs were very large, the number of fish was so enormous that sufficient escaped to the spawning grounds to maintain such runs without reduction, but in the "off years" the toll of fish taken was much more than the fishery could stand. Consequently each "off year" fewer fish were reaching the spawning beds than the fourth year previously, and hence the runs were being cut at both ends, and so dwindled with ever increasing rapidity, until now the fishery is a mere shadow of what it was, and has reached the verge of commercial extinction.

The last "big year" run was in 1913, and the railway building tragedy of that year, which is now well known, by which the always difficult passage at Hell's Gate, was rendered impossible of a negotiation by the salmon, resulted in few fish reaching the upper spawning portion of the river, and the consequent reduction of succeeding "big year" runs to the proportion of "off years." What this means will be realized from the fact that the sockeye pack in this system of fisheries was 2,357,695 cases in 1913, as against 67,572 last year, and this year unless something unforeseen happens it will be much less than even last year. This involves a money loss of approximately \$30,000,000 to the two countries.

The treaty and regulations appended thereto are absolutely in line with the recommendations of the Conference.

The treaty provides that the Federal Government of the United States—and not the State one as heretofore—with that of Canada will be responsible for the

enforcement of the regulations; that an International Fisheries Commission consisting of four members, two from each country, shall be appointed to conduct investigations into the life history of the sockeye, hatchery methods, spawning grounds, and other related conditions, and to recommend for the consideration of both Governments modifications in the regulations which experience may indicate as desirable. The treaty shall remain in force for fifteen years, and thereafter until two years after either Government gives notice of its wish to discontinue it.

The regulations provide for a limitation in the number of fishing licenses to be issued on both sides; for a thirty-six hour weekly close time excepting above New Westminster Bridge where it is sixty hours; for a twelve day annual close time from July 20th to 31st inclusive for the next eight years, which period covers a portion of the peak of the run, thus assuring an opportunity for a large escapement of fish to the spawning grounds. They further provide for a limitation in the size of traps and other nets, and they restrict purse-seine fishing to the deep waters of the Strait west of a line drawn from Trial Island, near Victoria, to the northwest point of Whitby Island, Washington, thus preventing fishing in the narrow channels amongst the islands where such seines have operated with great effectiveness in the past.

These regulations will afford a vastly greater measure of protection to this fishery than has ever been the case in the past.

If the treaty is ratified by the United States Senate this year, these regulations will govern operations next season.

CODFISH IMPORTATIONS INTO THE ARGENTINE REPUBLIC.

In response to inquiries, Mr. B. S. Webb, Canadian Trade Commissioner at Buenos Aires, writes as follows respecting codfish importation into the Argentine Republic:

Dry and salted codfish, or "baaalao," as it is called locally, is imported into Argentina to the extent of some 5,500,000 kilogrammes annually. In 1913 Norway supplied 3,600,000 kilogrammes, and the United Kingdom 1,078,000 kilogrammes. Whilst a considerable quantity of Canadian dry salted fish finds its way to Brazil and Central American states, practically none reaches Argentina.

One-third of the dry salted codfish coming into the Republic is of the kind known locally as "baaalao eortado." This fish is boned, cut into oblong pieces, and packed in tin boxes of 5 and 10 kilogrammes. Nearly all the boneless fish is imported from Norway.

Whole, dry salted codfish is landed in Buenos Aires in oblong boxes containing 50 kilogrammes (approximately 110 pounds); before the war those boxes had to be tin-lined, but I understand that during the war the tin lining was dispensed with.

The Canadian Mercantile Marine, operated by the Canadian National Railways, are running a line of steamers from Canada to Buenos Aires and Messrs. Maclean, Kennedy & Co., Board of Trade Buildings, Montreal, are also operating a line of steamers sailing to Buenos Aires direct at more or less regular intervals.



PACIFIC COAST SECTION

"The Canadian Fisherman," Pacific Coast Branch, will be glad to have inquiries from any one who wishes information in any way connected with the fishing industry. We would also appreciate items of fishing news suitable for publication.

Address communications to F. E. Payson, Pacific Coast Manager, Industrial & Educational Press, Ltd., 507 Board of Trade Building, Vancouver, B.C., Canada.

A New Angle to the Sockeye Salmon Hatchery Question

Mr. Henry Doyle Believes Hatchery Methods Can Be Improved On.

The following statement and interview by Mr. Henry Doyle of the Northern B.C. Fisheries throws new light on sockeye salmon hatchery methods, and opens up an altogether new angle to this important question. Mr. Doyle's ideas will be read with great interest, as he is a pioneer in the salmon canning business of British Columbia and has made a careful and exhaustive study of salmon and their habits.

Mr. Doyle believes that hatchery operations on the Fraser River have been mainly responsible for the depletion of the sockeye salmon. That fry liberated in rivers and streams that are lake outlets, have been a total loss. Reforms in hatchery operations, modelled more closely on nature's own lines, would, he believes, aid the increase of the sources of supply in the fisheries of the Province.

With due respect to the men who believe otherwise and have made statements on the subject recently, Mr. Doyle said he believed sockeye salmon hatcheries operating upon the right lines would prove successful.

"Just because there has been an apparent failure in sockeye salmon hatchery operations under present methods, does not necessarily mean that the entire system is worthless," he said. Mr. Doyle does not think that hatchery work should be discontinued until the improved methods have been tried out. He suggests that officials in charge of hatchery operations sometimes lacked efficiency. He said, "The failure of hatcheries to procure any augmentation in the number of sockeye salmon in areas where the hatcheries are situated, is probably very largely due to those in charge lacking appreciation of the necessity of employing distinctive methods for each individual species of fish. One who makes a success of whitefish hatching and applies similar methods to salmon propagation would make a mistake, and even in salmon culture the method of treatment for spring salmon must differ materially from that employed with the sockeye species."

Mr. Doyle's statement on sockeye salmon hatchery methods follows:

"Spring salmon deposit their spawn in streams which flow directly into the sea. A sudden transmission from fresh to salt water would be fatal to the young fish. Nature, therefore, endows them with size and strength to maintain themselves in the blackish water at tidal levels until sufficiently acclimatized to exist in the sea. Sockeye salmon, on the other hand, spawn only in rivers having a lake source, and generally then in the small streams by which the lake is fed. This distinctive feature in the natural laws governing the spawning habits of the two species indicates that different methods should be employed in artificial propagation work, but in the past this very important factor has been almost completely ignored.

"Sockeye salmon propagation on the Fraser River commenced in 1884 and year after year eggs were secured from Silver and Morris creeks and other tributaries of Harrison Lake. When the fry were being planted they were mostly deposited in the Harrison River, which is the Lake's outlet, where the current of this and subsequently of the Fraser River, would carry them to the Gulf of Georgia before they found suitable currentless water in which to remain while attaining greater growth. In the fry stage sockeyes lack sufficient strength to hold their own against the sweep of the tides, and doubtless practically all perished from too sudden change from fresh to salt water.

"Dr. Charles H. Gilbert of Leland Stanford University, is unquestionably our greatest authority on salmon life, and his investigations have shown that practically no sockeye, reaching the ocean as fry, return to the rivers as mature fish. It therefore follows that sockeye fry liberated in rivers and streams that are lake outlets have been a total loss.

Perish in Fry State.

"Hatchery troughs," continued Mr. Doyle, "have smooth sides and bottom and offer no opportunity for

the young fish to hide, and Mr. A. Robertson, officer in charge of the Harrison Lake hatchery, has pointed out that fish raised therein at least partially lose the natural instinct to bury themselves under gravel when danger threatens. Indeed, he says, they come to know the attendant that feeds them and swim towards him when he appears with their food. It stands to reason that such fish, even when deposited in the waters of a lake, will fail to protect themselves against their natural enemies, and, lacking the instinct to seek shelter, would doubtless swim around until, entering the current of the lake outlet, they would be swept seaward and likewise perish in their fry stage upon reaching salt water.

"Practically all the fish reared in the Harrison Lake watershed have been liberated as fry in either the lake or the lake outlet. Few, if any, were planted in the streams flowing into the lake from which in the past the parent fish were secured. If my theory is correct it follows that practically all those produced by hatchery operations have been lost, but in addition, and more important still, stripping the spawning streams year after year of the parent fish, with no attempt made to replace them with hatchery fry, has eliminated natural propagation as a factor in those streams.

"Years ago the Harrison Lake watershed was the main spawning area of Fraser River sockeye; today its spawning beds are deserted while mature fish pass them by to ascend the Lillooet and Berkenhead; and I believe the depletion of these streams and the consequent diminution in the quantity of salmon in Harrison Lake is largely, if not entirely, due to hatchery operations.

"But while the past has been disastrous, the future seems bright. The spring salmon hatcheries of the Columbia and Sacramento rivers have been successful in restoring the runs on those rivers and all conversant with conditions in those waters know this to be the case. It only remains for us to ascertain the proper procedure for sockeye propagation when success with that species will likewise surely follow."

Mr. Robertson, whom I have already mentioned, has made greater progress with this phase of the problem than any other investigator of sockeye salmon life, and in his invention of gravelled hatching boxes; the discovery of the natural food of salmon fry, and in going back to nature as regards temperature of water, method of fry planting, etc., I think he has opened the door to success. If he has not fully done so yet, he certainly has advanced very far toward the accomplishment of this object.

It Can Be Done.

"That the artificial propagation of sockeye salmon can be successfully undertaken if the natural laws governing the species are followed has been demonstrated by the success of our Namu operations. Here we maintain a private hatchery, which in the past has been stocked with eggs secured from the Government hatchery at Rivers' Inlet. We followed the adopted method of hatching the eggs in troughs—although in future we intend using Mr. Robertson's method—but instead of liberating the fry in Namu Lake or its outlet, we deposited them on gravelled beds in shallow water far up the main stream, which flows into the

lake. We commenced operations in 1915 and this season was the first to which we could look for the results of our undertaking.

"The Namu salmon are a distinctive fish. They differ both in size and appearance from both Bella Coola and Rivers' Inlet sockeye, which also differ from one another. In the past only the native Namu sockeye has been taken in our fishing operations at that point and any change occurring would indicate that sockeye of some origin were making an appearance in those waters.

"This year, for the first time on record, two distinct types of sockeyes have been taken at Namu, one the old familiar Namu type, the other—both in size and appearance—distinctly recognizable as of the Rivers Inlet type. This latter fish predominated in the early part of the season (the Rivers Inlet sockeye is also an early maturing fish), and represented at first over 60 per cent of the total catch. Later on the Namu type became the most numerous, until toward the first week in August this type constituted practically all of the catches. In no instance were any fish taken which resembled the Bella Coola type. We therefore conclude the new variety to be the product of the eggs secured from Rivers Inlet in 1915, and we feel it has proven artificial propagation of sockeye salmon can be successfully undertaken.

"To discontinue the artificial propagation of sockeye salmon would be a retroactive step. To give up is to confess ourselves beaten. Instead of abandoning hatchery work because of past failure we should diligently seek the proper solution. We should increase our experiments; not diminish them. What has been accomplished with spring salmon is likewise attainable with sockeyes. Almost every great invention of the past century has been the result of one final triumph after many disheartening failures, and the man who writes 'finis' to any incompleting effort belongs to the dark ages, not to the golden era of the present."

OIL-ENGINED FISHING VESSEL FOR LAKE ERIE.

The Port Dover Fish Co. Ltd. are building a new fishing tug, 64 feet long, 15 feet beam. This vessel will be equipped with one 80 B.H.P. Bolinder Crude Oil Engine (equal to 110 I.H.P. steam) and it is expected it will be completed in time to take part in the late fall fishing.

The vessel is being constructed of the very best white oak and is of a somewhat novel design. Great care is being taken to make it a model vessel in every respect. It will probably be the fastest fishing vessel on Lake Erie.

This vessel will be the first large oil-engined fishing vessel on the Great Lakes. In view of the enormous saving in operating expenses and numerous other advantages, coupled with the remarkable record of the Bolinder engine, the Port Dover Fish Company feel convinced that this vessel will be followed by many others with same equipment.

EVER TRY THIS?

The following from the "Dawson News," Yukon Territory, is of interest. Perhaps this is not new to many, but demonstrates what may be done to preserve food fishes with very crude equipment.

NEW WINTER FOOD SUPPLY**Yukoner Develops Industry of Kippered Grayling.**

Herbert A. Hartshorn, engineer for the C.K.M. at the big North Fork power plant, has had notable success in turning out kippered grayling. He has been in the north since '98 and has had such success in kippering fish each season that he says he believes that prospectors and miners throughout the country should know something of the trick, and thus be enabled to help produce more food for themselves for the winter and thereby keep the money in the country and fight off the common enemy, H.C.L.

"At the North Fork," says Mr. Hartshorn, "I have caught a number of grayling with hooks each fall, and have had no trouble each season in putting up a good supply for the winter. My process of treating them is this.

"Clean the fish well, leaving on the heads and tails. Then pack them in a crock or other suitable vessel, and in doing so sprinkle them with a mixture comprising equal parts of sugar and salt. I usually put on them about twice as much salt as one would use in a generous salting when frying fresh fish for a meal. Put this mixture on each and every layer of the fish as the vessel is filled. Add a good large portion of allspice. Then place a plate over the top of them and put a rock or other weight on the plate and keep the flies away. Leave the fish in the vessel sixteen continuous hours. During that time they will form a brine, caused by the juice being extracted from the fish.

"Next remove the fish, and wipe them dry with a cloth. Then hang them up and smoke them. I usually use a small tent for a smoke house, and place an old Yukon stove in the centre without any pipe to the stove. This confines the smoke to the tent, and yet gives enough draft to keep the fire burning just right. I smoke them four or five days, putting in two or three fires a day. Green birch is the most satisfactory wood I find for the purpose. Once the fire is started close it tight.

"In hanging up the fish I simplify the matter by having several poles with sharp nails protruding. Then simply slap Mr. Fish against the nail and there he hangs till cured, and, when removed and packed away in moderate cool temperature for the winter, one has something that beats the kippered herring and is a dish fit for the gods.

"I had similar success in making kippered lake trout and whitefish when I was in Atlin. The work is something everyone can perform successfully with a little care, and there is no reason men along the remote streams and where the supply is plentiful cannot provide themselves with this delicious article of food sufficient for every month of the year.

"I tried treating some salmon in that manner this month, and they also turned out prime and fine.

FRANCE WANTS RAW MATERIAL.**British Columbia Has Food.**

It is reported that France has not taken up the \$25,000,000 credit arranged for by the Dominion Government as she wants raw material.

British Columbia has some low priced canned fish. A fine food that would certainly pay any government to take over.

SEA FISHING RESULTS FOR AUGUST.

Weather conditions were fairly good for fishing on the Atlantic coast during August, and the landings of the chief kinds of fish, with the exception of herring, were greater than those for the same month last year.

The aggregate catch of cod, haddock, hake and pollock amounted to 273,978 cwts. This is almost 20,000 cwts. greater than the August catch of the preceding year. The increase was made up mostly of cod. Owing to glutted markets and low prices, the herring fishery was not prosecuted to the same extent as in other years; consequently, the catch for August this year was 60 per cent less.

The sardine fishery resulted in a catch of 121,470 barrels, against 67,815 barrels, but the price in August this year was \$1 per barrel against \$5 per barrel last year.

Lobster fishing was continued from the sixteenth of the month, in the northwestern half of the Strait of Northumberland, and 3,947 cases were packed. Since the beginning of the season in March last to the end of August, the total pack for the whole coast amounted to 120,033 cases against 101,967 cases last year.

Weather conditions on the Pacific coast were very favorable for fishing; but while the halibut fishing results were better by 8,000 cwts., the total salmon landings fell off by 87,000 cwts. The decrease was altogether in the northern district, and was due to a scarcity of pinks, cohoes and chums. Sockeye were plentiful in Rivers Inlet. In the southern and Vancouver Island districts there was an all-around increase in the salmon catch of over 20,000 cwts.

The total value of sea fish at the point of landing, on both coasts, was \$4,485,722, an increase of \$225,882 over that for the same month last year.

Nine fishermen lost their lives on the Atlantic coast during the month. Seven of these formed part of the crew of a Yarmouth county schooner which was sunk by a steamer in a fog.

GAS ENGINE NEWS.

Ferrier and Lucas report the following sales:

W. E. Williseroft of Prince Rupert, a 12-15 H.P. Sterling which is going into a 36-foot raised deck cruiser.

W. E. Roberts of Vancouver, a 12-15 H. P. Sterling for a heavy work boat.

Wilson-Brady, Ltd., a 9-12 H. P. Universal for a work boat to be used in timber cruising.

Sidney Canning Co., Ltd., Victoria, B.C., two 16 H. P. Atlas-Imperials for Jap style seine boats.

T. Okamoto, Vancouver, two 10 H. P. Atlas-Imperials for Jap style seine boats.

David Laiti, Vancouver, one 30 ft. trolling boat and a 6 H. P. Atlas-Imperial.

Henry Kewish, 12 H. P. Atlas-Imperial.

S. Ito, Vancouver, one 6 H. P. Atlas-Imperial for fishing boat.

CANADIANS HAVE ADVANTAGE OVER UNITED STATES IN CANNED FISH PRICES.

The following quotations by the large canned salmon packers of the United States shows much higher prices than those quoted by Canadian in comparison.

Prices for 1919.

		August 29, 1919.		
		Talls	Flats	1/2 flats.
		per doz.	per doz.	per doz.
*35%	Alaska Reds.....	\$3.35	\$3.50	\$2.25
	Cohoos	3.00	3.15	2.00
*65%	Pinks	2.25	2.40	1.40
	Chums	2.15	2.30	1.25

* Percentage of orders placed that can be delivered of these varieties.

B. C. PACKERS NAME PRICES FOR CANNED SALMON.

	Talls.	Flats.	1/2-lb. Flats.
Sockeye	\$15.00	\$15.50	\$16.50
Red Springs	13.50	14.00	15.00
Cohoe	12.00	12.50	13.50
Pink	8.50	.....	10.00
Chums	6.75	.....	7.75

Subject to 2 1/2 per cent.

The above prices are an advance of 50c per case over 1918 prices as regards chums.

SALMON RUNS.

The Skeena has had a good year and all the canneries in that district have done well. This helps to offset poor runs experienced in other sections of the Province.

Barelay Sound has had a poor run of cohoes and pinks, but a fair catch of sockeyes has been made lately.

On the Fraser the sockeyes have been noted for their extreme scarcity this season. So far very few pinks have shown up.

BRITISH COLUMBIA LOOKS FOR WORLD MARKETS FOR ITS FISH.

On August 17th Mr. A. E. Howard left Vancouver for the United Kingdom and France, representing the fishing interests of British Columbia. At the suggestion of the Canadian Trade Commission those interested in the British Columbia fishing industry decided to send Mr. Howard who will endeavor to open up new markets for the wider distribution of canned, frozen and cured fish.

VANCOUVER WHOLESALE FRESH FISH QUOTATION.

	Per lb.
Halibut	15c
Red Springs (heads off)	18c
White Springs (heads off).....	10c
Ling Cod (plentiful)	8c
Grey Cod (scarce)	5c
Red Cod (round) (scarce)	5 to 6c
Smelt (scarce)	10 to 12c
Soles and Brills	6 to 7c
Herring	4 to 6c

Skate	4c
Perch	6c

Shell Fish.

Crabs (scarce)	\$1.10 to \$1.20 per doz.
Shrimps	16c per lb.
Clams	2 1/2 to 3c per lb.

Vancouver Prices Smoked and Salt Fish.

Smoked Sable Fish (black cod, whole).....	14c
Kipperd Sable Fish	20c
Fillets, Sable Fish	17c
Smoked Pink Salmon (whole).....	20c
Kipperd Salmon	18c
Bloaters	7 1/2c
Kipperd Herring	9c
Eastern Haddie	14c
Western Haddie	10c
Herring Chicks in bundles of 5 boxes.....	18c

Per bbl.

Salt Herring, medium 900 to 1,000 count, 250 lbs. net	\$8.50
Salt Herring, medium 1,400 to 1,500 count, 250 lbs. net	7.50
Salt Herring, large 200 lb.	8.50
Salt Herring, large 100 lb.	5.25
Salt Herring, large 50 lb.	3.25
Salt Sable Fish (Black Cod), 200 lbs.....	22.00
Salt Sable Fish, 100 lbs.	12.00
Salt Sable Fish, 50 lb. (kit).....	6.50
Salt Pink Salmon, 200 lb.....	15.50
Salt Pink Salmon, 100 lb.	8.50
Salt Pink Salmon, 50 lb.	4.75
Salt Grey Cod, 50 to 200 lb., per lb. 10c.....	4.75

OVERHAUL YOUR GAS ENGINES NOW.

The fishing season will soon be over. The cannerymen, fisherman and every owner of a boat that is to be hauled up for the winter should overhaul the engine NOW.

An experienced gas engine man made the statement recently that "If cannerymen and owners of fishing boats that are going to be laid up for the winter would only give their engines a thorough overhauling before tying them up, they would save time and money." This sounds like good, hard, shrewd business sense. This same man then named over several parts that should be looked after. Among them were:

The mechanical oiler should be looked after also the valves, and the ignitors. Heads should be tested to see that salt water has not eaten through. Take your clutch apart and go over it thoroughly. A new greaser may be needed. Have you been using half hard grease and half 600-W? This mixture gives best results.

CLEAN! CLEAN! CLEAN! before tying up for the winter.

Plan ahead. It takes time to get parts from the factories. Do not wait until the season opens next Spring to overhaul, and then find you need parts that may take weeks to get. Overhaul now before you tie up for the winter.

Humpback salmon have been running into streams on the Maine Coast of late. The U.S. Bureau of Fisheries reports that considerable numbers have been peddled around Eastport, Me.

The otter trawler "David," built of wood, 168 feet overall, 26 feet beam, 13 feet depth of hold, was recently launched at Liverpool, N.S., for Canadian owners.

CANNED SALMON MARKET.**Sockeyes.**

cleaned up and the highest price realized was \$17.50. This is a record price and still Canada is paying less than the United States price.

Red Springs.

Still strong at \$13.50 for talls, \$15.00 for halves and very little stock.

Cohoos.

This variety is firm at \$12.00 for pound talls and \$13.50 for half flats with the outlook for still higher prices in certain instances. Some firms not quoting at the present time and this means they will hold for a higher price.

Chums.

One or two packs have been sold under \$6.50 per case but \$6.50 is nearer the mark for the 1919 pack although this price may firm up somewhat when the red meat stock is more thoroughly cleaned up.

Red Meated Salmon.

The Puget Sound, Alaska and British Columbia packs are way below normal and the Columbia River pack of Springs is not up to 1918.

Fishing in Districts.

In Northern B.C. the season is drawing to an end but no reports as to packs are obtainable for this report. On the Skeena the sockeye pack is heavier by far than 1918, Rivers Inlet poor and other sections fair. Too early to report finally on chums and cohoos.

Bute and Toba Inlets and Campbell River.

Season just starting. Cohoes are starting in very small in size. Too early to judge anything.

West Coast Vancouver Island.

Nothing to report on fall fish as yet.

Fraser River.

Season has been most discouraging. Pinks disappointing and cohoos very small and no quantity to speak of.

OIL AND FERTILIZER MARKETS.

There have been quite a few enquiries for fish oil lately, but there is no new production to quote on, and what is on hand, is being held for higher prices.

The whaling season is nearly finished, but no reports as to returns are obtainable, except that so far there has been a fair season.

A new plant for rendering fish oil and manufacturing fertilizer is reported to be starting at Heriot Bay.

ENTERPRISE ENGINE COMPANY OPENS VANCOUVER, B.C., AGENCY.

Under the management of Messrs. G. W. Pettigrew and C. T. Richardson, the Enterprise Engine Co., of San Francisco, Calif., has opened an agency in Vancouver, B.C. This agency will also handle Winton Gas and full Diesel engines.

Mr. G. S. Pettigrew, who will take care of the Technical and outside work, was with Ferrier and Lucas for several years, then with the Canadian Pacific Rail-

way as marine engineer but for the past three years was chief engineer on a submarine chaser in the Imperial navy. This means a returned sailor has now re-entered civil life in an important line of the allied industries in connection with the fisheries of B.C.

Mr. C. T. Richardson, who will look after the office and financial departments, comes to Vancouver from Seattle, where he was connected with the North Pacific Ship Building Co. and recently with Ferrier and Lucas.

NET FISHING STOPPED IN DISTRICT NO. 2.

On Sept. 15 the Dominion fisheries put into force a regulation which prohibits net fishing of all varieties of salmon in a portion of District No. 2 and which will remain in operation until the end of the season, this is owing to the fact that the light rain fall this season has resulted in the streams flowing from the spawning grounds becoming very nearly dry and the fish hovering around the mouths of the streams are easy prey for the fishermen.

The area affected is that portion of District No. 2 south of the north end of Porcher Island, thence south to an imaginary line drawn from the north end of Aristazable Island to Swanson Bay.

SHIPPING NEWS.

Mr. E. Cunningham, Vancouver, manager for the Overseas Shipping Company, reports that his company is agent for the South American-Pacific line now, having two boats sailing from Vancouver to points on the West Coast of Mexico, Central and South America. The next sailing will be the end of September. When operating with full service this line will have four steamers and others will be added as business warrants.

Late in October the Pacific Mail Line expect to start monthly sailings from Baltimore to points on the Pacific Coast through the Panama Canal.

BILLINGS GATE MARKET.

The conditions at present prevailing here show very little change from the experience during August in pre-war days. With the dispute at Hull at an end the recent heavy landings have every indication of being substantially increased next month, and it would appear as if the days of acute shortage of fish are over so far as the United Kingdom are concerned. This being so, there is scarcely any prospect for frozen fish in this country.

FISHING RULES RELAXED.**Regulation Controlling Industry on Lake Winnipeg Changes.**

Ottawa, Oct. 6.—A relaxation of the regulations with regard to fishing in Lake Winnipeg is announced by the fisheries department. Several years ago the fisheries in the lake were badly depleted and stringent regulations for their protection were put in force. The fish having recuperated, it is felt that these may now be relaxed and, accordingly, an order-in-council has been passed authorizing the use of nets of 5½ extension measure, instead of 5½, for catching whitefish. The mesh for pickerel, gold-eye, or jack-fish, is fixed at 4¼, and the mesh for tullibee at 3½ extension measure. The reserved area north of the Dauphin hatchery has also been reduced to allow winter fishing in that area.

Why is Exporting of Raw Salmon Allowed?

The sockeye salmon may not be shipped out of the country. All other grades may be exported and there is no duty on raw salmon shipped into the United States.

The Government has increased all modes of taxation yet allows valuable raw material to be exported into a country in which our canneries cannot ship their manufactured product without paying a heavy duty.

The cry is for more production, but what incentive is there when the Dominion Government will allow others to come in and take away our raw products because a few politicians are afraid of losing a few votes.

Fish Bought By Americans, Held Until Spoiled Then Canned.

The following correspondence shows just the help the fishing industry gets from the Fisheries Department at Ottawa. Then they are asked to produce more.

Until we have a Fisheries Department that is a Department by itself and with a man at the head who knows the industry, and is in sympathy with all sections of the Country, until then we shall have one continual complaint from those who are engaged in the industry. Lack of knowledge of the wants and requirements of the great majority engaged in the industry, and lack of sympathy, which means the taking into confidence those who are devoting their time and endeavors toward the success of the fishing industry in British Columbia, has created a distrust in those now at the head of the Fisheries Department at Ottawa that it will take a long time to remove.

August 30th, 1919.

Colonel F. H. Cunningham,
Chief Inspector of Fisheries,
City.

Dear Sir:

American buyers of raw salmon are now coming to the Fraser River to buy all grades of salmon (except sockeye, the export of which is prohibited)

It is usual for these boats to stay in the vicinity of the river until they secure a quantity which warrants the trip and consequently considerable numbers have been taken to Puget Sound in such a stale condition and unfit for packing that the cases were sold as "B.C. Salmon packed on Puget Sound," and sold at much lower prices than those charged for the Puget Sound ordinary pack.

This procedure greatly prejudiced the reputation of the British Columbia pack, and was, as you will recollect, strongly protested by our canners at that time.

Whilst you are not empowered to prohibit the export of these salmon, it is competent for your inspectors to protect our British Columbia reputation by carefully inspecting the fish on board the American collecting boats, and if found to be in a condition which renders them unfit for packing in this province, to condemn and seize them on such vessels, or take such steps as may be necessary to prevent them from being taken to the Sound.

Earnestly bespeaking your valued co-operation, and instructions to your officer to attend to this matter.

I remain,

Yours faithfully,

B.C. SALMON CANNERS' ASSOCIATION.

(Sgd.) W. D. Burdis, Sec.

Vancouver, B.C.,
August 30, 1919.

W. D. Burdis, Esq.,

Sec. B.C. Salmon Canners' Association,
213 Crown Building,
City.

Re Export of Salmon by Americans.

Dear Mr. Burdis:

I have your letter of the 30th instant in connection with the purchase of salmon by Americans on the Fraser River and quite agree with your position that action is necessary to protect the Canadian salmon industry from the results of packing fish in a stale condition, and especially when sold under the label of "British Columbia Salmon, packed on Puget Sound."

I enclose herewith for your information copy of a telegram which I have forwarded to the Department in this connection.

Yours faithfully,

(Sgd.) F. H. CUNNINGHAM,
Chief Inspector of Fisheries.

August 30, 1919.

W. A. Found,

Superintendent of Fisheries,
Department of Naval Service,
Ottawa, Ont.

Re purchasing salmon Fraser River by Americans Boats remaining until load is secured involving bad condition of fish which is packed on American side and disposed of as British Columbia salmon packed on Puget Sound. Sold at lower prices than Puget Sound pack. This is prejudicial to good name of British Columbia salmon and injurious to the trade, especially so to the Fall pack. Can authority be given to officers to inspect fish on board American collecting boats and if found to be unfit for packing in this Province to condemn and seize them or prohibit them leaving the Province? If this course can be adopted it should be done for protection of Canadian pack.

F. H. CUNNINGHAM.

Vancouver, Sept. 2, 1919.

W. D. Burdis, Esq.,

Sec., B. C. Salmon Canners' Association,
213 Crown Building,
City.

Re Export of Salmon by Americans.

Dear Mr. Burdis:

With further reference to my letter of the 30th ultimo in connection with the above subject, I beg to enclose herewith copy of a wire which I have just received in reply to mine mentioned in the letter above referred to.

Yours faithfully,

(Sgd.) J. A. MOTHERWELL,
Per Chief Inspector of Fisheries.

Ottawa, Ont. Sept. 2, 1919.

Lt. Col. F. H. Cunningham,
Chief Inspector of Fisheries,
Rogers Block, Vancouver, B.C.

Replying to your wire of thirtieth. Cannot exercise authority suggested by you. Mr. Found in Washington. Your wire forwarded with suggestion that matter be talked over with United States authorities.

W. FISHER.

Vancouver, September 3, 1919.

Col. F. H. Cunningham,
Chief Inspector of Fisheries,
City.

Dear Sir:

I thank you for your favors of the 30th ultimo and 2nd instant, advising me that the Department "cannot" protect our Canadian salmon canning industry against the unfair methods and practices of the Puget Sound Cannerymen, referred to in my letter to you of the 30th ultimo.

Had the conditions been reversed, I am certain the American Authorities would have found a means to protect their packers; but, as usual, the interests of our own people, whose money is invested in the canning business, is sacrificed for the benefit of our neighbors across the line.

I see in the "World" to-day that a treaty has been signed by the Canadian representative, Sir J. D. Hazen, with the United States Government which "embodies the conclusions reached in the conference at Ottawa, May 20th, 21st, 22nd, 1918, following the Seattle meeting, which conclusions were finally drafted at a meeting just a year ago at Lake Champlain," N. Y.

Though we have repeatedly asked for a copy of the Report of the International Fisheries Commission, or at least the recommendations made in respect to the clauses relating to the salmon fisheries on this Coast, we have been unable to obtain any information on the subject from Ottawa.

It appears, however, that the cannerymen on Puget Sound have been fully posted, for the same notice in the "World" from Seattle, goes on to say: "In fact, said one man identified with Puget Sound fishing interests, our information is that it is contrary to the facts developed in the testimony and also contrary to the understanding reached at the Seattle meeting of the Commission." At which the Canadian representatives must have been present.

We have never been informed what that "understanding" was, nor how it was liable to affect the fishing or canning on this side; and are at loss to understand why this discrimination has been exercised by the Department, and that you have also been ignored, for I understand you have not been favored with either a copy of the Report of the International Fisheries Commission, 1918, or of the treaty now said to have been signed in Washington yesterday.

I trust I may rely upon you for copies of the report and the treaty as early as possible, as you must recognize how vitally the interests I represent are certain to be affected; and of the reasons why this important information has been withheld by the Honorable Minister of Fisheries in Ottawa.

Awaiting your favors.

I remain,

Yours faithfully,

B.C. SALMON CANNERS' ASSOCIATION.

W. D. Burdis, Sec.

Why all the secrecy? Why not play square with those who are most vitally interested in the sockeye of the Fraser River?

The Government at Ottawa has already caused enough loss and trouble to British Columbia fishing interests. Why not let those that know and whose business it is have a "look in" before settling a question that means so much to the industry?

HAYSPORT PLANT PURCHASED BY MARITIME FISHERIES, LTD.

Prince Rupert will be pleased to hear that the cannery, fish and cold storage plant at Haysport, B.C., has been purchased by the Maritime Fisheries, Ltd., and that the entire plant will be put in first class condition and brought right up-to-date. The new owners intend developing its new acquisition in all its branches. This means canned, smoked and frozen fish will be handled, as well as ice and bait.

Fleeters will operate from this plant exactly on the same lines as the old country fleeters, and all the small fishing fleet on the banks will be able to remain on the grounds.

The fishermen will benefit by the operation of this plant in many ways and it will surely be a big thing for Prince Rupert, as it means the operation by a strong Company of another large fishing plant right at the city's doors. In fact the whole B.C. fishing industry is bound to benefit by the re-opening of this finely located plant.

The Maritime Fisheries, Ltd., deserve great credit and every success in the securing and operating of their new plant.

FALL SALMON MARKET.

Sept. 24th. Up to recently the United States has figured on Italy being a heavy purchaser of chums through a credit arranged by the U.S. Government. Owing to recent events and internal trouble in Italy, there is an uncertainty regarding such an arrangement, with the result that sales have been made of chums at \$7.00 per case by U.S. cannerymen. This is approximately \$1.45 per case under the opening prices.

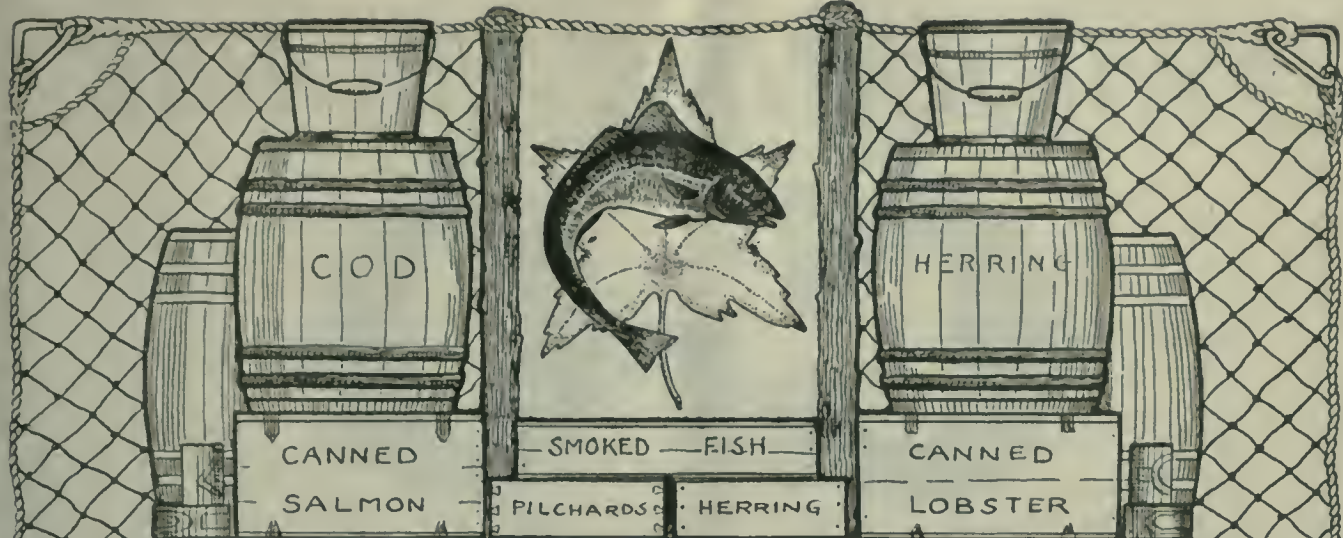
Even with these conditions obtaining the American cannerymen are buying British Columbia chums at 55c per fish and are paying 12c per lb. for any cohoes they can get. The question is how can they do it?

The estimated pack of chums in British Columbia was originally 300,000 cases for 1919. This has now dropped to 200,000 cases, and the outlook is not at all good.

On the West Coast of Vancouver Island on Sept. 17th, 1918, the seines were getting 3,000 to 4,000 fish to each seine. Up to Sept. 24, 1919, not over 5,000 fish all told have been caught. This is on account of the extremely bad weather. It has been impossible to put out seines for any length of time so far this season. Other sections are having a very poor showing up to date.

In the North, No. 2 district closed on Sept. 24, except Queen Charlotte Islands.

Cohoos are scarce and high priced, 11 and 12 cents per pound being paid the fishermen. This is too high for British Columbia cannerymen to pack.



THE CANADIAN FISHERMAN
LE «PÊCHEUR CANADIEN»
EL PESCADOR CANADIENSE

EXPORT EDITION
 EDITION D'EXPORTATION
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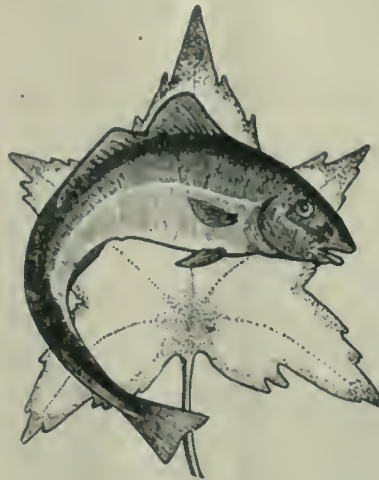
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FREDERICK WILLIAM WALLACE
EDITOR

Official Organ of the Canadian Fisheries Association and Affiliations

Vol. VI.

GARDEN CITY PRESS, St. Anne de Bellevue.

No. 10

ANNOUNCEMENT.

The present issue concludes the series of three Export Editions of the Canadian Fisherman and we trust they have been successful in portraying, to our friends in the fish trade abroad, the magnitude and variety of the fishery resources of Canada.

The descriptions of our various fisheries have been brief as space forbids more extended information. Several valuable and interesting fisheries have been omitted owing to the fact that they are not, at present, likely to feature in export trade. At some future date, when the meat herds of the world diminish or rise to a value beyond the purchasing power of the common people, ways and means will be evolved whereby all our fish varieties can be exported in preserved or chilled form. When that day arrives, and it is well within the bounds of possibility, Canada will become the world's greatest fish producer with enormous resources to draw upon and possessing a variety of food fish beyond all other nations.

A great draw-back to our export trade in fish has been the lack of transportation facilities. These are being remedied yearly and new steamship connections are being opened up with foreign ports whenever the possibilities of trade warrant. The Canadian Government will shortly have a fleet of forty-five large steamers available for service on any route

AVIS.

Le présent numéro met fin à la série des trois éditions d'exportation du "Pêcheur Canadien" et nous espérons avoir réussi à faire comprendre à nos amis intéressés dans le commerce du poisson à l'étranger l'importance et la variété des ressources des pêcheries du Canada.

La description de nos diverses pêcheries a été brève car l'espace nous manque pour nous étendre davantage sur ce sujet. Plusieurs espèces intéressantes ont été négligées, parce qu'elles ne paraissent pas devoir actuellement être employées pour l'exportation. Plus tard, lorsque le cheptel de l'univers aura diminué ou aura atteint un prix inabordable pour le commun des mortels, on mettra tout en oeuvre pour exporter toutes nos variétés de poisson soit conservé, soit frigorifié. Si ce jour arrive, ce qui est dans les limites du possible, le Canada deviendra alors le plus grand producteur de poisson du monde car il possède des ressources inépuisables et une variété de poisson pour la table plus grande que nulle part ailleurs.

Un grand obstacle qu'a rencontré notre commerce d'exportation a été le manque de facilité de transport. Cette condition s'améliore tous les ans et de nouvelles lignes de navigation nous relient aux ports étrangers, partout où le besoin du commerce le réclame. Le Gouvernement Canadien

AVISO.

La presente edición es la última de las tres ediciones de exportación del Pescador Canadiense.

Confiamos en que nuestros amigos del extranjero, interesados en el comercio de la pesca, habrán podido formar una buena idea de la magnitud y variedad de los recursos pesqueros del Canadá.

Hemos hecho una descripción tan extensa como nos ha sido posible teniendo en cuenta el poco espacio de que disponíamos, y hemos omitido el detallar algunas pesquerías, aunque importantes, no merecen por ahora especial mención, debido al probable resultado que tendrían al presente para el comercio de exportación. Más adelante, cuando las carnes escaseen en el mundo, o alcanzen mucho mayor precio, y se pongan fuera del alcance de la clase trabajadora, vendrá el tiempo en que todas nuestras variedades de pesca se podrán exportar en conserva o congeladas. Cuando tal tiempo llegue, lo cual es muy probable, el Canadá se convertirá en el mayor país productor de conservas de pescado y contará con enormes reservas y una variedad de pesca sin rival en todo el mundo.

Uno de los obstáculos mayores para nuestro comercio de exportación de pescado ha sido el de la dificultad en los transportes, pero a medida que pasa el tiempo la situación va mejo-

which shows a possibility of reciprocal trade. At present the Government Merchant Marine have twenty-six ships afloat and trading from Canada to Liverpool, London, Glasgow, Avonmouth, Buenos Aires, Havana, Trinidad, Demerara, Kingston and Australian ports. The regular steamship lines maintain services to all parts of the world from Canadian ports.

Canada possesses many reputable banking institutions and a number of these are paying special attention to foreign business. Branches, correspondents and connections have been already established in many countries to facilitate exchange and transmission of moneys. The Canadian Government also maintain Commercial Agencies abroad and Trade Commissioners are located in Buenos Aires, Rio de Janeiro, Shanghai, Havana, Paris, Rotterdam, Milan, Yokohama, Vladivostok, Christiania and in the British possessions throughout the world. A list of these offices are published elsewhere in this journal. All information pertaining to Canada and Canadian products will be cheerfully given by our Trade Commissioners.

In conclusion, it is respectfully suggested that the three Export Editions of the **Canadian Fisherman** which have been sent you be kept on file for future reference. The firms in a position to do export business will be found in the Directory included in the editions and in the advertising pages.

In writing Canadian producers kindly give as much information as possible regarding the particular fish product required in your market.—size, cure, weight, style of package, etc. Such details obviate mistakes and will tend to facilitate business.

aura sous peu une flotte de 45 grands navires pour faire le service sur toutes les routes qui offriront la possibilité d'un trafic réciproque. Actuellement la marine marchande du Gouvernement a vingt-six navires faisant le trafic entre le Canada et Liverpool, Londres, Glasgow, Avonmouth, Buenos Aires, La Havane, Trinidad, Demerara, Kingston et les ports Australiens. Les lignes régulières de vapeurs entretiennent des services des ports Canadiens vers toutes les parties du monde. Le Canada possède de nombreux établissements de banques de premier ordre et un certain nombre de celles-ci s'intéressent particulièrement au commerce d'exportation. Des succursales ont été établies ou des correspondants appointés dans les principales contrées pour faciliter l'échange et la transmission des fonds. Le Gouvernement Canadien a également des agences commerciales à l'étranger et on trouve des commissaires du commerce à Buenos-Aires, Rio de Janeiro, Shanghai, Havane, Paris, Rotterdam, Milan, Yokohama, Vladivostok, Christiania, ainsi que dans toutes les possessions britanniques du monde entier. Une liste de ces bureaux est publiée dans une autre partie de ce journal. Tout renseignement concernant le Canada et les produits Canadiens est donné avec plaisir par nos commissaires du commerce.

Comme conclusion, nous vous suggérons respectueusement de garder dans vos dossiers pour pouvoir vous y reporter plus tard les trois éditions d'exportation du "Pêcheur Canadien" que nous vous avons adressées. On trouvera le nom des maisons placées pour faire de l'exportation dans la liste publiée dans ces éditions ainsi que dans nos pages d'annonces.

En écrivant aux producteurs Canadiens, veuillez donner le plus de renseignements possibles sur le genre spécial de poisson que demande votre marché et indiquer la taille, le salage, le poids, le mode d'emballage, etc. Ces détails empêchent les erreurs et tendent à faciliter les affaires.

rando y se van estableciendo nuevas líneas de vapores a los puertos extranjeros cuyo comercio lo requiere. El Gobierno Canadiense contará dentro de poco tiempo con una flota de cuarenta y cinco grandes barcos para transportar nuestros productos a cuantos países puedan reciprocarse su comercio con el Canadá. Al presente, la marina mercante del Gobierno cuenta con veintiseis barcos que hacen el servicio entre Canadá y Liverpool, Londres, Glasgow, Avonmouth, Havre, Buenos Aires, Habana, Trinidad, Demerara, Kingston y con los puertos australianos. Además, las líneas regulares de vapores mantienen un servicio constante con todos los puertos del mundo.

El Canadá posee muchas instituciones bancarias de gran reputación y muchas de ellas están dedicando una atención preferente a los negocios extranjeros, habiendo establecido agencias y sucursales en muchos países de la América española para facilitar el cambio y transferencia de fondos. El Gobierno del Canadá tiene establecidas agencias comerciales en el extranjero y cuenta con Comisionados Comerciales en Buenos Aires, Rio Janeiro, Shanghai, Habana, Paris, Rotterdam, Milán, Yokohama, Vladivostok, Christiania y todas las posesiones británicas. En esta página de este número aparece la lista y dirección de los Comisionados y Agentes, quienes tendrán sumo placer en facilitar cualquier información sobre el Canadá o productos canadienses.

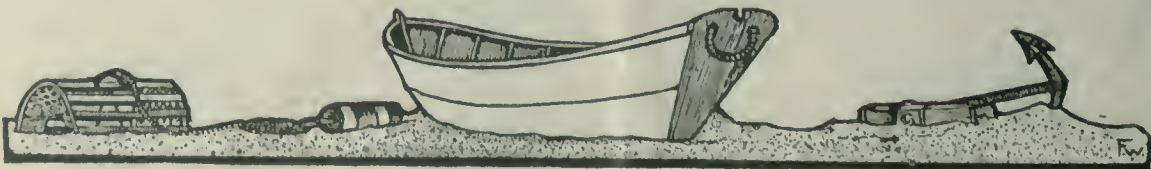
Para terminar, rogamos encarecidamente a nuestros lectores que conserven como referencia las tres ediciones de exportación del **Pescador Canadiense** que les han sido remitidas. Los fabricantes que se encuentran en condiciones de exportar, se encontrarán en el Directorio que se publica en dichas ediciones y en las páginas de anuncios.

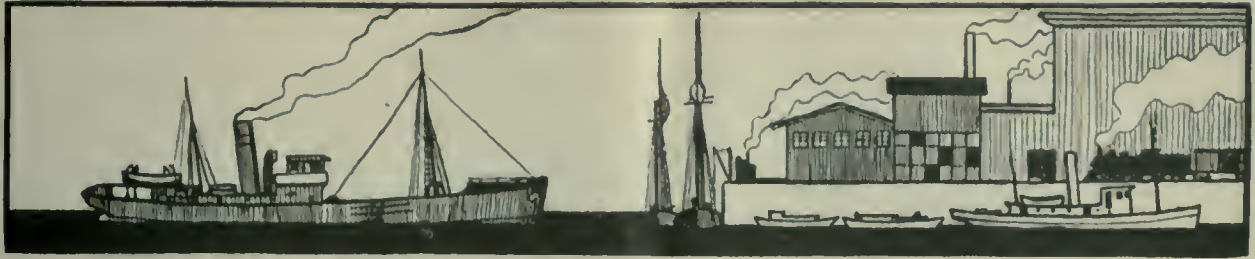
Al dirigirse a los productores canadienses tengan la bondad de facilitar la mayor información posible sobre la clase de pesca deseada, tamaño, cura, peso, estilo de envase, exigencias del mercado, etc. Tal información evitará dificultades y equivocaciones y facilitará los negocios.

Kindly keep these editions as a source of reference regarding Canada's fisheries.

Veuillez garder ces éditions comme sources de renseignements sur les Pêcheries Canadiennes.

Tengan la bondad de conservar estas ediciones como referencia de las Pesquerías del Canadá.





The Halibut Fishery La Pêche du Fletan La Pesca del Mero



The halibut fishery of the Pacific ranks in importance much on the same plane as the codfishery of the Atlantic. With the salmon, it is the most valuable fishery of the West Coast, and the yearly catch amounts to 12,300,000 pounds, valued at \$2,026,000.

Many years ago, halibut were to be caught in great quantities close inshore. Hecate and San Juan de Fuca Straits and the bays and indentations of the British Columbia Coast were famous halibut grounds, but the heavy fishing of latter years has cleaned up the Inshore Banks, and the great flatfish have to be hooked further offshore and up in the Gulf of Alaska.

The halibut of the Pacific is a brother to that of the Atlantic, and both rank under the same scientific name—*hippoglossus hippoglossus*.— It belongs to the Flounder family and is

La pêche du flétan sur le Pacifique est aussi importante que celle de la morue dans l'Atlantique. Avec le saumon, c'est la pêche la plus productive de la côte occidentale. Le rendement annuel s'élève à 12,300,000 livres évaluées à \$2,026,000.

Il y a de nombreuses années on pouvait prendre le flétan en grande quantité le long des côtes. Le détroit de San Juan de Fuca, les baies et les anses de la côte de la Colombie britannique étaient réputés pour l'abondance du flétan, mais la pêche immodérée des dernières années a chassé le poisson des côtes et il faut maintenant aller au large et remonter jusque dans le golfe d'Alaska pour prendre ce grand poisson plat.

