

37.—THE FISHERIES OF CANADA.

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All those who have written on the fisheries of Canada have agreed to say that they are inestimable; and, as a field for industry and enterprise, they are inexhaustible. Besides their general importance to the country as a source of maritime wealth and commerce, they also possess a special value to the inhabitants. The great variety and the superior quality of the fish products of the sea and inland waters of these colonies afford a nutritious and economic food, admirably adapted to the domestic wants of their mixed and laborious population. They are also in other respects specially valuable to such of our people as are engaged in maritime pursuits, either as a distinct industry or combined with agriculture. The principal localities in which fishing is carried on do not usually present conditions favorable to husbandry. They are limited in extent and fertility and are subject to certain climatic disadvantages. The prolific nature of the adjacent waters and the convenience of their undisturbed use are a necessary compensation for defects of soil and climate. On such grounds alone, the sea and inland fisheries to which British subjects have claims on this continent are of peculiar value.

From whatever point of view we may regard them, the teeming waters of the British American Possessions, and those which form their great lakes and magnificent rivers, must be reckoned as a national property, richer and more perpetual than any mere estimate in money can express. It is in the highest degree satisfying to find that Canadians are becoming every year more and more alive to the vast importance of their fisheries, and that they are now more than ever anxious to preserve them as the finest material portion of our colonial heritage.

Dr. George Brown Goode, one of the most prominent citizens of the United States, whom I had the honor and pleasure to meet in London at the International Fisheries exhibition, in one of his speeches at the Fishery Congress in connection with this exhibition referred to the immense growth of the Canadian fisheries during the last ten years. He declared that in the course of his own studies he had occasion each year to peruse the Canadian reports, and had been perfectly amazed at the rapidity with which this industry had been developed. In fact, if we consult the statistics so carefully collected every year by our fishery officers, these official figures will show that the value of the Canadian fisheries, which in 1870 was only \$7,573,000, had doubled during the succeeding ten years, and amounted in 1880 to \$14,500,000; and if we open the last official report published by the Department of Marine and Fisheries, we shall see that the same fisheries produced in 1892 over \$20,000,000.

Although our system of inspection is effective, although the organization of the outside service of our department of marine and fisheries and our method of collecting fishery statistics are given as models to other countries, yet they are susceptible of many improvements. It is easy to understand that in such an extensive country as Canada, where every settler has facilities for fishing, it is utterly impossible for our statisticians to impart a mathematical precision to their reports or to give accurately

the value of the home consumption. The \$20,000,000, mentioned above as the value of the Canadian fisheries in 1892, can not be anything else than the value of the fish prepared for exportation or sold on the Canadian markets. In that amount I do not include the \$5,000,000, the approximate value of the fish caught and consumed by the native population of Manitoba, British Columbia, and the Northwest. And in the other provinces of the Dominion, with a population of over 4,000,000 inhabitants, for whom fish is one of the principal articles of diet, the estimated value of fish consumed is \$12,000,000. Adding the value of fish cured for the trade and that of fish captured for local consumption, we have, for 1892, a total of \$37,000,000. These figures give an idea of the immense richness of the Canadian waters.

Every country of the world having waters of any extent understands what an important contribution fisheries are to the national wealth and encourages by every possible means those who carry on this industry. Large sums of money are spent every year by capitalists in the building of continually improved fishing craft and gear, and governments are spending millions in the construction of piers, breakwaters, wharves, and other improvements for the advancement of the fishing industry. Fishery bureaus, headed by the most eminent, influential, and practical men, are formed to seek for the best means of rendering the fisheries more and more productive, and this exposition brings an additional proof of the interest taken by all in the progress of the fisheries and the welfare of the fishermen.

I am happy to be able to state here that, owing to the encouragement lately given to them by our government, and especially by our able and energetic minister of marine fisheries, Sir Charles Hibbert Tupper, the Canadian fisheries are rapidly progressing. Fishing-craft building has advanced rapidly, and the swift schooners of our maritime provinces can already compete fairly with American fishing vessels, reputed the best of their class in the world. Steamers, which are now used in the fisheries on our lakes, will doubtless be seen soon among the vessels used for the working of our most important sea fisheries. Considerable sums of money are spent by our government on the building of harbors of refuge and lighthouses for the guidance of the fishermen. A large sum of money is distributed every year among our fishermen as premiums, and our public men are willing to continue to help the advancement of an industry which for the future of the Dominion is so necessary and important.

The incalculable importance of such invaluable fisheries in colonization, in the development of commerce, in adding to the country's food produce for home consumption, and for the training of skilled seamen for naval and merchant marine, are points which the histories of all great maritime nations amply demonstrate. The histories of the United States, France, Holland, Great Britain, are striking illustrations of the vast national benefits derived from the prosecution of sea fisheries. What but the rough experience of British and United States fishermen in prosecuting their labors on some of the roughest coasts of the world has made their skill and bravery? It is rough experience that makes a sailor, and it is just such experience that has enabled the seamen of the maritime provinces of Canada to take a first place for skill and coolness among the other sailors of the world.