Le flétan du Pacifique est le frère de celui de l'Atlantique. Ils portent tous deux le même nom scientifique de "hippoglossus". Ce poisson appartient à la famille des carrelets et

La pesca del mero en el Pacífico es casi tan importante como la del bacalao en el Atlántico. Con la del salmón es la pesca más valiosa de la costa occidental y produce anualmente unos 12,300,000 libras con un valor de \$2,026,000. Hace muchos años, el mero se pescaba en grandes cantidades cerca de la costa. Los estrechos de Hecate y San Juan de Fuca y las bahías y salientes en la costa de la Colombia Inglesa eran lugares famosos por la pesca del mero, pero la terrible persecución de los últimos años ha limpiado casi por completo los bancos cercanos de la costa, y el gran pez aplastado ha buscado refugio mar adentro de la costa, y hacia el Golfo de Alaska.

El mero del Pacífico es hermano del del Atlántico y los dos están clasificados como miembros de la misma familia conocida científicamente como



Clubbing an Atlantic Halibut.

Assommant un Flétan de l'Atlantique.
Rematando un mero del Atlántico.

a cold water flatfish running to great proportions—some weighing as much as 300 pounds.

At the present time the halibut fishery of British Columbia is carried on from the ports of Vancouver, Steveston and Prince Rupert. The favorite fishing grounds are in the 100 fathom depths west of Vancouver and the Queen Charlotte Islands and up the great Gulf of Alaska from Dixon Entrance to the Shumagin Islands. The methods of fishing were first brought to the West Coast by Atlantic pioneers and consist of the dory and long line method operated from schooners and steamers. Another system—that of steam long line fishing—was inaugurated successfully out of Prince Rupert some years ago by fishermen from Grimsby, England, and the North Sea method has proved

habite les eaux froides. Il atteint parfois de grandes dimensions, quelques-uns pèsent jusqu'à 300 livres.

Actuellement la pêche du flétan en Colombie Britannique a pour point d'attache les ports de Vaucouver, Steveston et Prince Rupert. Les endroits favoris pour cette pêche sont situés par les profondeurs de cent brasses à l'ouest de Vaucouver et des Iles de la Reine Charlotte et plus dans le grand golfe d'Alaska depuis Dixon jusqu'aux Iles Shumagin. Les systèmes de pêche ont été à l'origine introduits sur la côte occidentale par les pionniers de l'Atlantique, ils comportent la barque de pêche et la méthode de la longue ligne employées par les goélettes et les vapeurs. Un autre système, celui de la pêche avec longue ligne par vapeur, a été inauguré avec succès à Prince

hippo-glossus hippo-glossus. Pertenece a la familia de los lenguados y es un pez de agua fría, aplastado, que alcanza grandes proporciones, algunos pesan hasta 300 libras.

Al presente la pesca de mero en la Colombia Inglesa, se efectúa desde los puertos de Vancouver, Steveston y Principe Ruperto. Las zonas favoritas de pesca tienen una profundidad de cien brazas al oeste de Vancouver y de las Islas de la Reina Carlota, lo mismo que en el gran Golfo de Alaska desde la entrada de Dixon hasta las Islas Shumagin. Los métodos de pesca fueron llevados al Pacífico por los primeros pescadores que llegaron del Atlántico, y consisten en el empleo de botes y un largo sedal operado desde goletas y vapores. Otro método, el de pescar desde un vapor en marcha, con un largo sedal, ha sido inaugurado



Atlantic Halibut on Deck of Fishing Schooner.

Mero del Atlántico en la cubierta de una galeta.

Flétan de l'Atlantique sur le Pont d'une Goélette.

very successful in the halibut fishery of the Pacific.

Dory Halibuting.

The halibut fishermen of the Atlantic use sailing schooners and fish from dories with skates of lines made up of 6 to 7 fifty fathom shots of 28 lb. ground line of tarred cotton into which gangings of 14 lb. line are bent on to beekets at two fathom intervals. To the gangings are seized Mustad No. 6283 Halibut hooks or the hook manufacture by Arthur James. The whole "skate" will consist of some 1,800 feet of line equipped with 140 hooks. The dory halibut fishing of the Pacific is carried on with exactly the same kind of gear. Some fishermen may rig on heavier ground lines, but with only slight differences, the fishing is carried on in the same way on both oceans, and herring is used for bait.

Rupert il y a quelques années par des pêcheurs de Grimsby, Angleterre, et la méthode de la mer du Nord a donné d'excellents résultats pour la pêche du flétan sur le Pacifique.

La Barque de Pêche.

Les pêcheurs du flétan de l'Atlantique emploient des goélettes à voiles et pêchent dans des barques avec des lignes comprenant 6 ou 7 longueurs de 50 brasses de ligne de fond de 28 lbs. en coton goudronné auxquelles sont suspendues à intervalles de deux brasses des morceaux de ligne de 14 livres. A ces lignes sont fixées des hameçons à flétan No. 6283 Mustad, ou des hameçons de la fabrique d'Arthur James.

L'attirail complet compte environ 1880 pieds de ligne garnis de 140 hameçons. Le barque pour la pêche du flétan sur le Pacifique emploie exactement le même équipement. Quelques pêcheurs peuvent se servir de lignes de

hace pocos años por los pescadores de Grimsby, Inglaterra, y ha sido implantado con gran éxito por los pescadores de Principe Ruperto en la costa del Pacífico. Este último método es el que se emplea en el Mar del Norte.

Pesca del Mero Desde los Botes.

Los pescadores de mero del Atlántico emplean goletas y pescan desde botes que llevan "trolls" o aparejos de líneas hechas con seis a siete tiros de cincuenta brazas cada uno, de cordel embreado de 28 libras a los cuales se añaden ramales de catorce libras a dos brazas unos de otros. Los ramales van provistos de anzuelos para mero "Mustad" No. 6283, fabricados por Arthur James. El aparejo entero mide unos 1800 pies y lleva 140 anzuelos. La pesca del mero en bote se hace en el Pacífico con este mismo aparejo. Algunos pescadores usan



An Old Type Vancouver Halibut Fishing Vessel.
 Tipo Antiguo de Barco para la pesca del Mero, Vancouver, Colombia Inglesa.
 Un vieux Type de Bateau pour la Pêche au Flétan,— Vancouver, C. B.



A Modern Motor
 Halibut Fishing
 Schooner.

Tipo Moderno de
 Barca para la pesca
 del Mero.

Type Moderne de Goé-
 lette pour la Pêche
 au Flétan.



The type of vessel employed dory halibuting on the Pacific is radically different to the Atlantic. The Pacific schooners do not depend on sail, but are equipped with powerful oil or gasoline engines and use sail only as an auxiliary to the engine. The tall spars of the graceful Atlantic schooner is replaced by two stumpy masts—the foremast carrying a single jib and a foresail; the mainmast fitted with a triangular or jib headed mainsail and equipped with two stout derricks for hoisting out the dories with ricks for hoisting out the dories which are usually nested on the port and starboard quarters of

fond plus lourdes, mais à de légères différences près la pêche se fait de la même façon sur les deux océans. On se sert des deux côtés de harengs comme appât.

Le genre de bateau employé pour la pêche sur le Pacifique est totalement différent de celui de l'Atlantique. Les goélettes du Pacifique sont munies de puissants moteurs à pétrole ou à gasoline et ne se servent de la voile que comme un auxiliaire au moteur. Le grand mât de la gracieuse goélette de l'Atlantique est remplacé par deux mâts courts et trapus, le mât d'avant portant un simple foc et une voile de misaine, le

cabos o sedales de mayor resistencia, pero salvo pequeñas diferencias la pesca se practica lo mismo que en el Atlántico. Para cebo se usan arenques.

El tipo de bote que se usa en el Pacífico para pescar el mero es completamente diferente al del Atlántico. Las goletas del Pacífico no dependen de velas y están provistas de poderosos motores a gasolina o petróleo, usando las velas como una ayuda para las máquinas. Los altos y graciosos mástiles de las goletas del Atlántico se sustituyen por dos fuertes palos. El palo de trinquete lleva un solo foque y un trinquete. El palo mayor va dotado de un triángulo o foque a manera



A catch of 350,000 lbs. of Pacific Halibut.

Une prise de 350,000 livres de Flétan,—Océan Pacifique.

Un copo de 350,000 libras de Mero.—Océano Pacífico.

the vessel. The Pacific schooner is of shoaler draft and of fuller model than the Atlantic Banker, and while running to the same average of 50 to 100 tons and carrying from six to ten dories, the schooners are totally different in appearance; as may be seen by the illustrations.

The reasons for the difference may be summed up in the facts that the winds on the Pacific are not as regular as they are on the Atlantic. The vessels sail up through many miles of sheltered straits and inlets to reach the fishing grounds and sail would be useless in narrow waters. They also fish, at times, close inshore and in shoal water where an engine is necessary to manoeuvre quickly. In shoal water fishing, and in cruising through the channels, the deep draft of a sailing vessel would be a hindrance. Atlantic fishing schooners have been sent around to the Pacific, but their design and rig is altogether

mat principal garni d'une grande voile triangulaire et muni de deux sollides treuils pour hisser les barques qui se placent d'ordinaire à babord, et à tribord. La goélette du Pacifique est plus basse et d'un modèle plus large que celle de l'Atlantique. Bien que leur tonnage varie également de 50 à 100 tonnes et qu'ils portent l'un et l'autre de 6 à 10 barques, les deux genres de goélettes sont tout à fait différents, comme on peut le voir d'après les gravures.

La raison de cette différence peut être attribuée au fait que les vents sur le Pacifique ne sont pas aussi réguliers que sur l'Atlantique. Les bateaux ont à traverser pendant des milles des détroits et des anses abritées avant d'atteindre les lieux de pêche et la voile ne serait d'aucune utilité dans ces endroits resserrés. La pêche se fait aussi parfois près des côtes dans des eaux peu profondes où un moteur est nécessaire pour manoeuvrer rapidement. Dans les eaux

de vela mayor, con dos grúas para izar los botes, que generalmente se llevan ajustados unos dentro de otros en las cuerdas de babor y estribor del barco. Las goletas del Pacífico son de poco calado y de un modelo más lleno que las de los Bancos del Atlántico y aunque tienen más o menos el mismo tonelaje, (de 50 a 100 tons.) y llevan de seis a diez botes, la apariencia es enteramente diferente como puede apreciarse en el grabado.

La razón de esta diferencia se debe a que los vientos en el Pacífico no son tan regulares como en el Atlántico. Los barcos navegan muchas millas al abrigo de estrechos y canales hasta llegar a las zonas de pesca y las velas no sirven de nada en estos parages. Muchas veces pescan en aguas cercanas a la orilla y de poco fondo donde se necesita máquina para maniobrar rápidamente. En aguas bajas y en travesías por estrechos y canales, las velas serían un estorbo. Desde el At-

unsuited to the conditions and they have been altered or sent back.

Pacific halibut fishing from dories is carried on in pretty much the same manner as on the Atlantic. A heavier, and stronger class of dory is used on the Pacific as the fishermen are usually picked up by the vessel motoring or steaming up to them. Sometimes, dory and fish are hoisted aboard by derrick which calls for a strong craft to stand the strain. The larger size also enables the fishermen to carry a greater weight of fish and does away with the labour of "lightening up" when fish are plentiful.

peu profondes et dans la traversée des chenaux, le grand tirant d'eau d'un voilier serait un inconvénient. Des goélettes de pêche de l'Atlantique ont été envoyées sur le Pacifique mais leur forme et leur grément ne conviennent pas aux conditions locales et l'on a dû les modifier ou les retourner.

La pêche du flétan en barques sur le Pacifique se fait pratiquement de la même manière que sur l'Atlantique. On se sert d'un genre de barques plus lourd et plus solide sur le Pacifique parce qu'ordinairement les bateaux à moteur ou à vapeur viennent jusqu'aux pêcheurs pour les relever. Quelquefois barque et poisson sont hissés à bord par le treuil, ce qui

Atlántico se han traído goletas al Pacífico pero su corte y aparejo no se presta para la pesca en estos mares y han tenido que ser reformadas o devueltas al Atlántico.

La pesca del mero con botes se lleva a cabo del mismo modo que en el Atlántico. En el Pacífico se usa un bote mucho más fuerte debido a que los pescadores son recojidos por los barcos de vapor o de motor y los botes se izan a bordo con las grúas, siendo necesario que sean resistentes para poder hacerlo. Su mayor tamaño permite a los pescadores llevar mayor cantidad de pesca y evitar el tener que aligerar la carga cuando la pesca es demasiado abundante.

La pesca del mero también se lleva



Long Line Fishing for Halibut on a Prince Rupert Steamer.

Pescando con línea larga desde un barco a vapor de Príncipe Ruperto, C. I.

La Pêche au Flétan au moyen d'une longue ligne, sur un Bateau-Vapeur de Prince Rupert, C. B.

Dory halibuting is also carried on from fine steel steamers built on the lines of a British otter trawler. The dories, from ten to twelve of them, are carried, nested on the port and starboard quarters. The fish caught are laid on a strong net in the dory bottom, and hoisted aboard the steamer and dumped on the fore-deck for gutting and cleaning. This work is done with extreme care; the fish are well sluiced by hoses when gutted and placed on powdered ice in the fish rooms below decks. Pacific halibut fishermen are experts in their work and avoid bruising the fish by rough

demande une emparement solide pour supporter un pareil effort. Les dimensions plus grandes permettent aussi aux pêcheurs de porter un plus grand poids de poisson et les exempte de l'obligation de "s'alléger" lorsque le poisson est trop abondant.

On fait également la pêche du flétan avec de beaux vapeurs en acier construits dans le genre des chalutiers anglais. Les barques, au nombre de 10 à 12 sont fixées à babord et à tribord. Le poisson pêché est placé sur un gros filet reposant dans le fond de la barque et hissé à bord du vapeur où il est jeté sur le gaillard d'avant pour être vidé et nettoyé. Ce travail est fait avec beaucoup de soin. Le poisson une fois vidé et lavé à la lance et placé

a cabo usando barcos a vapor de acero, iguales a las traineras inglesas "Otter". Doce o catorce botes van colocados en las cuadras de babor y estribor. La pesca se va colocando dentro de una fuerte red en el fondo del bote y se liza a bordo del vapor arrojándola en la cubierta de proa para limpiarla y escurrirla. Este trabajo se hace con gran cuidado, el pescado se lava con mangas después de abierto y se coloca en la cámara frigorífica del barco. Los pescadores de mero del Pacífico son peritos en su trabajo y procuran manejar el pescado sin estropearlo ni mancharlo a causa de mala limpieza o desangre.



Modern Type of Steam dory Halibut Fishing Vessel. Type Moderne de Bateau-Vapeur pour la Pêche du Flétan.
Tipo moderno de barco a vapor para la pesca del Mero con botes.



Halibut Fishing Steamer.
Barco Pesquero de Mero a vapor.
Bateau à Vapeur pour la Pêche du Flétan.



handling or souring by careless gutting and bleeding.

The steam halibuters out of Vancouver and Prince Rupert are fine craft ranging from 95 to 150 tons and capable of steaming from 10 to 13 knots per hour. All are well equipped with steam winches, hoses, and electric light; some of them burn oil fuel, and the larger ones carry crews of thirty-five men. Two men go in each dory, and in addition to the fishermen there are skipper, mate, two engineers, two firemen, coal passer, watchman and cook included in the crew.

The small halibut vessels usually work the grounds around Vancouver Island, Hecate Straits and Dixon Entrance. The larger vessels cruise

ensuite sur la glace plée dans le magasin de l'entrepont. Les pêcheurs de flétan du Pacifique sont experts dans leur travail et ils évitent d'abimer le poisson par une manipulation brutale ou de le faire gâter par un mauvais nettoyage ou une manière déféctueuse de le saliner.

Les vapeurs qui font la pêche du flétan à Vancouver et Prince Rupert sont de beaux bateaux jaugeant de 95 à 150 tonnes et capables de filer de 10 à 13 noeuds à l'heure. Ils sont tous bien pourvus de treuils à vapeurs, de lances et de lumière électrique. Quelques-uns sont mus par le pétrole et les plus grands ont un équipage de 35 hommes. Il y a deux hommes par barque, et en dehors des pêcheurs, l'équipage comprend le chef d'équipage, son second, deux mécaniciens, deux chauffeurs, le soutier, la vigie et le cuisinier.

Les petits bateaux pour la pêche du flétan travaillent ordinairement

Los barcos que pescan el mero fuera de Vancouver y Principe Ruperto son de 95 a 150 toneladas con una velocidad de diez a trece nudos por hora. Todos están equipados de cabrestantes a vapor, mangas y luz eléctrica; algunos de ellos consumen petróleo y los mayores llevan una tripulación de treinta a cinco hombres, un capitán, un primer oficial, dos maquinistas, dos fogoneros, un pallerero, un vigia y un cocinero. En cada bote van dos hombres.

Los barcos pequeños, generalmente pescan el mero alrededor de la Isla de Vancouver, en los Estrechos de Hecate y en la Entrada de Dixon. Los barcos grandes llegan hasta el Golfo de Alaska y pescan en los Bancos de Yketat, Cabo San Elias, Kodlak y



Dressing Halibut, Pacific long liner.

Préparation du Flétan sur un bateau à vapeur du Pacifique.

Limpiando Mero Barco a vapor del Pacífico.

up to the Gulf of Alaska and fish upon the Banks off Yakutat, Cape St. Elias, Kodlak and Shumagin Islands. The average length of a trip for the large craft is from two or three weeks, and in that time, some 100,000 to 200,000 pounds of halibut are caught.

Long-Line Halibut Fishing

The long line system of halibut fishing was first introduced on the Pacific Coast by fishermen from Grimsby, England. It may have been tried before, but the Grimsby men were first to carry it on successfully. The pioneers of long line fishing in British Columbia operated out of Prince Rupert and with North Sea skippers

dans les environs de l'île de Vancouver, du détroit d'Hecate et de Dixon. Les plus grands bateaux croisent jusqu'au golfe d'Alaska et vont pêcher jusque sur les rives de Yakutat, Capo St. Elias, Kodlak et îles Shumagin. La durée moyenne d'un voyage au large est de deux à trois semaines et pendant ce temps on prend de 100,000 à 200,000 livres de flétan.

La Pêche du Flétan à la Grande Ligne.

Le système de pêche à la grande ligne fut au début introduit sur la côte du Pacifique par des pêcheurs de Grimsby, Angleterre. Ce système a pu avoir été essayé auparavant, mais ce sont les pêcheurs de Grimsby qui les premiers l'ont employé avec succès. Les pionniers de ce genre de pêche en Colombie Anglaise opéraient dans le voisinage de Prince Rupert et avec trois patrons de la

en las Islas de Shumagin. La duración de un viaje para los barcos grandes lleva de dos a tres semanas y durante ese tiempo pescan de cien a doscientas mil libras de mero.

El sistema de pescar mero con línea larga fué implantado en el Pacífico por los pescadores de Grimsby, Inglaterra. Es posible que se hubiese ensayado antes, pero los únicos que tuvieron éxito fueron los pescadores de Grimsby. Los primeros pescadores con línea larga de la Colombia Inglesa, salieron de Principe Ruperto con capitanes del Mar del Norte en tres traineras a vapor, tipo inglés, e inauguraron con gran éxito el sistema de pesca que hoy tanto se practica en



Halibut Fishing and Trawling Fleet of Canadian Fish & Cold Storage Co., Ltd. Prince Rupert, B. C.

Flotte de Pêche pour le Flétan, propriété de la "Canadian Fish & Cold Storage Co., Ltd., Prince Rupert, C. B.

Flota de pesca para el Mero, propiedad de la "Canadian Fish & Cold Storage Co. Ltd., Principe Ruperto, C. I.



Unloading Halibut, British Columbia.

Descargando Mero en la Colombia Inglesa.

Déchargement du Flétan, Colombie Britannique.



La long line Pacific Halibut Steamer.

Vapor para la pesca del mero con línea larga.—Océano Pacífico.

Un Vapeur pour la Pêche à longue ligne du Flétan du Pacifique.

or three steamers of the British trawler type, inaugurated successfully a system of fishing which is extensively carried on to-day. Long lining is now used on steam and gasoline propelled halibuters out of British Columbia and Puget Sound ports and many dory halibuters are equipped with long line gear for fishing either way.

For fishing in rough weather, long lining can be carried on when dory fishing would be impossible. Many dory halibuters are fitted with long line gear for use when dories cannot be utilized. On the regular long line steamers the work can be done with half the number of men required in dory fishing.

The halibut fishery is carried on largely by off-shore craft, though there are a number of small gasoline boats carrying two or three dories who fish in the inside channels. Halibut is marketed in a fresh and frozen state throughout Canada and the United States. Of late years a considerable quantity has been sent frozen and glazed to Great Britain. Halibut are also fletched.—i.e. filleted and salted.

mer du Nord sur 3 vapeurs du type du chalutier anglais, ils inaugurèrent avec succès un système de pêche qui est grandement développé aujourd'hui. La grande ligne est maintenant employée par les bateaux à vapeur ou à gasoline pour la pêche du flétan dans les ports de la Colombie Anglaise ou du Puget Sound et beaucoup de petites barques pour la pêche du flétan ont également la grande ligne pour leur permettre de pêcher des deux façons.

En cas de mauvais temps on peut se munir de grande ligne que l'on emploie lorsque la pêche en barque devient impossible. Beaucoup de barques pour la pêche du flétan sont équipées avec une grande ligne dont on se sert lorsque les barques deviennent inutilisables. Sur les vapeurs travaillant avec la grande ligne, le travail peut se faire avec la moitié de l'équipage requis pour la pêche en barques.

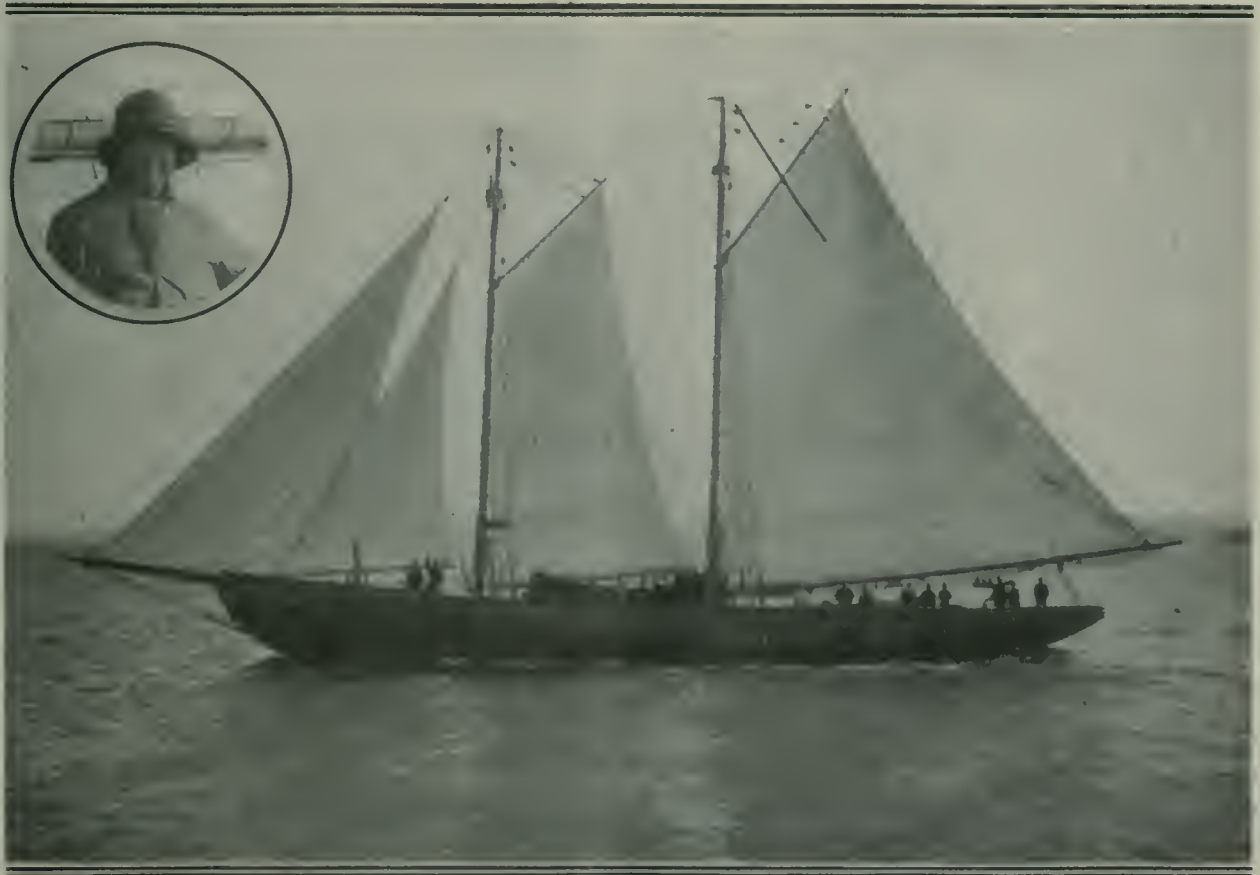
La pêche du flétan est surtout faite par des embarcations de haute mer, cependant il y a un certain nombre de petits bateaux à gasoline portant deux ou trois barques qui pêchent dans les chenaux intérieurs. Le flétan est expédié à l'état frais ou congelé dans tout le Canada et aux Etats Unis. Dans ces dernières années une quantité considérable de flétan congelé a été expédiée en Grande Bretagne. Le flétan est aussi découpé en filets et salé.

nuestras aguas. La pesca con linea larga se hace hoy en barcos de vapor y gasolina y el trabajo se simplifica grandemente debido a que no hay necesidad de llevar botes, por hacerse la pesca desde la cubierta de los barcos.

En tiempo malo, la pesca con linea larga puede hacerse sin peligro mientras que no podría hacerse en bote. Muchísimos barcos pescadores de mero con botes llevan también aparejo de linea larga para utilizarlo cuando no pueden usar los botes. Los barcos que regularmente pescan con linea larga, solamente requieren la mitad de hombres que los barcos que pescan con botes.

La pesca del mero se lleva a cabo principalmente por barcos grandes aunque hay gran número de lanchas de gasolina que llevan dos o tres botes y pescan en los canales interiores.

El mero se exporta en estado fresco y congelado a todo el Canadá y a los Estados Unidos. En los últimos años se ha exportado una gran cantidad congelado y cristalizado a la Gran Bretaña. El mero también se prepara en filetes o lonchas y se sala.



An Atlantic Halibut Fishing Schooner.

Golette de l'Atlantique para la pesca del Mero.

Goleta del Atlántico pour la Pêche du Flétan.



The Halibut Docks, Vancouver, B. C.

Les Quais à Flétan, Vancouver, C. B.

Los Muelles del Mero, Vancouver, C. I.



Frozen Halibut in Cold Storage, B. C.

Mero congelado en una Cámara Frigorífica de la
Colombia Inglesa.

Flétan Gelé dans un Entrepôt Frigorifique de la
Colombie Britannique.



THE CANADIAN HERRING FISHERY

L'INDUSTRIE DU HARENG AU CANADA

PESCA DEL ARENQUE CANADIENSE



The packing of herring, pickled, in barrels for exportation is an industry with a great future in Canada. Herring in great quantities are available on both Atlantic and Pacific coasts, but the fishery has been prosecuted only along-shore and drift net fishing for herring off shore is not yet engaged in.

Prof. E. E. Prince, Dominion Commissioner of Fisheries, states with regard to the Canadian herring:—

"There are immense possibilities in the herring industry. Compared with Scotland we have made little progress. Her coastal waters, over a thousand miles in linear extent, yielded, before the war, more than 450,000,000 lbs. annually, valued at ten and a half million dollars; but our twelve thousand miles of coast produce barely 250,000,000 lbs. of herring valued at about three million dollars. So abundant are herring on the Pacific coast that a captain on one of the coastal steam-

La mise en barils pour l'exportation de harengs salés est une industrie d'un grand avenir au Canada. Le hareng se trouve en grandes quantités aussi bien sur les côtes de l'Atlantique que sur celles du Pacifique, mais jusqu'à présent la pêche n'a été faite que le long des côtes et le filet flottant n'a pas encore été employé au large pour le hareng.

Le professeur E. E. Prince, Commissaire des Pêcheries du Dominion, dit en parlant du hareng canadien:

"L'industrie du hareng offre un grand champ d'action. En comparaison avec l'Ecosse nous n'avons fait que peu de progrès. Ses côtes qui s'étendent sur une longueur de plus d'un millier de milles rapportaient avant la guerre plus de 450 millions de livres par an, le tout évalué à dix millions et demi de dollars, tandis que nos douze mille milles de côtes produisent à peine 250 millions de livres de harengs évalués à environ trois millions de

El arenque envasado, en salmuera y en barriles es una industria de gran futuro para la exportación. Grandes cantidades de arenque existen en el Atlántico y en Pacífico para suplir la mayor demanda posible pero hasta el presente solo se ha venido pescando en las costas.

El Professor canadiense, E. E. Prince, Comisionado de las Pesquerias del Canadá, se expresa del arenque en los siguientes términos:

"La industria del arenque promete un gran futuro. En comparación con Escocia nuestro progreso es muy insignificante. Sus aguas costaneras, en una extensión longitudinal de 1,000 millas producían antes de la guerra más de 450,000,000 de libras de arenque anualmente, con un valor de \$10,500,000 oro, mientras que nuestras costas, con 12,000 millas, escasamente han producido 250,000,000 de libras con un valor de \$3,000,000 oro. Tan abundante está el arenque en el Pa-



Seining Herring, British Columbia.

Seinaje du Hareng, Colombie Britannique.

Apresanda arenque, Colombia Inglesa.

ers, whose word can be relied upon, stated a few years ago, that for three hours his vessel was passing through solid schools of herring, and on the Atlantic coast we know that the herring are enormously abundant, so much that at spawning time, the sea for many square miles in some localities is white as though diluted with milk, and after storms, herring spawn is thrown upon the shore along great distances, especially in northern New Brunswick and on the Magdalen Islands."

Pacific Herring.

Herring are extremely prolific in Pacific waters, and the value of the catch is over \$1,000,000 annually.

dollars. Le hareng est si abondant dans le Pacifique qu'un capitaine d'un bateau côtier en qui on peut avoir confiance, racontait il y a quelques années, que pendant trois heures son bateau était passé au travers de bancs compacts de harengs. Nous savons également que dans l'Atlantique le hareng est excessivement abondant, à tel point qu'à la saison du frai, en certains endroits la mer sur une surface de plusieurs milles carrés est blanche comme si l'on y avait versé du lait et après les tempêtes le frai de hareng est rejeté sur la côte sur de grandes distances, spécialement dans le nord du Nouveau Brunswick et dans les îles de la Madeleine."

Le Hareng du Pacifique.

Le hareng est très prolifique dans

cífico que un capitán de nuestros barcos de cabotaje, cuya palabra es digna de crédito, hace algunos años informó a las autoridades que durante tres horas seguidas su barco había estado atravesando un gran enjambre de arenque. En el Atlántico nos consta que la abundancia de esta pesca es también enorme, tanto que en la época del desove, el mar en muchas localidades está blanco como si hubiesen derramado leche, y después de las tormentas, las huevas se encuentran en grandes extensiones de las playas, especialmente al Norte de Nueva Brunswick y en las Islas de la Magdalena."

El Arenque del Pacífico.

El arenque es sumamente prolífico en aguas del Pacífico y el valor de



Seining Pacific Herring. Seinage du Hareng du Pacifique.
Accorralando arenque en el Pacífico.

There is but little difference between the Pacific herring and its Atlantic brother. They are caught mostly by seine net operated from gasoline boats. When seined, they are dipped out of the nets into scows and as much as 10 tons have been seined at a time. So plentiful are they, that in the migration season in summer, coastal vessels have had to steam through solid masses of them for miles. During the season, they swarm into the bays and inlets in countless millions followed by whales, sharks, porpoises and seals. Sea birds follow the schools in myriads and are a sure indication of the presence of the fish. The bulk of the Pacific herring are captured for dry salting purposes and are shipped to the Orient. Considerable business is done in fresh, smoked, canned and pickled herring, while a large quantity is used as bait in the halibut and cod fishery.

les eaux du Pacifique et la valeur de la pêche de ce poisson dépasse un million de dollars par an. Il n'y a que peu de différence entre le hareng du Pacifique et son frère de l'Atlantique. On les prend surtout à la seine au moyen de canots automobiles. Lorsqu'on relève le filet, on vide le poisson dans des bacs, on a déjà pris jusqu'à dix tonnes de poisson d'un seul coup de filet. Les poissons sont en si grand nombre qu'à l'époque de la migration en été, des bateaux côtiers ont eu à traverser des bancs épais sur une longueur de plusieurs milles. Pendant la saison ils arrivent par millions dans les baies et les anses poursuivis par les baleines, les requins, les marsouins et les phoques. Les oiseaux de mer suivent les bancs par myriades et sont une indication certaine de la présence du poisson. La plupart des harengs pêchés dans le Pacifique sont séchés et sa-

la pesca es de \$1,000,000 oro, anualmente. El arenque del Pacífico apenas si se diferencia del Atlántico. Ambos se pescan con presas operadas con botes a gasolina. Una vez apresados se pasan a las gabarras y algunas veces se han copado hasta diez toneladas de una sola vez. Esta pesca es tan abundante que cuando migran en el verano, los barcos de cabotaje tienen que navegar entre densas masas por millas y millas. Durante el verano acuden a las bahías y entradas perseguidos por las ballenas, tiburones, delfines y focas. Las aves marinas siguen las manchas de la pesca a millares, indicando de este modo su presencia. El grueso de la pesca del arenque en el Pacífico, se seca, se sala y se exporta al Oriente. Se hace un considerable negocio con esta pesca en estado fresco, ahumado, en conserva y preparada en salmuera, usándose una enorme cantidad como



Netting Herring, Atlantic.
 Pêche au Hareng à la seine.—Océan Atlantique.
 Pescando Arenque con red.—Océano Atlántico.



A load of Atlantic Herring.
 Une charge de Harengs de l'Atlantique.
 Una carga de Arenque del Atlántico.



A scow load of British Columbia Herring. Une barque chargée de Harengs, Colombie Britannique.
 Una gabarra cargada de Arenque, Colombia Inglesa.

Atlantic Herring.

Herring strike inshore along the Atlantic Provinces in enormous quantities during the summer months and are captured largely by means of brushwood weirs erected in tidal coves and places where it is sheltered from the fury of a rough sea. These weirs are built of stakes driven into the sand or mud from highwater mark seaward, and the spaces between the stakes are interlaced with willows or brush. The whole is constructed in the form of a corral or pond with a wide entrance or "shoot" seaward. The shoot faces the direction of the ebb tide and the herring, receding with the tide, strike the leading stakes of the weir shoot and swimming with the tidal current, swarm down the narrowing entrance

lés pour être expédiés en Orient. Il se fait un trafic considérable de hareng frais, fumé, salé ou mis en boîte et une grande quantité est employée comme appât pour la pêche du flétan et de la morue.

Le Hareng de l'Atlantique.

Le hareng est extrêmement abondant le long des côtes de l'Atlantique pendant les mois d'été. On le capture principalement au moyen de barrages de broussailles installées dans les criques, et les endroits où le poisson vient se mettre à l'abri de la furie de la mer démontée. Ces barrages sont établis au moyen de piquets plantés dans le sable ou la vase à la limite des hautes eaux et entre lesquels sont entrelacées des broussailles ou des branches. Le tout est construit en

cebo para pescar el mero y el bacalao.

El Arenque del Atlántico.

El arenque se encuentra en todas las aguas costaneras de las Provincias Atlánticas en grandes cantidades durante los meses de verano, y se captura por medio de presas colocadas en sitios y cuevas bajo la acción de las mareas, donde el arenque se refugia huyendo de las borrascas. Estas presas se preparan clavando estacas en la arena o barro y se extienden desde la línea a donde llega la marea alta hasta cierto punto mar-adentro. Los espacios entre estaca y estaca se entrelazan con ramaje u otras enredaderas. Todo se prepara en forma de corral con una gran entrada en el mar. La puerta se encuentra en la



Fish Tugs and catch of fresh water Herring, Lake Superior.

Remorqueur de Pêche et prise du Hareng d'eau douce, Lac Superior.

Remolcadores pesqueros cargados de Arenques de agua dulce, Lago Superior.

until they enter the pound. Once inside, the fish swim around but never seem to obtain their freedom by swimming out of the entrance again—a fact which may be accounted for by the resistance offered by the tide settling in through the shoot.

At high water, the weir is almost submerged, but it is during the ebb that the herring are caught, and as the water falls the weir emerges and the fish herd into the space of water remaining. By placing a net across the entrance the herring can be easily balled out by the weir fishermen or kept alive until required.

Hundreds of these weirs are to be found along the New Brunswick shore of the Bay of Fundy, and in the Gulf of St. Lawrence as far up as

ferme de parc ou d'étang ayant une entrée large ou "Shoot" du côté de la mer. Cette entrée fait face à la direction du reflux et le hareng qui arrive avec le flot vient frapper les piquets principaux de l'entrée et nageant avec le courant vient s'engouffrer dans le goulot de l'entrée pour se précipiter dans l'étang. Une fois à l'intérieur le poisson nage tout autour, mais ne semble pas chercher à recouvrer sa liberté en repassant par l'entrée. Ce fait peut être expliqué par la résistance offerte par le courant qui s'engouffre dans le passage d'entrée.

A marée haute, le barrage est presque submergé, mais c'est pendant le reflux que l'on prend le poisson. Lorsque l'eau baisse le barrage émerge et les poissons se groupent dans le peu d'eau qui reste. En plaçant un filet en travers de l'entrée les pêcheurs peuvent aisément relever le hareng ou le conserver vivant aussi longtemps qu'il est besoin.

dirección de la marea baja y el arenque, bajando con la marea, va pasando por la puerta hasta quedar prisionero. Una vez dentro, nada por todas partes pero no logra ganar la salida, lo cual se debe a la resistencia que ofrece la marea retrocediendo sobre la entrada.

En la marea alta, la presa está casi sumergida y el arenque no se pesca hasta que la marea empieza a bajar. A medida que el agua desciende, la presa empieza a verse, lo mismo que la pesca que va quedando encerrada. Colocando una red en la entrada los pescadores pasan a ella los arenques cojidos en la presa y de este modo pueden conservarlos vivos hasta que se disponga de ellos.

A lo largo de Nueva Brunswick se encuentran cientos de presas de esta clase, especialmente en las orillas de la Bahía de Fundy y en todo el Golfo de San Lorenzo hasta Rimouski Adamás



Cleaning Flatfish on Pacific trawler.
 Néttoyage du Poisson plat sur une barque de pêche du Pacifique Limpindo pesca aplastada en una trainera del Pacifico.



A catch of Flatfish and Cod, Pacific Steam trawler.
 Uné prise de Poisson plat et de Morue, sur une barque à Vapeur du Pacifique.
 Un copo de pesco aplastada y bacalao.—Trainera a vapor del Pacifico.



Watson Bros. Herring curing and smoking plant.—
 Industrial Island, B. C.
 Maison "Watson Bros." où le Hareng est assaisonné et fumé
 —Industrial Island, C. B.
 Ahumadero y curadero de Arenque de la Casa "Watson
 Bros."—Industrial Island, C. I.

Rilmouski, and in them are caught, not only herring, but alewife or gaspereau, mackerel, salmon and shad. The sardine fishery of New Brunswick located on Passamaquoddy Bay depends on weirs for the capture of the small herring which are packed in cans as Canadian sardines.

Great quantities of herring are caught in this manner for use as food, fresh, salted, smoked and pickled, and many tons are utilized for bait and fertilizer.

The possibilities of Canada's herring fishery are immense and bids fair to rival the great herring fishery of Europe in the course of time.

The Pacific Pilchard.

Upon the Pacific Coast, a great future is predicted in the canning of pilchards which strike certain sections of the coast in great numbers. A start has already been made in canning these palatable fish, and they have been well received in the markets. Prior they were not marketed, but the commandeering of the best of the salmon pack by British Government, brought the canning of pilchards into existence as a commercial enterprise. These fish run into the Straits of San Juan de Fuca and along the West Coast of Vancouver Island in immense numbers similar to the herring and are caught in traps and nets. Pilchards to the value of over \$100,000 were packed during 1918, and the fishery is destined to become of great importance. The pilchard is of the herring family and is an excellent food fish.

On trouve des centaines de ces barrages le long des côtes de la Baie de Fundy, dans le Nouveau Brunswick, et dans le golfe du St. Laurent jusqu'à Rilmouski et l'on y prend non-seulement du hareng, mais encore du maquereau, du saumon, et de l'aloise. Les pêcheries de sardines du Nouveau Brunswick situées dans la Baie Passamaquoddy utilisent les barrages pour la capture de petits harengs qui sont mis en boîtes sous le nom de sardines canadiennes.

De grandes quantités de harengs sont pris de cette manière pour l'usage alimentaire et livrés à la consommation soit frais, soit salés, soit fumés ou marinés. De nombreuses tonnes de ce poisson sont également utilisées comme appât ou comme engrais.

La pêche du hareng en Canada offre un champ d'action extrêmement vaste et promet certainement de rivaliser avec les grandes pêcheries de harengs de l'Europe à un moment donné.

Le Pilchard du Pacifique.

Sur le Pacifique on prédit un grand avenir à la mise en conserve des pilchards qui abondent en certains endroits de la côte. On a déjà commencé à mettre en boîtes ces délicieux poissons qui ont reçu un accueil favorable sur le marché. Autrefois on ne s'en occupait guère, mais l'achat de la meilleure partie des conserves de saumon par le Gouvernement britannique a donné naissance à l'industrie de la conserve de pilchards. Ces poissons affluent dans le détroit de San Juan de Fuca et le long de la côte occidentale de l'île de Vancouver en aussi grand nombre que les harengs. On les prend au moyen de trappes ou de filets. On a mis en conserve pour plus de \$100,000 de pilchards pendant l'année 1918 et cette industrie à destinée à revêtir une grande importance. Le pilchard est de la famille du hareng et est un poisson excellent pour l'alimentation.

del arenque se pescan alufas, macarelas, salmón y otras variedades. Las pesquerías de sardina de Nueva Brunswick, en la Bahía de Passamaquoddy, capturan de este modo los pequeños arenques que conservan y envasan como sardina canadiense.

Grandes cantidades de arenque se capturan de esta manera para utilizarlo como alimento, en estado fresco, salado, ahumado y escabechado, y muchas toneladas se utilizan como cebo y como fertilizante.

"Pilchard" Sardina-Arenque del Pacífico

La Costa del Pacífico tendrá con el tiempo un futuro brillantísimo con la conserva de la sardina-arenque, cuya pesca es de gran abundancia en ciertas secciones de la costa. Ya se ha empezado a conservar esta deliciosa pesca y ha sido recibida con gran aceptación en todos los mercados donde se ha presentado.

Anteriormente solo se conservaba la pesca más selecta de salmón pero el Gobierno Inglés implantó la conserva de la sardina-arenque como empresa comercial.

La sardina-arenque migra en los estrechos de San Juan de Fuca y a lo largo de la costa occidental de la isla de Vancouver en cantidades fabulosas y lo mismo que el arenque se pesca con presas y trampas. En 1918 se preparó sardina-arenque por valor de \$100,000 y esta industria está llamada a tener gran importancia. La sardina-arenque es de la misma familia que el arenque y es una pesca sumamente gustosa y alimenticia.



Steam Trawler at wharf, Liverpool, N. S.

Trainera a vapor, atracada, Liverpool, N. E.
Bateau de Pêche à vapeur à son quai, Liverpool, N. S.



Canada's Fresh Water Fisheries

Les Poissons d'Eau Douce del Canada

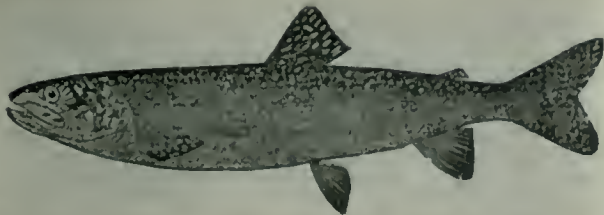
Pesca de Agua Dulce en el Canada



The value of the fish taken from the inland waters of Canada amounted to over five million dollars in value during the year 1917. The Province of Ontario leads the fresh water fisheries with a catch valued at \$2,866,419. Manitoba comes second with \$1,543,288. Saskatchewan and Alberta produced fish to the values of \$320,238 and \$184,009 respectively. The fresh water fisheries of Quebec average \$300,000 annually, and lesser amounts are taken from the rivers and lakes of the other Provinces.

La valeur du poisson pris dans les eaux intérieures du Canada a atteint plus de cinq millions de dollars pendant l'année 1917. La province d'Ontario tient la tête pour le poisson d'eau douce avec une production évaluée à 2,866,419 dollars, le Manitoba vient en second lieu avec \$1,543,288, la Saskatchewan et l'Alberta ont produit respectivement pour \$320,238, et \$184,009.—de poisson. La pêche du poisson d'eau douce dans la province de Québec s'élève en moyenne à \$300,000 par an et les rivières

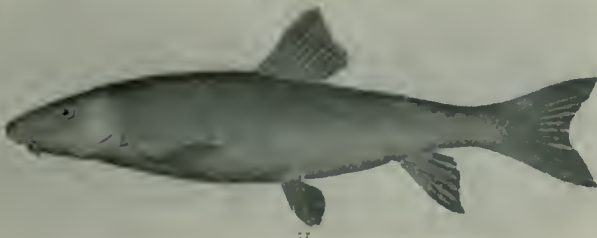
El valor de la pesca de las aguas interiores del Canadá ascendió a más de cinco millones de dólares durante el año 1917. La Provincia de Ontario figura en primer término en pesca de agua dulce con un valor total de \$2,866,419. Manitoba viene en segundo lugar con \$1,543,288. Saskatchewan y Alberta pescaron por valor de \$320,238 y \$184,009 respectivamente. Quebec, pesca un promedio anual de \$300,000 y los ríos y lagos de las otras provincias arrojan cantidades de menor importancia.



Lake Trout. — Truite d'eau douce. — Trucha, agua dulce.



Whitefish. — Poisson blanc. — Albur.



Sucker or Mullet—Mujil.



Pickerel. — Doré. — Lucio.

Canada's inland waters are as follows: Whitefish, trout, herring, pickerel, pike, tullbee, perch, mullets, bass carp, gold eyes, catfish, mullets, bass and maskinonge.

Fisheries of Western Provinces.

The lakes and rivers of Manitoba, Saskatchewan, Alberta, and to a small extent those of British Columbia, yield large quantities of fish — the bulk of which is caught during the

et lacs des autres provinces ne fournissent que des quantités moindres.

Les espèces d'eau douce que l'on trouve dans les eaux intérieures du Canada sont les suivantes: Poisson blanc, truite, hareng, brocheton, brochet, perche, esturgeon, anguille, carpe, barbote, mullet, et maskinongé.

Pêcheries des Provinces de l'Ouest.

Les lacs et les rivières du Manitoba, de la Saskatchewan, de l'Alberta,

Las especies de pesca de agua dulce del Canadá son las siguientes: Albur, trucha, arenque, lucio, mujil, tullbee, perca, esturión, angullas, carpa, ojodorados, barbos, mujil, loblina, sollo, etc.

Pesquerías en las Provincias Occidentales.

Los lagos y ríos de Manitoba, Saskatchewan, Alberta y hasta cierto punto los de la Colombia Inglesa,

winter months when the lakes are frozen over.

This peculiar feature is accounted for in the fact that many of the lakes and fishing stations are remote from railroads and only in the winter months when the snow is on the ground it is possible to transport the fish down to the nearest railroad shipping point. To some of the isolated lakes of the West, it has been necessary to construct roads through the bush for a hundred miles in order to transport by sleighs the fish caught in them, and practically all the northern lakes are only accessible to commercial fishermen in winter.

The lakes located in the southern part of the Provinces and served by railroad or steamboat transportation are fished summer and winter. The summer fishery is conducted from steam tugs, small sail boats, skiffs, and a few gasoline boats, and gill-nets and lines are used to catch the fish. In the lake fishing fleet of

et jusqu'à un certain point ceux de la Colombie Britannique fournissent de grandes quantités de poissons, dont la plus grande partie est prise pendant les mois d'hiver lorsque les lacs sont gelés.

Cette particularité est due au fait que beaucoup de lacs et de centres de pêches sont éloignés des lignes de chemin de fer et ce n'est que pendant les mois d'hiver lorsque la neige recouvre la terre qu'il est possible de transporter le poisson à la plus prochaine station de chemin de fer. Pour quelques lacs isolés de l'Ouest, il a fallu construire des routes à travers la brousse sur une distance d'une centaine de milles pour pouvoir transporter en traîneaux le poisson qu'on y prendait. Presque tous les lacs du Nord ne sont accessibles qu'en hiver aux pêcheurs professionnels.

Quant aux lacs situés dans le sud des provinces et desservis par chemin de fer ou par service de bateau, on y pêche été et hiver. La pêche es-

producen grandes cantidades de pesca, la mayor parte de la cual se saca durante los meses de invierno, cuando los lagos están helados. Esto se debe y se explica por el hecho de que la mayor parte de los lugares de pesca están lejos de las vías de ferrocarril y la pesca se puede transportar en trineos solamente en el invierno cuando la nieve se ha endurecido sobre la tierra. En algunos lagos aislados del Oeste, ha habido necesidad de construir caminos entre los bosques, algunos de cien millas de largo, para poder transportar la pesca en trineos, y se puede decir que casi todos los lagos del Norte solamente pueden explotarse comercialmente en invierno.

Los lagos que se encuentran al Sur de las provincias y que cuentan con servicio de ferrocarril o vapor, se explotan en verano y en invierno. La pesca en el verano se efectúa por medio de remolcadores, esquifes y botes con motor y sin él, y redes de agalla, y sedal. La flota pesquera de



Un Remorqueur de Pêche, Lac Supérieur.

A Lake Superior Fish Tug.

Remolcador pesquero.—Lago Superior.

Manitoba, Saskatchewan and Alberta there are 11 steam tugs, 81 gasoline boats and 1,905 sail boats and skiffs. The most of these craft are employed upon Lakes, Manitoba, Winnipeg, Winnipegosis, Isle la Crosse, La Biche, Lesser Slave, Jack-fish, and Murray—all of which are fished in summer. In connection with the fisheries of the Western Provinces are 136 freezers and ice-houses, and over half a million dollars are invested in boats, nets, gear, icehouses, fish sheds and wharves.

The gill-net is principally used in catching the fish and the length allowed by law is 5,000 yards for summer fishing from tugs with lesser amounts for sail-boats, skiffs, and individual fishermen. The fisheries of all western lakes are under the jurisdiction of the Federal Department of Fisheries, and almost every lake has certain regulations with regard to length of net allowed, extension of the mesh, and seasons in which fish

tivale se fait en remorqueurs à vapeur, petits bateaux à voile, chaloupes et quelques bateaux à gasoline. On y emploie les filets et la ligne. La flotte de pêche des lacs du Manitoba, de la Saskatchewan et de l'Alberta comprend 11 remorqueurs à vapeur, 81 bateaux à gasoline et 1905 bateaux à voile ou chaloupes. La plupart de ces embarcations sont employées sur les lacs Manitoba, Winnipeg, Winnipegosis, Ile la Crosse, La Biche, Lesser Slave, Jack-fish, et Murray, où l'on pêche en été. Les provinces de l'Ouest possèdent 136 entrepôts et glaciers réservés à la pêche et la valeur des bateaux, filets, glaciers, hangars et quais représente plus d'un demi-million de dollars.

C'est surtout le filet qui est employé pour la pêche. La longueur accordée par la loi pour la pêche d'été est de 5,000 verges pour les remorqueurs et naturellement moindre pour les bateaux à voile, les chaloupes et les bateaux individuels. Les pêcheries

los lagos de Manitoba, Saskatchewan y Alberta se compone de once remolcadores a vapor, 81 botes de motor, y 1905 barcos de vela y esquifes. La mayor parte de esta flota opera en los lagos de Manitoba, Winnipeg, Winnipegosis, Isle Lacrosse, Labiche, Lesser Slave, Jackfish and Murray, durante todo el verano. Las pesquerías de las Provincias Occidentales, tienen 136 depósitos frigoríficos, y han invertido más de \$500,000 dólares en botes, redes, aparejos, depósitos y muelles.

El grueso de la pesca se saca empleando redes de agalla. La longitud de la red permitida por La Ley es de 5000 varas para la pesca de verano con remolcadores y de una longitud menor según se pesque en barcos de vela, esquifes o de otro modo.

Todas las pesquerías de los lagos del Oeste están bajo la jurisdicción del Departamento Federal de Pesquerías y casi todos los lagos están sujetos a ciertas disposiciones que rigen la longitud de las redes, tamaño de



A catch of Whitefish, Lake Huron pound net.

Poisson blanc d'une livre pris sur le Lac Huron.

Un Capo de albur con red de garlito, Lago Huron.



A Lake Erie Fishing Station

Une station de Pêche du Lac Erié.

Estación pesquera. — Lago Erie.



A catch of fresh Lake Fish.

Un copo de pesca de lago.

Une prise de poisson des Lacs.





A Lake Erie Fishing Port.

Un Port de Pêche, Lac Érié.

Puerto Pesquero del Lago Erie.

may be caught. All fishermen are under license from the Department and licenses are granted for either domestic use or for commercial fishing.

Hook and line fishing is carried on to some extent, especially for sturgeon, and the gear used is somewhat similar to the lines of the sea fisheries, consisting of numerous baited hooks attached to a ground line anchored along the bottom.

The winter fishery, which produces the greater quantity of fish, is carried on through the ice by means of gill-nets. Holes are cut in the ice at certain intervals, and nets are threaded through from hole to hole under the ice and set. After the twine has been in the water for a time, the net is hauled up through the holes and the captures fish husked from the meshes. They are dressed immediately or left in the round and packed in boxes. Teams proceed from hole to

de tous les lacs de l'Ouest sont sous la juridiction du Ministère fédéral des Pêcheries et presque chaque lac a son règlement spécial concernant la longueur permise du filet, la grandeur des mailles et les saisons où la pêche est autorisée. Tous les pêcheurs ont une licence du Ministère. Les licences sont accordées soit pour l'usage domestique soit pour l'usage commercial.

La pêche à la ligne se fait sur une certaine échelle, principalement pour l'esturgeon et l'attirail employé est quelque peu semblable aux lignes dont on se sert pour la pêche en mer et qui consistent en de nombreux hameçons amorcés fixes à une ligne de fond.

La pêche d'hiver qui produit la plus grande quantité de poissons, se fait à travers la glace au moyen de filets. Des trous sont pratiqués dans la glace de place en place. Les filets sont alors passés d'un trou à l'autre en-

la malla y períodos en que se observa la veda. Los pescadores no pueden dedicarse a la pesca sin una licencia del Departamento y en dicha licencia se especifica si la pesca es para el consumo doméstico o para explotarla comercialmente.

La pesca con sedal y anzuelo se practica con frecuencia, especialmente para el esturión, y el aparejo es similar al que se usa en el mar, o sea un gran número de anzuelos cebados sujetos a un largo sedal que descansa en el fondo.

La pesca de invierno, que es la que produce la mayor cantidad de pescado, se lleva a cabo en el hielo, usando redes de agalla. Para ello se hacen grandes agujeros en el hielo, de trecho en trecho, y se enlazan las redes de hueco en hueco debajo del hielo. Después de que la red ha estado en el agua por cierto tiempo, se saca por los agujeros y la pesca se suelta de las mallas donde está aprisionada por

A Lake Superior Fishing establishment and Fish Tugs.

Establecimiento pesquero y remolcadores de pesca en el Lago Superior.

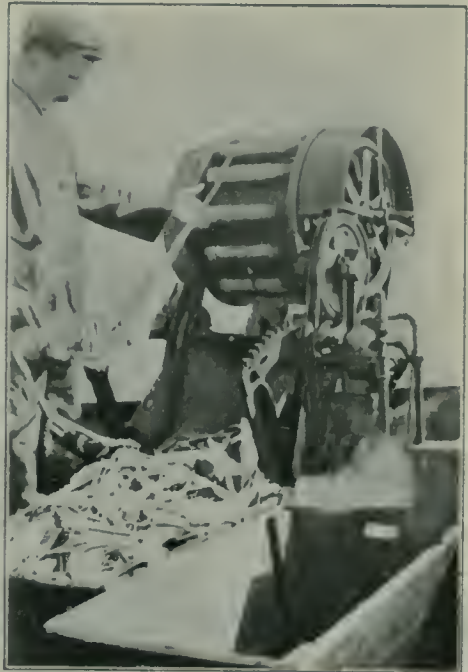
Etablissement de Pêche et Remorqueurs de Pêche du Lac Supérieur.





Lake Fishing Tugs in Autumn weather.
Remorqueur de Pêche sur les Lacs en Automne.
Remolcadores pesqueros de los Lagos en tiempo de otoño.

Sitting Gill nets, Lake Huron Fish Tug.
Préparation des filets sur un Remorqueur de
Pêche, Lac Huron.
Tendiendo redes de agalla.—Remolcador pesquera—Lago Huron



Steam net lifter on Lake Fishing vessel.

Machine à vapeur servant à relever les
filets sur un bateau de pêche
des Lacs.

Izador de redes a vapor, en los bar-
cos pesqueros de los lagos.



Discharging Lake Fish.
Déchargement du Poisson des Lacs.
Descargando pescado en los Lagos.



A Lake Erie Fishing Tug.
Rcmolcador pesquero.—Lago
Erie.
Un Remorqueur de Pêche.—
Lac Erié.

hole and pick up the boxes as they are filled. In the intense cold of winter, the fish freeze solid almost as soon as husked from the nets and remain frozen until marketed. When a sleigh load has been gathered, the team proceeds to the nearest railroad shipping point which may be anywhere from five to a hundred miles away, and the boxes of frozen fish are loaded into cars and despatched to market.

Over 22,000,000 pounds of fish from the western lakes were thus marketed during the winter of 1917-18 — the varieties being whitefish, trout, pickerel, jackfish (pike), tullibees and mullets.

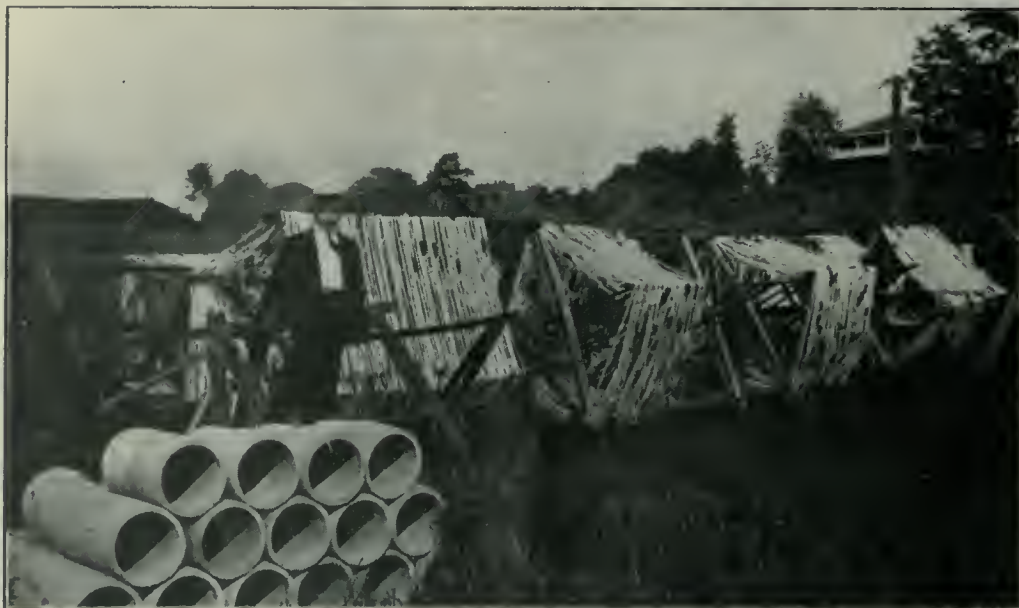
The Canadian firms engaged in the Western lake fisheries require considerable capital to engage successfully in the business. As a rule they supply the nets and boxes to the fishermen whom they hire or contract with to catch the fish. Supplies, including food, fuel and clothing have

dessous de la glace et mis en place. Lorsqu'il est resté un certain temps sous l'eau, le filet est remonté par les trous et le poisson capturé est retiré des mailles. Il est préparé immédiatement ou bien on les laisse tout rond et on le met en boîtes. Les traîneaux vont de trou en trou et ramassent les boîtes à mesure qu'elles sont remplies. Avec le froid intense de l'hiver, le poisson se congèle presque aussitôt qu'il est retiré du filet et reste gelé jusqu'à son arrivée sur le marché. Lorsqu'un traîneau a complété son chargement, il est dirigé immédiatement vers la plus prochaine station de chemin de fer dont la distance peut varier de 5 à 100 milles et les boîtes de poisson gelé sont chargées dans les wagons et expédiées sur le marché.

Plus de 22 millions de livres de poisson provenant des lacs de l'Ouest ont été ainsi mises sur le marché pendant l'hiver 1917-18. Cette quantité comprenait les variétés suivantes:

las agallas. Inmediatamente se limpia y se coloca en cajas. Como hace un frío tan intenso, la pesca se congela casi en el mismo momento que se saca de la red y adquiere una dureza como de piedra, conservándose en este estado hasta que se vende en el mercado. Cuando ya hay suficiente carga para un trineo se transporta hasta la estación de ferrocarril más cercana, de cinco a cien millas distante, y las cajas de pesca congelada se cargan en vagones y se mandan a los mercados. Durante 1917, se mandaron al mercado desde los lagos del oeste 22,000,000 de libras de pescado congelado. Esta pesca se componía de albur, trucha, lucio, mujol, tullibee y mujil.

Las Firmas canadienses que se ocupan de la pesca en los lagos del oeste, necesitan grandes capitales para poder explotar la industria con provecho. Por regla general, dichas firmas, proveen a los pescadores las redes y las cajas, y contratan la



Nets Drying, Lake Fisheries. Secadero de redes.—Pesca en las Lagos. Filets Séchant—Pêcheries des Lacs.

to be transported to the fishing camps for men and horses. Heavy losses are often incurred through sudden thaws which spoil the fish.

The fishermen of the Western Provinces pursue their vocation either winter and summer, or as a part time employment in winter. Many farmers located near the lakes become fishermen during the winter months. In addition to Canadian born, many Icelanders, Scandinavian and Scotch settlers who were engaged in fishing in their home countries are employed in the fisheries.

The greater proportion of the fish caught in the waters of the Western Provinces is exported to the United States, but during the war, considerable quantities of whitefish were sent overseas to Great Britain for use in the military hospitals.

The fisheries of Manitoba, Saskatchewan and Alberta are still capable of greater productivity when railroads are constructed to the northern dis-

poisson blanc, truite, brocheton, jackfish (brochet) et mullet.

Les maisons canadiennes qui s'occupent de la pêche sur les lacs de l'Ouest ont besoin d'un capital considérable pour réussir dans leurs affaires. Ordinairement elles fournissent les filets et les boîtes aux pêcheurs qu'elles emploient ou avec lesquels elles ont un contrat pour la pêche du poisson. Des approvisionnements comprennent la nourriture, le chauffage et l'habillement doivent être transportés aux camps de pêche pour les hommes et les chevaux. De lourdes pertes sont quelquefois subies par suite de dégels soudains qui font gâter le poisson.

Les pêcheurs des provinces de l'Ouest exercent leur métier soit été et hiver, soit seulement en hiver. Beaucoup de fermiers habitant dans le voisinage des lacs se font pêcheurs pendant les mois d'hiver. En outre des Canadiens, beaucoup de colons islandais, Scandinaves ou Écossais

dad de transportar provisiones tales como ropa, carbón, comida, pienso, etc., a los campamentos de pesca para los hombres y para los caballos. Muchas veces se experimentan grandes pérdidas debido a un deshielo repentino que pudre el pescado.

Los pescadores de las Provincias Occidentales, siguen su vocación lo mismo en invierno que en verano, y algunos de ellos como ocupación temporal en el invierno solamente. Muchos labradores que se encuentran localizados cerca de los lagos se dedican a la pesca durante el invierno. En adición a los pescadores canadienses se emplea gran número de pescadores de Islandia, Escocia y Escandinavia, que vienen al Canadá para seguir su oficio con más ventaja.

La mayor parte de la pesca sacada de las aguas de los lagos de las Provincias Occidentales se exporta a los Estados Unidos y durante la guerra Europea se exportaron a Europa enormes cantidades de albur para los

tricts. As the steel advances north, roads will be cut to huge fishing areas never before fished commercially and the winter fishery from these northern waters is destined to become of great value.

While British Columbia contains many inland lakes, yet the fisheries are not extensive. Some whitefish, trout and other species are caught commercially, but the most of the lake fish caught is consumed by settlers.

In the Province of Quebec, a very considerable fishery is carried on in the lakes and rivers of the Province and large quantities of pickerel, whitefish and pike are marketed. Eels to the value of \$20,000 annually are caught in the rivers and streams and marketed locally.

The Fisheries of the Great Lakes.

The fisheries of the Great Lakes are invested in the Province of Ontario. About four thousand men, 120 steam tugs, 702 gasoline boats, and 1108 sail

qui sont occupés de pêche dans leurs pays respectifs sont employés aux pêcheries.

La plus grande partie du poisson pris dans les eaux des provinces de l'Ouest est exportée aux Etats-Unis mais pendant la guerre, des quantités considérables de poisson blanc ont été expédiées en Grande Bretagne pour être utilisées dans les hôpitaux militaires.

Les pêcheries du Manitoba, de la Saskatchewan et de l'Alberta sont encore capables de produire davantage lorsque les lignes de chemin de fer seront ouvertes dans les districts du nord. A mesure que la voie ferrée se portera vers le nord, des routes seront ouvertes pour atteindre d'importants centres de pêche qui n'ont jamais été exploités commercialement et la pêche d'hiver de ces eaux du nord est destinée à acquérir une grande valeur.

Bien que la Colombie britannique contienne de nombreux lacs intérieurs, la pêche n'y est pas encore très développée. On pêche bien pour le com-

hospitales de la Gran Bretaña.

Las pesquerías de Manitoba, Saskatchewan y Alberta podrán producir enormes cantidades cuando se construyan líneas de ferrocarril en los distritos del Norte. A medida que el camino de hierro se extienda hacia el Norte nuevas y enormes zonas pesqueras se abrirán a la explotación y no está lejano el día en que la pesca invernal en las aguas del Norte alcance un auge y un valor imposible de describir.

Aunque la Colombia Inglesa posee gran número de lagos interiores, la pesca no se practica en tales aguas en la proporción que debiera hacerse y por regla general se explotan comercialmente algunas especies de albur y trucha, consumiéndose las otras cías entre los colonos.

En la Provincia de Quebec, se hace una gran explotación de la pesca de sus ríos y lagos, obteniéndose grandes cantidades de lucio, albur, mujil, dora, etc., para los mercados. En esta Provincia se pescan anualmente anguilas por valor de \$20,000, las cuales se



A Lake Erie Fishing Establishment. Un établissement de poche du Lac Erié. Establecimiento pesquero en el Lago Erie.

and row boats are engaged in Ontario's lake fisheries. The fishing is largely carried on by means of gill-nets and stationary pound-nets, and the bulk of the fish caught are trout, herring, whitefish, pickerel, pike and perch. The following statistics for 1916-17 gives the value of the catch of the fish marketed by Ontario fishermen.

Kind of Fish.	Quantity Cwt.	Value.
Trout	78,116	\$638,888
Herring	106,872	526,976
Whitefish	60,711	516,290
Pickerel	45,418	454,187
Pike	14,836	118,690
Perch	12,585	62,926
Tullibee	8,197	49,183
Catfish	5,427	43,417
Carp	18,578	37,157
Sturgeon	1,475	22,129
Eels	1,661	9,969
Mixed fish	34,936	171,830
Caviare .. (lbs.)	7,207	7,207

1 Cwt. equals 100 lbs.

merce quelques poissons blancs, quelques truites et quelques autres espèces, mais la plupart du poisson pris dans les lacs est consommée par les colons.

Dans la province de Québec on pêche énormément dans les lacs et rivières de la province et de grandes quantités de brochetons, de poisson blanc et de brochet sont mises sur le marché. On prend dans les rivières et cours d'eau plus de \$20,000 d'anguilles par an qui sont vendues sur les marchés locaux.

Les Pêcheries des Grands Lacs.

Les pêcheries des grands lacs appartiennent à la province d'Ontario. Environ 4,000 hommes, 120 remorqueurs à vapeur, 702 bateaux à gasoline et 1108 bateaux à voiles ou à sames sont employés dans les pêcheries des lacs Ontario. La pêche se fait principalement au filet fixe ou mobile et les principaux poissons sont la truite, le hareng, le poisson blanc,

consumen en los mercados locales.

Pesquerías en los Grandes Lagos.

Las pesquerías en los Grandes Lagos están localizadas en la Provincia de Ontario. Cerca de 4,000 hombres, 120 remolcadores a vapor, 702 botes a motor y 1,108 embarcaciones a vela y a remo se ocupan en la pesca del Lago Ontario. La pesca se efectúa por medio de redes de agalla y redes-sarlito fijas. El grueso de la pesca se compone de trucha, arenque, albur, lucio, mujil y percas. La siguiente estadística de 1916-17, expresa el valor de la pesca sacada por los pescadores de Ontario.

Clase	Quintales.	Valor.
Trucha	78,116	\$638,888
Arenque	106,872	526,976
Albur	60,711	516,290
Lucio	45,418	454,187
Mujil	14,836	118,690
Perca	12,585	62,926
Tullibee	8,197	49,183

Practically all of the fish mentioned are caught in gill-nets and pounds. Some are captured by hook and line.

Gill-Net Fishing.

In the Great Lake fishing, gill-netting (so-called because the fish strike the almost invisible nets and become caught by their gills) is largely practiced from small steam tugs. These craft are from 40 to 70 feet long and built on the lines of a tug.

Each fish tug carries an average of eight men—one skipper, one engineer and fireman, and six fishermen. The nets used are one fathom in width, thirty-five fathoms long, and made with a mesh running from 2¼ inches to 4½ inches extension measure—varying with the locality and the fish to be caught. The nets are carried in trays or boxes and the head of the net is fitted with wooden floats at intervals while the footrope is leaded.

le brocheton, le brochet et la perche. Les chiffres suivants indiquent pour 1916-17 la valeur du poisson pris et mis sur le marché par les pêcheurs de l'Ontario.

Genre de Poisson.	Quantité.	Valeur.
	Cwt.	
Truite	78,116	\$638,888
Hareng	106,872	526,976
Poisson blanc ..	60,711	516,290
Brocheton	45,418	454,187
Brochet	14,836	118,690
Perche	12,585	62,926
Tullibee	8,197	49,183
Barbote	5,427	43,417
Carpe	18,578	37,157
Esturgeon	1,475	22,129
Anguille	1,661	9,969
Poissons divers	34,936	171,830
Caviar	7,207 lbs	7,207

Note: 1 Cwt. égale 100 lbs.

Presque tous les poissons mentionnés sont pris au filet. Quelques-uns seulement sont pris à l'hameçon et à la ligne.

Barbo	5,427	43,417
Carpa	18,578	37,157
Esturión	1,475	22,129
Anguilas	1,661	9,969
Varias otras clases	34,366	171,830
Caviar (Libras)	7,207	7,207
(Un quintal tiene 100 libras).		

Casi toda la pesca que antecede se atrapa en redes de agalla y en garlitos. Algunas clases se pescan con sedal y anzuelo.

Pesca Con Red de Agalla.

En los Grandes Lagos, se efectúa la pesca con redes de agalla llamadas así por ser redes casi invisibles y los peces quedar enganchados de las agallas al intentar pasar por la malla de la red. Este método se practica con pequeños remolcadores a vapor, de 40 a 70 pies de longitud. Cada remolcador lleva una dotación de ocho marineros, un patrón, un maquinista,



A catch of Fresh water Herring, Lake Superior. Une prise du Hareng d'eau douce, Lac Supérieur. Cargados de Arenques de agua dulce, Lago Superior.

When fishing the tug steams to a "bank" or fishing ground and an anchor or stone with a ring in it and attached to a buoy, is lowered to the bottom. A pole is lashed to the anchor and line and to the pole, which is in an up and down position, the first gill-net is made fast. The poles serve to keep the net stretched and upright near the bottom of the lake.

From one hundred to two hundred nets are set from the tug—the whole being known as a "gang." The nets are usually set in zig-zag fashion over the ground and in the direction dictated by the skipper, and the fishing depths and locations are picked up by means of the sounding lead, compass and chart similar to the manner in vogue in salt water.

In lifting the nets, a steam net-lifter consisting of revolving drum,

Pêche au filet.

Sur les grands lacs, la pêche au filet "par les oules" (ainsi appelée parce que le poisson se jette dans les filets presque invisibles et reste pris par les oules) est surtout pratiquée par de petits remorqueurs à vapeur. Ces embarcations ont de 40 à 70 pieds de long et sont construites sur le modèle des remorqueurs.

Chaque remorqueur porte en moyenne huit hommes: un patron, un chauffeur-mécanicien et six pêcheurs. Les filets employés ont une brasse de large, 35 brasses de long et la largeur des mailles varie de 2¼ à 4½ pouces suivant la localité et le genre de poisson à prendre. Les filets sont mis dans les baquets ou des boîtes, la tête du filet est garnie par endroits de flotteurs en bois tandis que la corde du fond est garnie de plombs.

un fogonero y seis pescadores. Las redes tienen una brasa de ancho, treinta y cinco de longitud y están tejidas con malla de 2¼ a 4½ pulgadas, según la localidad y la pesca. Las redes se llevan en cajas y la cabeza de la red está dotada de flotadores o corchos mientras que la parte inferior está guarnecida de plomos. Para pescar se dirigen los remolcadores a un banco o zona de pesca y dejan caer al fondo una ancla o una piedra sujeta a una boya. Una pértiga o palo largo se sujeta al ancla y la línea se sujeta en la pértiga, y de esta manera se coloca la primer red. Las pértigas mantienen la red estirada y vertical cerca del fondo del lago. De cien a doscientas redes se colocan desde el remolcador y esta operación se conoce por el nombre de "gang". Las redes se co-

placed on the port bow, is used. As the nets come over the drum, the fish are "husked" from the meshes and the nets are placed in the trays.

In the off-season, when fishing is light, it is the custom to set the old nets; when fishing is heavy, the new nets are used. An average catch for a five man tug in the off season, setting 16 trays, is about 400 pounds of herring, whitefish, and trout. When the heavy fishing is on, in the Fall, a big tug will bring in from fifteen to twenty tons.

The fisherman of the ocean often labours under the delusion that the Lake fishermen have an easy time as far as weather is concerned. This idea is erroneous, as rough weather prevails on the inland waters just as much as on the seas.

In the early Spring and the late Fall, the fish tugs have some hard battles with the elements, and it is no uncommon thing to see a fish tug reach port so heavily iced up that she almost capsized with the weight of frozen water. The wind blows hard

Quand il va pour pêcher le remorqueur se dirige vers un banc ou un endroit où pêche, il jette alors au fond de l'eau une ancre ou une pierre avec un anneau attaché à une bouée. Un piquet est amarré à l'ancre et la ligne fixée au piquet qui est dans une position verticale. Le premier filet est ainsi vite fait. Les piquets servent à maintenir le filet tendu et vertical près du fond du lac.

Le remorqueur lance ainsi de 100 à 200 filets—l'ensemble est appelé une "gang." Les filets sont ordinairement placés en zig-zig sur le fond, dans la direction indiquée par le patron, et les profondeurs et les endroits sont choisis au moyen du plomb de sonde, de la boussole et de la carte tout comme dans les eaux salées.

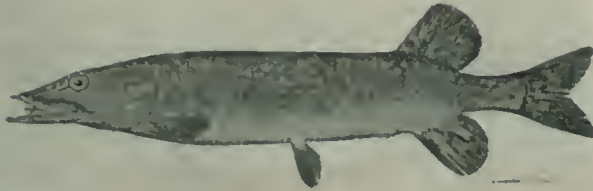
Pour relever les filets on se sert d'un élévateur consistant en un cylindre à révolution placé en avant à babord. A mesure que les filets arrivent sur le tambour, le poisson est retiré des mailles et les filets placés dans les baquets.

En morte-saison, lorsque la pêche décline, il est de coutume de placer les vieux filets, lorsque la pêche est abondante, on emploie les filets neufs. La prise moyenne d'un remorqueur de 5 hommes dans la morte-saison,

locan haciendo zigzag en la dirección que marca el patrón, y las localidades para la pesca se encuentran por medio de sondas y usando las cartas y brújulas lo mismo que en el mar. Para colocar los redes se usa un tambor a causa el que va colocado en la cuadra de proa y a medida que la red va saliendo la pesca se suelta de las mallas y se coloca en depósitos.

Fuera de estación, cuando la pesca es escasa, hay costumbre de usar las redes viejas y cuando la pesca es abundante se usan las nuevas. El término medio de pesca en un remolcador de cinco pescadores, fuera de estación, y usando dieciséis redes, es de 400 libras de arenque, albur y trucha. Cuando la pesca está en su apogeo, en el otoño, un remolcador grande, trae una pesca de quince a veinte toneladas.

Los pescadores del mar están en la creencia de que los de agua dulce no sufren penalidades a causa del tiempo, y tal creencia es errónea pues lo mismo hay mal tiempo en aguas de tierra adentro que en el mar. A principios de la primavera y al fin del otoño, los remolcadores tienen que luchar terriblemente con los elementos



Pike. — Mujol. — Brochet.



Ling. — Molvas. — Barbué.

at times on the Lakes, and over these great stretches of shoal water it kicks up a bad sea.—bad enough to cause 500 foot Lake steamers to founder. In shallow Lake Erie, a few years ago, a great steamer disappeared utterly in a gale, and was found bottom up afterwards in thirty feet of water.

Pound Nets.

This method of catching fish is extensively practised upon the Lakes. The pound-net is really a fish trap, and consists of a number of stakes driven into the bottom and running out from the shore. Between the stakes, strong netting is fastened to form a fence or "lead." The outer or deep water end of the gear consists of the pound—a four square net shaped like a box and with an entrance at the side facing the lead. The fish are turned by the lead when swimming along-shore and endeavoring to avoid the obstruction they swim out and through the gate in the pound, where they are imprisoned. The pound net

posant de 16 filets, est d'environ 400 livres de hareng, poisson blanc et truite. Lorsque la pêche bat son plein à l'automne un grand remorqueur peut rapporter de 15 à 20 tonnes.

Les pêcheurs de l'Océan sont souvent sous la fausse impression que les pêcheurs des lacs n'ont pas à souffrir du mauvais temps. Cette idée est erronée car il y a du gros temps dans les eaux intérieures tout autant que sur la mer.

Au début du printemps et à la fin de l'automne les remorqueurs ont quelquefois à lutter durement avec les éléments et il n'est pas rare de voir un remorqueur de pêche rentrer au port si lourdement chargé de glace qu'il chavire presque sous le poids de l'eau gelée. Le vent souffle souvent très fort sur les lacs et de ces grandes étendues d'eau peu profonde il fait une mer en furie, assez déchaînée pour faire sombrer des vapeurs de lac de 500 pieds de long. Sur le lac Érié pourtant peu profond, il y a quelques années, un grand vapeur disparut entièrement pendant une tempête et il fut retrouvé ensuite la quille en l'air dans 30 pieds d'eau.

Filets "enclos."

Cette façon de prendre le poisson est grandement pratiquée sur les lacs.

and muy amenudo llegan al puerto tan cubiertos de hielo que casi entran volcados a causa del peso del hielo. Los vientos soplan a grandes velocidades sobre los lagos y las aguas son tan terribles como las de cualquier mar y capaces de hacer naufragar barcos de quinientos pies en más de una ocasión. En aguas bajas del lago Erie, no hace muchos años desapareció sin dejar rastro un gran vapor y algún tiempo después se encontró quilla arriba en treinta pies de agua.

Pesca con Garlito.

Este método de pesca se practica con frecuencia en los lagos. El garlito no es sino una trampa y consiste en cierto número de estacas clavadas en el fondo y corridas mar adentro desde la orilla. Entre las estacas se sujeta una red cuadrada en forma de caja con de barrera. El extremo exterior o de fondo del aparejo es el garlito, o sea una red cuadra en forma de caja con una entrada a la lo frente a la barrera o hileras. El pescado que nada a lo largo de la orilla dá la vuelta al llegar al extremo de la hileras y a fin de salvar el obstáculo se dirige y entra por la puerta del garlito para quedar aprisionado dentro de sus redes. Un remolcador a vapor, o a

boat—a gasoline craft or steam tug—visits the nets during the day, and ranges alongside the stakes of the pound and makes fast. The fishermen then haul up the pound net by means of the ropes fastened to the upper and lower corners and haul the net up until the fish come to the surface in the bight of the net. The finny spoil is then bailed out by dip-nets and examined for legal sizes. Small fish and prohibited species are thrown back into the water.

A large quantity of the Ontario lake fish is exported to the United States, where there is a ready market for fresh water fish. During 1917-18, the Ontario Government entered the fish business and operated a fishery on Lakes Nipissing and Nipigon, besides taking part of the catch of the commercial fishermen. Through a government Sales Department, the fish thus secured is distributed to retail dealers and sold to the Ontario public at fixed prices.

During the year ending October 31st, 1918, the Ontario Government Fish Sales Department sold about 3,000,000 lbs. of lake fish in the Province and the receipts totalled \$234,594. This is the first instance of any Canadian Federal or Provincial Government engaging in the fish business.

Export Trade in Fresh Water Fish.

The export trade in Canada's fresh water fish is largely to the United States, though considerable quantities of frozen whitefish have been exported to Great Britain. The possibilities of preparing fresh water fish for foreign markets, other than in a frozen state has not yet been considered by our fishermen, but numerous enquiries have been received from European dealers of late asking for shipments of salted and dried eels, carp, mullets, ling and fish familiar to the people of Central Europe. Fish of the class mentioned are exceedingly common in our lakes and rivers and enormous quantities could be prepared for export provided a market was available.

Importers interested in Canadian fresh water fish would require to inform our fresh water fish producers the manner in which they desire the fish packed for their market. The particular species which would be available in quantity for export are lake herring, pike, pickerel, mullets, ling, eels and carp.

Le filet "enclos" est, en réalité un piège à poissons. Il consiste en un certain nombre de piquets plantés dans le fond et partant de la rive. Entre les piquets on attache un fort filet qui forme une clôture ou "gouttière." L'extrémité extérieure de l'appareil consiste dans l'"enclos" (un filet de 4 pieds carrés en forme de boîte avec une entrée sur le côté faisant face à la gouttière. Les poissons sont détournés par la gouttière lorsqu'ils nagent près du bord et cherchant à éviter l'obstacle ils passent par la barrière dans l'enclos où ils sont emprisonnés. Un bateau à gasoline ou un remorqueur à vapeur visite les filets durant la journée, se range le long des piquets et fait vite. Les pêcheurs carquent alors le filet au moyen des cordes fixées aux coins supérieur et inférieur et relèvent le filet jusqu'à ce que le poisson vienne à la surface dans les plis du filet. Le poisson est alors trié pour ne conserver que les tailles permises par la loi. Le petit poisson et les espèces prohibées sont alors rejetées à l'eau.

Une grande quantité du poisson des lacs de l'Ontario est exportée aux Etats-Unis où il y a un marché important pour le poisson d'eau douce. Durant l'année 1917-18 le Gouvernement de l'Ontario a entrepris le commerce du poisson et a exploité une pêcherie sur les lacs Nipissing et Nipigon, prenant de plus une partie du poisson récolté par les pêcheurs professionnels. Par l'entremise d'un bureau de vente gouvernemental le poisson ainsi obtenu est distribué aux détaillants et vendus au public ontarien à des prix fixés.

Pendant l'année finissant le 31 Octobre 1918, le bureau de vente du gouvernement de l'Ontario a vendu environ 3 million de livres de poissons des lacs dans la province et les recettes ont atteint \$234,594. C'est la première fois que l'on voit un gouvernement Canadien, provincial ou fédéral qui entreprend le commerce du poisson.

L'exportation du poisson d'eau douce du Canada se fait surtout aux Etats-Unis, bien que des quantités considérables de poisson blanc gelé aient été exportées en Grande Bretagne. La possibilité d'offrir le poisson d'eau douce sur les marchés étrangers autrement qu'à l'état congelé, n'a pas encore été étudiée par nos pêcheurs, mais récemment on a reçu de nombreuses demandes provenant de marchands européens réclamant des envois de poissons salés et séchés tels que l'anguille, carpe, mullet, morue et toutes sortes de poissons en faveur en Europe Centrale. Les poissons de ce genre sont excessivement communs dans nos lacs et rivières et on pourrait en préparer d'énormes quantités pour l'exportation si l'écoulement était possible.

Les importateurs qui s'intéressent au poisson d'eau douce devraient indiquer aux producteurs la façon dont ils désirent que le poisson soit emballé pour leur marché. Les espèces particulières que l'on peut obtenir ordinairement en quantité pour l'exportation sont: le hareng des lacs, le brochet, le brocheton, le mullet, la morue, l'anguille et la carpe.

gasolina, recorre el mar a la largo de las redes y de las estacas durante el día. Los pescadores recojen la red del garlito por medio de cuerdas sujetas a los extremos superiores e inferiores de la red y arrastran ésta hasta que los peces están en la superficie en la bolsa de la red. El botín se saca con nasas y se separa por clases y tamaños permitidos por la ley, devolviendo al agua los peces pequeños y las especies prohibidas.

Una gran cantidad de pesca del lago Ontario se exporta a los Estados Unidos donde siempre tiene mercado la pesca de agua dulce. Desde 1917-1918, el Gobierno de la Provincia de Ontario empezó a operar las pesquerías de los lagos Nipissing y Nipigon y además compra casi toda la pesca sacada por los pescadores de profesión. Todo el pescado así obtenido, se distribuye para la venta al público a un precio fijado, por el departamento de ventas establecido por el Gobierno.

Durante el año que terminó en 31 de Octubre 1918, el Departamento de Ventas del Gobierno de Ontario vendió cerca de 3,000,000 de libras de pescado en la Provincia, sacando un producto de \$234,594.00. Esta es la primera vez que un Gobierno Provincial o Federal en el Canadá se ha dedicado a la pesca a fin de contrarrestar el alto precio de este alimento.

Comercio de Exportación de la Pesca de Agua Dulce.

El mayor comercio de exportación de pesca de agua dulce del Canadá se hace a los Estados Unidos, aunque también se han hecho considerables embarques de albur congelado a la Gran Bretaña. La probabilidad de preparar el pescado de agua dulce de alguna otra manera que no sea congelado, no ha sido todavía considerada por nuestros pescadores. Sin embargo, últimamente los importadores europeos han expresado sus deseos de recibir embarques de anguillas secas, y saladas, carpas, mujiles, molvas y otras clases conocidas en la Europa Central. Pesca de las clases mencionadas se obtiene en abundancia en nuestras de aguas y se puede preparar una enorme cantidad para la exportación siempre que exista mercado para ellas.

Los importadores que estén interesados en pesca de agua dulce del Canadá, deberán dirigirse a nuestros fabricantes de conservas manifestando la forma de preparación de pesca que desean para llenar las necesidades de sus respectivos mercados. Las especies que se pueden exportar en gran cantidad son los arenques de lago, mujol, lucio, mujil, ling, anguillas y carpa.

CANADIAN GOVERNMENT COMMERCIAL INTELLIGENCE SERVICE.**Offices of the Canadian Trade Commissioners.****Argentine Republic.**

B. S. Webb, Canadian Government Trade Commissioner, Reconquista No. 46. Buenos Aires. Cable address, "Canadian."

Australia.

D. H. Ross, Canadian Government Trade Commissioner. Address for letters—Box 140 G.P.O., Melbourne; office—Stock Exchange Building, Melbourne. Cable address, "Canadian."

Brazil.

G. B. Johnson. Letters should be addressed to H. B. M. Minister, Rio de Janeiro.

British West Indies.

E. H. S. Flood, Canadian Government Trade Commissioner, Bridgetown, Barbadoes; agent also for the Bermudas and British Guiana. Cable address, "Canadian."

China.

J. W. Ross, Canadian Government Trade Commissioner, 13 Nanking Road, Shanghai. Cable address, "Caneoma."

Cuba.

Acting Canadian Government Trade Commissioner, 501 and 502 Antigua Casa de Corres, Teniente Rey 11, Havana. Cable address, "Cantraeom."

France.

Philippe Roy, Commissioner General of Canada, 17 and 19 Boulevard des Capucines, Paris. Cable address, "Stadaeona."

Holland.

Ph. Geleerd, Acting Canadian Government Trade Commissioner, Zuidblaak 26, Rotterdam. Cable address, "Watermill."

Italy.

W. McL. Clarke, Canadian Government Trade Commissioner, via Carlo Cattaneo, 2, Milan. Cable address, "Canadian."

Japan.

A. E. Bryan, Canadian Government Trade Commissioner, 53 Main street, Yokohama. Cable address, "Canadian."

Newfoundland.

W. B. Nieholson, Canadian Government Trade Commissioner, Bank of Montreal Building, Water street, St. John's. Cable address, "Canadian."

New Zealand.

W. A. Beddoe, Canadian Government Trade Commissioner, Union Buildings, Customs street, Auckland. Cable address, "Canadian."

Siberia.

L. D. Wilgress, Canadian Government Trade Commissioner, Sventlankskaya street 10, Vladivostok. Cable address, "Canadian."

South Africa.

W. J. Egan, Canadian Government Trade Commissioner, Norwich Union Buildings, Cape Town. Cable address, "Cantraeom."

United Kingdom.

Harrison Watson, Canadian Government Trade Commissioner, 73 Basinghall street, London, E. C. 2, England. Cable address, "Sleighting, London."

J. Forsyth Smith, Acting Canadian Government Trade Commissioner, 87 Union street, Glasgow, Scotland. Cable address, "Cantraeom."

J. E. Ray, Canadian Government Trade Commissioner, 4 St. Ann's Square, Manchester. Cable address, "Cantraeom."

J. Forsyth Smith, Canadian Government Trade Commissioner, Century Bldgs., 31 North John street, Liverpool. Cable address "Cantraeom."

N. D. Johnston, Canadian Government Trade Commissioner, Sun Building, Clare street, Bristol. Cable address, "Canadian."

Australia.

B. Millin, Canadian Government Commercial Agent, the Royal Exchange Building, Sydney, N.S.W.

British West Indies.

Edgar Tripp, Canadian Government Commercial Agent, Port of Spain, Trinidad. Cable address, "Canadian."

R. H. Curry, Canadian Government Commercial Agent, Nassau, Bahamas.

Norway and Denmark.

C. E. Sontum, Canadian Government Commercial Agent, Grubbegd, No. 4, Christiania, Norway. Cable address, "Sontums."

CANADIAN HIGH COMMISSIONER'S OFFICE.**United Kingdom.**

W. L. Griffith, Secretary, 19 Victoria Street, London, S.W., Eng. Cable address "Dominion," London.

Enlarged Canadian Trade Intelligence.**Brazil.**

Bahia, British Consul.

Rio de Janeiro, British Consul General.

Chile.

Valparaiso, British Consul General.

Colombia.

Bogota, British Consul General.

Ecuador.

Quito, British Consul General.

Guayaquil, British Consul.

Egypt.

Alexandria, British Consul General.

France.

Havre, British Consul General.

Marseilles, British Consul General.

India.

Calcutta, Director General of Commercial Intelligence.

Italy.

Genoa, British Consul General.

Milan, British Consul.

Mexico.

Mexico, British Consul General.

Netherlands.

Amsterdam, British Consul.

Panama.

Colon, British Consul.

Panama, British Vice-Consul.

Peru.

Lima, British Vice-Consul.

Portugal.

Lisbon, British Consul.

Spain.

Barcelona, British Consul General.

Madrid, British Consul.

Sweden.

Stockholm, British Consul.

Switzerland.

Geneva, British Consul.

Uruguay.

Monte Video, British Vice-Consul.

Venezuela.

Caracas, British Vice-Consul.



INFORMATION regarding Canada's Fisheries, Fish Products and Fish Producers will be readily given upon request by addressing the Secretary, Canadian Fisheries Association, Room 30B, Board of Trade Building, Montreal, Canada.

The Canadian Fisheries Association is composed of firms and individuals engaged in the Fishing Industry of Canada who are organized for the purpose of developing the great fishery resources of Canada upon the most modern lines.

The Association's members are the most progressive and reliable men in the Industry and the Association's ideals are to have Canada's fish products the best in the world.

DES INFORMATIONS, relatives aux Pêcheries, aux Produits de la Pêche et aux Producteurs de Poisson du Canada seront fournies gracieusement sur demande adressée au Secrétaire de l'Association des Pêcheries Canadiennes, Chambre, 30B, Edifice du Board of Trade, Montréal, Canada.

L'Association de Pêcheries Canadiennes est composée de maisons et personnes engagées dans l'industrie de la pêche au Canada et qui se sont organisées dans le but de développer les grandes ressources poissonnières du Canada suivant les méthodes les plus modernes.

Les membres de cette Association sont les hommes les plus dignes de confiance et animés du plus vif esprit de progrès de l'Industrie et les idéals de l'Association sont de rendre les produits de la pêche canadienne les meilleurs au monde.

CUALQUIER INFORMACION sobre las pesquerías del Canadá, productos pesqueros y productores de pesca, se facilitará a cuantos lo soliciten dirigiéndose al secretario de la Asociación de Pesquerías Canadienses, Oficina No. 30B, Edificio de la Cámara de Comercio, Montreal, Canadá.

La Asociación de Pesquerías Canadienses está formada de firmas y personalidades ocupadas en la Industria Pesquera del Canadá y se ha organizado con el propósito de desarrollar los grandes recursos pesqueros del Canadá, siguiendo los métodos más modernos.

Los miembros que componen la Asociación son personas de las más progresivas y reconocidas en esta Industria y el ideal de la Asociación es hacer que los productos pesqueros del Canadá no tengan rival en el mundo.

DOMESTIC SECTION

**FISH FOR MEAT AND LEATHER.**

Some years ago a learned professor made the statement that the time would come when the nation possessing the greatest fishery resources would lead the world in national status. He explained that the world's meat herds of cattle, sheep and hogs would decline through increasing difficulties in raising owing to the high price of land, fodder and labor, and the price of meat would become so high that the poorer classes would have to look for a cheaper substitute. The only satisfactory substitute is fish, and in that particular resource, Canada is most bountifully endowed.

The time prophesied is fast coming and the comparative merits and value between fish and meat is becoming more clearly defined. Fish as an economical substitute for beef, mutton and pork is now clearly recognized, but much educational work has yet to be done in teaching the masses the variety of species to be procured, the nutritive value, the proper preparation in cooking, and the economical saving in comparison with meat. Fish, as a staple and daily article of food in Canada will come with time—the consumption is yearly increasing—but there is yet another aspect in favor of fishery development which has come very much to the fore of late, and that is the use of fish skins for leather.

The scarcity of animal hides and the scandalous prices prevailing for leather goods at the present time has caused scientists and others to hunt for a suitable substitute. This has been found in the kinds of sharks, porpoises, dog-fish, rays, black-fish and whales. Sharks, common enough in Canadian waters, have been used to produce a very fine grade of leather—a chemical process recently discovered being able to separate the rough shagreen from the hide proper. Dog-fish of the larger size can be used to advantage, and the intestines of whales and porpoises produce fine quality leathers.

From the experiments conducted by American tanning firms, successful hides have been tanned from the skins of the fish mentioned, and in noting this fact we feel that the fisheries are destined to become of increasing value to the country. Much remains to be done in development work, but a great future is ahead of us in utilizing our fishery resources, not alone for good food purposes, but for producing leathers, oils, fertilizers, glues and fish meals for poultry and stock feed.

**GOVERNMENT STEAMER WILL BE NAMED
"CANADIAN FISHER."**

Some time ago the Canadian Fisheries Association wrote the Hon. C. C. Ballantyne, Minister of Marine & Fisheries, suggesting that one of the ships of the Canadian Government Merchant Marine be named either "Canadian Fisherman" or "Canadian Fisher." We are pleased to note that the keel for a new vessel to be called the "Canadian Fisher" has been laid at the Tidewater Shipyards, Three Rivers, Que. The

steamer will be constructed of steel and will have a deadweight carrying capacity of 5,100 tons, and will be ready for launching in the early spring of 1920.

We would suggest that the Fishing Industry of Canada recognize the compliment paid to the trade in the naming of this vessel by providing the ship with some suitable memento which may become an integral part of the "Canadian Fisher." This may take the form of a silver service or a brass plate suitable engraved and fitted in the ship's cabin. In the United States a popular form of sponsorship has been in providing the ship with her bells. Three bells—a large one for the fore-castlehead and two smaller ones for crew's nest and wheel-house—would be necessary. The Secretary of the C.F.A. would be glad to receive suggestions from readers of the CANADIAN FISHERMAN on the subject.

NATIONAL FISH DAY, NOVEMBER 11th.

National Fish Day this year, from all accounts, is going with a swing. The trade from coast to coast are responding nobly and preparing for a big day.

An attractive colored sticker for envelopes and parcels was produced under the auspices of the C.F.A., and members of the association have taken over 100,000 of them. The sticker is diamond shape and shows a fish across a maple leaf with the legend, "Canada's National Fish Day, November 11th. Boost, Eat Fish." The whole is printed in red, yellow, blue and green and is very striking.

Thousands of posters in French and English were printed and distributed by the association, and the trade are advertising generously in the local press.

In Montreal, the retail fish dealers are all competing for the silver cup to be presented by President Britain for the best display and the money prizes donated by Mr. Paulhus for the same purpose. On the evening of November 11th the fish trade of Montreal will gather together in a Fish Day Banquet.

A full report of the campaign and the prize-winners will be published in the November issue of the CANADIAN FISHERMAN.

RECENT FISHERIES LEGISLATION.

Oct. 1st, 1919.—Order-in-Council, Manitoba Fisheries. Pickerel fishing on Lake Winnipegosis extended to Oct. 4th this year only.

Oct. 1st, 1919.—Order-in-Council, Manitoba Fisheries. Changes in Lake Winnipeg fishing regulations, also reserving area west and south of a line drawn from Saskatchewan Point to the S.W. point of Reindeer Island and thence direct west to shore of lake, for hatchery purposes. No commercial fishing allowed in that area.

Oct. 1st, 1919.—Order-in-Council, Alberta and Saskatchewan Fisheries. Fishing on Lesser Slave Lake may be continued until full quota of 1,500,000 lbs. of dressed whitefish taken. Nets to be removed from water by Oct. 6th.

PISCATORIAL PARAGRAPHS.

Have you bought your Victory Bond yet?

On Oct. 21st, 19.9 cents per lb. was paid for halibut at Prince Rupert.

The Skeena River salmon pack for this season is valued at \$4,027,900. The sockeye pack was larger than usual, amounting to 180,000 cases.

If you wish to see Canada a great exporter of fish, you must make the desire come true by investing in Victory Bonds in order that we may extend credits to foreign importers.

Brazil is developing her fisheries. A special credit has been granted the Ministry of Marine to promote the industry, instruct fishermen and engage foreign specialists to assist in the work.

It is reported that the East Coast Fisheries Company of New York will establish a trawling base at North Sydney. The company have been using North Sydney during the past summer for landing salt fish from their trawlers.

Sir Arthur W. Brown, who with Aleoek, flew across the Atlantic, stated in Toronto recently "tons of fish from the Maritime Provinces could be landed in Toronto every day at less than one quarter of a cent additional cost." You have flown across the Atlantic, Sir Arthur, but if you can practically solve our fish transportation problems in this manner, we will consider that you have accomplished a greater feat than mere ocean flying!

At the convention of the American Fisheries Society in Louisville recently, Professor Prince, Commissioner of Fisheries, Ottawa, moved a resolution asking that a universal extension of the three-mile coastal limit be made by all nations with a view to protecting the inshore fisheries. The resolution seems to have awakened a storm of protest from British trawler fishermen who contend that theirs is the larger and more important industry and that the limit already in force is quite sufficient to protect the inshore fisheries.

The Department of Fisheries, Ottawa, has issued a neat and instructive pamphlet on the chum salmon, its food value and recipes for cooking same. The pamphlet was issued with a view to educating the Canadian consumer to use canned chum salmon, and should be given as great a distribution as possible through wholesale and retail grocers. Quantities can be had upon application from the Department.

Up to September 1,700 whales have been taken this season by the steam whalers operated out of the various stations controlled by the Consolidated Whaling Corporation, along the coast from Gray's Harbor to the Aleutians. The total catch for three British Columbia stations—Kyrnuot, Rose Harbor and Naden Harbor—this season is 275.