Our most important fishing-grounds.—The fisheries of Canada may be divided into two great classes, the deep-sea fisheries and the fresh-water or lake and river fisheries. We shall give the precedence to the former as being the most important. Only about half of our 5,000 miles of seacoast has till now been properly worked. We do not

know yet all the riches of the British Columbia waters, but can infer from reading the official report that they are teeming with a great variety of commercial fishes.

Our most important deep-sea fishing-grounds are the Atlantic coast of Nova Scotia, from the Bay of Fundy, around the southern part; around the coasts of Cape Breton, New Brunswick, and Prince Edward Island; embracing the Bay of Chaleurs and the Gaspé coast, and extending to the island of Anticosti, Labrador and the Magdalen islands. There is probably no part of the world where such extensive and valuable fisheries are to be found as within the Gulf of St. Lawrence. Nature has bountifully provided within its waters the utmost abundance of those fishes which are of the greatest importance to man, as affording not only nutritious and wholesome food, but also the means of profitable employment.

The cod fishery.—Of all the deep-sea fisheries of Canada, the most important is the cod fishery, which furnishes employment to thousands of men and contributes most largely to our exportation trade. It is one of the leading industries in Nova Scotia, New Brunswick, and the lowest part of the Province of Quebec, and last year it contributed over \$6,000,000 to our export trade. I will not attempt to give you the history of the Canadian codfishing; it would take too much of your valuable time. I will content myself with a brief summary of the way this industry is carried on.

The cod appears on the Canadian coasts at uncertain dates, generally between the middle of May and the beginning of June, sometimes in the latter end of the month of April. Local variations in the time of its arrival, amounting to days and even weeks, frequently occur, and these are dependent on the temperature, which determines the movement towards land of the various forms of marine life on which the cod feeds. It has some favorite spots, where it is found in greater quantities. These are the places which present the best advantages for the preservation and hatching of the spawn. Having deposited its spawn, it withdraws to shallow places, called banks, where it always finds food in sufficient quantity to satisfy the well-known voracity of its appetite. About the month of December the codfish appear to leave the shallow soundings and banks inshore and go farther out to sea.

The codfishing season varies with the different provinces, beginning earlier in Nova Scotia and New Brunswick, where the climate is not quite so severe as in the province of Quebec. From April to November, inclusive, may be given as an average time. The arrival of the cod on the coasts in the spring is heralded first by the herring, and secondly by the capelin. The latter is a small fish, the favorite of the greedy cod, and therefore the best fishing bait. In every large fishing establishment, during all the month of June, two or three boats, each of them manned by 7 men called seiners, are employed day and night in going about the coast in search of the capelin. When they meet with a shoal of these fish they cast the seine, load their boat, and hasten home to distribute these little fish amongst the fishermen. Each codfishing boat receives an equal share of the fish thus brought by the seiners. Vessels engaged in fishing on the banks run into the harbor at intervals for fresh supplies of capelin as bait, which they preserve in ice.

In some parts of the Dominion a considerable quantity is dried, packed up in small boxes, and sent to some of the United States markets. After the capelin has disappeared from the coast, about the end of June, the launce, the herring, the mackerel, the squid, the smelt, clams, etc., are used as bait for the cod.

Our cod being mainly taken by hand lines and bultows or set lines, the cost of

bait for codfishing is great. It is certainly not an exaggeration to estimate the actual cost of bait at one-fourth of the value of the cod taken. Besides this, much time is lost every year during the fishing season, owing to the want of fresh bait, which is not always easily procured and which is essential to good fishing. Hence anything that should economize the cost of bait and save time would be both desirable and important. Norway, the most important cod-producing country of Europe, and our chief rival in the cod markets of the world, has in recent years greatly improved her modes of fishing, her fishermen using gill nets to a large extent, with great success.

The cod fishery is carried on in Canada, either in vessels of a tonnage from 60 to 100 tons on the great banks or in open boats at a few miles from the shore. Nova Scotia and New Brunswick seem to have the monopoly of the fishing in large decked vessels, and I am happy to say that naval architecture has improved very much, during the last ten years, in these two provinces. This improvement in the dimensions and lines of their vessels has enabled their fishermen to increase their annual catch of fish considerably.

Vessels employed in codfishing are manned by from 10 to 13 men, according to tonnage. Generally the owner of the schooner, who also supplies the men with the necessary fishing tackle, receives half the catch, the fishermen retaining the other half. When the vessels have reached the fishing-grounds they are anchored, by hemp or manila cables, in from 15 to 50 fathoms of water. Bait is obtained by spreading nets in the sea at some distance from the vessel, and the fishing is then begun, with bultows or long lines, and carried on by night as well as by day, in spite of wind and storm, until the hold of the vessel is filled up with fish all split and salted. Then the vessel returns to port, the cod is landed, washed, dried, and prepared for exportation.