The word "rabbits" on board a Cornish fishing smack arouses the anger of the crew. Should the word be uttered as the boat is leaving the harbor, the speaker would stand a chance of being hurled overboard, as the mere mention of rabbits is believed to destroy all chances of a catch.

Try and think of the size of the creature whose mouth contained bone weighing 3,110 pounds. This

is said to have been the largest yield of whale bone ever taken from a single whale.

Scotland leads the rest of the British Isles in the fishing industry by a goodly margin, the Scottish population dependent upon the industry being practically as large as that in England and Wales.

CATCHING MANY FISH.

St. Thomas, Oct. 28.—Reports are coming in that there are huge catches of fish in Lake Erie near Port Talbot and the fishermen are experiencing great difficulty in disposing of the fish on account of New York refusing shipments while the strike is on. Most of the fish caught near Port Stanley and other Lake Erie ports are shipped directly to New York.

VISITS PRINCE RUPERT.

Prince Rupert, Oct. 24.—Morton Frewan, of London, who is interested in the fishing industry here, and also, in a farming colony on Queen Charlotte Island, arrived here last night from England.

A GREAT FIVE-YEAR-OLD SALMON.

Last spring a very large salmon was caught at Shieldhill, Kincardineshire, Scotland. It was a male and measured 4 feet 3½ inches in length, had a girth of 2 feet 4 inches, and weighed 56 lb. The size of the fish would in any case make it remarkable, but its age, as determined by "scale-readings," makes it more so. One would expect such a giant to be very old, since we know that plaice and cod and lobsters may reach thirty or thirty-five years, or even more. According to a letter from Mr. Pryce-Tannatt, the inspector of salmon fisheries to the Board of Agriculture and Fisheries, which is published in the Fishing Gazette (of London), the scales show that the fish was only five years old—viz., only one year of river life, in the early stage, followed by four years of life in the sea. Another remarkable fact, as brought out by the scales, is that the fish was a confirmed bachelor. The scales showed no "spawning-mark," so that the fish had never returned to the fresh waters to perform its sexual function. One sometimes wonders if the scale readings are always as trustworthy as is claimed for them.

OIL-ENGINED FISHING TUG AT PORT DOVER MAY BE IN COMMISSION THIS YEAR.

Capt. P. C. Robinson, of Port Dover, Ont., started in to build an oil-engined tug and expected ere this to have given the fishing-industry the benefit of his experiment. Then along comes the longshoremen's strike in New York and delays the whole business. Ordering the best engine available in Sweden, the shipment only left New York on Oct. 27th, so that it is hardly likely the craft will go into commission this fall. In the meantime Capt. Robinson is putting up a good hull ready for the engine and it is hoped to have the boat ready by the end of the year, so as to try her out in the present year's catch. The engine selected as a Bolinder—one that has given great satisfaction in the fishing industry in Europe and the same make was utilized in some of the monitors of the British Navy. The captain is the pioneer in essaying this class of fishing craft on the Canadian side of the Great Lakes and the results of his experiment will be awaited with considerable interest.

Prince Edward Island Fisheries and Fishing Notes

The late fall season for lobster fishing closed the 15th of October. It opened on August 16th. This was for a 150 mile section only of the coast, from Victoria to West Cape. Formerly the season for this section runs from May 24th to August 20th. The change which was experimental, was made on the recommendation of the Fishery Conference at Halifax last winter. In the opinion of Fishery Inspector Gallant it was a decided success. In quality, quantity and individual size the catch was superior to that of any previous year with the result that it has made the total yield for later spring and full fishing thirty per cent greater than the total for 1918. Oyster fishing opened on

October 1st. The catch in Gartawa West Rivers promises to be up to that of last year. In Malpeque Bay there was almost a failure last year owing to over fishing of previous years and a destructive disease, said to have been brought to the Island in the oysters imported from the United States by companies in an attempt to restock the beds. This year there is a fair catch of spat reported from the survivors, and the disease is said to have run its course so that by next year the once world famed beds will have their fertility in a measure restored.

above yard, almost all the timber being cut from the surrounding country. This spring Maedonald & Co. began the construction of another trading schooner and Captain Fitzgerald laid the keel of the Charlotte M. She took the water on September 10th and is now being fitted up at Georgetown for codfishing along the Nova Scotia coast. She is 50 tons burthen of the knock-about type, 73 feet over all, 16 feet beam, and 8 feet deep. She will carry 8 dories and have a crew of 10 men. Barring some small craft, this is the first fishing schooner to be launched for over twenty years. The building of others of the same type will likely be continued. Labor and material were procured on the Island. (See photo.)

"Vocational Education for Fishermen" was the subject of a very interesting paper read before a meeting of the Educational Committee of the Provincial Branch of the Navy League at Charlottetown recently by Mr. W. F. Tidmarsh, manager of the Portland Packing Company.

Mr. Tidmarsh after setting forth what is being done along the lines of fishing education in Scotland, the Netherlands, France, England, Japan (which leads the world in this work), United States and other countries,



Schooner "Charlotte M".

Smelt fishing with gill nets began on October 15th. Last year the business in the autumn months was affected by the long delay in shipment as the express companies had more than they could handle expeditiously and delays of ten days in the trip from the Island to New York were not infrequent with the result that a number of shipments had to be "dumped." This fall the railway gauge has been standardized over a portion of the road so that shipments of smelts could be placed on refrigerator ears at Summerside and forwarded to their destination without transfer. This should present a repetition of some of the losses of last year.

A new departure in the fishing industry was made on the Island this autumn when there was launched from the shipyard of J. A. Maedonald & Co. of Cardigan, the fishing schooner Charlotte M, built by Captain Charles Fitzgerald of Georgetown, one of her owners. Wooden shipbuilding which was dormant on the Island for many years was revived last year when a 200-ton trading schooner was launched from the

said that in Prince Edward Island vocational education of our fishermen should be undertaken by the Federal Government, the Navy League co-operating. The more intelligent young fishermen should be trained as instructors, and the methods should be such as to gain the interest of these young fishermen. When this is furnished they will soon find means of adding to their equipment whatever more is necessary.

Mr. Tidmarsh suggested that the Government should publish suitable bulletins freely illustrated, and also provide demonstrations by means of travelling instructors at suitable centres. Short courses suitable for selected leaders from all fishing localities, should be provided thereat. Moreover, courses in nature study having to do with the fisheries should be given in all public schools in fishing localities. Winter schools should be established wherever ten or twelve persons could be induced to attend, each into courses for young fishermen, (1) in fishing subjects and (2) in navigation and boat machinery.

The Provincial Department of Education, bodies of

public spirited citizens and school trustees should aid the Navy League and the Federal Government in the good work.

To begin with, competent instructors should be appointed to visit the fishing centres frequently during the summer, take statistics and give such special instruction to fishermen as they deem necessary. During the winter they should lecture on fishery subjects and instruct day and night classes at different fishing centres. This would give our fishing population a vocational education such as our farmers have received for many years to the great advantage of themselves personally and the state as well.

THE MUSTAD HOOKS.

We take pleasure in reproducing a photo of Mr. Gunnar Dahl, representing the famous fish-hook manufacturers, O. Mustad & Son, of Christiania, Norway. Mr. Dahl has just completed a tour of the United States and Canada in the interests of his firm, and since he left Norway last August he has covered Canada from Vancouver to Halifax.

Speaking with a CANADIAN FISHERMAN representative in Montreal recently, Mr. Dahl stated that the demand for Mustad hooks was greater than ever and with the resumption of direct overseas transportation, his firm could fill all orders promptly and up to any quantity.

Messrs. Mustad & Son first engaged in commercial fish hook manufacture in 1832 and adopted the "Key Brand" as their trade mark. Their business has grown to such an extent that they now claim to be the largest fish hook manufacturers in the world, producing several thousand different varieties of hooks suited to fisheries all over the globe. As their factory is located in one of the greatest fishing districts in Norway, they are able to keep in close touch with the fishermen's requirements, and their hooks, made from famous

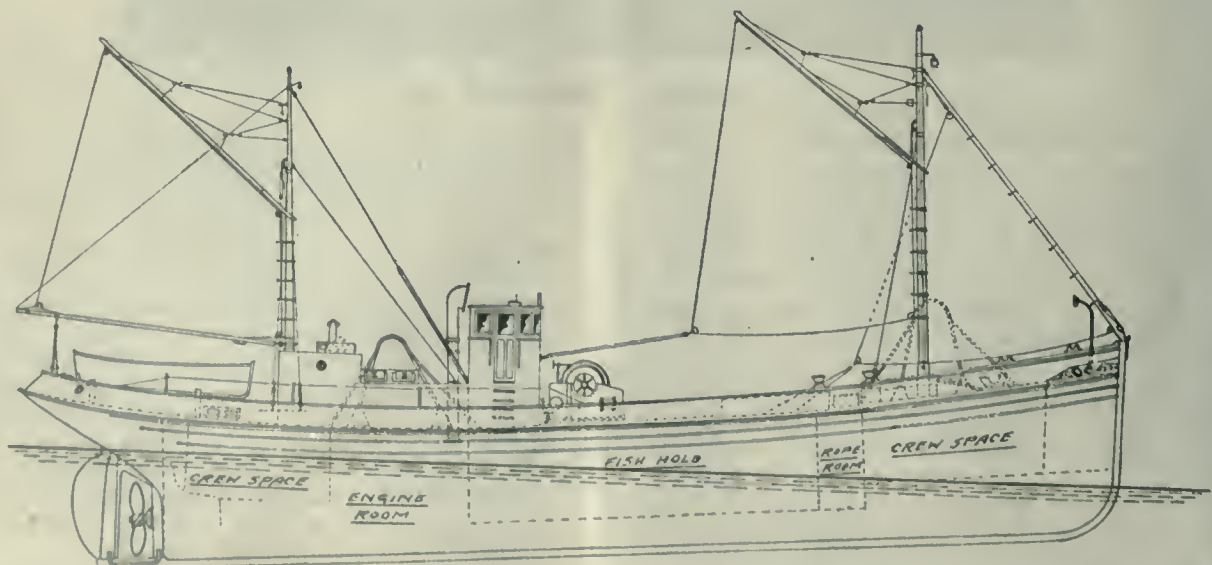
Swedish steel and tempered and finished by secret processes, have a great reputation among fishermen the world over. Their salmon, halibut and gravitation eod



and haddock hooks are well known to Canadian trawlers.

Mr. Dahl was much impressed with the Canadian fisheries and hopes to re-visit Canada again within a year or two. He will return to Norway in November.

A NOVEL AND HANDY FISHING VESSEL.



Combined oil engined trawler and drifter suitable for the Gulf of St Lawrence fisheries, designed by Walter Lambert, M.I.N.A., Montreal, Naval Architect to Canadian Fisheries Association.



PACIFIC COAST SECTION

"The Canadian Fisherman," Pacific Coast Branch, will be glad to have inquiries from any one who wishes information in any way connected with the fishing industry. We would also appreciate items of fishing news suitable for publication.

Address communications to F. E. Payson, Pacific Coast Manager, Industrial & Educational Press, Ltd., 507 Board of Trade Building, Vancouver, B.C., Canada.

WHY NOT INSTAL COLD STORAGE FACILITIES?

New Australian and New Zealand Steamship Service from Vancouver.

Just as soon as the SS. Canadian Raider is in commission, which will probably be about the end of November, the establishment of a direct service from British Columbia to Australia and New Zealand will be inaugurated. Such is the announcement of the Canadian Government Merchant Marine. The date of the beginning of this service will depend upon the delivery of the vessel from the builder's yards. This particular vessel is 5,100 tons dead weight, and contracts will be made on the basis of \$40.00 per 1,000 square of lumber, and \$20.00 per ton (weight or measurement, ship's option) on general merchandise. It is reported that all space is already taken for the first sailing.

While the ships are still under construction would it not be well to provide for cold storage facilities? There has always been a market for perishable goods such as fish, apples, onions and potatoes, etc., in these countries, and with facilities for carrying Canadian goods in cold storage and bringing back mutton and butter one of the great problems of the British Columbia fish man and rancher who have wished to do business with these other dominions would be solved. This is the kind of competition which British Columbia has been looking for, and it will do the whole country lots of good.

CANNED SALMON SHIPPED TO MARSEILLES DIRECT FROM VANCOUVER BY STEAMER.

The steel steamer Mount Cenis, for which Dingwall Cotts & Co. are agents, cleared at midnight Saturday after loading eleven thousand (11,000) cases of canned salmon and other merchandise. She had previously loaded part cargo at San Francisco and Seattle, and sails direct from Vancouver for Marseilles. Her regular run takes in Marseilles, Genoa and Alexandria. The Mount Cenis is 350 ft. long and about 5,000 tons register.

The next boat of this line is due in Vancouver in December.

SOCKEYE RETURNING TO KAWKAWA LAKE UP THE COQUAHALLA.

October 23rd the Dominion Fishery officials in Vancouver received word that sockeyes were heading up the Coquahalla River. Their destination appeared to be Kawkawa Lake. It is estimated that up to date 70,000 sockeye have entered the lake and are spawning. In 1915 the department planted the sockeye fry in Kawkawa, and the fish are returning on time to their place of origin after a cycle of four years.

The Coquahalla enters the Fraser near Hope, B.C. By making use of the streams and lakes forming part of the Coquahalla watershed the salmon will relieve the congestion at Hell Gate Canyon.

The Department has some men removing a log jam on the upper waters of the Coquahalla, to permit the sockeye to ascend to the upper reaches of the river. Up to date very few fish have been seen near the dam, practically all diverting to Kawkawa Lake.

CLOSED SEASONS ON SALMON IN B.C.

After Oct. 15 the Alert Bay district was closed.

After Oct. 18 the Queen Charlotte Islands was closed to salmon fishing.

Oct. 25.—Barelay sound was closed. This included the sound within a line drawn from Cape Beale to Amphrotite Point.

Oct. 25.—Pender Harbor district closed. This included Jervis Inlet, Toba and Bute Inlets.

NEWS FROM DISTRICTS.

Knight Inlet had a fair coho run.

Kingcombe Inlet had a very fair season all through.

The quality of Fraser River cohoes has been better than for some previous years.

Northern B. C. plants are all closed down, and crews are coming south as fast as they have the plants arranged for the winter. Practically all canneries report a satisfactory season. The packs at small plants being fair and others have had a good average pack.

B.C. HERRING MAY BE AFFECTED BY MEMORIAL BEFORE BRITISH CABINET.

The following are the chief points of the memorial before the British Cabinet, suggesting State aid for the herring industry:

(1) That the Government should buy up practically all the herrings landed at English ports during the coming season; (2) that fishermen should be paid at the rate of 50s per cran, and curers should be allowed 35s a barrel; (3) that a board should be set up, consisting of representatives of the curers and the Government, to arrange for the disposal of the herrings.

The total amount of money involved by the scheme is estimated at about £2,000,000.

Just how this would affect markets for British Columbia herring is problematical.

DROWNING AT NITINAT ENTRANCE.

Six Japanese fishermen lost their lives by drowning off the reef at the entrance to Nitinat Inlet. This is a particularly dangerous spot. It is exposed to the full force of the Pacific storms. The men were engaged in dragging a seine and it is supposed their boats, which were small ones, capsized while endeavoring to right the seine, which became entangled in some of the numerous rocks in that locality.

CANNED SALMON NOTES.

During the past month a large quantity of chums have been disposed of.

Enquiries are being received by salmon canners from all over the world for Canadian canned salmon. These enquiries are the result of the publicity carried on by the Canadian Trade Commission.

SALMON HELD BACK FROM SPAWNING BEDS.

Mr. John McHugh, resident engineer of the Dominion Fisheries, has just returned from a trip of inspection covering the east coast of Vancouver Island. He reports that salmon, principally cohoes and chums are unable to ascend the upper reaches of the rivers owing to the waters being very low. These are not the only streams that are low, as British Columbia had a very dry season and streams and lakes all over the province are very low this fall.

The fish are hovering about the mouths of the streams awaiting the opportunity to reach the spawning grounds.

At the present time the Department has about twenty to thirty-five men, mostly returned soldiers, divided into gangs, clearing the streams of obstructions to facilitate the passage of the fish.

Mr. McHugh's trip extended from Qualicum River to Black Creek, and he made a thorough examination of all the streams between those two rivers, including Courtenay, Tsolam and Rosewall rivers. The streams have been cleaned a considerable distance from their mouths and the men will continue these operations as long as the good weather continues.

CHUMS.

West Coast of Vancouver Island.

The production of chums on the west coast of Vancouver Island in 1918 was very heavy. This year there was three times the amount of equipment in operation, consisting of more than three times the number of men operating and much heavier equipment.

At this time it is impossible to give the total ton-

nage, but it is estimated that there will be 33 1-3 per cent less than last year. At least 75 per cent of the catch will go to the United States canners.

Although Barclay sound was closed to salmon fishing at 12 o'clock noon on Oct. 25th, there will be a week or ten days fishing on the outside.

OILS AND FERTILIZER.

The Consolidated Fish and By-Products Co., Ltd., with offices in Vancouver and plant at Heriot, B.C., started operations in 1918 and after careful investigation and operations put in an entire new plant during July, 1919. This was secured from the California Press Manufacturing Company of San Francisco and consists of cookers, press, driers, grinders and cooling system with necessary steam plant.

Capacity is 1½ tons of green fish per hour. It is a floating plant and can be moved if necessary. They are turning out both oil and fish meal for cattle, hog and poultry feed. The company is now contemplating the erection of other plants at different points along the coast.

SALMON SEALING IN GREAT BRITAIN.

Says the London (Eng.) Fish Trades Gazette: A meeting of the Executive Council of the N.F.A. was held recently. Considerable discussion took place on the subject of the sealing of salmon for sale during the close season. Mr. R. W. May, C.C., stated that in his opinion the system of sealing, if not entirely abolished, should be considerably altered, this being the opinion of both importers and exporters. Mr. Pratt (Liverpool) strongly supported Mr. May. It was stated that the shippers were willing for the sealing to be attended to on the other side, but it was doubtful whether such sealing would be recognised here. The question arose, "Why should frozen Canadian, qualla, or fall salmon, which usually came over headed and gutted, be sealed by the Fishmongers' Company," These kinds could never be mistaken for native salmon. Not only did the sealing mean that considerable expense was incurred, but in addition to the fish after being sealed not being placed back in the cases as originally received, "thawing out" to a certain extent was unavoidable, which tended to deterioration, and consequent depreciation in value.

Mr. J. M. Tabor remarked that the real reason salmon was sealed was to prevent home-caught fish being illegally sold during the close season. After further consideration, which was taken part in by Sir Edward Busk, Mr. R. Mowat, Mr. A. F. Ashton, Mr. A. Limburg, and others, the following resolution was proposed by Mr. Tabor, seconded by Mr. May, and carried unanimously:—

"That in view of the change of circumstances since the regulations were made, and in view of the distinct and easily distinguished differences between British salmon and imported frozen salmon, it is the emphatic opinion of this Association that the sealing of imported frozen salmon is unnecessary, especially in view of the great and unnecessary waste of labour involved in unpacking and repacking, the deterioration of the fish subjected to the process of sealing, and to the excessive expense incurred, and urges that the regulations enforcing this practice be cancelled forthwith, and the sale of imported frozen salmon be freed from all restrictions."

B.C. WHOLESALE FRESH FISH MARKET.

Independent halibut boats realized on an average of 18 to 20 cents per lb. for their catches at Prince Rupert during September and part of October. Twenty-three cents was paid for one small catch. This was the high record, 17 cents was the lowest.

Vancouver's highest price paid to an independent boat was 17¾ cents which was paid on Oct. 25.

Local ling cod has been scarce practically ever since the salmon season started, and the price to the fishermen has ranged from 8 to 14 cents during the past two months. Deep sea ling cod has been cheaper, owing to its being produced in larger quantities by the halibut steamers and schooners.

Soles and Plaice are scarce, but enough to supply the demand.

Herring being caught at Pender Harbor, and as a result the fresh fish dealer and smokers are getting a regular supply. Fresh smoked kippers are one of the specialties just now

Smelt have not started to run.

SHELL FISH MARKET.

Both the shell fish firms report a rather uncertain supply. Crabs are keeping at the old prices.

WHOLESALE FRESH FISH QUOTATION.

	Per lb.
Halibut, chicken	13e
Red Springs (heads off)	18e
White Springs (head off)	10e
Cohoos	16c
Ling Cod (plentiful)	8e
Grey Cod (searce)	5c
Red Cod (round)	5c to 6c
Smelt (searce)	10e to 12e
Soles and Brills	6c to 7e
Herring	4e to 6c
Skate	4e
Perch	6c

Shell Fish.

Crabs (searce)	(per doz.) \$1.10 to \$1.20
Shrimps	6c
Clams	2½e to 3c

Vancouver Prices Smoked and Salt Fish.

Smoked Sable Fish (black cod, whole)	14e
Kippered Sable Fish	20e
Fillets, Sable Fish	17e
Smoked Pink Salmon (whole)	20c
Kippered Salmon	18c
Bloaters	7½e
Kippered Herring	9e
Eastern Haddie	14c
Western Haddie	10c
Herring Chicks in bundles of 5 boxes	18e

Per bbl.

Salt Herring, medium, 900 to 1,000 count, 250 lbs. net	\$8.50
Salt Herring, medium, 1,400 to 1,500 count, 250 lbs. net	7.50
Salt Herring, large, 200 lb.	8.50
" " " 100 lb.	5.25
" " " 50 lb.	3.25
Salt Sable Fish (Black Cod), 200 lbs.	22.00
" " " 100 lb.	12.00
" " " 50 lb. (Kit)	6.25
Salt Pink Salmon, 200 lb.	15.50
" " " 100 lb.	15.50
" " " 50 lb.	8.50
" " " 50 lb.	4.75
Salt Grey Cod, 50 to 200 lb. per lb.	10c

CANNED FISH MARKET.

Sockeyes.

Nothing offering, as all this variety was disposed of some time ago. The fact that a good year was realized on the Skeena does not offset the poor season which hit other districts. The market is way short of sockeyes and other red varieties.

Cohoos.

A few scattering lots of cohoes are being held at \$12.25, but there is nothing of any amount to be had.

Red Springs.

Market was cleaned of these long ago.

Pinks.

Ten per cent or about 30,000 cases left. Holding at \$9.25 halves, \$8.00 talls. Export market has been very active recently.

Chums.

At one time this fall the American canners paid as high as 55c. each for chums. This meant that the Canadian canner simply let the canners to the south take all they wanted. Since then the price dropped to 40c. and as low as 30c. The latest report is that for want of cans the American canners are not taking as many chums as they were. The Canadian price for chums is \$6.75 as against \$7.00 for the United States prices.

Canned Kippered Salmon.

One-half lb. flats, \$9.75.

A delicious fish for luncheon and meeting with much favor. Gosse-Millerd are specialists in this line.

Canned Herring.

1 lb. talls (fresh)	\$5.00
1 lb. oval (sauce)	7.00
1 lb. oval (kippered)	7.25
½ lb. oval (sauce)	9.00
½ lb. oval (kippered)	9.25

Canned Pilchards.

One lb. talls, \$6.00.

Particular care has been taken in packing this season's fish and this palatable and nutritious food is bound to find a favorable place on the consumers list of canned fish.

Herring Market.

The outlook is not at all promising for the sale of Scotch cured British Columbia herring in Canada or the United States this season.

There will be a few barrels packed by one firm. These will be absolutely No. 1 stock.

Scotch cured herring have been marketed on the prairies in ten and twenty-pound packages. There is a market for packages of this size and no doubt British Columbia packers can ultimately compete with the Holland variety. What is needed is a persistent selling campaign, and getting the consumer to try out the British Columbia Scotch cure. Care must be used to warn the consumer when buying such packages that they must keep the fish covered with pickle and in a cool place at all times.

Dry salt herring are being cured this season by British Columbia firms where in past seasons it has been almost exclusively done by Japanese. The fact that the boycotting of Japanese trade by the Chinese is now being done may make it easier for the white firms to get into this market.

No doubt there is more or less risk in entering this particular field, but that should not deter responsible and energetic firms from getting a share of this enormous business, and in time, with care and a close study of conditions in connection with packing and marketing this particular cure of herring a larger business than ever should result.



"OUR PRINCE."

His Royal Highness the Prince of Wales became a Canadian Fisherman on Lake Nipigon, Ontario. We take pleasure in hailing him as a brother piscatorialist and a Prince of good fellows.



DIRECTORY OF CANADIAN EXPORTERS OF FISH PRODUCTS

ADRESSE DES EXPORTATEURS CANADIENS DE PRODUITS DE LA PECHE

DIRECTORIO DE LOS EXPORTADORES CANADIENSES DE PRODUCTOS PESQUEROS



CANNED FISH - POISSON EN CONSERVE - PESCADO EN LATAS

Canned Salmon (Pacific) of all Varieties.

Saumon en Conserve (Pacifique) de Toutes Les Variétés.

Salmón en lata (Pacífico) de todas clases.

Gosse-Millerd Packing Co., Ltd., Vancouver, B.C.
 Anderson & Miskin, Vancouver, B.C.
 O'Loane, Kiely & Co., Ltd. Vancouver, B.C.
 Wallace Fisheries, Ltd., Vancouver, B.C.
 Everett Packing Co., Everett, Wash., U.S.A.
 W. A. Ward & Co., Vancouver, B.C.
 D. Connor, Vancouver, B.C.
 Canadian Fishing Co., Ltd., Vancouver, B.C.
 Canadian Fish & Cold Storage Co., Ltd., Prince Rupert,
 Sidney Canning Co., Ltd., Vancouver, B.C.
 Maritime Fisheries, Ltd., Vancouver, B.C.
 B. C. Packers Association, Ltd., Vancouver, B. C.
 J. H. Todd & Sons, Victoria, B.C.
 H. Bell-Irving & Co., Ltd., Vancouver, B.C.
 M. Desbrisay & Co., Vancouver, B.C.
 Western Packers, Ltd., Vancouver, B.C.
 Cassiar Canning Co., Ltd., Vancouver, B.C.
 Rivers Inlet Canning Co., Vancouver, B.C.
 R. V. Wineh & Co., Vancouver, B.C.
 Anglo-British Columbia Packing Co., Ltd., Vancouver,
 B.C.
 British Columbia Canning Co., Ltd., Victoria, B.C.
 Kildala Packing Co., Ltd., Vancouver, B.C.
 St. Mungo Canning Co., New Westminster, B.C.
 Levesons, Ltd., Vancouver, B.C.
 Defiance Packing Co., Ltd., Vancouver, B.C.
 Gulf of Georgia Canning Co., Steveston, B.C.
 Evans, Coleman & Evans, Ltd., Vancouver, B.C.
 F. Griffin & Co., Vancouver, B.C.
 Glen Rose Canning Co., Ltd., Vancouver, B.C.
 Great West Packing Co., Ltd., Vancouver, B.C.
 C. L. Packing Co., Ltd., Vancouver, B.C.
 Eagle Harbor Packing Co., Ltd, Eagle Harbor, Howe
 Sound, B. C.
 Liverpool Canning Co., Ltd., Vancouver, B.C.
 Skeena River Commercial Co., Ltd., Vancouver, B.C.
 Port Edward Fisheries, Ltd., Vancouver, B.C.
 McTavish Fisheries, Ltd., Vancouver, B.C.
 Provincial Canning Co., Ltd., Vancouver, B.C.
 Kincolith Fisheries, Ltd., Vancouver, B.C.
 Western Salmon Packers, Ltd., Vancouver, B.C.

Portland Fisheries, Ltd., Vancouver, B.C.

Quathiaski Canning Co., Ltd., Vancouver, B.C.

Draney Fisheries, Ltd., Vancouver, B.C.

Preston Packing Co., Ltd., Vancouver, B.C.

Clayoquot Sound Canning Co., Ltd., Vancouver, B.C.

Nanaimo Canning & Packing Co., Ltd., Nanaimo, B.C.

Redopdo Canning & Cold Storage Co., Vancouver, B.C.

Lummi Bay Paeking Co., Ltd., Vancouver, B.C.

Gulf Islands Paeking & Canning Co., Ltd., Vancouver,
 B.C.

Nootka Packing Co., Ltd., Vancouver, B.C.

Puntledge Canning Co., Ltd., Vancouver, B.C.

Kimsquit Fisheries, Ltd., Vancouver, B.C.

Tallheo Fisheries, Ltd., Vancouver, B.C.

Loekport Canning Co., Ltd., Vancouver, B.C.

Canned Salmon (Atlantic).

Saumon en Conserve (Atlantique).

Salmón en lata (Atlántico).

A. & R. Loggie, Ltd., Loggieville, N.B.

W. S. Loggie & Co., Chatham, N.B.

Dominion Fisheries, Ltd., Halifax, N.S.

Canned Lobsters.

Homard en Conserve.

Langosta en lata.

Neville Canneries, Ltd., Halifax, N.S.

Banks, Ltd., Halifax, N.S.

Roberts, Simpson & Co., Ltd., Halifax, N.S.

Portland Packing Co., Charlottetown, P.E.I.

J. W. Windsor, Montreal, Que.

Fred Magee, Port Elgin, N.B.

W. S. Loggie & Co., Ltd., Chatham, N.B.

A. & R. Loggie, Ltd., Loggieville, N.B.

Dominion Fisheries, Ltd., Halifax, N.S.

R. O'Leary, Richibucto, N.B.

Scotia Fisheries, Ltd., Halifax, N.S.

O'Leary & Lee, Halifax, N.S.

Tignish Packing Co., Tignish, P.E.I.

Maritime Packers, Ltd., Montreal, Que.

Matthews & McLean, Souris, P.E.I.
Peerless Packers, Ltd., Halifax, N.S.
E. F. Hart & Co., Ltd., Halifax, N.S.
Edw. Chiasson & Sons, Etang du Nord, M.I., Que.
C. H. Mitton, Port Elgin, N.B.
R. J. Leslie Co., Ltd., Amherst Harbor, M.I., Que.
A. MacInnes, Wallace Ridge, N.S.
Herbert Journeaux, Port Daniel Centre, Que.

Canned Canadian Sardines (Atlantic).

Sardines Canadiennes en Conserve (Atlantique).

Sardinas Canadienses en lata (Atlántico).

Connors Bros., Ltd., Blacks Harbor, N.B.
Booth Fisheries Company of Canada, Ltd., Toronto,
Ont.

Canned Sea Trout.

Truite de Mer en Conserve.

Trucha de Mar en lata.

Gosse-Millerd Packing Co., Ltd., Vancouver, B.C.

Canned Herring (Atlantic).

Hareng en Conserve (Atlantique).

Arenques en lata (Atlántico).

Connors Bros., Ltd., Blacks Harbor, N.B.
Booth Fisheries Company of Canada, Ltd., Toronto,
Ont.

Neville Canneries, Ltd., Halifax, N.S.
J. S. Wells, Whitehaven, N.S.

Canned Herring (Pacific.)

Hareng en Conserve (Pacifique).

Arenques en lata (Pacífico).

Wallace Fisheries, Ltd., Vancouver, B.C.
Canadian Fishing Co., Ltd., Vancouver, B.C.
W. A. Ward & Co., Vancouver, B.C.
O'Loane, Kiely & Co., Ltd., Vancouver, B.C.
D. Connor, Vancouver, B.C.
Gosse-Millerd Packing Co., Ltd., Vancouver, B.C.
Anderson & Miskin, Vancouver, B.C.
Levesons, Ltd., Vancouver, B.C.

Canned Pilchards (Pacífico).

Pilchards en Conserve (Pacifique).

Sardinas arcnques en lata (Pacífico).

Wallace Fisheries, Ltd., Vancouver, B.C.
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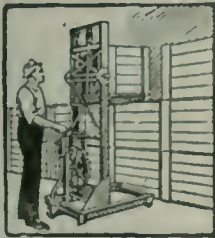
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Carruthers' made forty-nine trips out of Prince Rupert during the season, occupying 151 days, and landed over 2,000,000 lbs. of flounders, sole, witch, brill, eod, skate and a limited amount of halibut. Operations were limited because of lack of a market. There is, the season's operations of Prince Rupert show, no lack of supply. The bulk of the catch was marketed in the North West. The fish taken are the equal of any food fish, except salmon. They have more flavor than halibut and can be and are sold for much less than halibut or salmon. The successful operation of trawlers from Prince Rupert and Vancouver warrants the belief that eventually a large fleet of trawlers will operate from our ports, especially Prince Rupert.

Dr. C. H. Gilbert's contribution to the Department's Report on the life history of the sockeye salmon is most interesting. He conclusively demonstrates that, in the Fraser, at least, the sockeye returns to spawn in the identical tributary in which it was hatched. He demonstrates this, as he has in former reports demonstrated the age and maturity of the sockeye, by a microscopic examination of the scales. The scales of the salmon in general persist throughout life, and grow in proportion with the rest of the fish, principally by additions around its border. At intervals there is produced at the growing edge of the scale a delicate ridge upon the surface, the successive ridges thus formed being concentric and sub-circular in contour, each representing the outline of the scale at a certain period of its development. Many ridges are formed during the course of a year's growth. The numbers vary widely in different individuals and during successive years in the history of the same individual the number of ridges alone cannot be depended upon to determine the age. For this purpose, Dr. Gilbert has shown, that we must rely upon the fact that the fish grows rapidly during the spring and summer and less rapidly in the fall and winter. During the spring-summer growth the ridges are widely separated, and during the fall-winter they form a dense band of closely spaced ridges. Hence the scale is mapped out in a definite succession of bands of wide and narrow ridges, the two together constitute the record of a year's growth. Age may therefore be determined easily and reliably, as Dr. Gilbert has shown in previous reports published by the Provincial Department. Having demonstrated that the progeny of the Fraser sockeye return to that river to spawn, and that this is true of all the runs to the rivers and creeks in British Columbia, no matter how small or near together they may be. The fish return to the river in which they were hatched, Dr. Gilbert in the present paper presents further evidence by which he demonstrates that the sockeye runs to each separate section of the Fraser basin are as distinctively populated as though located in separate streams independently entered from the sea. This is shown by an examination of the nuclear area of the scale, that part of the scale that was formed on the young in the first year of their growth in fresh water. The report contains thirty-four plates of microscopic reproductions of the scales of sockeye, the majority of which show the centre of the scale only. Dr. Gilbert's present paper is of great value and interest, and adds materially to the series of reports on the salmon of the Province issued by the Department.

SEA FISHING RESULTS FOR SEPTEMBER.

Fishing operations, on the Atlantic coast, during September were conducted under rather unfavorable weather conditions. The aggregate catch of cod, haddock, hake, and pollock, however, was almost 200,000 cwts. greater than that for the same month in the preceding year. The totals are 786,000 cwts. this year, against 589,000 cwts. last year. Apart from an increased catch of 30,000 cwts. of pollock in Charlotte county, New Brunswick, the big aggregate increase comes altogether from Nova Scotia, Quebec, the northern counties of New Brunswick, and Prince Edward Island, all show decreased landings. Even in Nova Scotia, such important fishing counties as Guysboro, Halifax and Digby show somewhat smaller landings of these fish. Increases are recorded in Shelburne and Yarmouth counties, but the Lunenburg county offshore fleet is responsible for about four-fifths of the total increase.

The herring catch amounted to 100,000 cwts., against 57,000 cwts. last year. On nearly all parts of the coast smaller quantities were taken, except in Charlotte county, New Brunswick, where the catch amounted to 56,000 cwts. against 4,400 cwts. last year. Most of the Charlotte county catch was smoked.

There was an all-round increase in the mackerel catch of 15,000 cwts.; the greater part of which came from Inverness county, Nova Scotia.

The sardine fishery of the Bay of Fundy resulted in an increase of over 12,000 barrels, but the price remains low.

Lobster fishing was prosecuted during the month in the northwest half of the Strait of Northumberland, and 4,030 cases were added to the year's pack, which now stands at approximately 124,800 cases, against 101,900 cases last year.

Weather conditions were very favorable for fishing of all kinds on the Pacific. The salmon catch was almost 70,000 cwts. greater than that for the same month in the preceding year. The northern district gave an increase of 53,000 cwts. and the Vancouver island district one of 19,000 cwts., but the Fraser river district returns show a decrease of 3,000 cwts.

The halibut catch was greater by 7,000 cwts., while the quantity of flatfish landed was likewise greater by that amount. The quantity of pilehards, on the other hand, was about 50 per cent less than for September last year.

The total value of sea fish, at the point of landing on both coasts was \$6,113,723; an increase of \$1,354,600.

On the Pacific coast, one Japanese fisherman was drowned. On the Atlantic coast, a steam trawler valued at \$200,000 was sunk by an ocean liner, but no lives were lost.

British Columbia Canned Herring.

British Columbia is fortunate in having some of the finest herring that comes from the salt water, and is thus able to produce a brand (or several brands) of canned herring that is equal to anything on the market. Whether these are canned fresh, kippered or in sauce, it makes no difference as to the final product. Wholesale buyers will do well to study the British Columbia product. It will pay them in many ways. The men who are at the head of the firms that are canning the British Columbia herring are paying particular attention to the packing of this variety of fish, and they are getting most satisfactory results.



FREDERICK WILLIAM WALLACE
Editor

THE VALUE OF NATIONAL FISH DAY

There are always a few pessimists in an industry whose favorite croak is "What's the use of this?" or "What good will that do?" A close observer of human nature will invariably find that such men are not the most progressive in their business or profession, nor do they secure a full share of the trade which could be secured by them if their outlook on life was brighter.

Fortunately, we haven't many pessimists in our fishing industry and fish trade. There are a few, but these few are gradually being converted. They find that the state of "splendid isolation" and "playing a lone hand" doesn't pay nowadays, and that there are more material benefits to be gained by co-operation than by isolation.

We have heard some doubters ask. "What's the use of a National Fish Day? What benefit will accrue to the Industry by holding them and co-operating in the idea?" and lastly, "What do we, personally, get out of it and the money we spend in advertising propaganda?"

To answer this, every person engaged in Canada's fish trade must be cognizant of the fact that the development of our whole industry, domestic and foreign, depends upon Publicity. Publicity will sell anything, and even though an article be worthless it will sell it until the consumer recognizes its worthlessness. To sell our fish in the home market, we must educate the possible consumer. We have an article in our fish which we can stand behind as being a first-class food, reasonable in price, and of good quality, but experience has shown us that we cannot increase consumption without publicity. The Canada Food Board's success in increasing fish consumption in Canada, and in carrying out all its food production and conservation work, was based on publicity first, last and all the time.

National Fish Day is one of the best Publicity "stunts" we have. For a week or two before the Day, the newspapers are carrying reading paragraphs and advertisements about our fisheries and the coming National Fish Day. The housewife in her perambulation around town sees posters in store windows proclaiming that National Fish Day is on such-and-such a date and she is urged to celebrate the event by eating fish on that day. The aggressive fish dealer has his store specially fixed up a day or so before the event and he calls all his customers' attention to Fish Day, and on Fish Day the subtle suggestion of all this publicity leads the housewife into purchasing fish for one or other of the meals.

It is here where the fine points of the idea get home. The lady of the house remarks that they are having fish today because it is National Fish Day, and it is a safe bet that some conversation ensues on the subject of fish. On Friday, the fish meal would be taken as a matter of course, but on Fish Day it is an event

to be remarked upon. That this is the case can be proven by the fact that the sales of fish following Fish Day are greater than the usual daily average—a fact which we have substantiated by interviewing retailers in Montreal.

We are not going to state that the consumption of fish on Fish Day alone is going to pay for the time, money and effort spent in advertising, but the general effect, its subtle influence in bringing fish foods more prominently before the consumer more than pays in the long run. The fish consumption in Canada is increasing yearly. Retailers in the large cities are all doing well and their sales are gradually creeping up, and we will say, without fear of contradiction, that the increase is wholly due to the publicity which has been given fish during the past three or four years. If the trade in Canada were to co-operate in an advertising campaign such as that now being waged by the Paint and Varnish manufacturers, and with the assistance of the Federal and Provincial Fishery Departments, we could increase our fish consumption to proportions which would be permanent and which would more than repay the money and effort expended.

National Fish Day is our cheapest form of advertising. It is now an established institution, but we can make it a ten times greater success with closer co-operation on the part of the trade and more enthusiasm on the part of the half-hearted and pessimistic. Optimism and co-operation won the War just as it can accomplish any object. Pessimism and "lone hand" tactics are a form of low morale and absolutely futile. If the fishing industry of this country could be solidly banded together as a fraternity with optimistic faith in the product which they handle and the future possibilities, there is no limit to our expansion in any forward direction.

In the Canadian Fisheries Association we have a well established nucleus for aggressive and progressive fishery co-operation, and in its officers we have men, far-sighted and unselfish, who, if given support, could revolutionize for better, the whole trade as it exists today. Every publicity campaign worth while which has benefitted the industry has come from the Association, or has been directed by it. The publicity work of the Canada Food Board which did so much for the fishing industry would have gotten nowhere were it not for the C.F.A. National Fish Day is an Association idea which deserves whole-hearted support, and those pessimists in the trade who withhold it are merely cutting their own throats and throwing sand in the wheels of progress.

For the National Fish Day of 1920, the Association hopes to have the full backing of every individual interested in selling more fish, and we ask the reader of this article to question himself. "Have I given it in the past?" If not, then let him make a resolution to give it in the future.

A COLLEGE OF FISHERIES.

The Washington College of Fisheries, Seattle is an educational development which we have been watching with interest and pleasure. The *Canadian Fisherman* has been suggesting and urging the establishment of such an institution in Canada for years past, but up to the present no light of this nature has yet appeared in our piscatorial firmament.

As an addition to the long four and five year courses in fishery science which are more suited for fish culturists, the College is now announcing a short course which would be applicable to fishermen. The subjects include:—The Fisheries of the Pacific; Canning and curing of fishery products; Scotch and other methods of curing Herrings; Bacteriology of Foods; Classification, habits, etc., of Pacific economic aquatic species; Diseases and parasites of fishes; Elements of Navigation; Short course in gas engines for fishermen, and First Aid to the injured.

This syllabus is a most excellent one and well designed to be of the utmost value to the commercial fisherman and executive in the Pacific fishing industry. The period of the course is from January 2nd to March 25th; students must be 20 years of age, and the tuition fee is \$10, with minor amounts for field trips. Board and lodging can be secured from \$40 to \$60 per month. At the end of the course, examinations will be held and a certificate showing the work satisfactorily covered will be issued to each student. The Director and promoter of the Fisheries College is Prof. John N. Cobb—a well known ichthyologist and authority on commercial fishing who was for many years editor of the "Pacific Fisherman."

It should be possible in this country of ours to establish, in a limited way for a beginning, a fisheries course in three universities—one in Vancouver, another in Toronto or Kingston, and one in Halifax. Under a small Government subsidy, this could be maintained, and would undoubtedly be of great benefit to our growing industry.

We would commend this idea to the officers of the Marine and Fisheries Department and the Canadian Fisheries Association, and we would like to see the matter taken up and something started at the next Association Convention in Vancouver. With the excellent precedent set by the Washington Fisheries College, there should be no great difficulty in establishing similar technical educational opportunities in Canada.

FOOD FOR THOUGHT.

According to a bulletin issued by the U. S. Bureau of Fisheries, 25,356,789 lbs. of fresh, and 717,593 lbs. of salt, fish were landed ex vessel at the ports of Boston, Gloucester and Portland during the month of October 1919.

An analysis of this report shows that of the total amount of fresh fish landed, 5,879,368 lbs. came from the fishing grounds adjacent to the Canadian coasts—Cape Shore, Browns, La Have, Western, Quero and Grand Banks. Of the salt fish, practically all, or 707,543 lbs. came from the same grounds.

Scanning the report for the summer month of June 1919, we find the total landings to be 23,661,050 lbs. fresh and 2,693,907 lbs. salt, of which amount 11,635,-

988 fresh fish came from the grounds mentioned above. With the exception of 7,000 lbs. all the salt fish landed came from the grounds off the Canadian and Newfoundland coasts. These landings are all from American vessels.

It seems regrettable that we Canadians have not developed our adjacent fishing grounds to a greater extent, and, making use of our proximity, become the greatest fish producer of the Western North Atlantic. There is food for thought in the figures given above.

OUR EXPORT EDITIONS.

The Editor and Publishers of the "Canadian Fisherman" have received a host of congratulatory comments on the three Export Editions which we produced under the auspices of the Department of Marine & Fisheries the Canadian Trade Commission and the Canadian Fisheries Association. These comments came, not alone from our own people, and from contemporary publications, but also from abroad, and every mail brings us congratulatory epistles, and subscriptions, from foreign importers.

A large number of subscriptions came from Greece which would seem to indicate that that country is very much interested in supplies of fish from Canada. We would like to call the attention of our exporters to this country as being a field for considerable expansion. Others in as important proportion came from France, Italy, Spain and the West Indies.

The Export Editions, apart from their great value in educating foreign importers to the magnitude of Canada's fisheries and our export possibilities, have also rendered a service to our advertisers inasmuch as we have built up a foreign circulation which covers the West Indies, France, Belgium, Australia, New Zealand, South Africa, Holland, Denmark, Italy, Greece, Japan, China, and South America—paid subscriptions which are distinct from our free circulation to British Consulates and Canadian Trade Commissioners abroad. Our circulation in Great Britain and the United States always has been considerable.

Several of our advertisers have informed us that foreign enquiries are coming in as a result of the Editions. We would appreciate hearing from the trade of these enquiries as it gives us an idea just where the real interest in our exportable fish products centres and we will endeavour to stimulate that particular market.

FISH TRADES GAZETTE "VICTORY" NUMBER.

We congratulate our British contemporary the Fish Trades Gazette upon their Victory Number. Consisting of 192 pages, crammed with interesting articles, and full of an optimistic faith in the future which we like to see, the Victory Number is a production of credit to the publishers and a magazine one can pick up at any time and peruse with profit and instruction.

FISHERIES PUBLICITY AND TRANSPORTATION OFFICIAL APPOINTED

James H. Conlon, of St. John and formerly on the editorial staff of the St. John Globe, has been appointed to the position of fish marketing specialist, for the Department of Marine & Fisheries by the Civil Service Commission. Mr. Conlon will start upon his duties immediately.

RAILWAYS CO-OPERATED IN NATIONAL FISH DAY.

The Canadian Fisheries Association are indebted to the various Canadian Railway organizations for their cooperation in the National Fish Day campaign. The Canadian Pacific, Grand Trunk and Canadian National Railways featured fish in all dining cars, restaurants and hotels on November 11th.

AN INTERESTING PUBLICATION.

The "New England Fisheries" is a Boston fishing journal which we peruse with much pleasure. It is well printed and the subject matter is of varied interest. There is a fine literary quality in the editorials which bespeak to the initiated that the Editor is a man who sees the romance of his industry amidst the commercialism of it. This is as it should be, for when a man views his vocation with a realization of its romance and adventure, his interest, as a worker, is not likely to flag.

EXPORT EDITIONS BRINGING BUSINESS.

Several firms advise us that they are receiving numerous inquiries and orders for fish products from abroad. One Pacific firm received an order for 1,000 cases of salmon from a foreign importer who could only have heard of them through their advertising in the Export editions of the *Canadian Fisherman*.

CANADIAN ICE MACHINE COMPANY MOVES TO NEW QUARTERS.

The Canadian Ice Machine Co., Ltd., announce their removal to their new building on Villiers and Munition Streets, Eastern Harbor Terminals, Toronto, Ont.

PISCATORIAL PARAGRAPHS.

The Montreal Retail Fish Dealers Association are affiliating with the Canadian Fisheries Association.

Mr. T. H. Johnson, Manager of the Canadian Fish and Cold Storage Company, Limited, Prince Rupert, was in Montreal recently en route to England where he intends to spend Christmas and visit friends. He will return in January, 1920.

Yarmouth, N. S. "Herald" is agitating for the establishment of a cold storage plant at the port. There is no doubt but what the fishing industry of that district would benefit, and we would like to see them get it.

One of the most indefatigable workers for the good of the fishing industry is Mr. J. A. Paulbus, Vice-President of the C. F. A. He devoted a great deal of time and effort to the recent National Fish Day—of which he is the sponsor—and recently gave two lectures on the fisheries before the Montreal Chamber of Commerce and a meeting of French-Canadian students. Knowing the amount of work he has done, and from which he gets no direct benefit, we would commend his efforts and voice the appreciation and thanks of the trade.

Vancouver and Montreal certainly did well in the National Fish Day celebration. Reports from other centres show that the dealers all made a good showing, though not on as elaborate a scale as the two first mentioned cities.

A new shore wireless station is being erected and equipped by the East Coast Fisheries Company at its terminal wharves in Rockland, Me. This radio station will contain equipment powerful enough to communicate with the company's vessels operating on any fishing banks in the North Atlantic.

THE WHY OF A TRADE MARK.

Why do most of the large Fish firms of to-day guard their trade mark so closely?

Why do they advertise the phrase "Beware of Imitations" so extensively? What is the real reason:

A trademark on a product is like a seal on a legal document. It signifies the manufacturers willingness to assume the responsibility, should the product fail to accomplish what is claimed of it. It stands for good faith, as well as carrying with it the principles and ideals of the manufacturer. It means that every detail in the preparation of the product on which it appears has been O.K.'d.

Almost any kind of a trademark can be designed. It may be clever, artistic, attractive or unusual and can be placed on practically any kind of product. But the value of the trademark will only be determined by the value the consumer places on the product.

The consumer cannot use the trade mark, he cannot wear it or even eat it. . . . BUT he can use, wear or eat as the case may be, the article on which the trade mark appears. If he is satisfied with his purchase the trademark will always remind him of a good investment, and will repeat it.

The fact that the trademark is placed voluntarily on the manufactured product, is, in itself, an indication of the makers confidence and good faith, that same will live up to expectations.

Therefore it is a symbol of identification, and after a while becomes to stand for something—a certain grade, a quality, efficiency and even service, and the more the consumer knows about your trade mark, the greater your sales will be, and a greater certainty of repeat orders.—C. H. Armstrong, Jr.

TRAWLING IN THE ADRIATIC.

At the invitation of the Italian Government, Sir John H. Irwin and Dean of Guild Holmes, Aberdeen, two leading representatives of the Scottish fishing industry, have left for Rome to advise the Government in regard to a scheme for the development of fishing in the Adriatic. It is proposed to form a company with a capital of £100,000 to develop the industry, and £50,000 of the sum required will doubtless be raised in Great Britain.

NATIVES BUY CANNED FISH IN SOUTH AFRICA

In South Africa there are from six to nine million natives and a peculiarity of the native buying canned fish is that each member of the family buys for himself. He or she buys a can of fish and at the same time a package of biscuits and then goes out and eats it by himself or herself.

Mr. Egan the South African Trade Commissioner suggested that representatives of the canners should be sent to South Africa and conditions in marketing methods be studied, then packages of canned fish packed to meet the demand. The native is generally well supplied with funds and if his taste for canned salmon of the lower grades was cultivated there is no doubt that a big market would be opened up. He believes the market is there for chums and it simply remains to be developed.



Prize Winning Window Display, Levesque's Market, Montreal



National Fish Day



Annual Piscatorial Event Successfully Celebrated.

Canada's National Fish Day, on Tuesday, November 11th, went "over the top" as successfully as the Fish Day of the year previous and the Publicity Committee of the Canadian Fisheries Association are very much pleased at the enthusiastic and whole-hearted manner in which trade and public supported the movement from one end of Canada to the other.

Last year, the Association had the powerful backing of the Canada Food Board and war-time meat-saving to ensure the wonderful success of the Fish Day of October 31st, 1918—a day in which over two and a half million pounds of fish were consumed throughout the Dominion—but this year, the Association had to carry out the campaign on its own initiative and with its own resources.

The C.F.A. members throughout the country were

bulletined by the Secretary and urged to make Armistice Day, November 11th, noteworthy also as Fish Day, and 50,000 posters printed in English and French were distributed by the C.F.A. to the trade from Vancouver to Halifax. A very attractive sticker for affixing to parcels, letters, billheads, etc., was produced under the Association auspices and 100,000 of these were purchased by members. Arrangements were also made by the C.F.A. to have publicity paragraphs regarding fish and Fish Day written up and sent to the newspapers of Canada by one of the Press News Agencies, and the Department of Fisheries, Ottawa, also co-operated in this manner to good effect. Individuals in various centers augmented these efforts by advertising in their local papers and by special circulars to their customers.



Prize Winning Inside Stalls—Harrison's Fish Market, Vancouver

Fish Day in Montreal.

In Montreal, a silver cup was donated by President A. H. Brittain for the fish store credited with having the best display of fish, ingenuity in advertising, and general neatness and cleanliness of appearance. This was augmented by two purses of gold—one of \$15 and another of \$10—donated by Mr. J. A. Paulhus, Chairman of the Publicity Committee and father of the National Fish Day, and \$10 apiece from Mr. D. J. Byrne, Mr. W. R. Spooner, and the "Canadian Fisherman."

Thirty stores entered the competition in Montreal and Mr. F. W. Wallace, Secretary of the C. F. A., was asked to judge them. A dinner was held in the evening of Fish Day at the Queen's Hotel and forty or fifty guests were present, including representatives of the wholesale and retail fish trades, the Chambre de Commerce, and the Press.

to be in. The matter of financial standing did not enter into the judgment at all, and I have given 100 per cent marks to stores with only one window and stocks amounting to a hundred dollars or so, as well as to palatial establishments with large stocks and many salesmen. The proprietors of the small stores did their best with the means at their disposal and I think they are fully entitled to be recommended for First Prize as well as those in uptown districts who have elaborate fixtures and skilled window dressers to help them. I may say here, gentlemen, that we owe a vote of thanks to two large Montreal dealers, Messrs. Henry Gatehouse and Stanford's Ltd., both of whom asked me to strike their names off the list of contestants as they both wished the smaller dealers to be given a chance to win the cup and money prizes."

Six stores were judged eligible for first prizes and

FISH DAY DINNER, MONTREAL



Back Row, left to right, Messrs. Wallace, Spooner, Byrne, Ethier, Paulhus, Brittain, Mayor Leclaire, Mason, Gravel.

In making his report on the results of the competition, the judge, Mr. Wallace, said in part:—

"About thirty stores advised us of their intention to compete for the prizes and the committee in charge of the National Fish Day campaign asked me to look them over and judge the best along the lines of cleanliness, neatness, display and advertising, and neatness in the person of the salesman. In going the rounds yesterday from Verdun to Maisonneuve, and from Point St. Charles to Rosemount, I was very much impressed by the appearance of the fish stores—in fact it was an eye-opener—and I am safe in prophesying that with such aggressiveness it won't be long before Montreal will support as many fish stores as butcher's stores, and the vendors of meat are going to have a hard run with the vendors of fish.

In judging the stores I examined them from the stand-point of a consumer in the district I happened

it was decided to draw for the possession of the cup and the other rewards. The drawing resulted as follows:—

Brittain Silver Cup, won by Montreal Public Market.
Purse of \$15 in gold won by Mount Royal Fish Market.

Purse of \$10 in gold won by Besner's Market.
Ten dollars each were won by Levesque's Market, Tremblay's Fish Market and Wellington Fish Market. It must be understood that any of the above stood a chance of winning the cup and all are rated as first prize winners—the outstanding excellence of their displays fully meriting that honor.

It was suggested, and approved, that for future years the national fish day should be preserved for the same date, so that those who supported Canada's fish industry should be able at the same time to celebrate their memories of those who had given their

lives in the great war, in which the naval work of the Empire had counted so many fishermen, who had subsequently joined the fleet in its protective work.

There was an excellent attendance, representative not only of the wholesale but the retail fish business of Montreal and adjoining municipalities, while it was emphasized that the fish industry was one of the leading productive businesses of the Dominion, and one calculated to not only keep down the high cost of living, but assist in the export of food products to aid the Mother Country and the Allies in their fight for existence.

Mr. A. H. Brittain, president of the Canadian Fisheries Association, took the chair, and with him at the

and the necessity of increasing the consumption of sea foods in the Dominion in order that other supplies might be furnished for export.

Other toasts were replied to by Mayor Leclair, Ludger Gravel, and J. L. Ethier. Mr. S. H. Mason, speaking on behalf of the retail fish trade, made a humorous and forceful speech in which he proved that the butcher had no right to be in business at all. "The Almighty gave us cows for milk, sheep for wool and swine for the reception of devils. When he undertook to feed the multitude, he fed them on fish and bread, and his disciples were selected from fishermen first. Some of our prominent fish retailers started out in life as butchers, but saw the error of



Prize Winning Display. Mount Royal Fish Market. Montreal

head table were Messrs. J. A. Paulhus, Mayor J. A. Leclair, Verdun; Ludger Gravel, J. L. Ethier, D. J. Byrne, W. R. Spooner, S. H. Mason and Capt. F. W. Wallace.

Keep Same Date.

After an excellent dinner, in which Canadian fish played the primary part, the toasts were responded to. Mr. Paulhus, for "Our Fisheries" expressed the idea that the National Fish Day had become a national institution, coupled with the hope that it would be fixed for the 11th of November, in order that it might become part of a celebration in which the toilers of the sea had taken so ample a part. Mr. Paulhus pointed out the importance of the fishing industry to Canada,

their ways and became out-and-out fish dealers; another was a plumber, and he, too, reformed and became a fish dealer, and yet another was a dispenser of alcoholic stimulants over a mahogany counter, and when he repented, he became a fish salesman." Mr. Mason held to the biblical allegory of the loaves and fishes, and his slogan for the Montreal retail fish trade is to have as many fish stores as there are bakeries. He stated that the consumption of fish benefitted greatly by publicity and advertising and he enthusiastically endorsed the National Fish Day idea. He also stated that the fish trade was growing larger in Montreal every year and was at present in a healthy condition.

CANADA'S NATIONAL FISH DAY IN VANCOUVER

The Vancouver Branch of the Canadian Fisheries Association helped to celebrate Canada's National Fish Day by doing everything possible to get the public to eat fish.

Street cars, delivery wagons and windows were well placarded several days previous to November, 11th. Prizes were awarded both for fresh and cured fish and canned fish displays. The winners in the competition held for such displays were as follows:—

Winners.

National Fish Day Competition.—Fresh and Cured Fish Displays.—Best Window Displays.

First Prize.—Chris. Johnson's Economy Fish Market, 71, Hastings Street West.

Special Prize.—Grocerteria No. 9, 1035 Robson St.

The Canadian Fisheries' Association wishes to thank all those who made displays and entered the competition.

One thing this year which created quite a little friendly competition and discussion was the canned fish display and next year it is proposed to make this more general all over Canada. This matter will be taken up before hand so that firms in the East and on the prairies will come into this competition more generally than in previous years. British Columbia, Vancouver especially, was somewhat handicapped this year on account of the date coming on armistice day, November 11th, and on Friday night previous to the Tuesday which Canada's National Fish Day



Prize Winning Canned Fish Display, A. & C. Grocery, Vancouver

Second prize.—Progress Market, 803 Granville Street. Honorable mention: Burns' Market, Limited, 627 Hastings Street West; Returned Soldiers' Fish Market, Walter Newport, Prop., 4308 Main Street.

Best Inside Stall Display.

First Prize.—Harrison Fish Market, Stalls 27, 28, 29, Cal-Van Market.

Second Prize.—Pacific Coast Fish Market, Stall No. 8, Cal-Van Market. Honorable mention: Spencer's Fish Market.

Best Display Canned Fish.

First Prize.—A. & C. Grocery, Granville Street.

Second Prize.—London Grocery, 627 Hastings St., West.

Third Prize.—McTaggart's Grocery, 794 Granville Street.

fell on, the Provincial authorities by an Order-in-Council declared Tuesday, November 11th a Provincial holiday. This put somewhat of a damper on the retail trade all over the Province and caused a mix up on this account, not only in the fish business but in other lines, as merchants had generally prepared to keep open on this day. Adjustments in judging the competitions, etc., had to be made at the last moment to coincide with Tuesday being a holiday.

Vancouver feels that there should be a change in the date of the National Fish Day and that the West Coast should be taken into consideration more generally when this date is being set by the National Association. This will probably be done when the deciding of the next National Fish Day is considered.

A peculiarity of the National Fish Day in British

Columbia this year was that the increased sale of cured and canned fish was more general than the increased sale in fresh fish, although there was an increase in both. It was also felt that in justice to all there should be two sets of prizes awarded for the best displays of fresh fish. That for store window displays and for inside stall displays there should be separate prizes as conditions were entirely different. This was done and the results were satisfactory to all concerned.

Several photographs that were taken of window displays were not successful as the photographer slipped up on his job and as a result it is impossible to show the best window display that was made this year in fresh fish.



Interior, Mount Royal Fish Market, Montreal

RAISE RESTRICTIONS FROM PACIFIC SALMON FISHERIES.

Recommendation in Interests of Returned Men.

Ottawa, Nov. 25.—The Department of Naval Services has under consideration a number of changes in the regulations covering the salmon fisheries in British Columbia. Acting on recommendations of a commission, headed by Mr. Sanford Evans, which investigated conditions on the Pacific coast, the department has been protecting the salmon fisheries by limiting the number of salmon canneries and the number of fishermen engaged in the industry. Since the termination of the war, and the return of the soldiers from the front, many representations have been made to the department on the advisability of throwing this fishing open to all comers, so as to give the returned soldiers a proper opportunity of engaging in the fishing industry, which is one of the main occupations in British Columbia, and which should give good returns to those engaged in its pursuit.

Most of the fishermen favor this policy, and a number of firms who are anxious to engage in the cannery business would be glad to see the restrictions abolished. If this were done, it would be necessary to protect the fish by means of weekly and annual close seasons, and by increasing the area in which the commercial fishing is prohibited.

Representations are being received in the Department from various fishing interests regarding the regulations to be adopted, and these are being carefully considered by the Minister before deciding a change of policy.

PRINCE RUPERT WANTS CHANGES IN SALMON REGULATIONS.

Ottawa, Dec. 6.—Mr. M. P. McCaffrey, president of the Board of Trade of Prince Rupert, B. C., has arrived in Ottawa in connection with the question of throwing open to their subjects generally the northern British Columbia salmon fisheries. This matter is now under consideration by the Government, which is obtaining information from the various interests concerned.

Mr. McCaffrey takes the ground that fishing ought to be thrown open to all British subjects and to British subjects only. It would be as easy, he contends, to prevent overfishing by limiting hours and seasons for fishing, as by the present arrangement, where private rights in what is essentially the property of the state have been allowed to grow up. The present arrangement, he says, gives what is in effect a monopoly of the fishing to men who sometimes do not even reside in the locality and employ Asiatic labor largely.

ONTARIO GOVERNMENT FISH HATCHERIES.

Toronto, Dec. 2.—According to a report just issued by the Game and Fisheries Branch of the Department of Public Works, the exigencies of the Great War stimulated things, the development of Ontario's fishing resources and fish-culture. In 1916 there was but one Government fish-hatchery, at Mount Pleasant, near Brantford, with a capacity of 2,000,000 eggs. In 1919 there are practically five hatcheries under Ontario Government control, with a total capacity of 375,000,000 eggs, including the species of speckled and lake trout, whitefish, herring and pickerel. The hatcheries are in Mount Pleasant, Port Arthur, Fort Frances, Normandale and Port Carling. The last names is a private hatchery, but for the past two seasons has been operated by the Ontario Government for the benefit of the Muskoka waters. The Port Arthur plant keeps Lake Nipigon replenished with trout, whitefish and game fish, while the Fort Frances plant supplies the Rainy River waters with fresh stock. The Normandale hatchery is situated on Lake Erie, in Norfolk County.

BY-PRODUCTS OF FISH MONEY MAKERS.

According to W. S. Smith of the Automobile and Supply Co., Limited, the by-products of the fish industry are big money-makers. "Before the war America had a wonderful reputation for extravagance," he said, "but now fish will help us tell the world that the pre-war indifference will not return. One of the old habits was to use only such parts of the fish as could be used for food. Now, food is but a small part of the fish. Big companies have been formed to extract the fish oil and make fertilizer from all parts of the fish formerly thrown away. The by-products of the fish industry have more than doubled their value in the past few years. When fish are caught they are sealed and the entrails, head and tail removed. All the moisture in the form of fish oil is extracted under hydraulic pressure. The dry material is then put into large cylindrical vats with an intense heat retort at one end. After a short period this material is removed from the vats, packed in bags and sold as a very valuable fertilizer. The motor truck is practically responsible for the development of the well-paying fish industry on the Pacific Coast. The bags of fertilizer are easily taken care of but the transportation of oil from the small coastal towns has been a problem."

Dr. Knight's Retirement From Academic Work

(By A. BROOKER KLUGH.)

The retirement of Dr. A. P. Knight deprives Queen's University of one of her ablest teachers, but fortunately his connection with the university as a research worker remains unsevered, as he continues to represent Queen's on the Biological Board of Canada. The academic loss to the university is a gain to the fisheries of Canada as Dr. Knight now intends to devote his entire time to scientific investigation of fishery problems.

Dr. Knight was appointed as Professor of Animal Biology and Physiology in Queen's University in 1892,



Dr. A. P. Knight

and in 1898 when the Biological Board of Canada was established he was selected as the university's representative on the board.

In his long career of twenty-seven years as a teacher in the university Dr. Knight has done much to further the interests of fisheries research, as he has ever kept the importance of this work before his students. Some of these students, through his influence, have taken up the practical work of marine biological

investigation, while hundreds of others, who are now scattered throughout the country as teachers, doctors, and in other responsible positions, have an appreciation of the needs of the fisheries and form the nucleus of a body of public opinion favourable to any move which will promote the efficiency of the fisheries of the Dominion.

As a teacher Dr. Knight had few equals and no peers. Clear and lucid in exposition, with a faculty of firmly impressing fundamental conceptions, and treating any subject with which he dealt synthetically, he was successful not only in imparting information but in stimulating his students to think for themselves. He ever bore in mind that, to use one of his own expressions, "you must crawl before you can run," and thus he unfolded a subject so gradually that his students found no difficulty in following him.

Dr. Knight is an indefatigable worker. For many years he has given his winters to teaching and his summers to marine biological investigations. Among the practical problems upon which he has worked are the effects of sawdust on fish-life, the efficiency of various kinds of bait in line-trawling, and the conservation of the lobster.

The success which Dr. Knight has attained in his investigations is due to the fact that he possesses in so marked a degree the prime requisites of the research worker—enthusiasm, initiative and persistence. As an example of persistence one has but to review his work on the lobster, to see how difficulty after difficulty has been surmounted, how discouraging results have been used as stepping-stones to new methods of attack, until he has reached conclusions which are of fundamental importance to the lobster industry.

All Dr. Knight's friends were delighted to hear him proclaim, at the banquet given by the staff of Queen's to the professors who are retiring this year, "I am just 21 years old," and all who have followed his work in the interests of Canadian fisheries wish him many years of happiness and usefulness in his chosen field.

PORTO RICO MARKETS.

(Reported by A. Escudero & Co, San Juan.)

Nov. 19.—The Steamships "Cornelia," "Helen," "Brazos," and "San Juan" have arrived to our port since our last report. The Steamship "Coamo" is expected in any minute.

All these ships brought the fish that were held at the Piers in New York, owing to the longshoremen strike, and while the market was bare of fish, the quantity brought by these four steamers is large enough to supply our needs for a couple of weeks.

We beg to quote our market as follows:

	Per cask of 448 lbs. net.
Large Codfish	\$66. to \$68.
Medium Codfish	\$63. to \$65.
Small Codfish	\$60. to \$62.
Pollock and Haddock	\$49. to \$51.
Hake	\$36. to \$38.
Cusk	\$48. to \$50.
Bloaters (smoked Herrings) 25/30 lb. gross, other weights in proportion.	\$1.75 to \$1.90 per box of
Split Herrings, 13 to 15 per barrel of 200 lb. net guaranteed.	\$15. to \$17.
Dry salted, sun dried Split Herrings, in cases of 200 lb. net guaranteed	\$15. to \$17.



Our Fishing Industry

(This article was written by Miss Allison Fitzrandolph, age 13, of Bridgtown, Annapolis Co., Nova Scotia, as a school essay. We would suggest that fishing companies give prizes to their local schools for similar essays on the Fishing Industry, with the object of interesting the young people in this natural resource.—Ed.,C.F.)



Canada's fisheries are the most extensive in the world. Nova Scotia formerly ranked first among the provinces, but since British Columbia's large salmon output in the last few years she now takes second rank. Her fisheries are almost equal to those of New Brunswick, Prince Edward Island, Quebec and Ontario together.

The entire sea-coast of the Maritime Provinces from the Bay of Fundy to the Straits of Belle Isle, which cover a distance of 5,600 miles, is more than double that of Great Britain and Ireland. Over most of this the Nova Scotia fishers hold sway. So Nova Scotia has a good deal of sea coast and great deal of water to fish in.

There are not less than twenty varieties of edible fish beside some used for other purposes. There are two different kinds or classes of fish. There are those with bones or bony matter outside in the form of a shell, as lobsters and clams, called mollusks, and those with the bones inside the skin, as cod and salmon. The following are some of the most important common fish: Cod, haddock, mackerel, herring, sturgeon, halibut, shad, salmon, pollock, gaspereau, flounder, bass, trout, hake, porpoise, smelt. Our principal mollusk fish are lobsters, clams, mussels and oysters.

The cod, lobster, mackerel, haddock and herring, in the order named, are our most important edible fish. Vessels of about one hundred tons each are used in catching cod; which are caught with a hook and line. Cod are sold mostly cured and dried and bring a good price. From their livers are extracted an oil which for medicinal purposes is of great value and importance. The lobsters are caught in an altogether different way. For catching lobsters, traps are made of slats of wood and covered with nets. These are called pots and they are attached to a buoy and anchored on the bottom. There is a hole in one end into which the lobster goes and then cannot turn round to come out. The lobster fisheries employ 3,600 men and there are 266 canneries in which they are canned and from which they are ex-

ported to all parts of the world. The annual value of the lobster fisheries is \$2,850,983.00. Haddock are sold fresh, cured and dried like cod fish. They are also cured in peat smoke and canned and sold as finnan haddies. This process originated in Findon, Scotland. Mackerel and herring are caught in nets moored not far from the shore. Mussels, dog fish and others of less importance are used for fertilizer. The principal inland fisheries are salmon, bass, trout and eels. These are exported chiefly to the United States in cold storage.

Salmon, shad, bass and smelt are caught along the rivers of Nova Scotia. Weirs made from brush woven together tightly and sometimes wire with small mesh is used. These are built along the banks of the river, and when the tide comes up the fish swim round inside them, and when it goes down it makes them prisoners.

From sturgeon and porpoise an oil of great value is obtained. A few years ago sturgeon were caught here in our own (Annapolis) river. The oil was extracted and the roe was cured and sent to the big cities where it brought a fancy price. After about three years of this work the sturgeon disappeared. So now they cannot be caught.

There are fishing laws forbidding people to fish at certain seasons of the year. If this law is broken a heavy fine is imposed.

Some of the finest natural beds of oysters in the world are to be found in Nova Scotia. The present yield is about 4,000 bushels only, nevertheless it is claimed that there is a greater area for oyster beds in Nova Scotia than even in the State of Maryland, which has produced in one year 10,559,012 bushels. This was taken from statistics the Government issued in 1915.

For a good many years our fish have been exported to Spain, Portugal, and Mediterranean ports, beside the West Indies and a good many South American ports. Every year our fisheries employ 23,368 men, 819 vessels and tugs, 10,842 sailboats and 2,000 petrol boats. The annual value of the Nova Scotia fisheries is \$10,092,902.





New Brunswick Fisheries

By COLIN MCKAY



New Brunswick with a coast line of 600 miles and numerous rivers and lakes has extensive fisheries. In 1917 there were 21,799 persons engaged in the work of the provincial fisheries, of which number 1,664 were employed on vessels and carrying smacks, 14,008 in boats, and 6,127 in canneries, Smoke-houses, etc., ashore. The product was valued at \$5,656,859. The average return is small. But few people in New Brunswick depend on the fisheries for a livelihood. Most of the men who engage in the fisheries for a short period are lumbermen, farmers, sailors, etc. A limited number of fishermen make big money for the time they devote to the fisheries.

New Brunswick has a few small vessels operating in the Gulf of St. Lawrence, but the great bulk of the catch is taken by small boats or weirs. The principal varieties of fish caught in the provincial waters are herring, sardine herring, cod, haddock, hake, pollock, salmon, smelts, gaspereaux, shad, trout, pickerel, oysters, lobsters and clams. Other species occur, but are not caught for commercial purposes. For lobsters and oysters there is no difficulty about finding markets. Lobsters caught on the Bay of Fundy shore are usually shipped fresh to the American market, but on the North Shore the bulk of the lobster catch is canned and shipped to markets the world over. New Brunswick oysters find a ready sale in Canadian markets. At one time the farmers dredged oyster beds to secure fertilizer for their fields, the result being that the natural beds are not now as productive as they ought to be. Experiments in artificial cultivation of oysters have been too recent and on too small a scale to materially increase the yield.

New Brunswick possesses the only sardine fisheries in Canada. Carried on in the waters of Passamaquoddy Bay and around the Islands and shores of the Bay of Fundy, this fishing is of considerable importance, but is subject to ups and downs. This year the schools of small herring have been simply enormous. At the outset of the season the weir fisherman demanded \$20 a hogshead for sardine herring; at present the price is \$4.00 and \$4.50. The Maine factories are busy and the quality of the fish this year should guarantee of a good pack of sardine herring. Only one factory on the Canadian side—that of Connors Bros. at Black's Harbor—is in operation this summer; and owing to the difficulty of getting oils and tins it is only working to about half its capacity. The big canning factories at St. John and Chamecook have not started operations up to the present. Many Canadian fishermen have dismantled their weirs, owing to the low prices and lack of demand. It is surprising that Canadian fishermen

have not learned to put up sardine herring in small packages, packed in salt, sugar, and spices, as is done in Germany and Norway. Germany sells small herring treated with spiced pickle under the name of anchovies at high prices. Some Canadian wholesale dealers pack these small herring in barrels with salt, and ship them to New York, where the fishmonger treats them with a preparation of salt, sugar and spices, repacks them in small pails and sells them to the foreign population. But sardine herring packed by the barrel cannot possibly reach New York in the best of condition.

Connors Bros., who had a considerable pack of sardines in oil left over from last year, are now making shipments as far afield as Argentine, and Australia. They report an increasing demand from England and France, where they have to sell their product under the description of "Little Fish in' Oils." The situation in New Brunswick this summer shows the need of new markets for sardine herrings packed in oil. And judging from the reception given the N. B. product in England the opening of new markets is only a matter of enterprise and time.

At Grand Manan and also on the North Shore an increasing number of men and girls are employed in the industry of smoking herring. A very good product is prepared, and a growing market is being found in the West Indies and other southern countries, as well as among the foreign population of American cities. Some of the girls employed in this business at Grand Manan this summer are making from \$6.00 to \$10.00 per day.

Enormous quantities of herrings, suitable for pickling, have been available this summer, but the prices offered for pickled herring have been so low that the majority of fishermen have declined to pay the high prices for salt and take the risk of carrying a stock of pickled herring. Whether they have been wise remains to be seen. The Canadian market for pickled herrings is small, and the wholesalers evidently have no great faith in the foreign markets. Scotland has had a good herring catch, and has been carrying considerable stocks of pickled herrings put up under a government guarantee. And the Scotch have not so far been able to sell many herrings to Germany, where before the war they had an important market. It appears that the Norwegians had during the war put up something like 10,000,000 barrels of pickled herrings under a guarantee of their government, and that they are now disposing of this great surplus to the Germans. Unless the Scotch can secure access to the Russian market, which before the war absorbed more pickled herrings than any other market, they will have

a surplus to dump on the American market. Not for many years have pollock appeared in the Bay of Fundy in such numbers as this summer, and in spite of low prices many pollock fishermen working with small boats have been making \$300 and \$400 a month. Hake have been very abundant and cod fair. The gaspereaux or ale-wives' catch this season was much below the average. These excellent food fish are poorly appreciated, and the bulk of catch, heavily pickled, is usually sold through New York houses to the West Indies, mainly to Hayti.

An apparent drawback of the fish business in New Brunswick is the fact that some of the more important wholesalers rely on New England or New York houses to dispose of a good deal of their fish, and are seldom in direct touch with their consuming markets. Their object is to make a turn-over as soon as possible, and they do not look for small orders. Their method of business may be safe, but as they do not buy much from the fishermen unless reasonably certain of a sale in a short time, the fishermen are not encouraged to steady production. Possibly the C. F. A. might be better employed than trying to work out some system of co-operative marketing, making possible the encouragement of steady production and enabling the wholesalers here to be more independent, and to reserve for themselves profits or commissions which now often go elsewhere.

MARITIME FISHERIES.

MARGARET McLAREN.

Is anything which brings fifty-two million dollars into circulation in Canada worthy of consideration? The Canadian fisheries are the means of doing this annually, and if serious consideration were given their operations along the lines of development, there is no doubt but that the commercial life of Canada would benefit by the addition of another fifty million dollars yearly.

From the time when the pioneer fishermen of Canada began to reap the harvest of the sea, until the abrogation of the reciprocity treaty in 1866, there was a steady gain in the volume of the Maritime fisheries; since that time they have merely been kept going, as it were, with antiquated appliances for carrying on the work, and no modern plants for the curing of fish worth speaking of in connection with what should be in existence. The development of the fisheries of Canada owes its present condition to the steady increase in value of the fisheries of British Columbia and of the great lakes. The Maritime fisheries, the real treasure house of Canada, are allowed to languish, business enterprise not seeing what it really is the business of public policy to promote, i.e., the development of those fisheries which have the boundless unsurveyed acreage of the North Atlantic with its prolific grounds, or banks, adjacent to the coasts of the Maritime provinces, ever at the disposal of the fisherman. We are urged to consume as much fish as possible for patriotic reasons. And too, although many do not seem to realize it, we have a National Fish Day. All very well, but we in Canada cannot consume the extra volume of fish that would be ours if the government would try development along the lines of modernity in the fisheries. Thinking of all the industries dependent upon the fisheries for life and the thousands who get employment thereby, it seems

strange that a market, whose door is ajar only just across the way, is apparently unthought of.

This market is in the United States, whose fisheries cannot supply the demand. There is, in that great republic an enormous immigrant population, whose chief article of diet is cured fish. It is their accustomed food from childhood, it is cheap, consequently they clamor for it. This trade was supplied by importation from Norway, but, owing to war conditions, and the scarcity of tonnage the supply from that source has practically been cut off. In Norway, all appliances in modern use were in operation for the curing of fish. In Canada there is room for the building of great plants for this work. There is a harvest off our coasts at all seasons awaiting the garnerer, and all that is necessary is equipment, and advertisement of our wares in the United States to develop the greatest industry the world has ever seen.

We can supply the whole world with fish if it were necessary. Owing to war conditions, too, there will be a scarcity of flesh producing animals in Europe for some time. There, after tonnage has been adjusted, conditions will be promising for the development of a great trade. Some person facetiously called the fisherman an "Aquaticist." This term is an equivalent of "Agriculturist." But, unlike the farmer, the fisherman has no seeding time, or long months of arduous cultivation ere his harvest can be reaped. It is always harvest time with him.

Nothing of our treasures of the land can compete with the golden hoards held by the sea in the North Atlantic. We have intrepid lads enough who will harvest it for us, but business enterprise must awaken on shore, to bring out the glitter of the ruddy gold, and to pour its golden stream into our National life.

FIELD WORK SUSPENDED FOR WINTER MONTHS.

An early snow fall and very heavy rains has closed down construction work at Lakelse Lake hatchery on the Skeena watershed. On account of rainfall, the outfit working in the vicinity of Quathiashi cove have had to discontinue. During the summer the department have had men clearing the streams and already coho salmon have been seen seven miles up Black Creek from the river's mouth, the freshets enabling the cohoes to reach the highwaters.

The men engaged in clearing of streams and other field work along Black Creek on the East Coast of Vancouver Island have also been withdrawn for the season.

John McHugh, resident engineer of the Dominion fisheries office has returned from an inspection of conditions in the sockeye streams at Kamloops and at Merritt. He says that few sockeye appear to have passed through the fishway at the Adams River dam, the majority apparently, having spawned in Shuswap Lake. In the Nicola and Coldwater Rivers a fair run of sockeye is reported for the season.

UNUSUAL WHALING SEASON.

The four whaling vessels, the Kodiak, Unumak, Paterson and Tanginak, returned to Seattle during the middle of October after a most unusual season's work in Alaska. The total catch reported was 412 whales. The fleet made headquarters at Akutan in the Aleutian group.



When The Herring "Set In"

By S. T. PAYSON



As all fishermen know the most important article in a fisherman's life is **Bait**. On Brier Island, sometimes the fishermen are held up for days or weeks for want of bait and great is the joy when the squid or herring "set in." The richest harvest of our Bay of Fundy island is of course the winter lobstering and to be successful there must be lots of herring well spoiled to tempt the dainty (!) appetite of Mr. Lobster.

Well, when the season was passing and still no great number of herrings had come to hand everybody was getting pretty nervous. It meant so much trouble to get bait and even if a man could afford to buy there might be no one who could sell.

So you may imagine the excitement when on a Sunday the word went around that the herring had "set in".

Driven by pollock, which in their turn were chased by dog fish the harbor front was a flashing struggling mass of living silver.

Sunday morning! And we were a Sabbath keeping people. There were no Sunday picnics or sports on the Island. Everyone went to church and young and old to Sunday School.

What should we do? There was a fortune flapping at our doors. Hundreds of dollars worth of Bait and it was Sunday. The men fidgetted and fumed—the wives looked anxious—the children were frantically excited. Along came the village Patriarch—the chief speaker in the little church—the guide, philosopher, and friend of every earnest soul among us.

"Well Sir," said Amos Barton, "What shall we do—look at the fish—"

"What shall you do!" cried the Patriarch—"Haven't you been praying for weeks for Bait and here the Lord has sent it right to your feet. Gather

it in—gather it in! It's God's free gift to you and your children—why waste time?"

Such a clatter as men and women, boys and girls raced to make ready! Soon the waterfront was alive with fishermen—many standing rubber-booted in the water with dip nets—dipping the herring into dories—others in their dories, dipping, dipping until the dories were on the point of sinking—then carefully paddling to their warehouse to fling their silver load on the floor and back again for more.

Children stood bare-legged in the water and threw the herring ashore and the rocks and beach were soon alive with the flapping spoil. It went on for hours until the retreating tide swept the pursuers and pursued back to the deep bay—leaving many a larger pollock and haddock stranded where in their eager pursuit of the smaller herrings they had ventured into too small an aperture and were unable to get back. The warehouse floors were heaped with silver mountains of herrings—which had all to be packed in hogshead, generously sprinkled over with salt to await the lobstering season, or put down in ice for ordinary bait.

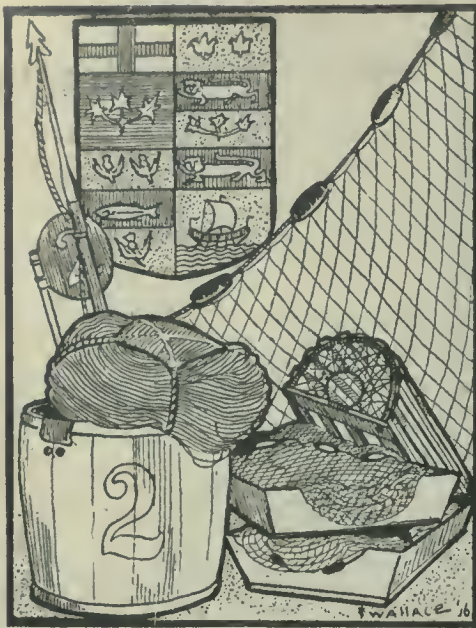
"How much did you get," I asked one fisherman.

"About \$100.00 worth," he answered, "but I took a net."

He and his son had taken opposite ends of an ordinary net, walked into water and let the net down behind the squirming mass and then simply dragged it ashore. It was full, solid, and several neighbors had to lend a hand to land it.

The next tide brought the herring back but not in such quantities and for two or three days there was a fairly good harvesting of bait, after that they disappeared, but enough had been gathered in to ensure a prosperous season. "God's good gift" to the fisherman is bait.





The Sanitary Canning of Fishery Products

By JOHN N. COBB

(Director College of Fisheries, University of Washington. Author of "The Canning of Fishery Products," "The Pacific Salmon Fisheries," "The Pacific Cod Fisheries," "The Fisheries of Alaska," &c.)



Canning, as here understood, is the art of preserving a food through sterilization by heat, and maintaining it in that condition in a hermetically sealed container. By this method the atmospheric air has, so far as practicable, been driven off, the germs in the food have been destroyed, while the entrance of other germs or putrefactive organisms is prevented.

The Pacific Coast of North America is the center of the most stupendous fish canning industry to be found anywhere in the world. Some 16,000,000 cases, each holding about 48 pounds of fishery products, were packed last year, the products including salmon, herring, sardines or pilchards, tuna, yellowtail, cod, mackerel, bonito, clams, crabs, shrimp, mussels, etc. In order to develop and carry on a business of this magnitude the inventive genius of the continent was early requisitioned, with the result that to-day some of the most wonderful and intricate machinery and appliances are used in handling and packing the fish, thus forming a remarkable contrast with the conditions which prevailed in the early plants, when nearly all the operations were performed with the hands and a few primitive tools. This improvement has especially tended toward more sanitary methods of handling and packing the product, but in order to thoroughly appreciate the wonderful change which has occurred it will be necessary to go back and trace the early history of the art of canning.

While war is probably the most wasteful and destructive agency in the world, it is also sometimes the inciting cause for some extremely useful inventions, and one of the most noted and useful of these was the discovery of a method of canning food products in hermetic containers. During the Napoleonic wars it was found extremely difficult to prevent heavy wastage and spoilage in foods used in military and naval stores, and late in the eighteenth century the French government offered a bounty of 12,000 francs to anyone for a method of preserving perishable food products.

Nicholas Appert, a Frenchman, worked on the problem from 1795 until 1804 before he attained any considerable measure of success, which consisted in heating the product and then hermetically sealing the container. Encouraged by this he continued his efforts, using many different substances, and succeeded so ad-

mirably that in 1810 he published the results and was rewarded with the prize.

The method of Appert was essentially as follows: The products, which in some cases were partly cooked, were packed almost to the top in glass bottles, sufficient water added to cover, the bottles corked loosely and placed to their necks in tepid water, the heat being raised gradually to a temperature between 190 to 200 deg. F. (88 to 94 deg. C.) in the center of his bottles, the maximum being 212 deg. F. The length of the cooking depended upon the character of the food and varied generally from 30 to 60 minutes. The bottles were then corked securely and allowed to cool slowly in the bath.

Appert thought that the exclusion of outside air after applying sufficient heat to the food was the reason it kept when treated according to his method, and for some years those who followed him also fell into the same error. It was not until the advent of the new science of bacteriology that the true explanation was found. It is now known that all foods, water, air and the containers, are bearers of bacteria and other micro-organisms; that the effect of the heat is to destroy them, and that the hermetic container merely excludes those from without. This science has also shown that all organisms are not killed at the same temperature; that some spores possess great resistance, and that some products bear types of organisms which are more resistant than others. The spores of some bacteria are able to sustain life after continuous boiling from 6 to 10 hours, but spores as yet examined are destroyed at a temperature of 250 deg. F. if this temperature be applied to them for 20 minutes. This heat must come directly upon the spores, and to this fact is due the difference in time and temperature required to process different foods. Fish products, as a rule, contain highly resistant organisms, besides which the majority of these foods are of such a consistency that the heat penetrates them very slowly. As a class they require the heaviest process.

Appert's discoveries were soon applied commercially on a small scale in Europe, but it was not until the substitution of tin cans in place of glass bottles was successfully accomplished that the general process of canning was extensively applied. These seem to have

been first used commercially in 1820, and in 1823 a patent for them was issued to Pierre Antoine Angilbert. Preserved fish had been placed in tin cans for many years previous, but not in the manner known at present as canning.

Angilbert's method was very similar to the process in vogue up to the introduction of the sanitary can. A definite amount of the article to be preserved, with some liquid, is placed in a tin can, over which the cover, containing a minute hole, is soldered, and the can and contents are placed in a bath of boiling water. Through the small hole the air and steam escape from the can in boiling, and the heat also kills the bacteria. The hole is closed with a drop of solder, and the process of cooking is completed.

While no material change was made in the process until the introduction of the sanitary can, a number of modifications and improvements were made and adopted, principally in reference to shortening the time of cooking, permitting the heated air in the can to escape, softening the bones of small fish, filling and handling the cans, etc., all found necessary because of the great development of the industry.

Appert used an open water bath for heating his bottles, and in this method a temperature of 212 deg. F. (100 deg. C.) is the maximum obtainable. Packers of fish soon found that while it was necessary that the product be thoroughly cooked, yet in a majority of cases it was equally important that they remain as short a time as practicable under the action of the heat. In order to secure the necessary increase in temperature, first salt was added to the bath, by which a temperature of 250 deg. F. was obtained, and later calcium chloride. With the latter the heat could be made to reach 250 deg. F. (121 deg. C.). But, unfortunately, these agents were each prejudicial to the metal of the can and the kettle, causing them to rust or wear rapidly, and by using the maximum of heat secured by the calcium chloride process the cans often burst, with dangerous effects to the workmen.

About 1874 steam-tight cylinders, or retorts, were introduced, in which the cans were subjected to a very high temperature by introducing steam from adjacent boilers, thus shortening the time of exposure to heat and removing the liability of burst, the outward pressure in the can being counterbalanced by the inward pressure of the steam in the retort. This was first applied in the canning of oysters. At first steam alone was used, but it was soon found that with some products the contact of the steam with the can resulted, to some extent, in scorching the contents that lie next to the inner surface of the can, and this was remedied by cooking the cans in water heated by steam.

To remove air from the can, or "exhausting" as we now term it, it was formerly customary to leave a minute hole in the top, heat the can and contents by nearly submerging the can in boiling water, and then solder the small hole. This was later improved by hermetically sealing the cans and boiling them then venting them to permit the expanded air to escape, when they were resealed and the process of cooking completed. The latter was the method in vogue for many years in salmon canneries.

There are certain products, such as lobsters, shrimps, crabs, cod, etc., which attack the tin coating with more or less vigor, resulting in a darkening of the flesh, and at the same time form salts of tin which are objectionable. It is necessary to keep these products from coming in direct contact with the tin, and this is accomplished by either lining the inside of the can with wood,

parchment paper, or cloth, or by coating or lacquering the inside. The latter type of can is known as the "enamel-lined" can. This enameling is accomplished in two ways—by baking the lacquer on the sheet and by spraying it on the inside of the finished can.

For years complaint has been rife that the acid and solder used so profusely in making and sealing the cans contaminated the foodstuffs. This led finally to the adoption early in this century of what is known as the sanitary can, or method, which is now universal on the Pacific Coast. With the sanitary can solder is used in making the side seam, but the methods of manufacture are so superior that practically no trace of solder is seen on the inside. No solder is used in sealing up the ends, a thin layer of cement being used instead. The sealing is done so well, however, that it is probable in most cases the cement could be dispensed with, but it is retained as an added precaution. The making of these cans has reached such a point of perfection that manufacturers guarantee all above two to the thousand, and these imperfect cans are usually due to the solder not making a perfect union or to defects in crimping or double seaming. With the use of automatic capping and tipping machines there are fewer leaks than formerly occurred when the work was done by hand; leaks in sanitary cans are generally due to poor adjustment of the rollers. In the can-making plants leakers are recognized, as a rule, by testing in the hot bath. Leaks may be very small, even microscopic in size, and, therefore, difficult to detect, or pieces of the content may be driven into the opening and seal it for the time. Leaks invariably cause swells.

In the sanitary can method as used in salmon canneries the cans have their tops crimped on loosely, after which they are exhausted in an exhaust box. In one type, a common one, this is a long box about 30 feet in length, in which are three endless-chain belts running side by side. Under and over each belt are steam coils, and under each of the lower coils are single pipes, which through small holes throw jets of live steam upon the coils, creating an intense heat. The cans pass along the first belt, are then transferred to the second belt, on which they return to the entrance of the box, whence they pass to the third belt, and continuing along this to the end pass out to the double seamer, the whole operation occupying from 5 to 15 minutes. One style of exhauster has 10 ovals formed by the pipe, and the cans pass along these from side to side of the exhaust until discharged at the far end. Upright exhausters, in which the cans travel along a spiral, are also in use. By this means the contents of the can are heated and the greater part of the air exhausted, which is the object of the first cooking in the retort under the method formerly in general use.

A recent invention, which the inventor claims will do away with the steam exhaust box, and thus save a large amount of valuable floor space in the canning "line," is the power vacuum pump, known as vacuum exhausting machine, by means of which air is exhausted from the cans, accomplishing the same purpose as the steam exhaust box. Some of these machines have been in active use for several seasons, with most satisfactory results.

The cans then pass to the double seamer, which fastens the cover on tightly with a double seam or crimp. The cans are then piled on coolers and run into the retort for the one cooking they are to receive instead of the two cookings as in the old style method.

In but few, if any, industries is the packing of a food product surrounded by so many safeguards and precautions as in the canning of fishery products. Most of the products are obtained from the salt waters when they are in the finest possible condition. This is especially true of the salmon, as they are usually not caught until they come in from the sea on their way to the spawning grounds, and are then sleek and fat in preparation for their long fast after reaching fresh water.

Most fish are caught in waters adjacent to the canneries, and are generally taken from the apparatus in which caught by dip nets or steam brailers, thus obviating any necessity for rough handling of the fish. Self-unloading scows are used at many plants and with these the fish are allowed to slide naturally from the scow onto the elevator, thence to the fish floor. A few plants have the fish floor so elevated that the fish slide naturally toward the cleaning machines, thus saving time and the useless and unsanitary piercing of the body with the pew.

In the case of salmon the fish are fed to the iron Chink, a wonderful machine which cuts off the head, tail and fins, eviscerates them and thoroughly slimes and cleans them, both inside and out, ready for the cutting, instead of as in the old days, the fish having the pass through a number of hands, which was far from sanitary. It is the firm belief of certain canning machine makers that the time is near at hand when no human hand will need to touch a salmon from the time it is caught until it is sealed in the can, and that this is no idle dream is manifest when I state that at present the fish are touched but twice during this long operation.

The floor of the cannery and fish house, and the machinery, is cleaned and polished every evening, and oftener should the supply of fish be cleared away sooner. Live steam under pressure and water are used in doing this work, and not a trace of dirt or debris is left, after which the floor is salted. Not even the most fastidious housewife could object to its appearance after the workmen get through, and I have heard more than one lady visitor in a cannery exclaim under these conditions, "how sweet and clean it smells and looks," than which there could be no higher praise.

Not all of the sanitary improvements have been confined to the packing end. The rough-boarded, unpainted cluster of buildings which once masqueraded as a cannery plant is but rarely seen in these modern days. The up-to-date cannery is built either of corrugated iron or wood, with iron or shingle roof. Great care is now exercised in the location of the plant to see that it is over running water or on high ground having good natural drainage. The gurry is usually run into scows for transporting to fertilizer plants. In some places the gurry is dumped into the water and the heavy tides prevalent on this coast carry it out to sea, but it is hoped eventually to save and render all this, thus making the waters adjacent sweeter and better.

In the modern cannery especial provision is made for the cleanliness and comfort of the employees. Sinks, with running water, are placed at convenient spots that the workers may wash their hands often, and sanitary drinking fountains are installed to take the place of the common drinking cup. Proper separate toilet and clothes rooms for both sexes (where employees may change from street to working clothes and vice versa) are provided, and the latter have lockers in which clothes can be stored. Some plants

provide special suits for its employees, and manicurists to keep their hands in order. The various states now fix the general conditions under which labor may be performed, as age limit, number of working hours in a day or week, and physical condition. In most canneries no person afflicted with a skin disease is employed. In the States the packing of sardines is supervised by the National Canners' Association, whose experts stamp all canned fish which are inspected by them. This year (1919) the Association took charge of the sanitary inspection of salmon canneries on the Pacific Coast, and next year expects to inaugurate a thorough inspection of the pack as well. In Canada the inspection of canned fishery products will probably soon be begun by the government, and it would not surprise me to see the same inaugurated in the United States in the near future.

Line fishing results, on the Atlantic coast, during the month of October were somewhat handicapped at times by unfavourable weather, the presence of gray-fish, or dogfish, and the scarcity of bait at several places.

The aggregate quantity of cod, haddock, hake and pollock landed was 59,000 cwts. less than that for October last year. The totals are 173,000 cwts. this year, against 232,000 cwts. last year. The landings in Nova Scotia alone fell 60,000 cwts. short of those of last year, notwithstanding very greatly increased landings by trawlers at Port Hawkesbury in Inverness County, and at St. Peters in Richmond County. In Quebec there was an increase of 10,000 cwts. in the catch of cod, haddock, etc.; while in New Brunswick, as a whole, there was a shortage of 13,000 cwts., although the catch of pollock in Charlotte County was 12,000 cwts. greater.

The quantity of herring taken was about the same as in October last year, but the value was less.

There was an increase of 3,000 cwts. in the mackerel catch, attributable mainly to Inverness Co., N.S.

The catch of oysters amounted to 7,752 barrels, against 7,924 barrels in the preceding October.

The sardine fishery produced rather less than half the quantity taken in October last year, as a result, no doubt, of the diminished demand for the canned product.

Lobster fishing was continued during the first part of the month in a section of the Strait of Northumberland, and a catch of 4,150 cwts. was landed as a result of the two weeks' fishing. The year's catch is now approximately 126,064 cases, against 101,900 cases last year.

Weather conditions were rather unfavourable in southern British Columbia, and only fairly good in the northern district during the month. There was an increase of over 20,000 cwts. in the salmon catch in the northern district, but in the southern and Vancouver Island districts, mainly in the former, there was a decrease which caused the salmon catch for the whole province to fall short of that in October last year by 40,000 cwts.

The halibut catch exceeded that of last year by 8,000 cwts. Flatfish also gave an increase, amounting to 5,000 cwts.

The total value of sea fish, at the point of landing on both coasts, for the month of October was \$3,027,708, against \$3,912,987 in October of last year. This shows a decrease of over \$800,000, which is mainly due to the diminished salmon and sardine values.



PACIFIC COAST SECTION

"The Canadian Fisherman," Pacific Coast Branch, will be glad to have inquiries from any one who wishes information in any way connected with the fishing industry. We would also appreciate items of fishing news suitable for publication.

Address communications to F. E. Payson, Pacific Coast Manager, Industrial & Educational Press, Ltd., 507 Board of Trade Building, Vancouver, B.C., Canada

Duty Free Distillate For Fishing Vessels

Through the instrumentality of the Vancouver Branch of the Canadian Fisheries Association working in conjunction with the Canadian Manufacturers Association the following recent order by the Department of Customs has been issued.

Department of Customs,
Collector of Customs,
Vancouver, B. C.

Sirs:

Referring to the late Commissioner's telegram to you of 12th, December last as follows:

"Until otherwise ordered Customs officers may allow gasoline and petroleum to be delivered ex-warehouse as ships' stores to vessels clearing for the salmon deep sea fisheries, the same as allowed to vessels clearing for the halibut deep sea fisheries. Please instruct outports concerned accordingly."

It has been represented to the Department that the fishing vessels operate at great distances from the Customs ports and considerable time is lost in proceeding to your port to obtain supplies of gasoline and distillate.

It appears that the fishing companies have certain vessels acting as tenders to carry gasoline and distillate from the ports of entry to the vessels actually engaged in the fishing operations and it has been decided to extend the instructions so as to permit the Masters of these vessels acting as tenders to enter gasoline and distillate ex-warehouse as ships' stores so as to enable the fishing vessels to engage the whole of their time in the catching of fish.

The Master of the vessel acting as tender is required to make a declaration in each instance on the ex-warehouse entry that the gasoline and distillate covered by the entry will be distributed only to vessels engaged in fishing in the coastal waters of British Columbia and for no other purpose.

Under the provisions of the regulations as contained in section 3 of memo. 1859-B, the Master of the vessel acting as tender shall prove by affidavit to the satisfaction of the Custom officer at the port of clearance that the gasoline and distillate to be ex-warehoused are necessary for the fishing vessels to which such gasoline and distillate are to be supplied.

The Masters of the vessels acting as tenders should keep a record of the dates of deliveries of the gasoline and distillate to fishing vessels, and the names of the vessels to which delivered so that our officers may satisfy themselves on inspection that the provisions of the instructions have been approved

Please instruct outports concerned accordingly.

I have the honour to be, Sir,

Your obedient servant,

(Signed) R. R. FARROW,
Commissioner of Customs.

This means that firms operating in the fishing industry are enabled to secure free distillate to be shipped on their tenders to whatever part of the Coast their regular fishing boats are operating on when such distillate, or gasoline is to be issued to the fishing boats. This means not only the saving in duty but also a great saving in time as in many cases it was impossible to send the regular fishing boats to the stations to secure this distillate.

As it stands now the canners and large producers are able to secure free distillate and gasoline under circumstances much more favorable than in the past.

All concerned in the fishing industry have been endeavoring to secure the passage of such an order for some time past and the industry as a whole is very much pleased that the Customs officials have seen fit to issue the present order.

DRIED FISH MARKET.

There has been several more sales of Lunenburg ear-goes at \$12 per quintal of about 100,000 quintals still unsold, says the Halifax Maritime Merchant. Exports of bank fish have been moving fairly well so that, so far, stocks have not accumulated. Up to the present the demand has been very good, with, however, very keen competition. There have been considerable arrivals of Canada, Labrador and Gaspé fish during the past fortnight, but the local stock in Halifax is considerably less than usual.

TERRITORIAL LIMITS.

Says the British Trades Gazette:—

We confess that the letters in the Times about the Canadian Dr. Prince's proposals to increase the territorial limits have left us cold, but that which Professor James Johnstone contributed last week is of such outstanding merit that we feel it only right to give his points the wider publicity, in a technical sense, of our columns. One reason, for our indifference was the "vague and unconvincing way" in which it was argued that the three-mile limit was insufficient to conserve the sea fisheries. Words, words, and no facts. We are glad to see that so high an authority as Professor Johnstone shares our views. Clearly when a radical change of this nature is proposed those who advocate it should be prepared to state without equivocation the reasons which move them and to produce the evidence on which they rely. The matter is far too important for hustling. It may be that, one man's meat being another's poison. Dr. Prince has a case: if so, it should be set forth concisely and clearly. What may be suitable in one part of the world may be unsuitable in another, even from a purely scientific point of view; but the principles of Liberalism, as defined by Mr. Gladstone, "the greatest good of the greatest number," must ever be borne in mind. In Atlantic waters the problem is simple: only the United States, Canada, and Newfoundland have to be considered. But in the North Sea there are the Scandinavian countries, and Holland, Germany, and France to be considered. Any action which interfered with the free prosecution of our fisheries in what are now extra-territorial waters must be, and would be, vigorously opposed. Our experience of the Moray Firth does not incline us to welcome empiricism—using the word in its popular sense.

Professor Johnstone's point is that any extension of territoriality ought to be made to justify itself. How? he asks: and answers his own question, by suggesting a model preamble which is quite the best thing of its kind which we have seen. We quote it in full:—

Whereas it has ascertained that there are great numbers of plaice of less than 20 centimetres in length in the sea within a distance of 15 miles from low-water mark and ordinary spring tides, and within the boundaries specified in the schedule to this Act; and Whereas large numbers of these fish are at present being captured by trawling vessels; and Whereas the continued capture of the said plaice is detrimental to the fishing industry, inasmuch as it has been ascertained

that it is producing a progressive diminution of the stock of plaice on the fishing grounds in general—be it therefore enacted, etc.

Having thus stated the preamble, its proud author asks is any scientific man who has attentively studied the information available prepared to draft regulations based upon it? And again he answers his own question—"I doubt it." So do we, and it is well to be reminded that scientific investigation of the sea fisheries is not more than 30 years old in Great Britain; it has never been properly organized and supported; and it is in a worse condition now than ever it was before. That being so, no sensible person will dissent from the Professor's conclusion, that it seems better to refrain from giving administrative authorities legislative powers which they cannot properly exercise.

Presumably all such questions as these, so far as the home waters are concerned, will soon be discussed and settled. Obviously this is not the proper time for rash experiments, or for departures from an order of things which has worked well and is in harmony with our present knowledge.

SMALL SOCKEYE CATCH ON WEST COAST.

On October 27th, Mr. Peter Wallace, president of the Wallace Fisheries, Limited, returned from a visit to the Kildonan cannery, operated by the company and situated on Barclay Sound. He says the sockeye catch on the West Coast of Vancouver Island this year will be much smaller than for previous years though the chums and cohoes have been caught in considerable numbers and the canneries in this locality are very busy handling these last two varieties.

The streams are very low on the West Coast of the Island and a heavy rainfall is needed to enable the fish to ascend to the upper reaches of the river, and some difficulty was experienced at the Kildonan cannery in the operating of the cold storage plant, owing to the shortage of water.

Mr. Wallace also pointed out that poor catches of sockeye have been made off Nitinat, for which several reasons have been offered. Bad weather and too many fish boats cutting up the salmon shoals have had their full share of the blame, but his opinion is that the fish are not there to be caught.

BRITISH COLUMBIA SALMON PACK, 1919.

	Sock-eyes.	Red Springs.	Pink Springs.	White Springs.	Blue-backs.	Steel-heads.	Cohoos.	Pinks.	Chums.	Total
Fraser River	29,628	14,519	704	3,592	15,613	328	39,253	39,363	15,718	158,718
Skeena River	184,945	19,661	3,624	2,656	.....	2,672	36,559	117,303	31,457	398,877
Rivers Inlet	56,258	967	234	241	.....	2	9,038	6,538	7,089	80,367
Naas River	28,259	2,408	585	581	.....	789	10,900	29,949	24,041	97,512
Vancouver Island	15,678	28,476	1,076	6,461	8,645	.....	44,884	43,186	128,013	276,519
Outlying	54,677	7,148	2,854	4,764	65	702	34,936	110,300	165,717	381,163
	<u>369,446</u>	<u>73,179</u>	<u>9,077</u>	<u>18,295</u>	<u>24,323</u>	<u>4,493</u>	<u>175,670</u>	<u>346,639</u>	<u>372,035</u>	<u>1,393,156</u>

November 28, 1919.

W. D. BURDIS, Secretary.
British Columbia Salmon Cannery Association.

Loss to Canada Though Salmon Being Allowed to be Exported to Puget Sound From the Fraser River in the Fall of 1915 and 1916

In 1915 there was exported to Puget Sound:—

	Salmon.	Fish per case.	Full Cases
White Springs	86,203	4	21,700
Humpbacks	1,100,704	16	68,798
Dog Salmon	952,353	8	119,794
Cohoos	74,866	10	7,486
	<u>2,220,786</u>		<u>217,778</u>

or a loss to Canada (calculated as below) on 217,778 full cases at \$3.50 per case, of \$781,823.00—including a loss of Revenue to British Columbia of \$8,711.00

In 1916 there was exported from the Fraser River to Puget Sound:—

16,051,600 pounds of salmon at 80 lbs. of raw Dog Salmon per case would have filled 200,645 cases of 48 pounds each.

Had these salmon been packed in British Columbia and fishermen been paid 15c per fish, they would have reduced their indebtedness to the Cannerymen—

at 12 lbs. per fish—1,337,634 fish at 15c each	\$200,645.00
Have expended for boxes and cans (1 lb. Talls) made in B. C.—200,645 cases at 90c per case	180,580.00

Have paid for labour in Cannery for packing the fish 200,645 at \$1.00	200,645.00
Have paid for lacquering, labelling, fuel, salt, collection, etc.—200,645 cases at 30c	60,193.00
Have paid for Freight, wharfage, storage, insurance, interest and incidentals which vary materially.—200,645 cases at 35c	70,225.00
Have paid tax to Provincial Government of 4c per case on 200,645 cases	8,025.00
A total loss to Canadian Trade of	\$720,313.00

A war tax, 25% of all profits in excess of 7 per cent, payable to the Dominion Government is not included in the above estimate, as the profits would depend upon the sales price.

Note:—During the "Falls" of 1917 and 1918 it is certain, (though the exact figures have not yet been received from Ottawa), that equally large numbers of Chums, Pinks and Cohoes were exported to Puget Sound, in a raw state and canned there; consequently in those two years, Canada lost at least \$1,500,000 by the failure of the Canadian Government to prohibit the export of salmon for canning purposes.

BRITISH COLUMBIA CANNERYMEN WANT PROTECTION FROM ALLEGED INJUSTICES.

At present American boats come into Canadian waters, and buy salmon for several days at a time. Before they reach their canneries the first fish have become soft. These are canned and sold as a lower grade and at a cheaper price, it is alleged, and labelled "B. C. Salmon Packed on Puget Sound," while the first class salmon from the same boat are packed under the name of the United States packer. This has a damaging effect on the reputation of British Columbia salmon.

Colonel Cunningham, inspector of Fisheries, has brought this to the attention of the Canadian Government in the hope that some clause might be added to the proposed treaty between the United States and Canada to rectify this. The Department of Marine and Fisheries, however, will not act in this matter and advised the Inspector to take the matter up with the Pure Food officer in the United States.

Proposed Reciprocal Port Privilege with U. S.

The Department of Commerce has forwarded to the State Department with its approval, the final draft of the proposed treaty between the United States and Great Britain for reciprocal port privileges for fishing vessels operating out of American and Canadian ports.

This treaty is the companion to the sockeye treaty now pending before the Senate Committee on Foreign Relations and the expectation is that some Seattle and Alaska fishing interests will oppose it on the ground

that it may prove more beneficial to Prince Rupert and other British Columbia ports than to Alaska and Puget Sound ports.

It grants Canadian fishing vessels the same rights in American ports that are granted to American vessels and equal right to American vessels in Canadian ports, in a measure removing some of the objections which American interests have made to present conditions.

Also the treaty provides for the abrogation by Canada of the present Canadian tariff of 1 cent a pound on halibut, the United States having no such tariff.

Stringent regulations for the preservation of halibut in the north Pacific, by establishing closed seasons and other measures are features of the treaty. These regulations are reported to be those recommended and discussed before the joint international conference which considered the subject at Seattle and in Alaska.

The text of the treaty having been approved by the Canadian and American commissioners, it now only awaits formal signature before being sent to the Senate for ratification.

Sir Douglas Hazen, of Canada, one of the negotiators, has been designated by the British Government to sign for that government. As soon as President Wilson is well enough to sign an order designating Secretary Lansing to sign for the United States, a date will be set for signing and Sir Douglas will come here for the purpose.

SOUTH AFRICAN AND AUSTRALIAN TRADE COMMISSIONERS MEET CANNED FISH PRODUCERS OF BRITISH COLUMBIA

On November 6th the Vancouver Branch of the Canadian Fisheries Association arranged an important luncheon meeting to which Mr. W. J. Egan, South African Trade Commissioner, and E. H. Ross, Australian Trade Commissioner were invited to attend and address the members. Practically every producer and handler of canned salmon in British Columbia was represented at the luncheon. Both commissioners in their addresses explained marketing conditions in their respective countries and gave important first hand information regarding the marketing of canned fish in South Africa and Australia.

Owing to the fact that practically all present were more familiar with conditions in Australia than South Africa, Mr. Egan's remarks were given particular attention and when the meeting was thrown open for questions and discussion the Commissioner from South Africa found that he had a very important audience and the questions which he answered covered practically every part of the field pertaining to the marketing of canned fish in his territory.

There is no doubt that Mr. Ross and Mr. Egan know their field of endeavor in every department and while they were in Vancouver their time was taken up very largely by conferences and interviews with men in every line of business where the different firms were looking for inter-Dominion trade.

As far as canned and cured fish industry of British Columbia is concerned this was probably one of the most important meetings ever held. Besides this luncheon meeting the Secretary of the Vancouver Branch arranged several personal conferences with the Commissioners for different firms. Everything points to increased business with these different countries and it is such meetings that help to develop the industry along the lines of expansion in an inter-Dominion way.

The Department of Trade and Commerce are fortunate in having two such men as Mr. Ross and Mr. Egan to look out for the interests of Canadian manufacturers and exporters in Dominions across the seas and British Columbia only hopes that others will make it a point to visit this part of the country whenever they are in Canada.

Mr. Beddoe, the New Zealand Commissioner has also spent considerable time in Vancouver and held many important conferences.

Mr. Ross and Mr. Beddoe, sailed for Australia, November 29th on the S.S. Niagara.

ADVERTISE CANADA.

Mr. E. H. Ross, Canadian Trade Commissioner to Australia advised exporters of canned fish to advertise in a national way throughout Australia and other British Dominions their products as from Canada, that is, advertise the name "CANADA" and specify the products. He applied this particularly to Canadian canned fish and said that it was his strong belief that if the Canadian canners would advertise their Canadian canned fish in a national way the consumption would show such an increase that they would consider all spent in this way to be a big investment and that the returns of such an investment would warrant an increased investment the next year. It is up to the Canadian canners to take this suggestion to heart, consider it seriously and then get busy. **Advertise Canadian Canned Fish.**

CANADIAN MERCANTILE MARINE SERVICE OFFICERS VISIT VANCOUVER IN CONNECTION WITH TRANSPACIFIC SERVICE TO BE INAUGURATED IN DECEMBER.

Mr. R. C. Vaughn, vice-president Canadian National Railways and Mr. D. O. Wood, Export Traffic manager, were in Vancouver recently and several important conferences with exporters of canned salmon were arranged by the Secretary of the Vancouver Branch of the Canadian Fisheries Association.

Cold Storage Service Between Canada and Australia Assured.

During the recent visit of the representatives of the Canadian Mercantile Marine Service, Ltd., to Vancouver, assurances were given those interested that facilities for cold storage space for shipments of fish destined to Australia was being provided for. This is of great importance to British Columbia as, for the past ten years, it has been known that there was a market for frozen and cured fish in Australia and New Zealand which could be developed if there were proper facilities for handling such shipments in cold storage space. This also provides for increased shipments of mutton from Australia to Canada.

South African and South American.

There is no doubt that sometime during 1920 there will be a freight service from Vancouver to South Africa, is the assurance given by officials of the Canadian Mercantile Marine Service, Limited. This means much to exporters of canned fish from British Columbia. These officials are also making inquiries and investigations regarding the possibilities of West Coast business with South America with the idea of opening up new markets there for which they will furnish direct service from Vancouver.

VANCOUVER WHOLESALE MARKET.

Local Ling Cod has not been very plentiful and the price still rules high, ranging from 12 to 14 cents. Deep Sea cod still sells at the wholesale price as quoted below. Fresh silver smelt are arriving in small quantities and meeting with a ready sale at 12 cents. Local soles are selling around 7 cents and are very scarce.

Shell Fish Market.

Crabs are not at all plentiful and it is hard to get a supply. Shrimps are very scarce and the supply does not meet the demand.

Canned Salmon Market.

The general market is quiet, not much stirring and no changes in prices. It is getting on to Christmas and the wholesalers thinking more of Christmas nuts and candies so there will not be much doing until January first. This applies particularly to chums as the red varieties are cleaned up and the market is now in pinks and chums.

Canned Herring and Pilchards.

There are no quotations on the new pack of these varieties as the quantity is not yet known and no one is anxious to quote. Any old stock on hand is being held at old quotations.

Net Weights for Australia.

All canned fish shipped to Australia must be labelled with the net weight of contents. This ruling is now being enforced on all shipments of canned fish.

Engine Efficiency Determines Haul and Profit

On correct lubrication depends your speed to the fishing grounds and back—engine wear and tear—cost of repairs—the efficiency power and service you get from your motor.

The proper lubricant helps you to be first into the wharf and get the biggest prices for your haul. A poor lubricant means days lost when the fishing is good.

Polarine
FRICTION REDUCING MOTOR OIL

"Makes a Good Motor Better"

Will correctly lubricate your motor—keep it lively and powerful—assure a gas-tight piston-to-cylinder seal—provide an oil film that cushions bearing surfaces and cuts friction and wear to a minimum. Imperial Polarine flows freely, burns up clean. Valves, cylinders, pistons and bearings need the least attention when you use it.

Use Polarine oils and greases for lubricating fly-wheel bearings, gears and other parts requiring heavier oils and greases. There is a wear-saving grade for every purpose.

For fuel and the lubrication of other parts of the motor the following products are recommended.

FUELS

Imperial Premier Gasoline,
Imperial Silver Star Kerosene,

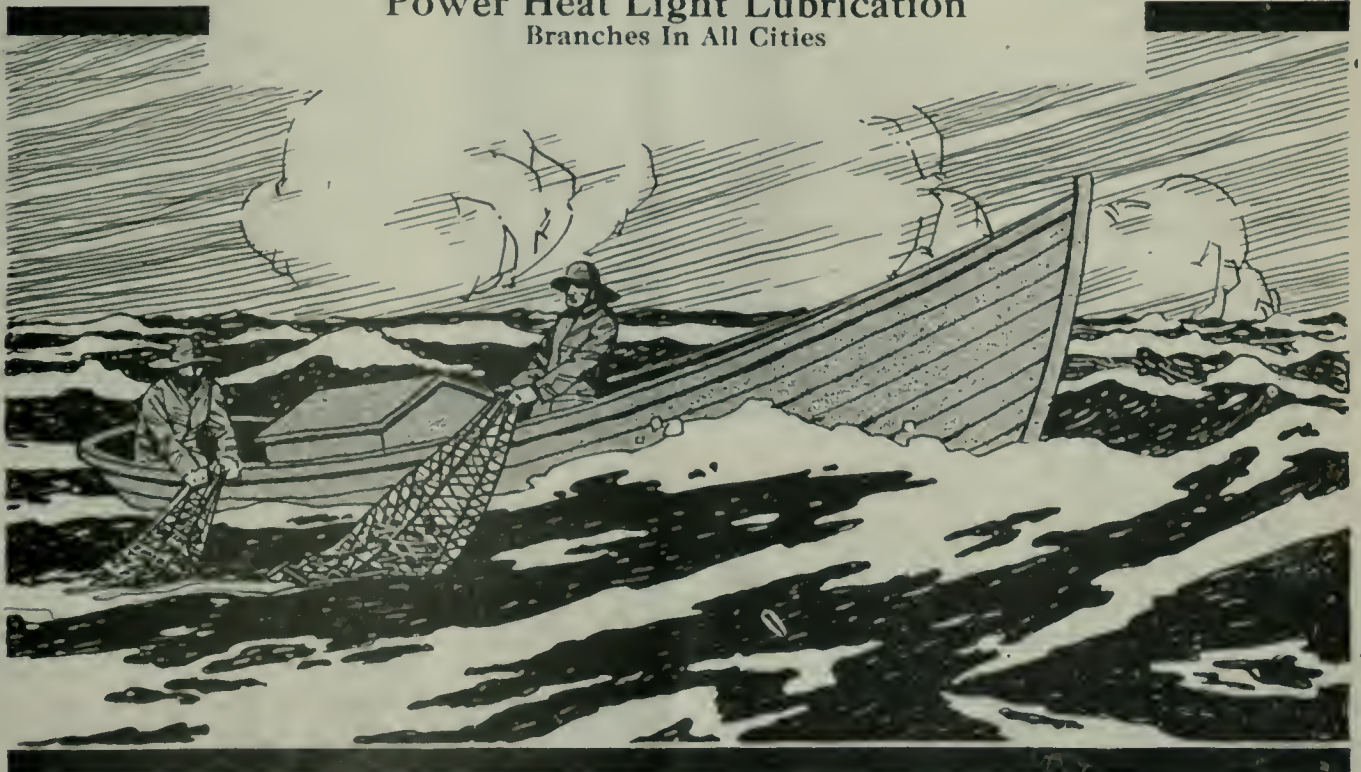
Imperial Royalite Coal Oil,
Imperial No. 1 Engine Distillate.

LUBRICANTS

Imperial Arctic Cup Grease,

Gargoyle Mobiloils.

Imperial Oil Limited
Power Heat Light Lubrication
Branches In All Cities



Herring on the West Coast of Vancouver Island.

It is reported that there are twelve seiners operating on Barelay Sound. The larger proportion of these herring are being dry salted for Oriental markets. There are two or three firms dry-salting for the oriental market this season as well as the Japanese firms and one or two Chinese firms.

There were very few pilehards canned this season as it is reported that the run was small and the supply not large enough to warrant heavy operations. Several canners are putting up herring and the total of this pack will not be known for some time to come.

Magistrate J. Stilwell Clute of New Westminster is attending to the cases, which began on December 2nd at Chilliwack.

The offense is a serious one and according to Section 82 of the 1918 Consolidated Fisheries Act, the maximum fine is \$1,000 and costs or 12 months in jail or both.

Inspector of Fisheries Halliday of New Westminster is the prosecutor.

VANCOUVER WHOLESALE FRESH FISH QUOTATION.

	Per lb.
Halibut	13c to 14c
Red Springs (heads off)	18c
White Springs (heads off)	10c
Ling Cod	8c
Grey Cod	5c
Red Cod	5c to 6c
Smelt	10c to 12c
Soles and Brills	6c to 7c
Herring	4c to 6c
Skate	4c
Perch	6c

Shell Fish.

Crabs (scarce)	\$1.10 to \$1.20 per doz.
Shrimps (very scarce)	18c per lb.
Clams	3½c to 4c per lb.

Vancouver Prices Smoked and Salt Fish.

	Per lb.
Smoked Sable Fish (black cod, whole)	14c
Kippered Sable Fish	20c
Fillets, Sable Fish	17c
Smoked Pink Salmon (whole)	20c
Kippered Salmon	18c
Bloaters	7½c
Kippered Herring	9c
Eastern Haddie	14c
Western Haddie	10c
Herring Chicks in bundles of 5 boxes	18c a box
	Per Bbl
Salt Herring, medium 900 to 1,000 count, 250 lbs. net	\$8.50
Salt Herring, medium 1,400 to 1,500 count, 250 lbs. net	\$7.50
Salt Herring, large 200 lb.	8.50
Salt Herring, large 100 lb.	\$5.25
Salt Herring, large 50 lb.	\$3.25
Salt Sable Fish (Black Cod) 200 lbs.	\$22.00
Salt Sable Fish, 100 lbs.	\$12.00
Salt Sable Fish, 50 lbs. (kit)	\$6.50
Salt Pink Salmon, 200 lbs.	\$15.50
Salt Pink Salmon, 100 lbs.	\$8.50
Salt Pink Salmon, 50 lbs.	\$4.75
Salt Grey Cod, 50 to 200 lbs.	10c per lb.

WHITE MEN AND INDIANS SUMMONSED UNDER FISHERIES ACT

About 100 summonses have been issued against as many white men and Indians charged with gaffing salmon at Veddar Crossing, a branch of the Fraser River. These salmon were headed for the spawning grounds.

COLONEL CUNNINGHAM RETURNS FROM INSPECTION OF WEST COAST OF VANCOUVER ISLAND

On October 30, Lieut.-Col. Cunningham, chief inspector of the Dominion Fisheries of British Columbia, returned from an examination of the fishery areas on the West Coast of Vancouver Island.

He says the catch has been very good in this district and the spawning ground should be well seeded next year, judging from the quantities of salmon waiting to proceed to them. It is absolutely necessary to stop fishing generally throughout the Province much earlier than usual because the streams are so low that the salmon cannot ascend and are hovering in large quantities around the mouths of the rivers.

Colonel Cunningham points out that the dog salmon caught on the West Coast are a very fine quality. Though lighter in color than other species this is a very nutritious fish and deserves more attention from the public than they are receiving. If the question of color could be overlooked the consumption of this class of salmon would be greatly increased throughout Canada.

The area for seining licenses on the West Coast of Vancouver Island extends from Cape Beale to Sombrio Point and from Beachy Head to the south end of Sidney Island. Most of the operations, however, are conducted between Cape Beale and Sombrio Point, opposite Nitinat Arm and Clo-oose. Fishing takes place wherever the fish are running, sometimes close to shore, at other times out at sea.

Twenty-nine licenses are being operated this year. fifteen by returned soldiers and the remainder by the licensees of 1918. The size of the catch will not be known until the season closes but, though it is believed it will not be as great as last year, the indications are that it will be large. The catch per boat will not be as large in proportion to previous years because of the inexperience of many of the fishermen and a larger number of boats. Some of the seiners have already ceased operation on account of the rough weather encountered at this season of the year.

NEW CURING AND OIL PLANT.

Logie Phillips Fish Company began curing operations at Pender Harbor, B.C., in July last.

Mr. Phillips was formerly with the Canadian Fish and Cold Storage Co. in their curing plant. He served his apprenticeship in the old country and has been sixteen years in the business. Mr. Logie is from the Orkney Islands, and comes from a family of fishermen. He looks after the office and selling end of the business. This firm is also rendering fish oils



ON the Pacific Coast, where it has been widely used for many years, the "Frisco Standard" is known as "the Engine of Utility." It catches and transports to the salmon canneries close to one-half of the world's supply of salmon. It supplies the motive power for over 50 per cent of the Pacific halibut fleet which catches 75 per cent of the world's supply of halibut. It is an important factor in towing timber for the mills that supply one-half of the nation with lumber. It is used in passenger service, in dredging, in railroad building, in carrying agricultural supplies to the markets. It supplies the motive power for Arctic explorations, for traders who bring the fur-seals' skins, the walrus pelts and a dozen other essentials of civilization from the Far North. It is a connecting link between the producer and the consumer, between civilization and the wilderness. It is one of the most important mechanical factors in the industrial and commercial activities of nation's seaboard and its waterways.

"Frisco Standard" Power Offers Commercial Success East or West

Logical Power for Work Boats Everywhere

What the Frisco Standard engine has done for the Work Boat men of the Pacific in broadening their opportunities, increasing their income, making their lot more comfortable and secure, it can do for owners of boats on the Great Lakes, the rivers of the Middle West and the waterways of the East.

It is the perfect power for tow-boats, small passenger vessels, fishing schooners, freighters, shallow draft river boats, ferry boats and commercial craft of all kinds. It always goes, it never wears out, it operates on cheap fuel, and in fact makes motor boat navigation a certain and dependable factor from every standpoint. It will pay the Work Boat owners of every section of the country to investigate its record.



SEND FOR COPY OF "BOAT BOOK"

We have issued an 80 page "Boat Book" showing Frisco Standard installations, the most remarkable, interesting and complete publication of its kind in existence. Copies sent free to those writing and mentioning "The Canadian Fisherman."

Mechanically Simple, Strong, Effective

The Frisco Standard is made in sizes from 4 h.p. to 275 h.p. It operates successfully on Gasoline, Benzine, Kerosine, Distillate, etc. It is as nearly mechanically perfect as the years of experience and observation on the part of its engineers have been able to make it. Its neatness of design, coupled with simplicity of construction, its absolute reliability, combine in one engine points of desirability found in no other. The massive construction necessary for slow propeller speed and large propeller diameters, overhead cam or timing shaft with valves in head reducing moving parts to minimum, reverse gear that gives same speed astern as ahead, all of these are features that deserve the attention of the prospective builder.

Standard Gas Engine Co.

Canadian Agents

Main Office and Works
OAKLAND, CAL.

Pacific Herring

By Dr. C. McLEAN FRASER,

In the great rush for the Pacific salmon and the Pacific halibut, the Pacific herring has been rather sadly neglected, but this neglect is not in any way due to any deficiency in either quality or quantity of this fine food fish. On account of the high cost of preparing the fish for the market, high transportation rates and, unfortunately, owing to the poor product that has been put up in some cases, the introduction of Pacific herring into the markets of the world, where the Atlantic herring has already been long established, has been rather too uncertain a proposition to induce many fish men to enter the field.

During the last five years, on account of the falling off of the North Sea supply, an opening presented itself but only a limited number of companies had sufficient familiarity with the herring trade to be able to put up a good article. Others tried it, it is true, and some of these not only failed to make a success of it for themselves but did much to spoil the chances of others. An inspector was appointed but not before the damage was done. Compulsory inspection from the start might have saved the situation. At present the outlook is not too good but such a condition cannot last as any article of food of such intrinsic merit as the flesh of the herring, that can be obtained in almost unlimited quantity, cannot indefinitely remain unappreciated.

The Pacific species is a different species to the Atlantic herring but in general appearance, flavor, etc., the difference is not very material. As regards spawning time, they are all of a kind, corresponding to the winter herring of the Atlantic. Although there may be a slight difference in time of spawning depending on the latitude in which they are found, they all spawn in the early spring, the first two or three weeks in March in the Nanaimo district where the greatest amount of fishing has been carried on. Some of them spawn in the third year but probably a greater number do not begin until they are four years old as there are seldom many three year olds caught even with the purse seine. The bulk of the catch consists of those in their fifth, sixth and seventh years, with fewer in the eighth year and very few older than that. Of those caught in the gill nets there are few younger than six years.

Although the herring, at various stages of its existence, is preyed upon by such a large number of other species, from the time the ducks in myriads devour the spawn until the halibut, sea-lion or killer satisfies its appetite with full grown individuals, and the fisherman with his gear takes his quota, adequate provision is made against extermination or serious depletion.

A three-year-old female lays about 10,000 eggs, an eight year old about 35,000. A fish living eight years will produce over 100,000 eggs. To prevent depletion all that is necessary is that two fish, a male and a female, out of these 100,000 survive to be eight years, or that the lack be made up by those that live three, four, five, six or seven years. They start out well in the race for, under normal conditions, practically every egg is fertilized, and since the eggs are hardy, almost every egg that is not devoured in the meantime, hatches out. The hatching takes place in two weeks and this short period of incubation increases the chances for the hatching to take place.

are not so readily seen and hence they are not liable to be attacked by the enemies of the older fish. For the same reason they escape injury from human contrivances.

The schools, too, move about from place to place and are not necessarily found frequenting the same places at the same time each season. The movement is probably largely due to a matter of food supply, although it has been found that the herring is more sensitive to impurities in the water than some other fish are and this may account for their disappearance from certain areas.

Although there is such good provision for the perpetuation of the species it will scarcely do to say that the supply is inexhaustible. This much may be said. At the present time the number of herring taken by human agency is so small as compared to that destroyed in other ways that it can be of little moment. The ducks in a five-mile spawning area may easily destroy a greater number of prospective herring in a day than all the fishermen on the Coast take in a whole season.

The supply, therefore, is not a matter of conjecture. So great is it that as yet the fishermen wait until the fish come into comparatively shallow water in order that they may easily be surrounded by the purse seine or intercepted by the set gill net. No one has con-

A. E. HALLETT,

BROKER

FRESH AND FROZEN FISH

Correspondence solicited

Ref., Corn Exchange National Bank, or any Chicago
wholesale fish concern.

236 N. Clarke St. :: :: CHICAGO

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O'Connor's Fish Market

For all Varieties of

F I S H

1, 2 and 3 St. Antoine Market

M O N T R E A L

"THE PLANT BEHIND THE PRODUCT"



A General View of the Plant of The Consumers Cordage Co., Ltd., Dartmouth.

"LION BRAND" CORDAGE

a reliable product that will stand every test. Made in a Canadian Factory by Canadian Workmen for Canadian Industries.

Our aim is SERVICE centered, as it is, on one product—CORDAGE—

Most Fishermen know that the use of "Lion Brand" Cordage means satisfaction and with our Coast to Coast Service, you can be served as you would wish to be served.

MADE
IN
CANADA



NEARLY
A
CENTURY

A TRADITIONAL TRADE MARK

CONSUMERS CORDAGE COMPANY, LIMITED

MILLS AT DARTMOUTH, N.S., AND MONTREAL

BRANCHES AT TORONTO AND ST. JOHN, N.B.

Tees & Perse, Limited, Winnipeg, Regina, Saskatoon, Calgary, Moose Jaw, Edmonton
and Fort William, Ont. James Blisset & Co., Quebec, P.Q.;
Macgowan & Co., Vancouver, B.C.

Until they are mature the young herring do not school with the larger and older fish and although they go in schools the individuals are of such small size that sidered it necessary to go out to look for them in deeper water. Such being the case there is no excuse for putting any of them up except when they are in prime condition, at which time they can rival any herring on the market.

Herring are sold fresh, frozen, dry-salted, pickled, smoked or canned. The fresh fish supplies a small local demand, that should be made much larger. Some of them are also sold for bait. This produces the principal demand for the frozen fish as well. There seems no special reason why they might not be frozen with more care and shipped like salmon or halibut. The dry-salted herring goes to the Oriental market and as it is now put up is not a very desirable article. Improvements might easily be made but whether they would pay or not no one knows.

Successful competition with the Atlantic herring trade in smoked or pickled fish, or in fish cured by a combination of the two, is rather a difficult proposition for although the product may be just as good, the Atlantic herring has been long on the market and all the large markets of the world are reached more cheaply by the Atlantic species. The only chance for success lies in consistently putting up the best article that can be produced, for in the end, quality must tell.

In case of canned herring, the field has not been exploited to the same extent and here the Pacific coast should be more than able to hold its own, since canneries with the most efficiency and the best appliances are ready available for the work. Herring canned straight or with tomato sauce cannot be surpassed for flavor and as they can be put up cheaply a fair trial should ensure a sale at any time, unless it be true, as it sometimes appears to be nowadays, that only the high-priced goods will sell.

For pickling, smoking or canning, herring caught during September, October, November and December are in the best condition. There is no excuse for making a poor preparation of them at this time by any of these methods. During January they are beginning to lose some of their fat as the roe develops more rapidly. During the last month before spawning this depreciation in oil becomes rapidly more marked and in connection with this the flesh becomes soft. So that by the time the eggs in the roe turn from opaque to transparent, just before spawning takes place, it is no longer possible to make a preparation that at all comes up to the standard of the prime fish. Fisheries regulations prohibit the taking of such fish when they have become thus ripe but for the good of the trade it would be well if the taking of the fish were stopped somewhat earlier.

Some day, possibly, advantage may be taken of the presence of such large schools of yearling herring to start a sardine industry but as yet there is no indication that it is receiving any consideration.

No matter in what way herring are desired, the Pacific species is present in the waters of the British Columbia coast in sufficient numbers to supply the need, and sooner or later the quantity as well as the quality must make these waters known to the world as the quantity and quality of the salmon and halibut do now

WALLACE FISHERIES, LIMITED.

This long established firm of Pacific salmon and herring canners first founded by John and Peter Wallace, was re-organized as an entirely new firm and incorporated in January, 1911. The new company purchased the plants and fishing rights of: Wallace Bros. Packing Co., Claxton, Skeena River, B. C.; Strathcona Packing Co., Limited, Strathcona, Rivers Inlet, B. C.; Hicky Canning Company, Smiths Inlet, B. C.; Alberni Packing Company, Uchucklesit Harbor, B. C. (now Kildonan); Winter Harbor Packing Company, Quatsino Sound, B. C., and certain Fishing rights owned by parties at Naden Harbor, B. C.

The plants at Claxton, Rivers Inlet and Smith's Inlet were all extended and remodeled. The plant at Uchucklesit Harbor, was torn down and an entirely new plant built there, and a cold storage with a capacity of 2000 tons built. New plants entirely were constructed at Quatsino and Naden Harbor.

The officers of the Company are: P. Wallace, President; J. D. McCormack, Vice-President; Col. J. M. McMillan, Treasurer; F. E. Burke, Secretary and Managing Director.

The above named with the addition of: Geo. C. Howe, of Minneapolis, Minn. E. J. Palmer of Chemainus, B. C.; Gen. A. D. McRea, Vancouver, B. C. constitute the Board of Directors.

The Quatsino and Strathcona plants are what is known as "one line plants," and their capacity is from 750 to 1000 cases a day, according to the size of the package being manufactured. The other plants are what is known as "two line plants" and their capacity would run from 2000 to 3000 cases per day, according to the size of package put up. Their annual pack of salmon is around 145,000 cases.

The Company has long made a specialty of herring packing, and were the pioneers of that particular industry on the Pacific Coast.

CIVIL SERVICE APPOINTEES

Ottawa, Dec. 10.—The Civil Service Commission has made the following appointments: R. G. McKay, Amherst, N.S., as senior clerk for staff of chief fishery officer for the Maritime Provinces; R. S. Shreve, Digby, N.S., as principal clerk for staff of chief fishery officer for Maritime Provinces.

THE SPANISH FISHING INDUSTRY

In the Spanish fisheries the number of boats employed amount to approximately 791 steamers and about 14,721 sailing boats. In 1916, 88,150 men were employed in the fishing fleet. The average catch of fish amounts to about 145,000 tons annually, over 93,000 tons being caught in the El Ferrol district, which comprises the northern and western coasts of Spain. The other big fishing districts are found at Cadiz and Cartagena. Spain consumes about 120,000 tons of domestic fish a year, thus leaving between 25,000 to 30,000 tons annually for export. The most important catches are sardines, tunny fish and cod. There are about 1,400 factories in Spain engaged in treating and preserving fish. Over 1,000 of these are in the maritime district of El Ferrol. Some 50,000 tons of fish are salted, canned or prepared in brine in the above factories, where some 20,000 operatives are employed. The total value of the fish caught in Spanish waters during 1916 amounted to 901,833,250 pesetas, while the export of sardines and preserved fish was valued at 27,387,985 pesetas.



FREDERICK WILLIAM WALLACE
Editor

THE EDITOR AND PUBLISHER OF THE
"CANADIAN FISHERMAN" WISH
OUR READERS AND ALL FRIENDS IN
THE FISHING INDUSTRY A MOST
PROSPEROUS AND HAPPY NEW YEAR.



ANNUAL CONVENTION, VANCOUVER, 1920.

The Annual Convention of the Canadian Fisheries Association will be held in Vancouver, B.C., on Thursday, Friday and Saturday, 3rd, 4th, and 5th of June, 1920. The Canadian Manufacturers' Association are holding a Convention in Vancouver a few days later and as many of our members belong to that organization, the date was selected in order that those who wish might attend both gatherings.

It is confidently expected that a record number of C.F.A. members will be on hand, and the Executive are working out the details of the trip to the Coast with stop-overs at centres of interest.

In addition to its value as a get-together caucus of those engaged in the fishing industry of Canada, the Convention at Vancouver is also designed to provide an enjoyable vacation for eastern members and their wives. June is an agreeable month on the Pacific Coast and a first-class time for travelling. The suggested itinerary is that a stop-over be made at Port Arthur and Winnipeg, and possibly at Banff and Sicamous and a trip down the Okanagan Valley, on the way out to Vancouver—the return journey to be made by the delegates by whatever route they choose. An effort will be made to include Prince Rupert in the trip.

Full information regarding the Convention will be published in the *Canadian Fisherman* or by bulletin to C.F.A. members between now and May 1920. Remember the dates—June 3rd, 4th, 5th and, plan your summer vacation accordingly.

THE PAST YEAR.

The value of Canada's fisheries for the year 1919, will, as far as we can judge from the statistics available, be about the same as the year 1918. This comes, not from decrease in the quantity landed, but mainly from a decline in value. The catch of the Lunenburg fleet was larger than in the previous year, though the price was lower. The lobster catch was a good one and the pack of canned lobsters for the year was about 126,064 cases compared with 101,900 cases for 1918. The B.C. salmon pack shows a slight falling off. The total pack of canned salmon for 1919 being 1,393,156 cases while that of 1918 was 1,616,157 cases. The landings of scallops and smelts were very good.

With the signing of the Armistice on November 11th, the fish trade of Canada received a set-back and were caught with large stocks on hand and produced at high prices. The open winter of 1918-9 played havoc with the frozen fish market—fresh fish coming in good supply throughout the months when frozen fish plays a prominent part. The salmon canners of B.C. were overstocked with a pack of chum salmon, and the sardine canners of New Brunswick were caught with a considerable quantity of sardines on hand. The sudden cessation of hostilities had the trade somewhat apprehensive for the future, but the recovery was rapid and serious attention was given to foreign markets.

At the present time, the prospects for the new year are good. With the restoration of shipping facilities, good connections have been made with foreign importers and the indications are that we are entering upon

an era of world trade in fish products. The home trade fell off slightly with the release of war-time restrictions, but the campaign work in favor of fish and the high prices of meats and eggs soon reacted to the benefit of the retail trade and the home consumption of fish is now better than ever and prices are extremely moderate in comparison with other food products.

About forty persons lost their lives in the prosecution of the fisheries during the year, and a steam trawler was run down and sunk on the Atlantic. The year ended with desperate weather on the Atlantic Coast and much damage to fishing property.

RETAIL FISH TRADE IN GOOD SHAPE.

From reports received, the retail fish trade in Canada is in exceptionally good shape and the outlook for the coming year is brighter than ever before. The Association's efforts to disassociate fish from Friday has attained a considerable measure of success and Tuesday is pretty generally recognized as a fish day in addition to the Friday. Many Montreal dealers report a good fish trade every day in the week, and one of the largest retail handlers states that of late his trade has been growing wonderfully—even during the Christmas week.

There is no longer any doubt but what the Canadian housewife is taking to using fish more than ever. The good effects of the Canada Food Board advertising; the high price of meats, and the comparative cheapness and general good quality of the fish now available, help materially in increasing the consumption, but we are inclined to think that the demand of late has been stimulated by the high cost of another rival product, viz.: eggs.

With the product of the domestic hen selling at \$1.30 per dozen in many places, the man of ordinary means has been forced to pass up the matutinal "eggs and bacon" and has turned to kippers, blattlers, finnan haddies and other fish as a substitute. Smoked fish is the real substitute for eggs, just as the fried, boiled, and grilled fresh fish is the only substitute for the various animal meats.

It is just as well for the fish trade to take note that meat is not the only rival to a fish diet—eggs come a close second, and at certain seasons, it is possibly the most dangerous rival of the two.

LORD LEVERHULME VISITS CANADA.

Lord Leverhulme—famous as the head of the great Lever Bros., Soap Manufacturies, and noted for his work in bettering the lot of the worker in industry—is at present interesting himself in the fisheries of Great Britain. He has purchased fleets of trawlers and fishery establishments in Great Britain and organized a huge retail distribution system for the purpose of giving the British public supplies of fish at low prices. His fishery enterprise by this time is the greatest organization of its kind in the world.

His Lordship, accompanied by his advisor in fishery matters, Captain J. F. Crighton, is at present touring the United States and Canada examining the methods of catching and handling fish as practised on this side of the Atlantic. In Vancouver recently, it is reported, Lord Leverhulme made arrangements with B. C. cannery interests to supply fresh frozen and canned fish to his company.

Capt. Crighton, who accompanies him, is well known to the Canadian fish trade on the West Coast and has a good knowledge of the fishery resources of B. C.

waters gained during the time he was in command of an expedition engaged in fishery investigations for the Canadian Government.

With a huge distributing organization at his command, Lord Leverhulme is in a position to undertake an enormous business in fish products. For sources of supply in fish species and products not available in European waters, the Canadian industry should prove of interest to him, and we will welcome him as a customer.

U.S. LOBSTER BILL WILL AFFECT NOVA SCOTIA EXPORTERS.

A correspondent reports that a Bill is at present before the United States Congress to prohibit the importation of live lobsters less than 10½ inches long. Our correspondent further points out that the passing of such a bill would seriously affect the Nova Scotian live lobster trade to the U. S. Also, that while all sizes may be legally taken in Nova Scotia, and there is a nine inch limit in Maine and Massachusetts, the reason for banning Canadian lobsters unless 10½ inches or over is incomprehensible. All lobsters seized under such a regulation would be dumped into American waters and would naturally help to replenish the supply there.

Just what the motive is in this bill is hard to determine, but we are inclined to think it emanates from some enthusiast who has a misplaced sympathy for the lobster itself. There will be considerable opposition to it from the U. S. importers, but even strenuous opposition is no guarantee that the bill will not be slipped through. Congressman Tague of the Tenth Massachusetts District will fight the passage of the bill, and Mr. M. H. Nickerson of Boston is waging an active campaign in favor of the Nova Scotia exporters.

PISCATORIAL PARAGRAPHS

The Publicity and Transportation Division of the Department of Fisheries, Ottawa, is now organized with Mr. J. H. Conlon as the officer in charge.

The value of fish imported from the United States into Australia during the year ending June 30th, 1918, amounted to \$1,915,376 in value. If this refers to fish products of U. S. origin, it would seem that Canada is overlooking good business.

The imports of fish into New South Wales amounted to 209,000 pounds sterling in value during the year ending June 30th, 1919.

The imports of codfish into Brazil during the year ending June, 1919, amounted to 11,633 tons valued at 1,116,000 pounds sterling e.i.f. Brazilian ports. The quantity is only half that of 1913 though the value is greater.

The landings of codfish in Canada for the nine months ending Sept. 30th, 1919, amounted to 1,852,035 cwts., exceeding the same period of the previous years by some 365,000 cwts. There were increases in the catch of salmon, lobsters, pollock, mackerel, sardines, halibut, soles and swordfish; and decreases in the landings of black cod, haddock, hake, cusk, herring, alewives and pilehards during the nine months period of 1919.

"Why Take Down Your Shingle?"

A Talk to Producers and Manufacturers Who Are Flooded with Orders They Cannot Fill

C. H. ARMSTRONG, JR.

Should a producer or manufacturer who is unable to supply the demand for his product continue to advertise? Some discontinue all their advertising entirely, yet others continue to boost, as it were, their oversold product.

First—To you who keep your advertising going strong. When the consumer finds that you cannot supply him with his particular brand because of the demand, he comes to the conclusion that it must be "GOOD STUFF" and is the only brand he must have. Because you cannot cope with the demand now does not necessarily mean that your product will always be oversold. No! but to keep the good-will you have attained you keep your advertising going.

Now, to you who discontinue your advertising. You have advertised for years, bringing before the public all the good points about your product. It has cost you hundreds, yes, maybe thousands, of dollars to attain the stage where you cannot cope with the demand, and are again looking for orders, how much is are these good points which you have impressed on the public by well designed publicity, going to remain in the minds of possible customers? How long is the consumer going to keep these important features before him when they are taken from all the places of publicity? He forgets you, he forgets your product, and you are also willing to forget the thousands of dollars expended in getting into the limelight—into the consumer's mind. When you can supply the demand, and are again looking for orders, how much is it going to cost you to get into the Front Line, and to put your product again before the public? Because the Doctor could not attend to all who desired his professional services during the Spanish Influenza Epidemic, did not mean that he had to take the name-plate from his door. Far from it!

There is only one way. Keep your advertising before the consumer. Don't give him a chance to forget your product, in other words, "Don't take down your shingle!"

LUNENBURG DRY FISH MARKET

The general fish market is quiet, but firm, according to a local fish dealer. The fact that the Lunenburg fisherman sold a big catch at \$12 a quintal is interesting. Cuba and Jamaica are free buyers at present but the other West Indies markets are poor. Porto Rico is overstocked for the present, but after the first of the year should become a considerable buyer. In Brazil owing to the rate of exchange the buyers are holding off, but Newfoundland has no large supplies for this market, and Norway will probably find markets nearer home.—Lunenburg News.

WANTS QUOTATIONS ON ICE AND DRYING MACHINERY

Mr. H. C. Walby, 15 Park Row, New York, advises us that he is desirous of securing information and quotations on a cold storage plant and artificial driers for a large fishing equern in Norway.

DEPARTMENT OF THE NAVAL SERVICE

Notes on Sea Fishing Results for November

On the Atlantic coast the weather was fairly good for fishing during the month, apart from a heavy easterly gale in the first week which wrecked or damaged many boats and much fishing gear. In the second week of November last year a similar gale did an equal amount of damage to boats and gear.

The catch of cod, haddock, hake and pollock amounted to 94,195 cwts, against 87,311 cwts. in the same month last year. There was a smaller herring catch in Nova Scotia which was offset by an equivalent increase in New Brunswick. The mackerel catch amounted to 13,800 cwts., against 22,910. This decrease was largely due to the aforementioned gale happening when these fish appeared in abundance on some parts of the coast.

The sardine fishery, owing to unremunerative prices, was not prosecuted with the usual vigor; consequently the catch amounted to not more than 83000 barrels, against 65,000 barrels in November last year.

The new lobster fishing season opened in Charlotte and St. John Counties, New Brunswick, on the 15th of the month and the catch, which was all shipped fresh to market, amounted to 2,333 cwts., against 1,268 cwts. for the same period last year.

There were 3,900 barrels of oysters taken. This is about equal to the catch in the preceding November.

On the Pacific Coast weather conditions were not favorable for fishing. Yet, the salmon catch was 70,000 cwts. greater than that for November last year. The herring catch also was greater by over 6,000 cwts.: while the halibut catch shows an increase of 1,700 cwts.

The total value of sea fish on both coasts, at the point of landing amounted to \$2,138,513 against \$2,272,468 for the same month last year. The value of the British Columbia catch was over \$300,000 greater, but this was offset, mainly, by the drop in value of the sardine catch of the Bay of Fundy.

One man of Richmond County, N.S., was drowned during the month.

PORTO RICO FISH MARKET

(Reported by A. Escudero & Co., San Juan)

Dec. 17th.—Arrivals of shipments which were held up at New York by the longshoremen strike, have overstocked our market.

For the last 18 days we have had a railroad strike and this prevents the possibilities of shipping to the towns in the interior of this island.

The coastwise service is not sufficient for taking care of the over rush of cargo and increased quantity due to the railroad strike and shipments to nearby ports usually supplied by San Juan is made practically impossible for fishstuffs, as preference is given by the schooners to light weight packages.

On top of all this, we have had 2 weeks of steady heavy rains which prohibits the hold on to dry fish for better prices, as before the fish should spoil, holders get rid of same at any price.

We recommend no consignments for the next 4 weeks during which time we feel:

Market will have improved, stocks will get normal, railroad strike settled, good dry weather re-established.



New Method of Fish Drying



Under the above heading a notice appeared in *Weekly Bulletin* 787 (February 24, 1919, page 327) concerning the formation of a company in Bergen, Norway, for the utilization of an invention for the rapid drying of fresh fish. In response to inquiries on the subject, Mr. C. E. Sontum, Canadian Commercial Agent in Christiania, the author of the above-mentioned notice, transmits, under date September 27, the following translation of a letter which he has received from the promoting company:

Cyklon Drying Machine.

The fundamental idea embodied in this drying machine, which has been called "Cyklon," is that a heated blast in conjunction with heating will secure a more rapid drying than a high temperature only; and in this special invention that idea is taken hold of to the best advantage in a highly economical way. Unlike most machines of the kind with horizontal rollers or endless belts, this plant is fitted with a horizontal rotating drying plate or disc. This disc is heated from underneath. The cap or cover of the machine is fitted with an injector pipe for heated air as well as an ejector for moisture. By means of this construction one may have full control over the functions as follows:—

1. Temperature of the drying chamber.
2. Speed of the rotating drying disc.
3. Velocity and temperature of the injected air.
4. Velocity of the escaping moisture.

Through these facts it is easily understood that this plant may be used for the drying of a great many substances without these first being prepared in any way whatever.

As the machine is fitted with a horizontal plate or disc this plate may be covered with a nickel or glass plate. In this way the plant is fully capable of drying stuffs containing acid.

With reference to the accompanying sketch the following explanation is given:—

The air which is led over the substance to be dried is drawn through the pipe M by means of a fan. After being heated in the compartments A and B, it is conveyed further by the same fan to the rotating drying plate through the opening Q in the top cover.

A strong current of hot air is obtained by means of another fan located over the drying plate. The air current flows in the opposite direction to that of the rotating drying disc. The rotating disc is heated by steam from the boiler.



Norwegian Machine for the Rapid Drying of Fish.

After passing the disc, the hot air is forced out through the opening Q1 by the last described fan.

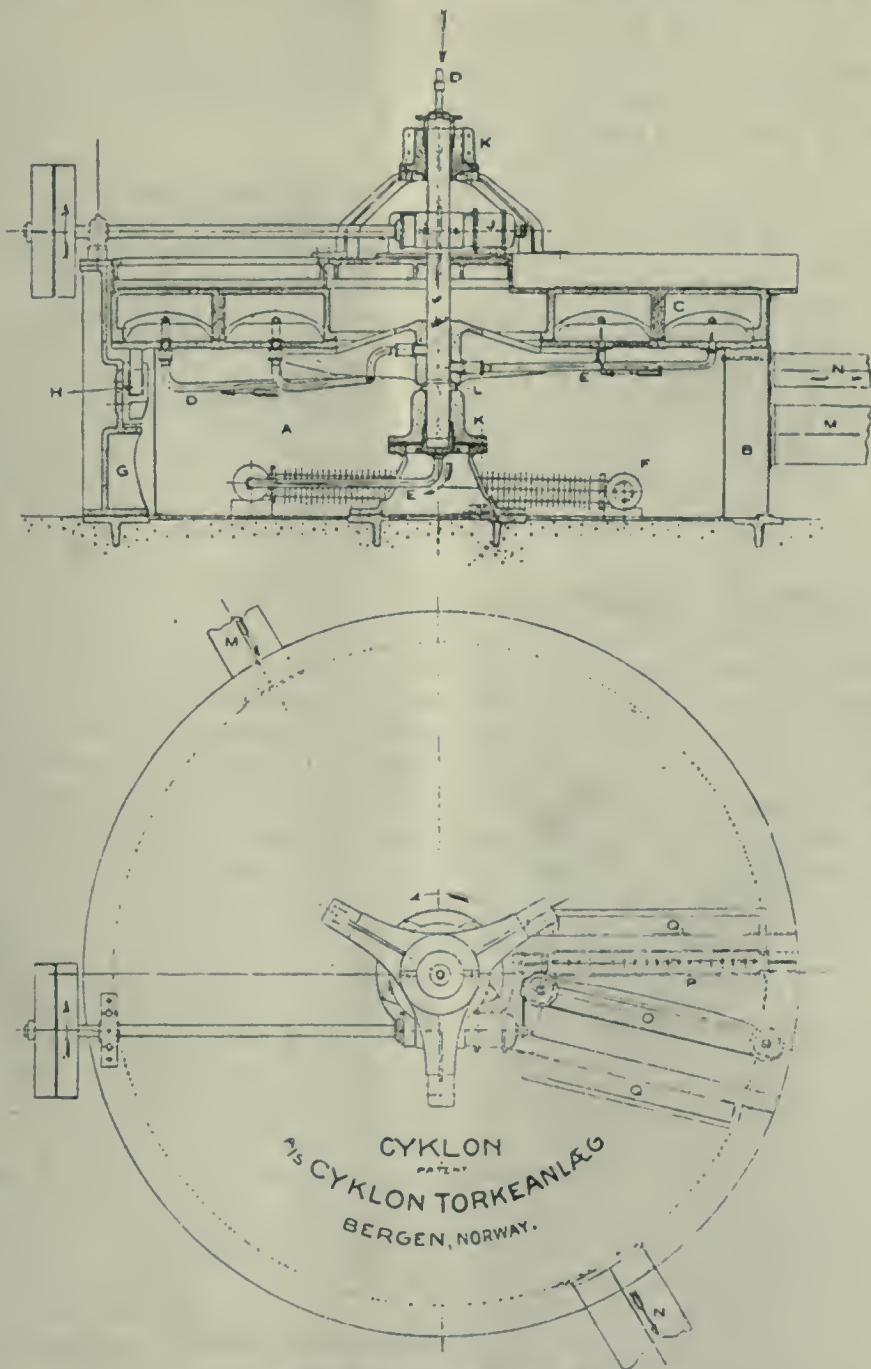
The product that is to be dried is put in through the opening P on the rotating disc. By means of a special feeding mechanism the product is spread so as to form an even thickness on the plate. When the rotating plate has travelled about one turn the product is fully dried and is loosened by the knife, after which it is drawn out by the fan to a gathering room.

and wheel. The uncharged steering bearings for the vertical shaft are lined with metal bushings.

From the gathering room the dried product is conveyed to the mill where it is ground or shredded.

As will be seen from the above explanation, the whole process is extremely simple and special attention is called to the very small space needed for the plant.

A plant of normal size only has a diameter of three metres and can easily be installed in factories already



Plan of Norwegian Drying Machine.

The feeding mechanism may be adjusted so as to feed in larger or smaller quantities. The knife is also adjustable, so that it can be given the desired inclination.

The weight of the rotating parts is taken up partly by the ball-bearing L and partly by the six rollers H, which also run on ball-bearings. The upper horizontal driving shaft, which likewise is running on ball-bearings, mediates the rotation by the aid of a worm drive

at work. Numerous experiments have proved that the plant is extremely useful in drying different products such as meat, fish, potatoes, eggs, blood, milk, etc.

The normal size type of this machine will dry about 200 kilogrammes per hour of a product containing 70 to 95 per cent of water.

For this work the whole plant requires about 60 kilogrammes of coal per hour. The working of the machine

ery is automatic, and the number of attendants necessary is only three or four persons, viz., one man to tend the machinery, one man to attend to the firing, one female assistant and one boy.

The product is not touched by hands during the whole process. The working method of the machines secures an absolutely fresh and natural product, which in the very short period of five to six seconds leaves the machine all ready.

The power necessary for the drying machine itself is 2 to 3 horse-power and for a complete plant comprising the drying machine, three fans and the mill, etc., about 8 horse-power. A boiler with 20 m² heating surface is sufficient. The machine itself weighs about ten tons. As mentioned above, different stuffs may be dried on the machine that are in a moist state or can be brought into such a state; and this invention is of special importance for the drying of fish products, which may be done in only a few seconds.

The machine is patented in all the principal countries; but the patentees are still open for negotiations for the sale of the sole right for drying fish after this method in Holland, Japan, the United States and Canada, and for Seanindavia for the drying of some other products. The cost of a machine at present is kroner 16,000 (\$4,266.67) delivered from the works.

ANGLO-BRITISH COLUMBIA PACKING COMPANY'S REPORT

Says the British Fishing News:—The report of the Anglo-British Columbia Packing Company for the year ended June 30 last, states that the net profit, after appropriation to taxation reserve account amounted to £33,132, less transferred to general reserve account £7,154 and amount transferred to insurance fund £5,000, leaving £23,028; £32,008 was brought forward, making 55,036. The directors propose to pay a dividend of 8 per cent for the year on the Preference Shares, also a dividend of 20 per cent on the Ordinary Shares, carrying forward £36,036. The company's assets in the United States have now been transferred to the Fidalgo Island Packing Company in exchange for 5,500 shares of \$100 each, on which a dividend of 10 per cent has been received this year. The salmon packed by the two companies last season amounted to 340,256 cases but the cost of production was the highest on record. Practically all the salmon for the United Kingdom was purchased in Vancouver by the British Ministry of Food, and a portion of this was distributed in this country by the company under the Ministry's scheme. The present season's pack is fair, but the run of red fish, particularly in Alaska, has been very short. None of the company's canneries on the Fraser River were operated this season. The auditors in their report state that a recent valuation of the company's properties and plant having resulted in an increase over the original cost price of such assets, the sum of \$115,000 previously written off as depreciation has now been written back to capital expenditure, with the exception of £10,000 applicable to the American properties transferred; £65,000 has been credited to general reserve and the balance of £40,000 has been credited to depreciation reserve.

CHARLOTTETOWN, P. E. I.

During the year 1919 lobsters were "high line" in the fishing industry. The catch was from 18 to 20 per cent better than that of 1918 and the value was fully 70 per cent greater. The pack, according to figures furnished by Mr. L. T. Gallant, amounted to 32,062 cases, the details being as follows by counties:

County	Pack
Kings	14,755 Cases
Queens	5,965 Cases
East Prince, Early Season	2,569 Cases
East Prince, Late Season	2,887 Cases
West Prince, Early Season	4,981 Cases
West Prince, Late Season	905 Cases

32,062 Cases

These sold from \$33 to \$38 per case, so that the total value ranges from \$1,058,079 to \$1,226,394. This is more than the total value produced by all the fisheries of the Province last year or in many previous years. In other lines the catch fell off say 50 per cent in cod, while the catch of mackerel was also small and of herring about the usual average. It seems safe to estimate the total value produced at \$1,550,000, which is above the highest record in any year past.

At present, fishing is now confined almost entirely to smelts, with some small catches of eels. The smelt fishing is good, the price paid to the fishermen being from six to seven cents per pound. Both gill and bag nets are being used, the latter to a greater extent than the former, especially since the ice formed on the rivers. The western part of the island is yielding the biggest catches. The New York market is absorbing the great bulk of the smelts and the Island papers are filled with advertisements of New York commission houses soliciting business. Last year the unsatisfactory transportation facilities especially in the early part of the season caused considerable losses owing to fish spoiling by delay in transit, but this year conditions have been greatly improved in this respect, enabling the fish to be sent through to their destination in excellent condition.

The oyster fishing came to a close with the advent of frosty weather. Mr. Gallant, Fishery Inspector, estimates the total catch at about 3,000 barrels, valued at \$30,000. Good catches were made in East and West Rivers, Orwell Bay and other waters in Queens County, but Prince County, once the great oyster county, yielded few if any of the valuable bivalves. It was thought this season that the disease which played such havoc with the beds in Malpeque Bay and contiguous waters for the past two or three years, had been stamped out, but an investigation, conducted by the Fisheries Inspector, late in the season, revealed the presence of the disease still in Grand River.

YARMOUTH FISH CO. GOING OUT OF BUSINESS

Sehr. Yafico, built for the Yarmouth Fish Co., has been sold to Bradford Smith and others of Cape Sable Island. The Yarmouth Fish Co. will dispose of all their property and wind up their affairs.

Don't forget to mark the date of the Canadian Fisheries Association Convention at Vancouver on your calendar pad for 1920. June 3rd, 4th and 5th.

Artificial Propagation of Fraser River Sockeye

By HENRY DOYLE.

In August last I wrote an article on the benefits of artificial propagation of sockeye salmon, provided Nature's own methods were employed in the work, and giving the results of our private hatchery accomplishments at Nanu as evidence of the success to be attained from such efforts. Since then three factors have appeared, each with its particular bearing on this artificial propagation question, and all of them of such vast influence as to justify a further discussion of this very important subject.

These three factors are:

(a) The increase in the number of sockeyes reaching the "lower" Fraser spawning grounds.

(b) Dr. Gilbert's 5th "Contribution to the Life History of the Sockeye Salmon" (covering the season of 1918).

(c) The proposed International Treaty in relation to the Puget Sound-Fraser river fishery.

The Results of Artificial Propagation.

In my former article I contended that "stripping the spawning streams year after year of the parent fish with no attempt made to replace them with hatchery fry, has eliminated natural propagation as a factor in those streams." Dr. Gilbert, writing of Morris Creek, says, "This stream offered in the early days one of the most valuable spawning districts in the Harrison watershed. . . . The Dominion Government has operated a spawning station here since 1885, and with the exception of the year 1900 has never failed to take eggs. . . . None of the fry in the early days were returned to Morris Creek, as it was not believed that such procedure was necessary to maintain the spawning run. Believing, then, that any increase in the run to a large river would equally benefit all the tributaries, there seemed no reason for labouriously returning fry to Morris Creek in order that they should return there and help maintain the spawning run. Knowing, as we now do, that salmon will in general return to the district in which they were liberated the fate of the Morris Creek run seems to have been inevitable. It has steadily dwindled with the years until it can no longer be depended on for any considerable take of eggs. Natural propagation was reduced to a minimum in order to obtain eggs for the hatcheries, while the hatchery reared fry did not at maturity return to Morris Creek. The same has been the history of Silver Creek. . . . The run in Silver Creek is practically now extinct, and we cannot doubt that this process has been hastened by failure to replenish its run through the planting of fry. No better examples than these can be found of the necessity of working out completely the entire life history of our commercial fishes before it is possible to propagate them with success *or to legislate wisely for their protection*. Failure to follow this principle has discredited hatchery work from the beginning and has led to the well founded suspicion that in many instances they have been more of a detriment than advantage to the runs."

In the above quotations I have underlined "*or to legislate wisely for their protection*." I will dwell more at length on this phase of the question when discussing the proposed Treaty, but I wish to emphasize this cor-

roboration, by so eminent an authority as Dr. Gilbert, of the merit of my contention.

Mr. Babcock, Mr. Robertson of the Harrison Lake Hatchery, and many others who have given considerable study to the Fraser sockeye fishery have expressed the opinion that the "upper" Fraser district produced the bulk of the sockeye runs of the past. In this I do not agree. I believe that outside of the "big" year the "lower" Fraser should be regarded as the main area of production. All the historical records of the Fraser river bear out this contention. Over 100 years ago it was a recognized fact that the "upper" regions were practically without sockeye salmon every second year, and also failed occasionally in three years out of four, while, on the other hand, the runs to the Harrison-Lillooet watersheds were consistently satisfactory.

There can be no possible doubt but that a large percentage of the depletion has been occasioned by excessive fishing, and in this I believe traps have been the most responsible factor. But I cannot see how cessation of fishing will re-stock streams that are today practically barren of spawning sockeyes. The alarming reports, annually reiterated, of a lack of spawners in "upper" Fraser waters are undoubtedly correct, but what reports attribute this shortage to natural causes? Commercial fishing has been saddled with the entire blame; its temporary abolishment is urged as the only remedy. I have been practically alone in contending that artificial propagation should be resorted to for rebuilding the "upper" Fraser runs, and even to-day I know of no other advocate of new hatcheries being established in these waters.

Hatcheries as at present conducted we know to be unsatisfactory, and my contention is—and Dr. Gilbert's Report is corroborative—that if hatcheries follow Nature's methods in propagating sockeyes their efforts will be crowned with success. We know that at the Harrison Lake hatchery a new system has been tried out which is along natural lines, and which has produced stronger and more active fry than the old methods secured. It, therefore, borders on the criminal to continue rearing sockeyes in open hatchery troughs and to ignore entirely the more promising methods. And yet this is exactly what is taking place at the present moment. At Harrison Lake hatchery—the very place where the new system has been perfected—the eggs secured this season have been placed in the old style hatchery troughs, and no attempt whatever is being made to hatch eggs by the new process. I cannot say who is to blame for such a state of affairs but certainly those responsible should be made to awaken from their lethargic condition.

The "upper" Fraser, where artificial propagation is a dead letter, has practically no runs today. The annual reports have shown the spawning beds becoming each year more barren than in the preceding season, until in 1919 they were almost entirely depleted. Under existing conditions there is neither expectation nor hope that the runs to this section can be restored.

In the "lower" Fraser area artificial propagation has been carried on at Birkenhead in the Lillooet Lake watershed, at Harrison Lake, Pitt Lake, Cultus Lake, and Kawkawa Lake; the latter being at the head of Coqua-

halla river. Excepting at Harrison Lake hatchery (and even there to a slight extent) the fry have been released in streams that have lake waters between them and the main Fraser River. The success to be expected from intelligent hatchery efforts I think is demonstrated by this season's results in these "lower" Fraser waters. Despite the great and varied amount of fishing gear employed, the commercial take of sockeyes was—excepting 1886—the poorest in the history of the industry. The number of sockeyes Mr. Babcock reports to have reached the "upper" river sections was likewise the smallest he has ever observed. And yet the "lower" river sections that were assisted by artificial propagation show decided increases over four years ago. Not only did sockeyes run the gauntlet of fishing appliances intended to intercept them, but the number that did this successfully were considerably greater than was the case in any of the past few years. At Birkenhead over 30 million eggs have been secured and the hatchery superintendent writes that the run which arrived there has been the largest in years. From the little stream at Harrison Lake hatchery more than four million eggs were taken, nearly three times as many as in 1918; Pitt Lake has shown just as satisfactory an increase; and Hawkawa Lake, which received its first planting of hatchery fry in 1915, this season has enjoyed an enormous run of spawning sockeyes. It is estimated by the hatchery officials that 70,000 adult sockeyes have passed into this lake during the past ninety days.

Purse Seine Fishing.

Sockeyes entering the Straits of Fuca, on the return journey to their spawning grounds, assemble in compact masses. When trap fishing first started, and when it was believed purse seines could not be successfully employed to capture sockeyes it was a common sight to see large schools of this species travelling through the Sound waters. They swam close to the surface and, since traps are stationary appliances, there was nothing to alarm or disturb them in their progress. The leaders entered the trap openings without fear, and the masses behind followed on blindly; and thus the traps exacted an enormous toll. But with the advent of purse seines all this was changed. The seiners went out to meet the fish before they entered the trapping area; the casting of the net, and the noises and disturbances of gasoline boats alarmed them; and the multitude of purse seines employed broke up and scattered the schools. The sockeyes' natural instinct taught them to seek greater depths, and, as the seiners followed the onward pathway of the fish, and continued to disturb and harass them whenever they appeared on the surface, they soon learned that quietness and safety lay only in the deeper waters. They no longer travelled in enormous bodies, but each individual looked out for itself, and while still keeping in touch with the Fraser fresh water influence, they journeyed on over a wider area and in a more scattered formation. In this departure from their normal habits they but emulated the birds of the air and the beasts of the field that in closed seasons lead a community life, but which scatter and seek shelter when hunters are active.

As evidence of this scattering of sockeyes and of their deeper swimming habits I would point out:—

- (a) The absence of the compact schools of sockeyes formerly noticed in the trapping areas.
- (b) The decrease in the number of trap caught fish despite the increase in the number of sockeyes reaching the "lower" Fraser spawning grounds, and

- (c) The better gill net catches made in English Bay and the North Arm of the Fraser (i.e., the more outlying B.C. waters of the Fraser river) since purse seines have been employed on Puget Sound.

If, as is now proposed, purse seines be shut out of the sockeye area of Puget Sound waters, the natural result will be that sockeyes will follow their normal mode of progress; the traps increase their catches so their total take will exceed the present total of purse seines and traps combined; and the fish entering B.C. waters will swim nearer the surface and increased numbers will fall victims to the gill net fishermen. These are my views, and while I make no claim of infallibility, I would hesitate long before condemning purse seines when there is no direct positive proof that to them more than to any other appliance, or cause, is the decrease in the Fraser river sockeye fishery attributable.

A Closed Period in the Middle of the Fishing Season.

Dr. Gilbert in several of his reports, especially the last one, has pretty conclusively shown that every tributary of the Fraser river that sockeye salmon frequent has its own distinctive individual run of fish. And not only do the sockeyes of these tributaries differ in the age at which they return from the sea, but they also have a *distinctive time* for making the homeward journey. It might therefore follow that open fishing until 20th July would exterminate the "upper" Fraser runs; the closed time from 20th July to 1st August enable the entire Lillooet Lake (Birkenhead) run to proceed unmolested to their spawning beds; and the open season after 1st August intercept all the sockeyes bound for Harrison Lake, Pitt Lake, and the other spawning areas of the "lower" river. Granting that such an extreme result did occur, what would be the situation? There would be complete extermination of Fraser river sockeyes, except in the Lillooet Lake area.

This view point is not as far fetched as one might imagine. In the early days of the Fraser river sockeye fishing there were two or more heavy runs of sockeyes. July fishing was profitable and a goodly portion of the total annual pack was secured in that month. In 1899 the early July run on Puget Sound was quite heavy; some of the packers had their season's preparation of cans filled out of this early run, and about 25 per cent of that year's total for Puget Sound was packed by the middle of the month. The run ceased; and packers were just about concluding there would be no more fish when another, and larger, run made its appearance.

Up to this time separate runs of sockeyes were generally recognized features. But with 1899 two things happened. First, while Puget Sound had the early and late runs, the Fraser canners only participated in the latter. Second, never, to my knowledge, since that year has more than one run been experienced even on Puget Sound. It would appear that the traps had secured *all* the early run of spawners, and it was from that time on the Fraser entered its period of decline.

In the old days of the fur traders while salmon on the "upper" Fraser were generally scarce every even numbered year—such as 1810, 1812, 1814, etc.—the odd numbered years very rarely failed. But since 1899 only in the years of the "big" run has the "upper" river enjoyed plenty of fish. It probably is largely due to the Puget Sound traps that the early runs are things of

(Continued on Page 488D.)



Airplane Fishing

By JEFFERSON WILLIAMSON.



The use of the seaplane as an aid to commercial fishermen of the United States became an established fact when, on Tuesday, December 16, a seaplane patrol consisting of two Government planes from the aviation field near San Diego, Calif., were put in operation off the coast of Southern California. Its success was instantaneous. Despatches from San Diego state that within fifteen minutes after the planes had been taken to the air the pilots reported the location of two schools of fish which provided the smaeksmen a profitable day's work.

The pilots made their reports by wireless to a Government submarine chaser in the harbor, which relayed the information to the fishermen, who set out immediately to take advantage of the airmen's discoveries.

This event was the auspicious beginning of plans which have been worked out by the Bureau of Fisheries, United States Department of Commerce, to give aerial assistance to the fishermen on both the Atlantic and Pacific coasts wherever there are fishing fleets of sufficient importance to make the work worth while. Rapid extension of the plans is contemplated and it is expected that within the next few weeks seaplanes all along both coasts will be co-operating with the fisheries vessels.

There are improvements yet to be made in the plans and one of the first of these will be that one or more experienced seiners be detailed by the fishermen to go aloft in the planes with the pilots and act as observers for the aircraft, because the experience of the naval aviators has not been such as to enable them, without considerable training, to assist in directing the movements of the fishing vessels. Another important improvement which immediately suggests itself is that instead of having to wait in harbour for reports relayed to them from Government ships, the fishing vessels be equipped with small radio receiving apparatus, capable of getting messages from, say, a distance of twenty or twenty-five miles. It would be necessary for only one vessel of a fleet to carry the apparatus, which would be a great time saver and greatly facilitate quick action on the part of the fleet.

Plans for similar aid to the commercial fisheries of other countries are under way but so far as is known the successful test at San Diego is the first practical work thus far done. The Fisheries Bureau of the United States began experimenting two or three months ago on the Atlantic Coast where, it is expected, the next seaplane aid will be established. W. W. Welsh, of the Bureau, who made the first observation flight (unaccompanied, however, by a fishing fleet), is great-

ly impressed with the possibilities of the work and predicts for it a great future. Mr. Welsh gives a graphic account of his initial observation trip and the facts he was able to establish during the course of it. He went up with a pilot of the Naval Air Station at Cape May, New Jersey, and made a one and one-half hour tour, at an altitude ranging from 500 to 1,000 feet. It was, he says, a clear day except for a few scattered clouds, but at no time was the sun obscured. There was a light westerly breeze and a smooth sea, covered with small ripples.

"At the time of the flight," says Mr. Welsh, "no schooling fish were breaking water upon the surface and none would have been visible from the crow's nest of a vessel except at very short range, and then only by the color of the water above them. From the shore and from the ocean pier there were no indication of any schools of fish in the vicinity. The water was quite green and rather thick, due to the abundance of plankton.

"The plane ascended rapidly to about 800 feet and most of the trip was made at that altitude. Few schools of fish were seen at first, but as my eyes grew more accustomed to conditions many small schools of menhaden were observed, all moving at some depth and none of them breaking water. Some schools were so near the surface that they appeared as a reddish-brown granular mass, constantly changing in form. Deeper schools had the appearance of large masses of sunken gulfweed and others were so deep that they could be distinguished chiefly by the shadow they caused on the suspended particles in the water. From a comparison with other objects seen at known depth, it is estimated that the depth of the schools varied from about two to ten feet, and possibly more.

"One school of silvery fish was observed breaking water. Those were possibly weakfish, certainly not menhaden, as they lacked the characteristic color of the latter. A school of porpoises was clearly seen and could be followed under water.

"The range of visibility of the menhaden schools varied according to the depth of the school and the angle of incidence of the sun's rays. However, had the fish been ruffling the surface they could have been seen as far as the size of the school and the atmospheric conditions permitted. This was evident by the visibility of tide-rips and catspaws of wind upon the surface. The deeper the school, the more necessary it was to approach it in order to see it. The deepest schools observed were only visible from directly above. When the sun's rays were reflected from the surface it was impossible to see anything, and the

visibility only improved as the eye was directed away from the angle of incidence of the sun. On the particular day in question, the majority of schools of fish were at such a depth that they were invisible at a greater angle than 45 or 50 degrees from the nadir, and visible only on the side of the plane away from the sun."

Mr. Welsh says that aerial aid to fishermen will, of course, be most valuable in the pursuit of such fish as go in schools—herring, mackerel, bluefish, bluebacks, menhaden and others. In the case of the spring mackerel fishery, he says, it is believed that the use of aircraft would save much time in locating the fish upon their first appearance and in enabling the fishermen to keep in touch with the fish as they appeared farther north. The chief service rendered, naturally, would be the notification of the fishermen of the general vicinity of the schools with the consequent benefit to the fishing fleet of time and fuel saved in the search for fish and in the concentration of effort on large schools instead of wasting time on small, scattered bunches of fish. It is quite possible also, he says, that schools of large, fat fish might be

distinguished from those of smaller, leaner fish, although this would require experience in observation. Another field for experiment, he says, would lie in the guidance of fishing steamers to large schools not visible from the cross-trees but plainly visible from aircraft, and communication by means of wireless telephone, marking buoys, and other devices, would enable the boats to set the seine around the fish, invisible to them. He points out that such co-operation would be of great advantage to the Naval Air Service as well as to the fishing interests, as it would provide for the naval aviators excellent practice in scouting, station finding and communication.

It is Mr. Welsh's belief that in no other way could such a clear idea be gained of the abundance or scarcity of the fish schooling species, and of the characteristic appearance of the schools. By means of aircraft the location and extent of the nets, the number and position of the fishing craft and many other things relating to the fisheries can thus be accurately observed in a mere fraction of time that would be required in any other way.



Re-Establishment of Soldier and Sailor Fishermen

By COLIN MCKAY



Suggestions have been made that the Canadian Government, which is carrying on an excellent scheme for assisting ex-soldiers to establish themselves on the land should have provided for the advancement of loans to demobilized men who desired to establish themselves in the fisheries. Apparently nothing has come of them—perhaps for the reason that men who have served the colors and returned to the life of the fisheries have felt competent to carry on without the help of State loans.

In Great Britain, however, the Government has made some provision to enable fishermen who were called to the colors to resume their occupations under more favorable conditions than most of them could hope to attain to, if left to their own devices. Arrangements have been made whereby groups of ex-service men may have first choice in the purchase of trawlers released by the Admiralty, or may take over under conditions of easy payments on the installment plan. The Government has also placed at the disposal of the Fishery Boards a considerable sum of money to be used in assisting demobilized fishermen of good character to obtain new motor boats, or install motors in sailing boats owned by them. The first call on this fund will be for the construction of new boats, and applications for loans for motor engines take second place in the consideration of the Boards. Loans may be made direct to the fishermen, or through Co-opera-

tive Fishery Societies. Boats must be constructed in accordance with specifications prepared by the Board, and when completed are turned over to the fishermen on the deferred payment plan. The Fishery Board of Scotland has decided in the first instance to build motor boats for the herring fisheries in the Firth of Clyde, and West Coast Lochs—boats of a type which at present cost about 1,100 pounds sterling each. Where loans are made to boat owners to enable them to install motor engines, the type and horse power of the engine is subject to the approval of the Board. Preference is given to the application of two or more fishermen working together, and where the applicants are in a position to contribute a portion of the cost of the boat or motor at once they are required to do so. Loans are repayable in half yearly installments with interest at four per cent; in case of boats fitted with engines the loan must be repaid in ten years and in the case of motors alone in five years. Boats must be kept insured by the borrowers in the name of the board, and be maintained in good condition. The fishermen may repay the whole loan at any time, but so long as they owe anything on the boat or engines they may not sell or transfer without the approval of the Board. If a Co-operative Society is formed at the port where the borrower belongs the Board may at its discretion compel him to become a member of such society.



Trade Names For Canadian Fish

Results of General Canvass and Popular Selection

Some few months ago, Dr. A. G. Huntsman, Professor of Marine Biology, Toronto University, and one of the Canadian Fisheries Association's most valued members, undertook to standardize the trade names of the various species of Canadian commercial fish. Circulars were sent to the Industry all over Canada and from the replies received and personal discussion with organizations and individuals, Dr. Huntsman has submitted the list herewith published. In a communication to the Secretary of the C. F. A., Dr. Huntsman suggests calling a meeting early in the

New Year between a committee of the C. F. A. and the Biological Board to finally ratify the names selected. The standardized names will then be submitted to the U. S. Fisheries Association and the Bureau of Fisheries with the hope that they will adopt the same in their trade and thus make the names of all North American fish common to both countries. The list of fish names comprising the present Blue Book nomenclature, the scientific designation, and the suggested name selected after canvassing the trade is as follows:

Present Blue Book Name	Scientific Name	Suggested Trade Name
1 Albacore	Thunnus thynnus	Tuna
2 Alewife	Pomolobus pseudoharengus and Pomolobus aestivalis	Alewife
3 Angler	Lophius piscatorius	Angler
4 Bass	Roccus lineatus	Striped Bass
Beluga	Delphinapterus leucas	Beluga
6 Black Bass	Micropterus dolomieu and Micropterus salmoides	Black Bass
7 Black Cod	Anoplopoma fimbria	Sablefish
8 Blackfish	Globicephala melas	Blackwhale
9 Blue Perch	Tautoglabrus adspersus	Cunner
10 Burbot	Lota maculosa	Burbot
11 Capelin	Mallotus villosus	Capelin
12 Carp	Cyprinus carpio	Carp
13 Catfish	Ameiurus nebulosus, Ameiurus lacustris and Ictalurus punctatus	Catfish
14 Clam	Mya arenaria	Soft Clam
15 Clam	Saxidomus giganteus	Butter Clam
16 Clam	Paphia staminea	Little Neck Clam
17 Cockle	Lunatia heros	Round Wheelk
18 Cod	Gadus morrhua	Cod
19 Crab	Cancer magister	Pacific Crab
20 Cusk	Brosmius brosme	Cusk
21 Dollar Fish	Poronotus triacanthus	Butterfish
22 Dulse	Rhodymenia palmata	Dulse
23 Eel	Anguilla chrysypa	Eel
24 Flounder	Pseudopleuronectes americanus	Flounder
25 Flounder	Limanda ferruginea	Flounder or Dab
26 Flounder	Glyptocephalus cynoglossus	Flounder or Witch
27 Flounder	Hippoglossoides platessoides	Flounder or Canadian Plaice
28 Fur Seal	Callorhinus ursinus	Fur Seal
29 Goldeye	Hiodon alosoides	Goldeye
30 Grayfish	Squalus acanthias and Squalus auckilli	Grayfish
31 Greyling	Coregonus williamsoni	Alberta Cisco
32 Haddock	Melanogrammus aeglefinus	Haddock
33 Hair Seal	Phoca groenlandica, Phoca foetida, Phoca vitulina and Cystophora cristata	Hair Seal
34 Hake	Urophycis chuss and Urophycis tenuis	American Hake
35 Halibut	Hippoglossus hippoglossus	Halibut
36 Herring	Clupea harengus and Clupea pallasii	Herring
37 Herring	Leucichthys (Thriassomimus) spec. var. Leucichthys eriensis, and Leucichthys (Cisco) spec. var.	Cisco
38 Launce	Ammodytes americanus	Launce
39 Lobster	Homarus americanus	Lobster

Present Blue Book Name	Scientific Name	Suggested Trade Name
40 Lumpfish	<i>Cyclopterus lumpus</i>	Lump
41 Mackerel	<i>Scomber scombrus</i>	Mackerei
42 Maskinonge	<i>Lucius masquinongy</i>	Maskinonge
43 Mullet	<i>Moxostoma aureolum</i> , <i>Moxostoma breviceps</i> and <i>Moxostoma lesueurii</i>	Lake Mullet
44 Mussel	<i>Hytilus edulis</i>	Mussel
45 Muttonfish	<i>Zoarces anguillaris</i>	Muttonfish
46 Octopus	<i>Octopus spec.</i>	Octopus
47 Oulachon	<i>Thaleichthys pacificus</i>	Oolachon
48 Oyster	<i>Ostrea virginiana</i> and <i>Ostrea lurida</i>	Oyster
49 Perch	<i>Perca flavescens</i>	Yellow Perch
50 Pickerel	<i>Stizostedion vitreum</i> and <i>Stizostedion canadense</i>	Pike-perch
51 Pike	<i>Lucius reticulatus</i> and <i>Lucius lucius</i>	Jackfish
52 Pitchard	<i>Clupanodon caeruleus</i>	Pichard
53 Pollock	<i>Pollachius virens</i>	Pollock
54 Porpoise	<i>Phocaena phocaena</i>	Porpoise
55 Quahaug	<i>Venus mercenaria</i>	Quahaug
56 Rock Cod	<i>Sebastes melanops</i> , <i>Sebastes ruberrimus</i> and <i>Sebastes species</i>	Rockfish
57 Rock Cod	<i>Gadus ogac</i>	Cod
58 Rockweed	<i>Fucus vesiculosus</i> and <i>Ascophyllum modosum</i>	Rockweed
59 Rosefish	<i>Sebastes marinus</i>	Redfish
60 Salmon	<i>Salmo salar</i>	Salmon
61 Salmon (Sockeye)	<i>Oncorhynchus nerka</i>	Sockeye Salmon
62 Salmon Cohoe	<i>Oncorhynchus kisutch</i>	Cohoe Salmon
63 Salmon (Spring)	<i>Oncorhynchus tshawytscha</i>	Spring Salmon
64 Salmon (Pink)	<i>Oncorhynchus gorbuscha</i>	Pink Salmon
65 Salmon (Chum)	<i>Oncorhynchus keta</i>	Chum-Salmon
66 Scallop	<i>Pecten magellanicus</i>	Scallop
67 Shad	<i>Alosa sapidissima</i>	Shad
68 Silver Hake	<i>Merluccius bilinearis</i>	Silver Hake
69 Skate	<i>Raja laevis</i> , <i>Raja ocellata</i> and <i>Raja binoculata</i>	Ray
70 Smelt	<i>Osmerus mordax</i> and <i>Osmerus thaleichthys</i>	Smelt
71 Squid	<i>Ommastrephes illicebrosa</i>	Squid
72 Sturgeon	<i>Acipenser sturio</i> , <i>Acipenser rubicundus</i> and <i>Acipenser transmontanus</i>	Sturgeon
73 Sucker	<i>Catostomus catostomus</i> and <i>Catostomus commersoni</i>	Sucker
74 Swordfish	<i>Xiphias gladius</i>	Swordfish
75 Tomcod	<i>Microgadus tomcod</i> and <i>Microgadus proximus</i>	Tomcod
76 Trout	<i>Salvelinus fontinalis</i>	Brook Trout
77 Trout	<i>Cristivomer namaycush</i>	Lake Trout
78 Trout	<i>Salmo clarkii</i>	Spotted Trout
79 Trout	<i>Salmo irideus</i>	Rainbow Trout
80 Tullibee	<i>Leucichthys tullibee</i>	Tullibee
81 Turbot	<i>Rheinhardtius hippoglossoides</i>	Greenland Halibut
82 Whitefish	<i>Coregonus clupeaformis</i> and <i>Coregonus quadrilateralis</i>	Whitefish
83 Winkle	<i>Littorina litorea</i>	Winkle
84 Wolffish	<i>Anarrhichas lupus</i> , <i>Anarrhichas minor</i> and <i>Anarrhichas latifrons</i>	Kingfish

BRITISH FISHERIES EDUCATION

In the British House of Commons recently Mr. Irving (Burnley-Lab.) asked the Parliamentary Secretary of the Board of Agriculture whether the Board of Agriculture and Fisheries would be prepared to make grants from money placed at their disposal by the Treasury from the Development Fund for the purpose of aiding local sea fisheries authorities in England and Wales to extend and systematize fisheries education in their districts.

Sir Arthur Boseawen—The Board have no grants at their disposal for the purpose mentioned by the honorable member, but are considering the whole question of training and education of fishermen with a view to discussing it with the Board of Education.

Mr. Irving—When you can find money for agricultural education why can't you find it for fisheries education?

Sir A. Boseawen—We have not refused. We are taking up the question with the Board of Education.

(The British industry seems to be suffering from the same handicap as our own. The farmer features as the "spoiled darling" in the Old Country as in Canada.)

The imports of canned, dried and pickled fish into the Island of Dominica during 1918 amounted to approximately \$54,000 in value, of which amount Canada claims the greatest share.



PACIFIC COAST SECTION

"The Canadian Fisherman," Pacific Coast Branch, will be glad to have inquiries from any one who wishes information in any way connected with the fishing industry. We would also appreciate items of fishing news suitable for publication.

Address communications to F. E. Payson, Pacific Coast Manager, Industrial & Educational Press, Ltd., 507 Board of Trade Building, Vancouver, B.C., Canada

HALIBUT CLOSED SEASON TO BEGIN 1920.

According to a Washington D. C. report the Joint International Fisheries Conference has framed a new treaty providing for a closed season for fishing halibut. This closed season to extend from November to February 15th beginning in 1920. The treaty is to run fifteen years with privilege of renewal. The treaty does not prevent fishing for other varieties.

Halibut which may be caught accidentally during the closed period must be sold fresh canned or cured at the first port of landing. It provides that no halibut can be shipped from these ports during the closed season.

Besides halibut conservation measures, it deals with reciprocal fishing privileges in the North Pacific and lobster fishing in the North Atlantic. It binds both countries to levy no customs duties on fresh fish, and fishing vessels registered under each country are given the privilege, without license or fee, to enter the ports of the other to purchase bait or supplies, ship crews, trans-ship catch in bond, buy fishing implements, land or sell catches, enter and clear without tonnage dues or duties, and to preserve, salt and prepare catches on board ship in port subject to local regulations.

Persons employed on fishing vessels are made subject to the immigration laws of the country they visit, and a fishing vessel passing through territorial waters of either country is not required to clear at any port or report to customs officials. The power to enforce the provisions of the treaty is vested in the International Fisheries Commission created in the Sockeye salmon treaty, which is shortly to come before the senate for approval.

Persons violating the provisions of the new treaty are subject to seizure and arrest on the high seas by the authorities of either nation, but they must be turned over to the authorities of their own nation for prosecution.

The decision regarding the treaty was arrived at after a very careful consideration and survey of the halibut banks of the Atlantic and Pacific oceans. This survey showed that unless conservation measures were taken these fishing banks would be completely destroyed owing to their rapid depletion during the past few years.

RETAILERS ADVISE CONSUMERS TO BUY CANNED FISH BY THE CASE

By F. E. PAYSON, Secretary Canadian Fisheries Association, Vancouver, B. C.

As a general thing a pound of canned fish is the basis of a meal for four persons. Where it is a large family more than a one pound can is needed.

This year the fruit growers of several Western States spent a large sum of money advertising. This advertising was to advise the public to buy apples by the box. The campaign was successful. Now, why isn't it just as sensible to buy a case of canned fish instead of a can. A big saving would be made by purchasing in quantity. If a case was too much for one family, they buy on the co-operative basis, that is, one family buys a case of canned fish and it is divided up among two or three neighbors.

This plan applies more particularly in the cities and suburbs. In most of the large cities there are delivery zones within a fifteen or twenty mile radius. In rural communities the tendency is toward buying in larger quantities and not as often. This class of trade is one of the best sources through which to build up a case trade in canned fish.

There are several good arguments in favor of buying by the case. The goods will keep indefinitely. The saving in cost to the consumer is very much worth while, as the retailer can afford a liberal allowance when selling goods in quantity. The goods are in handy packages, and nothing is wasted as it is only necessary to open just the amount you are going to use.

The next time the wholesaler fills an order for canned fish, let him begin asking the retailer to try selling canned fish by the case. Explain how he can make larger and quicker turn overs. It can be done. Try it out, and big results are sure to come. The firms in the large cities can make this a big drawing card by advertising special sales of canned fish by the case, at special prices.

In the large prairie centers a campaign of this kind advising the rancher to buy a case of canned fish is bound to find favor.

Mr. Wholesaler, now is your chance to increase the sale of canned fish. Give it a trial and you will be mighty well pleased at the good returns.

DISAPPROVE PROPOSED PLAN TO THROW OPEN FISHING RIGHTS IN BRITISH COLUMBIA

Executive members of the Army and Navy Veterans Association, in Vancouver, B. C., have strongly disapproved the proposed plan of the authorities to throw open the salmon fisheries of British Columbia to all British subjects whether by naturalization or birth.

A strong resolution was passed to be forwarded to the Minister of Marine and Fisheries, stating in part as follows:

1. "That at least 40 per cent of the licenses on Rivers Inlet be reserved for returned men, and that the 15 per cent allotted on the Skeena this year be increased to 30 per cent for 1920.

2. "That purse and drag seining should be prohibited on Nitinat Lake and 60 gill net licenses be issued, preferably to local settlers. Under present conditions it is a private reserve of an American corporation, which employs chiefly aliens from the United States.

3. "That seine licenses be granted only to British born citizens or naturalized citizens who served with the forces. These men must actually operate the gear themselves and have three years fishing experience, at last 50 per cent of them to be returned soldiers, sailors, marines or merchant seamen.

4. "Assistance should be provided fishermen to enable them to obtain their own gasoline boats in the same way that farmers are granted land under the Land Settlement Board scheme.

5. "All naturalized alien enemies who did not register with the police between 1914 and 1919 should be debarred from obtaining licenses.

6. "All issues of naturalization papers should contain a full description of the individual, his photograph and finger prints.

ONE ORGANIZATION FOR FISHERMEN OF BRITISH COLUMBIA PLANNED

At a recent meeting held in New Westminster, B. C., under the auspices of the Fraser River Fishermen's Association, plans were inaugurated toward the formation of one large, active association with the object of improving conditions in the fishing industry of British Columbia.

A notice of motion was presented to be voted on at the next regular meeting, to change the present name from the Fraser River Fishermen's Association to "The British Columbia Fishermen's Protective Association" and instructing the president to take steps towards affiliating with the New Westminster Trades and Labor Council and also to look into the subject of affiliating with the Trades and Labor Congress of Canada.

The idea is to have the fishermen of the three fisheries districts of British Columbia come under the jurisdiction of the one association, but with power to organize a local branch in each of the respective districts to be known as unions number one, two and three.

HERRING SCARCE.

Reports from the West Coast of the Vancouver Island are that the run of herring has been very disappointing and that at the present time the fishermen are not making expenses.

FISHING BY AID OF SEAPLANES.

In San Diego, Calif., they have established an aerial Fish Patrol. The seaplanes go looking for schools of sardines, and upon sighting them flash the news by radio to a submarine chaser whose commander relays the message to the waiting fish boats. Good catches result.

SOUTH AMERICAN TRADE.

The Canadian Fisherman believes that the trade with the West Coast of Central and South America is well worth going after very strongly by British Columbia canned and cured fish firms.

At the present time some very good sales are being made in canned fish, although it is generally understood that San Francisco is getting most of this trade. This should not be the case, especially as soon as we get the direct steamer service to the West Coast of South America, which is promised for this coming year. There is an intermittent service at the present time.

Now is the time to get in touch with this wonderful market, and be ready for the service which is promised us, and which is assured as a permanent service in the trade warrants.

The Fisherman is busy now endeavoring to secure information that will be valuable to all in the canned and cured fish business. During January we hope to have some particulars that will assist in developing an interest in British Columbia by the South American firms, and then it is up to the exporters of canned and cured fish to get busy and make a hard concerted drive for this business.

ADVICE TO FOREIGN PURCHASERS OF CANNED FISH.

It is essential that Foreign buyers of Canadian Canned Fish should employ reputable and experienced representatives.

The new firm of Birks and Crawford, who have recently opened offices at 325 Homer St. Vancouver, B. C., enter the canned fish trade with an experience extending over twenty years in the business. They are familiar with the requirements of buyers from all parts of the world.

Their specialty is to act as Canadian Representatives of Buyers of Canadian Canned Fish. Enquiries from any part of the World will have their closest attention, and they solicit such enquiries.

They also have excellent facilities for the warehousing of any kind of goods.

VANCOUVER LOCALS.

Mr. James L. Lee, manager of the Atlin Fisheries, Limited, and his wife have been in Vancouver recently.

Mr. A. W. Sterrett, Supt. of the Canadian Fishing Company, Limited, is going to Santa Barbara, California, for the winter on account of his health. He will return in the Spring.

Mr. R. J. Davis will assume Mr. Sterrett's duties while he is away. Mr. Davis was formerly Vice-President of the Pacific Cold Storage Company at Tacoma, Wash.

Harry Hall & Company Move to Larger Offices

Finding their business expanding and needing more room, Mr. F. A. Gosse, Vancouver Manager of Harry Hall & Company, has secured new and a more commodious suite of offices on the 14th floor of the Standard Bank Bldg.

Mr. R. G. Scott has gone to Southern California to look over the fishing industry in that section. Bob was on the West Coast of Vancouver Island all through the fall salmon season.

Mr. Wm. Shrubbsall, the well known smoked fish man of Price Rupert, has gone to Southern California with the idea of entering business there.

B. C. Salmon Cannery Association in New Quarters

The B. C. Salmon Cannery Association have moved into new quarters on the 8th floor of the London Bldg., 626 Pender St. West. According to Mr. Burdis, Secretary of the Association, they had occupied the former quarters since 1906, at which time the building in which they secured offices (The Crown Bldg.) was the first fireproof building in Vancouver.

O'Loane & Kiely Uptown

O'Loane & Kiely are now settled in their new offices, 1110 Dominion Bldg., 207 Hastings St. West, having moved from 157 Water Street.

Col. Cunningham, Chief Inspector of fisheries in British Columbia for the Dominion Fisheries Department, is in Ottawa on business in connection with the Department.

Col. C. W. Peek, V.C., and Mayor McClymont of Prince Rupert are at Ottawa in connection with the question of opening up the salmon fisheries in Northern British Columbia.

LONDON FISH COMPANY CHANGE OWNERSHIP

V. F. Johncox has sold the London Fish Company of which he has been the owner for the past seven years.

Mr. Wm. Johncox and Mr. John Blair who have been with the Company for some time are to continue Mr. Wm. Johncox becoming Manager and Mr. Blair office manager for the new owners.

Mr. V. F. Johncox is secretary for the B. C. Wholesale Fish Dealers' Association, and has always been to the front in any movement for the good of the fishing industry. He has not made definite plans for the future, but expects to stay in the fishing industry, but not in the fresh fish branch.

RETURNED SOLDIER FISHERMAN DIVES OVERBOARD WITH CLOTHES ON FIRE.

R. Brown a returned soldier, who has been fishing at Pender Harbor had a painful and nearly fatal experience recently. Leaving Pender Harbor on his launch with a load of herring for Nanaimo, his engine stalled when a few hours out. He found the gasoline feed pipe was clogged. To clear it he had to crawl in under a bulkhead, which he did when he unscrewed the pipe the oil spurted out and caught fire from a lantern he was carrying. He had to crawl through the flames which set fire to his clothing. To extinguish the flames he dived into the water. The sea being very rough he had a hard time regaining the boat, but finally succeeded in doing so. By this time the flames had enveloped the cabin, but he finally extinguished them. It was now 4 o'clock in the morning, and Brown found himself in a hard plight. A long way from port, and his engine out of commission. Notwithstanding bad burns to his hands and arms he got out his oars and started to row. By hard work, and after nine hours rowing through a rough sea, he finally succeeded in making Nanaimo.

It will be several weeks before Brown is able to get back to his fishing.

SOMETHING ABOUT DESTROYERS OF SALMON EGGS.

From the Vancouver Daily World

The Salmon Fishing Industry.

To the Editor of the World:

Sir:—I have made my home within one mile of the Vedder river for over thirty years, and during all these years have done a lot of fishing with a hook and line, and for the last fifteen years have seen the salmon gradually getting less in numbers coming to the spawning grounds. Naturally I began to look for a cause. First, there are small fish which accompany the salmon to the spawning ground. They resemble the herring in size and color. They are so small and numerous that the salmon cannot fight them away; they will run in under the salmon when they are spawning and grab the eggs before they touch the spawning bed. After the salmon are done spawning and gone, these fish put in the winter digging the salmon eggs out of the gravel and sand. Then in the spring of the year there is a small black sucker, weighing from one-half pound to a pound that run up the river by the hundreds of thousands. These are responsible for the destruction of a great many of the young salmon. Now, if something is not done to get rid of these natural enemies of the salmon it is only a matter of time until it is "Goodbye to the salmon. Bears also destroy a lot of salmon and eggs on the spawning grounds.

Two of the governments officials have admitted to me that the traps and hatchery on Cultus Lake outlet are in the wrong place. They said they ought to be on the other or upper end of the lake, which is perfectly true. What I would like to know is why they are not there. I would also like to know why the salmon are not allowed to go into the lake, where they have plenty of room to ripen in a healthy condition, then caught in trap-nets, which would not injure them, and the spawn could be gotten for the hatcheries in a good healthy condition.

Yours, etc.,

W. E. A. THORNTON.

R. R. No. 1, Sardis, B. C., Dec. 11, 1919.

LORD LEVERHULME IN VANCOUVER

British Columbia Sea Products Interest Him

Mr. A. L. Hager, Manager of the Canadian Fishing Company, had some distinguished visitors recently when Lord Leverhulme, Capt. J. F. Crichton, his advisory expert on fishery matters, and Mr. Angus Watson, head of the Skipper Sardine Company, called on him.

Mr. Hager showed the party over the plant, which, by the way, is the only plant in British Columbia that combines every method for handling fish. The Canadian Fishing Company have unequalled facilities for handling any quantity of fresh fish from small express shipments to trainloads. The cold storage plant is one of the best on the Coast for freezing and storing fish and shipping facilities. The curing plant is the largest and most up-to-date, and the cannery is equipped with the latest type of machinery and is a model in sanitation and for the efficient canning of fish.

Lord Leverhulme was intensely interested in this wonderful fish plant. Every department was thoroughly inspected.

Capt. Crichton believed no trouble would be experienced in refrigerator service across the Continent. The principal feature would be the securing of sufficient and suitable bottoms for trans-Atlantic serv-

ice. None of the party would make any definite statements regarding whether the Lever interests proposed operating their own fleets on the West Coast or would secure supplies from firms already operating. Although His Lordship nor any of his party would make any definite announcement it was stated that plans for the shipment of frozen fish and fish products to England as a part of the gigantic fishing merger that was being organized in the Old Country were being seriously considered.

It has been reported that the Lever interests have already secured a large share, if not control, of the English and Scotch vessels, plants and equipment operating in the fishing trade, and have made plans for operating and extending on an enormous scale their many interests.

It is now stated in a news report that Lord Leverhulme has acquired the business of Messrs. John S. Duncan and Sons of Liverpool, a leading firm of fish dealers. This is in connection with his scheme of developing the Island of Lewis fisheries.

VANCOUVER SHIPPING

On December 8th the S. S. "Joan of Arc" sailed for San Francisco and South American points with a cargo of pulp and canned fish for Peru, Chile and Bolivia.

The Overseas Shipping Agency, Mr. Cunningham, manager, reports that the S. S. Annett Rolph will sail early in February on the same route as the Joan of Arc. Also that about the 15th of January there will be a sailing for Marseilles, Genoa and Mediterranean ports with facilities for trans-shipment to Alexandria.

VANCOUVER EXPORT TRANSPORTATION FACILITIES

The Canadian Mercantile Marine, Ltd., S. S. "Canadian Importer" sails from Vancouver for New Zealand and Australia about Jan. 15, 1920. By June, 1920, the Company hopes to have four regular freighters plying on this route. The plan is to have four stops. Two in New Zealand at Wellington and Auckland and two in Australia at Sydney and Melbourne. This will mean that the business between Canada and the two Southern Pacific Dominions will have an immense increase. From now on Canada must advertise Canadian goods in every country that the Government-owned freighters reach. It will result in an inter-Dominion trade beyond the imagination of Canada's most optimistic.

South America is another country which should prove of value to Canadian exporters. There is at present an intermittent service from Vancouver, that cannot be depended upon. Before 1920 rolls by it is hoped there will be a regular service to all ports on the West Coast of Central and South America.

A direct service is promised to South Africa from Vancouver before the end of 1920. This will mean real big export business from Vancouver to our sister Dominion in South Africa. Exporters of canned and cured fish will be glad to know that shipping conditions with these countries are to be improved so soon, and will without doubt make active preparations to create new markets, and increase those they already have in the countries to be reached by the new Government line of steamers. Canada, it is up to you to fill the hold of every steamer leaving our ports.

C. P. O. S. SAILINGS

Jan. 20—S. S. Methven sails for Japan and China, freight only.

Jan. 22—S. S. Empress of Russia for Japan and China, freight and passengers.

Australian Line

Jan. 24—S. S. Niagara sails for New Zealand and Australia, freight and passengers.

Blue Funnel Line

Jan. 5—S. S. Eurydamas for Liverpool direct, freight only.

Canadian Mercantile Marine

Jan 15—S. S. Canadian Importer sails for New Zealand and Australia, freight only.

Dingwall Cotts & Company

Jan. 15—S. S. Mount Cervin sails for Tunis, Marseilles and Genoa, freight only.

Canadian Robert Dollar Company

Jan. 25—S. S. Melville Dollar sails for Shanghai, Hong Kong and Manila.

MINIMUM WAGE FOR WOMEN IN THE FISHING INDUSTRY.

Fish Canneries Exempt.

At a conference held in Vancouver, B.C., on Dec. 12 by the Minimum Wage Board of British Columbia it was decided that fish canneries would not come under the jurisdiction of the Minimum Wage Act.

In connection with the fish curing plants a minimum wage was fixed however as follows:

For all women over 18 years old \$12.75 per week was set, to apply during the first four months, \$13.75 for the second four months; \$14.75 for the third four months, and \$15.50 for those having more than twelve months' experience.

The conference was made up of four representatives of employers, four employees, and four for the public and the Minimum Wage Board. The hearing and conference was called by the Minimum Wage Board to consider a minimum wage and maximum hours for female help in the fishing industry. It was clearly shown that this could not be done as far as canneries were concerned, and after an all day and evening discussion it was finally so decided by the conference.

The fish curing plants were held to come under the act, as practically all are located in the city, and are now working on an eight hour basis. The new scale of minimum wages for the female help will not affect any one as these are close to those now being paid.

Owing to the nature of the business and uncertainty of supply of raw material, and many other details of the industry with which several at the conference were not familiar it took considerable time to explain the different phases of the canning and curing business.

The final decision was considered to be very fair to all concerned.

This law will go into effect 60 days after the order is issued by the minimum wage board, unless a longer time is specified by the Board.

WINTER FISHING SEASON ON THE FRASER OPENS DECEMBER NINTH AT NOON

On November 12th, at noon, District No. 1, including the Fraser River and adjacent waters, was closed to fishing, as the Department wishes to assure an unhampered trip to the spawning grounds for salmon

and also owing to the fact that fish were not fit at this stage.

Chums and Cohoes have now reached the spawning grounds, and in order to provide fresh fish for the markets the Department wished to open the waters as soon as possible to allow the catching of Steelheads and Springs, particularly the former, therefore the Winter season will open on December 9th at noon.

All fishermen holding licenses for District No. 1 are allowed to fish, but the remainder of the Province, including Howe Sound and Burrard Inlet, is closed until January 1st. Nothing less than seven inch mesh extension measure will be allowed. All regulations governing former seasons are in force.

JAPANESE FISHERMEN PROPOSE TO AFFILIATE WITH WHITE FISHERMEN.

President P. E. Kuwabara, of the Steveston Fisheries Benevolent Society, the Japanese Fisherman's Association on the Fraser River, has written the Fraser River Fisherman's Association, which is the white fisherman's organization, making overtures to affiliate with the latter organization.

The white men's organization has given the matter careful consideration and decided to ask three of the Japanese to attend a meeting to be held at a later date.

It is the general sentiment among the white men's organization that the question of such an affiliation should not be looked at from every angle and the olive branch tendered should not be lightly tossed aside, to use the words of Ex-President Maiden of the Fraser River Fisherman's Association.

CANNED FISH MARKET.

There is little real activity in the canned fish market, although there are quite a few shipments being got away, sales of which were in previous months. A considerable amount of labelling is going on and lots are being sent in from the canneries, and being prepared for shipment.

Quite a few shipments went forward on the S. S. Joan of Arc the first of the month destined for South America, and several shipments are already booked for Australia on the new Canadian Mercantile Marine steamer Canadian Importer, which will get away about the middle of January.

The market on the West Coast of South America is looked upon as a very favorable just as soon as a regular service is inaugurated.

Herring in tomato sauce is quoted at 6.75 in 1 lb. ovals, and fresh canned herring in 1 lb. talls is quoted at 5.25.

A considerable quantity of herring are being sold in Canada and this domestic demand is increasing. This is as it should be, and with the proper publicity there is no reason why this demand should not be steady and of greater importance than many believe it to be at the present time.

There is a steady flow of enquiries coming in for pilchards from foreign buyers, and good results should accrue from these enquiries.

VANCOUVER WHOLESALE FISH MARKET.

Plenty of local ling cod is in the market, and a considerable quantity of black cod is arriving from Prince Rupert.

Local soles are larger and more plentiful than for some time past.

Smelt are not very plentiful. Herring are good supply.

During the holiday season local fresh fish will be more scarce, as the fishermen generally observe Christmas and New Year's Day by laying off and taking several weeks' holiday.

	Cents per lb.
Halibut, chicken	13
Red Springs (heads off)	18
White Springs (heads off)	10
Cohoes	16
Ling Cod (plentiful)	8
Grey Cod (scarce)	5
Red Cod (round)	5 to 6
Smelt (scarce)	10 to 12
Soles and Brills	6 to 7
Herring	3 to 5
Skate	4
Perch	6

Shell Fish.

Crabs (scarce) (per doz.)	\$1.00 to \$1.50
Shrimps	22c to 25c
Clams	2½c to 3½c

Vancouver Prices Smoked and Salt Fish.

Smoked Sable Fish (black cod, whole)	14c
Kipperd Sable Fish	20c
Fillets, Sable Fish	17c
Smoked Pink Salmon (whole)	20c
Kipperd Salmon	18c to 20c
Bloaters	7½c
Kipperd Herring	9c
Eastern Haddie	14c
Western Haddie	10c
Herring Chicks in bundles of 5 boxes (per box)	18c

Salt Herring:

Medium, 900 to 1000 count, 250 lbs. net	\$8.50
Medium, 1400 to 1500 count, 250 lbs. net	7.50
Large, 200 lb.	8.50
Large, 100 lb.	5.25
Large, 50 lb.	3.25

Salt Sable Fish (Black Cod):

200 lbs.	22.00
100 lbs.	12.00
50 lb. (Kit)	6.25

Salt Pink Salmon:

200 lbs.	15.50
100 lbs.	8.50
50 lbs.	4.75

Salt Grey Cod:

50 to 200 lb., per lb.	10c
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The month of December, 1919, will be memorable on our Atlantic Coast as being a season of violent weather accompanied by a staggering list of marine disasters. Both Canada and Newfoundland have suffered heavily in vessel losses.

The large French trawler "Simon Duhamel" was launched recently from the yard of Hall, Russell & Co., Aberdeen, Scotland, for Fecamp owners. The trawler is 170 feet between perpendiculars with bunker accommodations for 40 hands. The "Simon Duhamel" is one of the largest trawlers afloat and is designed for fishing off the Newfoundland Coast.

Market for Canned Salmon in France

The following account of the market conditions for canned salmon in France, written by a Canadian interested in the trade, has been forwarded from the office of the Commissioner General of Canada in Paris, under date November 5:—

Ports of Entry.

Le Havre is the chief distributing centre for salmon in France. It is true that Marseille and Bordeaux import certain quantities direct, but in normal times this has not been large.

Importers.

At Le Havre there are probably two English importers who are firmly established. One in particular has a certain control over the French market in view of the fact that he keeps stocks at the port for immediate delivery. These stocks are re-examined and blown tins or leaks are culled. Certain of the smaller French importers, during November could import sufficient salmon to warrant their doing business direct with the packer, but during the rest of the year, when they require small lots of one or two hundred cases, it is easier for them to order from the stocks at Le Havre. For this reason they are not anxious to break away from this large house at Le Havre. They have to pay more for their salmon, but would prefer to do this than keep large stocks themselves.

The packers would probably obtain a better price if they were directly represented in France. On the other hand it is questionable whether it would pay any one packer to go to the expense of opening an office there. One American firm are established in France, but besides salmon they have their other canned lines. If Canadian packers are desirous of establishing directly on the French market the only feasible plan would be for them to pool their interests in regard to sales, in which case sufficient business might be done to warrant a selling organization. There is a considerable margin between the c.i.f. price French port and the wholesale price.

Present State of the Market

The French Government as well as the Belgian bought large stocks of the American Army salmon at about half price. This is at present on the market and is selling cheaply. It is thought that the army stock will be disposed of by about the end of November. French merchants who had stocks on hand are holding them over until the army supply is disposed of.

Grades.

France in her present state seems to think that the red salmon is too expensive; she is consequently turning her attention to pinks (and to chums to a much lesser extent)

Foreign Competition.

Americans are doing some business on consignment. They seem anxious to get their goods firmly fixed on the French market.

One shipment of Japanese (Siberian) medium red salmon has been offered at a lower figure than the Canadian. However, the French did not seem anxious

to touch it, as they have been disappointed in one or two shipments from this source.

One thing was impressed on me: It is absolutely essential that Canadian packers standardize their products either by a Government inspection or by other means. A great deal of harm has been done and is still being done to the name of British Columbia fish products by certain of the smaller packers. These people are doing incalculable harm to the whole industry. At present Canada is in the eyes of France, and with care she should build up a good trade. She will never do it if certain packers are allowed to ship in an inferior manner to France. It is not the grade of fish but the way it is packed which counts.

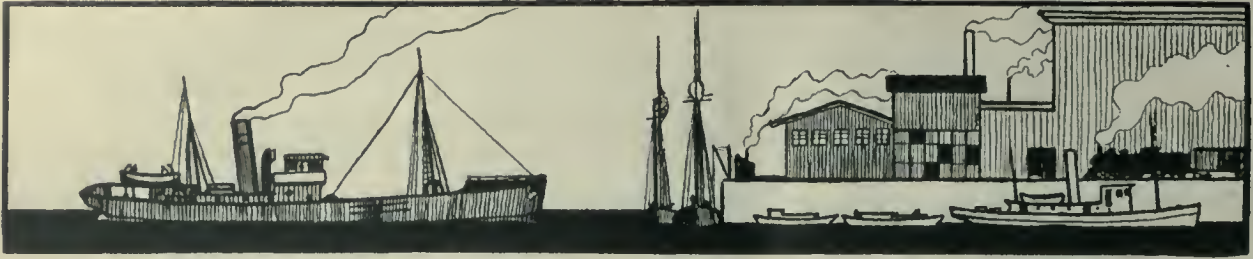
ARTIFICIAL PROPAGATION OF FRASER RIVER SOCKEYE.

(Continued from Page 482.)

the past, and all the closed time after 20th July would never help to restore them.

Some 25 years or so ago, when the Columbia river fishing industry was passing through its period of alarming decrease, one measure adopted to prevent a catastrophe was the stopping of all fishing during part of the months of April and August. It was thought that by so doing a greater number of fish would proceed to the spawning beds. At that time I was in close touch with the Columbia river fishery, and I argued that while such stops might build up the April and August runs it would not help out the runs of May, June and July. Since the same closed seasons still prevail there in the two months mentioned, I cannot say how they have benefitted, but I have never heard that the intervening three months have profitted by the closure. The runs on the Columbia today are largely to areas where hatcheries and other protective measures have been employed to benefit them; Snake river, and other interior waters, which were the objectives of the early running fish have not today a tithe of the runs they formerly experienced. Closing early fishing was not the cure for their ailment. Closing the Fraser fishery from 20th July to 1st August will not restore the early July runs. And closing the entire fishery for a period of four, five or six years will not build up any tributary where the runs from which they should be stocked have already been exterminated.

To my mind artificial propagation, and artificial propagation only, will build up and restore the "upper" Fraser river sockeye runs. Until this is done, and done on Nature's lines, things will go from bad to worse. Every year's delay will make this harder to accomplish because the spawning stock is becoming less and less. Salvation now is only possible by securing eggs from outside sources. For years I have been urging hatchery installation on the "upper" Fraser tributaries, but the jealousies of the Sound and Fraser canners and fishermen prevented their seeking any concerted action; it was beneath the dignity of our Government to permit American packers or fish culturists to assist in propagation work; what was everybody's business was nobody's business; and until these ideas give place to a broad intelligent co-operative policy it is useless to look for any restoration of what was one of the grandest assets any two countries ever possessed.



Beam and Otter Trawling

By J. J. COWIE.

(From Annual Report, Department of Marine & Fisheries, 1908.)

(In view of the development of steam trawling in Canada, the following article relative to the establishment of this method of fishing some years ago, is of interest.

While on the coast, recently, I took occasion to visit the port from which the steam trawler "Wren" has been lately—summer and fall of 1908—working,

and in view of the development of this new industry, if I give you a description of this mode of fishing, and a report on the work of the first Canadian steam trawler, together with observations on trawling in general, and a sketch of what has been done, from time to time, for its regulation in Great Britain.

The credit of introducing this modern method of



Modern steel trawler employed in Canadian waters.

to find out, in person, what success she had been meeting with.

As this is an entirely new mode of fishing from a Canadian port, and further, in view of the trouble, more or less serious, that has existed in Europe, since its inception there, between steam trawlers and line fishermen, it may be of interest to the Department, and of some future service, in the event of the expan-

sion of this new industry, if I give you a description of this mode of fishing, and a report on the work of the first Canadian steam trawler, together with observations on trawling in general, and a sketch of what has been done, from time to time, for its regulation in Great Britain.

Definition of Trawling.

In the first place, a considerable amount of confu-

sion exists as to the use of the term trawling and what it really applies to.

The name is used on the American side of the Atlantic to denote a totally different style of fishing from that carried on under the same name in European waters.

Trawling, as understood and carried on by United States, Canadian and Newfoundland fishermen, is simply fishing for cod, haddock, and other round fish, with a long line to which is attached a great many baited hooks, at regular intervals along its length. Such lines are called "trawls," and are set in the water, anchored and buoyed, and hauled in from "dories" or small boats. This mode of fishing—except that no dory is used—is also common in Europe, but it is known only by the name of long, or great line fishing.

The term trawling, on the other hand, as used in Europe, is applied to a method of fishing which consists in the dragging of a strong bag-shaped net over the sea bottom, by either sailing or steam vessels, for the capture of both round and flat fish.



Canadian built wooden trawler, 1918.

Trawling, as such then, has been carried on in European waters for very many years. As long ago as the year 1839, regulations, for the carrying on of this and other kinds of fishing in the English Channel, were framed at a convention, concluded at Paris, in August of that year, between representatives of the British and French Governments. Article XVI. of the said convention reads: "Trawl fishing may be carried on during all seasons in the seas lying between the fishery limits, which have been fixed for the two countries." Other articles regulate the length of beam and size of mesh of the net to be used, besides laying down rules for prevention of trouble between trawl boats and herring or mackerel boats during fishing operations, and which I shall touch upon later herein.

There are two distinct kinds of trawling carried on in the North Sea, and bearing two distinctive names, viz.: Beam Trawling and Otter Trawling. Again, there are sailing trawlers, vessels propelled by wind alone, and steam trawlers, those propelled by steam.

The Beam Trawl.

Beam trawling, being the original method, is by far the older of the two. The instrument known as a beam trawl, as the name implies, consists of a wooden yard or beam of a length varying from 40 to 60 feet, made, as a rule, of elm or some other

tough wood. This beam is supported at each end by a triangular-shaped iron frame, called a head-piece, into which is fitted the ends of the beam.

The height of the beam, when resting on the head-pieces, is about four feet from the ground. The net takes the shape of a huge bag, and may be of any length from mouth to bottom.

The upper part of the mouth of the net is fastened to the beam, and the under part, along which runs a thick ground rope, is secured to the bottom of the head irons. Thus the mouth is kept open. The lower side of the triangular head irons is made so as



Hauling up the bag on a steam trawler.

to slide easily over the sea bottom, like the runners of a sleigh. This combination, then, of net, beam, and irons is dragged behind the vessel over bottom which has been found smooth enough for the purpose, and the operation is called beam trawling.

Steam Trawling.

Up till about 35 years ago, trawl fishing was carried on entirely by sailing vessels. With the increasing fresh fish trade of Great Britain, the advantages of steam vessels, not only in the dragging, and handling of the cumbersome beam trawl, but in their ability to make speed to the land in any weather, with their fresh fish, soon became apparent, and in the early eighties of the last century, steam propelled vessels came into common use for trawl fishing in the British Islands. With the exception of one

or two places on the south and east coasts of England, where some sailing trawlers are still in existence, steam vessels are now used entirely all round the British Coasts.

The Otter Trawl.

Not long after the general introduction of steam vessels as trawlers, a further advance was effected in shape of improved and less cumbersome trawling gear. I think it was about the year 1889 that some one, with an inventive turn of mind, hit upon the idea of keeping the mouth of the trawl-net open without the use of the clumsy beam and irons.

The new device consists in attaching what is called a board, measuring about 10 feet by 5 feet, to each end of the mouth of the net. The ropes by which the vessel drags the net are fixed to the boards in such a way that, as the vessel steams ahead, the

Those sailing vessels on the south and east coasts of England, to which I have referred, continue the use of the original beam trawl for the very obvious reason that they could not make the necessary speed to force the boards of the otter trawl apart and keep the mouth of the net open, consequently they go after the slower moving flat fish with the beam trawl.

Operations of the "Wren."

The Canadian trawler "Wren" at present fishing off the Nova Scotia coast, uses the otter trawl in her operations, and this brings me to the point of giving you a sketch of what she has been doing and what fishing grounds she has operated on during the six months she has been at work.

The "Wren" is a steel vessel of 95 feet keel, and has a speed of 10 knots, ordinarily. She belongs to the smaller class of steam trawlers; none have been



Mending the Net, Canadian Steam Trawler.

pressure of the water on the outer face of the boards, drives them apart and keeps the mouth of the net quite as open as the old beam arrangement. This new kind of gear is named the "Otter Trawl"; hence the use of the names "Beam and Otter Trawling."

The "Otter" invention proved so successful, when first used, that all steam vessels at once discarded the old beam and adopted the new otter trawl. The advantages of the otter trawl are to be found in that it occupies very little space on board the vessel, is easier to handle, and captures a greater proportion of round fish than the beam trawl.

Otter trawling then, is the latest, and most successful mode of capturing large quantities of fish ever put in operation.

built within the last three or four years under 120 feet keel, and with a correspondingly greater speed.

The trawler arrived at Canso, Nova Scotia, from Grimsby, about the middle of June, and after replenishing her coal bunkers and putting her fishing gear in order, set out on her first trip to the Atlantic bank, known as "Middle Ground," which lies about 45 to 50 miles south of Canso.

Two days fishing on this bank resulted in the capture of about 15 tons of haddock, mostly of a large size, besides 200 codfish, and 10 boxes of flat fish, said to be plaice. More plaice were thrown overboard, however, than were brought ashore, as well as large quantities of skate or rays; there being no market for such fish at present. After this trip, the

vessel was sent to the Bay Chaleur, with headquarters at Paspebiac, in Bonaventure County, where she continued fishing during the month of July.

The sea bottom near the mouth of the Bay Chaleur was found to be somewhat rough for trawling, which resulted in a considerable amount of damage to the net. Farther up the Bay, where the bottom was more suitable, large quantities of very large sized cod were caught, but few haddock and flat fish. Daily landings of from 5 to 7 tons were made at Paspebiac, about one hour's run from the fishing grounds.

In August, Halifax was made the headquarters, and the grounds fished were those in the Atlantic off the Nova Scotia coast. Salt was taken on board at Halifax, and a salt fishing trip made to "Banquereau," which lies from 90 to 100 miles from Halifax.

As a result of this trip, the trawler returned to port in ten days with about 25 tons of salted cod and haddock. Plaice and skate were also numerous here, but only small quantities were taken to port. Quite as many fish could have been landed in half the time, but the crew, owing to limited accommodation, was not large enough to split and salt the fish so quickly as the trawl could bring them on board. Another salt fishing trip of 11 days' duration resulted in the landing of about 30 tons, made up mostly of cod. Plaice and skate again being plentiful.

With regard to the flat fish taken, I may say that I doubt very much if they are the real plaice. I rather think they are the common "flounder." The real plaice would be in greater demand, I think, and none would be thrown overboard. During my four years experience on the coasts of Canada, I have seen many "flounders," but no real plaice.

While the "Wren" was at work on "Banquereau," twelve French trawlers of the largest class were also engaged trawling on the same grounds, and observers on board the "Wren" were of the opinion that those boats with their greater power, larger net, and more numerous crew, were catching much larger quantities of fish at each drag than the "Wren" was taking.

In September, the "Wren" was hired by a Halifax fresh fish merchant to supply him with fresh haddock, making Hawkesbury, in the Strait of Canso, her landing place, and when I left the coast, last month, she was still working on that engagement.

The fishing grounds she worked on in this connection were those lying off the east coast of P.E.I. and off Cape George, Antigonish County. As a rule, she made two trips a week, when the weather made such possible, returning to port on Wednesdays and Saturdays. Fish were found abundant in these waters, and her usual landings for each trip ran from twenty to twenty-five thousand pounds of large sized haddock.

Strange to say, those haddock were being taken, and landed months before the time reckoned on by local fishermen, when the haddock fishing season begins. There were few, or no line boats fishing for haddock during September and October on the grounds so successfully worked on by the "Wren."

The quantity mentioned as landed, however, did not represent anything like the quantity actually caught. As the buyer would take nothing but the extra large fish, many good sized haddock had to be thrown overboard, as well as all the skate and flat fish, as useless. The price paid for the large haddock was \$1.25 per hundred pounds, which was not sufficient to make the venture financially successful.

Equal success, as regards quantity, was met with on the occasion of one or two trips made to the grounds near the southern coast of Cape Breton.

As a result of the "Wren's" fishing, so far, it has been proven that fish are more abundant in Canadian waters than in any of the waters surrounding the British Islands, the famous "Dogger Bank" not excepted.

On the other side of the Atlantic a not unusual length of time for the net to be in the water during one drag, before heaving up, is from three to four hours, while, in Canadian waters, the "Wren" could only drag one hour when the net was so filled with fish that it had to be hove up and emptied at the end of that time.

Prospects of Development.

In spite of this great abundance of fish, however, it is somewhat doubtful if steam trawling will become in any degree common in Canada for many years yet, owing to the lack of a fresh fish market of any great extent, and the price of salt fish being too low, generally, to permit of a steam vessel depending largely on that class of trade for profit.

The French trawlers previously mentioned, fire entirely for the salt-fish trade, but they are paid a considerable bounty, by the French Government, on every quintal of cod cured, which makes it possible for such boats to come to this side and engage profitably in that class of fishing.

It is the great fresh fish markets, which have been opened up within the last 30 years in every little town and city all over the country, by the splendid facilities for transportation offered by the various railway companies of Great Britain on which British trawlers depend almost solely for profitable working.

The price of fresh haddock, which constitutes the bulk of the catches, in the course of a whole year, for instance, in Great Britain, never falls below 10s. (\$2.50) per hundred pounds, and often touches 20s. (\$5.00), as against the fixed price of \$1.25 paid for the same class of fish to the "Wren" in Canada.

Although the price for fresh fish on the coast here is only half the lowest price paid to fishermen in Great Britain; on the other hand, the price paid by the consumer is actually nearly double what the consumer pays for his fresh fish on the other side of the water, except in the case of the finer varieties of flat fish.

The greater volume of business done by the fish merchants of Great Britain, and the keener competition, I suppose, leads them to look for smaller profits per pound, or hundredweight, which is reflected in the comparatively cheap price to the consumer and the greater quantity consumed.

Added to the better price for the classes of fish named, the British trawler finds a ready market for practically every kind of fish taken in his net; nothing being wasted. Flat fish such as soles and turbot, often fetch as much as \$20 per hundred pounds at the vessel's sides; but these varieties do not form a large proportion of the catches.

Further, in the Scottish Fishery Board's report for the year 1906, I find, for example, that the total quantity of round fish, i.e., cod, haddock, hake and ling, landed fresh in Scotland during the year named, was 2,284,368 cwts., and out of that quantity only 81,967 cwts were salted and dried, the great bulk being disposed of fresh at good prices. I do not know the exact figures for Canada, but I imagine the trade is just the opposite to that in Scotland, in about a similar proportion. This, then, is what makes me doubt the possibility of trawling taking a very great hold in Canada, in the immediate future at least.

The greatly scattered population, and the long railway haulage, especially in the summer heat, when real fresh sea fish is a most desirable article of diet, are against the rapid development of a fresh fish trade in this country.

At the same time, I must point out that fish merchants on the coast, time and again are without a single pound of fresh fish with which to supply the increasing orders of their customers. For instance, the merchant who has been taking the catches of the "Wren" has been able to handle and despatch nearly 20 tons a week of fresh haddock all over the country, during the last three months, which would never have been taken out of the sea but for his enterprise in hiring the steam trawler, and there can be no doubt that much more could be done in the way of developing a greater fresh fish trade in the Dominion, if fish merchants could count upon getting a steady supply of fresh fish such as might be secured by the operation of steam trawlers.

I think it is now beyond a doubt that trawling has come to stay here, and though its development will, of necessity, be slow, nevertheless, looking to the time when Canada will have many more millions of people within her borders, than she now has, when railway rates have been reduced, and the distributing facilities will have been increased to keep pace with the expanding trade, I believe there will be seen a fleet of Canadian steam trawlers running in from the Atlantic grounds with daily supplies of wholesome fresh sea food.

Such a fresh fish trade need not, and will not expand at the expense of the present salt cod fishing industry. So long as there remains a demand throughout the world for salted codfish, so long will fleets of line fishing schooners, owing to the comparative cheapness of the method, continue to be fitted out to supply it.

Effects of Much Trawling.

The cry may be raised, however, that with the increased operations of steam trawlers, the sea will become depleted of fish, and that line fishermen will have found their occupation gone. Well, much has been said and written in Great Britain since the introduction of trawling, as to its destructive effects on fish life, and its tendency to waste the resources

of the sea, generally, and more especially since the great development of the industry by the use of steam.

Parliament has been called upon, from time to time, to legislate for the restriction and prohibition of trawling within certain limits, with a view to protecting the home waters and the narrow seas, and to insure that the line fisherman—who is still an important factor in the national fisheries—may with safety leave his baited line on the inshore grounds, and have some hope of reward for his labour.

I have always maintained in the "press" of Great Britain, and otherwise, that trawling within limited sea areas is most destructive, and, apart from the fact that the many line fishermen, who depend for a living, entirely on what the baited line captures, have some rights, held that the compelling of the steam trawlers to keep to the open sea and what may be called the offshore grounds, is a wise and necessary measure for the protection and insurance of the fish supply.

At the same time, I cannot agree with those who assert that trawling, if long continued offshore, as well as inshore, is destined to deplete the sea of food fishes. The facts and figures concerning trawling in the comparatively narrow North Sea, where the method is so old and the fleets so large, do not lend themselves to such views.

The reliable figures of the Scottish Fishery Board in relation to trawling in Scotland tell another story, and show that the total quantity of fish landed by trawlers, each year, keeps pace with the increase in the fleet. I take the Scottish Board's figures as they are more readily got at, but the figures of the English Board of Agriculture and Fisheries, and those of the Irish Fishery Board, show the same results. I therefore give below, the landings of the Scottish trawling fleet, from the year 1898 to that of 1906. In the former year, the fleet numbered 149, and in the latter, 274 steam vessels. Observe the marked rise in the yearly total, in hundredweights, as the fleet increases, showing that the fish are in the sea and just waiting for increased catching power to bring them to land. In recent years, some of the larger boats have extended their operations as far as Iceland, and the White Sea, but the great bulk of the landings are still taken from the North Sea and what may be called the home waters surrounding the north and west coasts of Scotland.

Year.	Trawlers.	Catch.
1898	149	778,731 cwts.
1899	207	980,396 "
1900	232	1,073,164 "
1901	256	1,325,072 "
1902	275	1,465,073 "
1903	280	1,566,370 "
1904	270	1,705,633 "
1905	266	1,745,431 "
1906	274	1,870,517 "

But, further, to come down to the present year (1908), I find in the "London Fish Trades Gazette" a report from its Aberdeen correspondent, of the week's fishing ended November 14th last, in which he says:—

"Arrivals report that finer weather conditions

have seldom, if ever, been experienced in the month of November, and the result is seen in abundant supplies, with consequent low prices.

Almost every one connected with the trade is hoping for a gale to clear the markets. Fish has been too plentiful, not only here, but all along the coast, and quotations have to be cut so keen that profits are almost microscopic.

It may also happen that it is impossible to place orders however low the price."

Those figures and facts speak for themselves, and do not show signs of any decline in the productiveness of the sea. On the contrary, with all the increased outlets for the product, the trade finds itself actually empowered with the supply, on occasion, and the consumer surfeited.

Restrictive Legislation.

He is devoid of reason who would belittle or ignore the importance of the great trawling industry as a means of keeping up an important food supply to the British nation. Nevertheless, it has been found reasonable and necessary, as I have said, to place restrictions upon it in the breeding areas near the shore, and in the narrower waters and bays of the British Islands. I shall, therefore, endeavour to give you a sketch of the legislative steps taken to regulate the industry, by the Imperial Parliament and the Scottish Fishery Board.

The line fishing interests of England are trifling compared with those of Scotland, hence the reason that Scotland has been the main agitator for restrictions, and the further reason for dealing herein chiefly with the By-Laws passed by the Scottish Fishery Board.

Great Britain, it may be said, is the home of the steam trawler. Close upon 2,000 of these vessels are owned and operated in the three Kingdoms, as against less than half that number belonging to the combined countries on the other side of the North Sea.

The first mention of trawling regulations is to be found in the articles of the Convention held in 1839 between representatives of France and Great Britain, for the regulation of the fisheries, and the guidance of the fishermen in the seas lying between the coasts of the two countries.

Article II defines the exclusive fishery limits, or territorial waters, of either country, as that within three miles, geographical, from low water mark, and with respect to bays, the mouths of which do not exceed 10 miles in width, three miles from a straight line drawn from headland to headland.

Article XVI permits trawl fishing at all seasons in the seas lying between the fixed fishery limits of the two countries.

Article XXIV forbids trawl fishing in all places where there are boats, engaged in herring or mackerel drift-net fishing.

Article XXV says that trawl boats shall keep at a distance of at least three miles from all boats fishing for herring or mackerel with drift nets.

Article XXVI provides that when herring or mackerel boats shall commence fishing in any place whatever, the trawl boats which may be already fishing in such places shall depart therefrom and keep at the distance of at least three miles.

With the exception of regulations as to the length of the beam in the old trawling gear, and the size of mesh of the net to be used, there is nothing further mentioned in the Paris Convention of 1839 with respect to trawling.

Representatives of both countries again met in 1868 and revised the articles of the 1839 Convention, but no change was made concerning trawling.

In 1881, the British Parliament by an Act called the "Clam and Bait Beds Act," empowered the Board of Trade to make an order for restricting or prohibiting the use of beam trawls within clam or other bait bed areas in the event of trawling being found injurious to such. In 1882, an Act was passed creating a Fishery Board for Scotland. All the powers and duties previously conferred on the Commissioners of British White Herring Fishery by various Sea Fishery Acts relating to the fisheries of Scotland, were by this Act transferred to the new Board.

In 1883, an international convention was held, for the purpose of regulating the fisheries of the North Sea outside territorial waters, by representatives of Great Britain, Germany, Belgium, Denmark, France and Holland—Norway and Sweden later adhering to the various articles agreed upon.

At the North Sea Convention, the exclusive fishery limits of each country as defined in the Franco-British Conventions of 1839-68 were agreed to, and extended to all the coasts of the British Islands, including the Channel Islands.

The only reference occurring in the North Sea Convention with respect to trawling is contained in Article XIX, which reads as follows:—

"Where trawl fishermen are in sight of drift net, or of long-line fishermen, they shall take all necessary steps in order to avoid doing injury to the latter. Where damage is caused, the responsibility shall lie on the trawlers, unless they can prove that they were under stress of compulsory circumstances, or that the loss sustained did not result from their fault."

In 1885, the British Parliament passed an Act called the "Sea Fisheries (Scotland) Amendment Act" empowering the Scottish Fishery Board to make by-laws to restrict or prohibit beam trawling in any part of the exclusive fishery limits of Great Britain in the seas adjoining Scotland, where such fishing is considered injurious to any kind of sea fishing within that part.

As will be observed by the following by-laws, the Board began by closing small areas here and there, and gradually extended the prohibition to the full limit of its power, except in one case.

By this year (1885), beam trawling had assumed quite large dimensions and in consequence of the demands of line fishermen for protection against trawlers in the inshore waters, the Fishery Board proceeded, under powers of the Act just mentioned, to make restrictive by-laws.

It was also enacted in this year that steam trawlers "shall have their registry number and port letter, legibly painted in white-oil color, on a black ground, on each quarter as well as on the bows."

The first by-law was passed by the Scottish Board in the year 1886 and closed the Firth of Forth, St. Andrews Bay, and the Firth of Tay, and the waters off the coast of Aberdeenshire inside of a straight line drawn between the outermost points of that coast, against beam trawling. The penalty for contravention of this by-law was fixed at £100, or imprisonment for 60 days.

No. 2 by-law was passed in the year 1887 under powers of the 1885 Act and prohibited beam trawling inside of three miles along the shores of the Moray Firth. The penalty for contravention being the same as for that of No. 1 by-law.

No. 3 by-law passed in 1887 revokes by-law No. 1. This by-law along with by-law No. 5, passed in 1888, closes the whole east coast of Scotland to trawlers, inside of three miles from low water mark, from Tantallon Castle in Haddingtonshire to Kinnairdhead Lighthouse in Aberdeenshire. The penalties for contravention remaining the same as those mentioned in previous by-laws.

The fears of the line fishermen at the further development of trawling, become so great that Parliament was again appealed to for more stringent measures to protect the home fisheries, so in 1889 an Act was passed to amend the Herring Fishery (Scotland) Acts, and other purposes relating thereto. Section 6 of this Act prohibits beam or otter trawling within three miles of any part of the Scottish Coast, except within waters specified and permitted by the Scottish Fishery Board.

It is interesting to notice that in the history of trawling legislation, the term "Otter Trawling" is made use of, for the first time, in this Act of 1889.

Section 7 empowers the Fishery Board, by by-law to close, against beam and otter trawling, any area or areas within a line drawn from Duncansby Head in Caithness, to Rattray Point in Aberdeenshire, and may, from time to time, make, alter or revoke by-laws for the purpose of this Section.

Section 8 reads: "It shall not be lawful to land or to sell in Scotland, any fish caught in contravention of this Act, or of any by-laws made thereunder, and all superintendents and others employed in the execution of the Herring Fishery (Scotland) Acts are hereby empowered and required to prevent the landing or sale of any fish so caught."

The two latter sections of the Act of 1889 are the most important of all the laws and regulations ever passed against trawling in Great Britain, in that they have given rise to all the present trouble and turmoil between British and Foreign trawlers over the Moray Firth question.

Under powers of the 1889 Act, the Scottish Fishery Board passed by-law No. 6 which permits, under Section 6 of the Act, beam trawling in the Firth of Clyde from August 1st to April 30th; provided that the vessel is propelled by sails only, and is of not more than 8 tons burden.

By-law No. 7 passed in 1890 with the same author-

ity as that mentioned in the previous by-law, permits beam or otter trawling in the Solway Firth within three miles of the shore, for scientific purposes only, by persons having the written authority of the Board.

By-law No. 8, dealing with the Moray Firth, was passed in 1890 under powers of Section 7 of the Acts of 1889-90, and requires that beam or otter trawling shall not be carried on inside of a straight line drawn from the Ord of Caithness to Craighead, near Buckie, in Banffshire; thereby closing about half the area of the Firth to trawlers. The Act of 1890 added the confiscation of every trawl net set or attempted to be set in contravention of the Board's by-laws, to the penalties already mentioned.

By-law No. 9 deals with seine or circle net fishing for herring on certain parts of the west coast of Scotland and need not be taken notice of herein.

By-law No. 10, passed in 1892, still under powers of the Acts of 1889-90, section 7, revokes by-laws No. 8, and prohibits beam or otter trawling inside of a line drawn from Duncansby Head in Caithness, to Rattray Point in Aberdeenshire.

The area defined in this by-law constitutes the whole of the Moray Firth, the width of which, at its mouth, is about 90 miles, narrowing gradually until at a distance of about 60 miles from its mouth, near Cromarty, it reaches the 10 mile point defined in the North Sea Convention.

The penalty for illegal fishing within the whole area of the Firth was fixed by this by-law as a fine not exceeding five pounds for the first offence, and not exceeding twenty pounds for the second and subsequent offences with confiscation of gear. The reduced penalty in this by-law was the outcome of an effort to make it easy for trawlers in the face of the apparent injustice of shutting them off from such a large body of water, while appeasing the line fishermen by closing the whole Firth.

Line fishermen were not appeased, however, as the small fine had no effect in keeping trawlers from continually breaking the law, and the Board passed by-law No. 14, in 1896, revoking No. 10, and raising the penalty to the old one of £100, or 60 days imprisonment.

By-law No. 11, passed in 1893, permits the use of a beam trawl in the Solway Firth, within certain limits, in fishing for shrimps, provided the vessel is propelled by sails only, and of not more than five registered tons.

By-law No. 12 was passed in 1893 under powers of the Act of 1885 to prohibit the use of a modified method of trawling, practised on certain parts of the coast, within the limits described in by-law No. 3.

By-law No. 12 was revoked by by-law No. 17, passed in 1898, and extends the area closed to the modified method, to the whole exclusive fishery limits of the British Islands in that part of the sea adjoining Scotland in which the trailing or dragging along the bottom of the sea of any net, including a seine or circle net, shall be illegal except in the Firths of Clyde and Solway, under conditions authorized and defined by the Board in previous by-laws.

By-laws No. 13 deals with the method of dredging for cockles or other shell fish around the Shetland

Islands, and does not call for comment here.

By-law No. 15 regulates the taking of mussels — the chief haddock bait of line fishermen in Scotland — on certain parts of the Scottish coast, and may also be passed over without comment.

By-law No. 16, passed in 1898, revokes by-law No. 6 dealing with permissions, and changes the tonnage of vessels to be allowed the use of a beam trawl in the Firth of Clyde, from that of 8 tons to 7.

An "Act for the better regulation of Scottish Sea Fisheries" was passed in 1895, in which power was granted the Scottish Fishery Board to prohibit, by by-law, beam or otter trawling within 13 miles of the Scottish coasts, but no action whatever has been taken by the Board, up to the present, in extending the prohibition limit under this Act.

The foregoing constitutes all the legislative measures passed for the regulation of beam or otter trawling since the commencement of the industry till the present day, in so far as Scotland is concerned.

The Moray Firth Question.

At this moment, however, a conflict is being waged between the line fishermen of the Moray Firth and the trawling interests of England arising out of the closing of the whole of the Moray Firth to trawlers, under powers of the Act of 1889, and a Bill is meantime before Parliament which seeks to extend the provisions of section 8 of the Herring Fishery (Scotland) Act 1889, to the ports of England, and it may be of interest if I here give you an idea of what is known as the troublesome Moray Firth question, with its international aspect.

The Moray Firth is a triangular stretch of water, which lies in the north-east corner of Scotland. To convey to you a clearer idea of what the line fishermen's demands amount to, and of the enclosed nature of the waters of the Firth, let me cite as an example a similar area of water on the Canadian Coast. Nature, however, seems to have worked on such a huge scale in the matter of lakes, and rivers and their estuaries upon this continent, that our illustration may be found in the mouth of a river. Suppose then, a straight line were drawn across the mouth of the St. Lawrence, from the Gaspé peninsula to the shore on the north side of the river, between points where it is 90 miles wide, and another line between points where the river is 10 miles wide, and you have a reproduction of the Moray Firth in Canada.

The Moray Firth has always been looked upon as one of the best fishing areas on the Scottish coast, and is considered, in fact, a kind of fish nursery for the east coast. Being fertile and comparatively sheltered it has always been resorted to by steam trawlers as a sort of happy hunting ground. So many of these were drawn to its waters, that a time at last came when the thousands of line fishermen round the shores found the utmost difficulty in securing enough fish, with the baited hook, to provide them with a living.

As a result of the agitation thereby engendered, Parliament passed the Act of 1889 and the Scottish Fishery Board, under the powers of that Act, passed the by-law in 1892 which closed the whole area of the Firth to trawlers.

After the closing, only an occasional poaching trawler was seen in the Firth for some years, and the effect was plainly observed in the increase of young fish. But about the year 1896, some foreign trawlers began to visit the Firth; hailing chiefly from Norway. These claimed the right to fish there, so long as they kept outside the exclusive three mile British fishery limit.

Now, section 8 of the Fisheries Act of 1889 prohibiting the landing or sale, in any port of Scotland, of fish caught in contravention of the Scottish Fishery Board's by-laws, does not apply to England; consequently, foreign trawlers, fishing in the closed waters, found a convenient market for their fish in Grimsby, England. While this may be illustrative of the independence of Scotland, it, at the same time, demonstrates the need for unity in law making.

Those foreigners were welcomed by the trawling interests of England, as it gave them a splendid excuse for appealing to the Government for equal rights to British trawlers in the matter of the Moray Firth.

The number of foreign vessels that actually fished in the Firth was never very large, nevertheless, the apparent injustice of British trawlers being debarred from waters so near to the British Isles, in which foreigners could roam at will, roused the British trawling interests to action, and they demanded a repeal of the closing Act. But successive governments have been satisfied of the necessity of keeping the Firth closed to trawlers over whom they had control, and so the by-law remains in force.

Shortly after the appearance of foreign trawlers in the Firth, a number of British trawl-boat owners conceived the idea of changing the registry of their boats to that of Norway, to fly the Norwegian flag, and go ahead fishing in the prohibited area; so, at present, the majority of the trawlers working in the Firth is of this class, each of which carried one bona fide, Norwegian, nominally as master and landing their catches without hindrance in England.

This procedure became so pronounced and annoying, that in the year 1906 one of the Fishery Board's cruisers was ordered to seize a Norwegian trawler in the Firth, with a view to testing the question as to whether the prohibition-of-trawling by-law extended to foreigners or not.

The case came before the High Court of Justiciary, sitting at Dornoch, Sutherlandshire, and the master, being charged with contravening the Fishery Board's by-law, was convicted and penalized in conformity therewith.

Following the decision of the High Court, a batch of "Grimsby Norwegian" trawl-masters were convicted in the Sheriff Court of Elgin, Morayshire, of a similar offence. The full penalty was imposed, and some of the masters chose to go to prison.

The attention of the Norwegian Ambassador in London was drawn to the matter, and he made representations to the British Foreign Office for the liberation of the imprisoned masters on the ground that they were Norwegian subjects fishing in extra-territorial waters, and therefore beyond the jurisdiction of the British Courts.

Sir Edward Grey, after consideration of the whole

matter came to the conclusion that, under existing international arrangements, foreign trawlers could not be prevented from fishing in the Moray Firth outside of the recognized exclusive fishery limits. As a consequence of this decision of the Foreign Office, the imprisoned masters were at once liberated, and the fines refunded, in cases where such had been paid.

The next move in the Moray Firth tangle was made by the Secretary for Scotland in the course of the present year (1908). Recognizing the fact that the trawlers continuing to use the Firth were almost entirely bogus "foreigners" owned in and hailing from Grimsby, England, he brought a Bill into Parliament seeking to make it illegal to land, or sell fish in English as well as Scottish ports caught in contravention of the Scottish Fishery Board's by-laws. In this way, it is calculated that trawling by "foreigners" in the Moray Firth will be practically stopped.

Considerable opposition to the Bill has naturally arise in Grimsby, and Lord Heneage, who is President of the National Sea Fisheries Protection Association, and chief champion of the trawler's cause, last month moved a resolution in the House of Lords, calling on the Government to suspend the Scottish Fishery Board's by-law dealing with the Moray Firth.

The motion created a long discussion in the House, but it was ultimately withdrawn on the advice of the Marquis of Lansdowne, in view of the Government's Bill which deals with the British grievance, by seeking to place such disabilities on the foreigner in British ports as could be enforced.

The Bill, in all likelihood, will become law. Mr. Asquith in replying to a question on the subject recently, in the House of Commons, said the Government has no intention of repealing section 7 of the Herring Fishery Act, and that the present Government Bill, would remove any injustice which at present exists as between English and Scottish trawlers, and foreigners. (The Bill became law in the course of that session of Parliament.)

It is admitted, however, that even with this law, the question is only partly solved, and an effort will, undoubtedly, be made at the next conference of the Powers signatory to the North Sea Convention, to have the Moray Firth closed to all trawlers by international agreement.

This will be found, I believe, not very difficult to accomplish, in view of the fact that continental Powers, bordering on the North Sea, are now passing severe measures for the regulation of trawling within their waters.

A new law has recently come into force in Norway under which fishing with a trawl is forbidden in Norwegian territorial waters, and while a trawl vessel is within such waters all fishing gear must be stowed away inboard. The nets must be detached from the trawl-boards and laid on one side, or tied up inboard.

Owners of trawlers and skippers are warned that persons found guilty of offenses against this law, or against any regulations issued thereunder, will be liable to a fine ranging from 1,000 to 5,000 Kroner; and that the vessel to which the guilty person belongs, and its catch and gear, may also be confiscated either wholly or in part.

In the beginning of the present year, an English

trawler was seized by a German cruiser for alleged fishing within German territorial waters. The punishment meted out to the trawl-master and crew was so severe, and unreasonable (the attributes of the Hun stood forth even then, in peaceful pursuits) that it caused the British Foreign Office to interfere on behalf of the accused parties, and in investigating the circumstances of the prosecution, the fact was revealed that on the German charts the territorial boundary line had been measured three miles from the shifting shoals which abound off that coast, and not from the permanent coast line. This places the limit six or seven miles out to sea. The contention has been upheld by a German court of justice, and is now a subject of discussion between the British and German Foreign Offices.

An attempt similar to this of the German authorities was made some years ago by Denmark, who claimed a reef of rocks three miles from land as the shore line, but without success.

Prospective Restrictions in Canada.

With regard to the framing of laws for the restriction and regulation of beam and otter trawling in Canadian waters, I may be allowed to say that, in my opinion, all that is really necessary is the keeping of trawlers outside the three mile limit along the coast, and outside the ten mile limit in bays, with regulations providing that no trawler shall fish within three miles of any boat or vessel which is in the act of fishing for herring or mackerel, or within three miles of any vessel anchored for the purpose of line fishing. Regulations dealing with extra-territorial waters would, of course, have to be mutually agreed to by all the countries interested, to be of any use.

There need be no fear of trawl-fishing depleting the sea here. The conditions on this side of the Atlantic are altogether different from those on the other.

In European waters, intensive fishing goes on from January to December, by an immense fleet of trawling and other vessels and in spite of this, the total landings, as has been seen, are actually increasing rather than diminishing.

In Canadian waters, on the other hand, and even on the "Grand Banks"—and this should be kept in view in placing restrictions on trawling here—there is an enforced close time of at least three months every year, owing to the climatic conditions, during which little or no fishing whatever takes place, and even steam trawlers during that time would be practically stopped, for the same reason.

Moreover, the suspension of fishing operations actually occurs during the spawning season for haddock and cod. Indeed, the Gulf of St. Lawrence, that immense fish breeding area, is practically closed to fishing from January to May, so that the grounds, even if they were intensely fished during the open season, would, owing to the long rest, become rapidly replenished.

This convinces me then, that neither trawl fishing nor line fishing will ever appreciably diminish the extraordinary abundance of certain classes of fish, i.e., cod and haddock, in the waters of Canada, and that its deep-sea fisheries will remain a splendid heritage for all time.

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