Fishing in vessels is more expensive, but also more remunerative, than fishing with open boats along the shore. Cod taken on the banks are larger and finer in quality than those fish taken along the coasts. An average of 30 bank cods, when dried, makes a quintal, and it brings a higher price than the shore fish.

In the province of Quebec and in Prince Edward Island the cod fishery is still almost universally carried on in open boats, in the neighborhood of the coves and bays where the fishermen reside. In some parts of the province of Quebec, however, fishermen venture with their open boats to 20 and 30 miles from shore. These boats are built by the fishermen themselves. They vary in dimensions from 20 to 40 feet keel, with a breadth of beam from 6 to 10 feet, according to the use they are intended for. They are very sheer built, and their clinker work is usually of cedar. Pointed at both ends, their rigging consists generally of two sprits or gaff-sails, some of these intended to fish on the banks being schooner-rigged. They are comparatively light, in order to be easily hauled up on the beach in stormy weather; are good sailers and behave wonderfully well at sea. Yet, although good sea boats and splendid sailers, manned by fishermen whose intrepidity and skillfulness are well known, these boats are too small to enable our fishermen to carry on codfishing upon as large a scale as it might be done. The fishermen of Quebec and Prince Edward Island, with their small boats, being too often obliged to run before the storm and leave the fishing-grounds when they are sure of a good catch, in order to save themselves from being caught away from land by heavy gales, lose every year much precious time during which the fishermen of Nova Scotia and of New Brunswick reap an abundant harvest. The reports on the fisheries of the last few years show a noticeable diminution in the quantity

of fish caught by the fishermen of the province of Quebec, and this deficiency was due mainly to the frequent storms which raged in the Gulf of St. Lawrence during the last few years, and also to the absence of harbors of refuge in this part of the Dominion.

Our principal markets for dried and salted codfish are Italy, Spain, Portugal, Brazil, the British and Spanish West Indies, and the United States.

The finest cod in all America is cured on the coast of Gaspé, in the Province of Quebec, where the effects of the mists generated by the Gulf Stream are least felt. It is well known in the markets of Spain, Italy, and Brazil, where it is generally sent, the large fish going to the Mediterranean countries in bulk in vessels from 100 to 300 tons and the small fish to Brazil in drums containing 128 pounds.

During the time that the fish is exposed on the flakes to dry, if the weather is fine, the sun shining, the westerly winds predominating, cod is easily cured and made of fine quality; but sometimes easterly winds prevail, rain lasts for weeks, and in spite of all possible care and precaution it is inevitably spoiled. So, before sending it to the markets, the fish is carefully culled, the greater part of the best quality being sent to Europe and Brazil and the inferior to the West Indies. Nova Scotia, New Brunswick, and Prince Edward Island export chiefly to the West Indies, United States, and Brazil; Quebec to Brazil, the Mediterranean countries, and the West Indies.

The cod is the most useful of all fish; no part of it is valueless. Oil is taken from its liver; the head, tongues, and sounds form a good article of food; the offal and bones, when steamed, dried, and ground, are converted into very good manure, equal as a fertilizer to Peruvian guano; the roes are a splendid bait for the sardine fisheries of France and Spain; and from the swimming bladder isinglass is made.

The herring fishery.—The sea fishing next in importance to the cod fishery in Canada is the herring fishery, the value of which, without taking into account the local consumption and the quantity used as bait for the cod fishery and for manure in many parts of the Dominion, was, according to our last statistics, represented by the sum of over \$2,000,000. This amount is a large one, and the result seems handsome, but it is certainly not in relation with the abundance of this fish in Canadian waters. The herring fishery is far from getting here all the attention it deserves; and I might even say that we have no regular herring fishery in Canada. It is true that in Nova Scotia, New Brunswick, and Prince Edward Island schooners are especially fitted out for this fishery; that it is regularly and intelligently practiced by a large number of men from those provinces, bringing them handsome returns; still all these endeavors, although very laudable, are nothing but isolated undertakings.

It will perhaps surprise a good many of my hearers to learn that the whole of the Province of Quebec, possessing 10,000 fishermen, 1,100 miles of maritime coasts, numerous bays far-famed for the abundance of herring repairing to their waters, does not annually export 2,000 barrels of this fish. Although they could derive immense benefits from the working of the industry, the Quebec fishermen are satisfied when they have taken enough for their own consumption and for the wants of the cod fishery.

The reason of this apparent neglect lies in the fact that the province of Quebec capitalists give all their time and attention to the cod fishery. Nevertheless, it is almost impossible, without seeing it, to form a correct idea of the immense quantity of herrings that visit the coasts of the province, especially in the spring during the spawning season. Their compact masses cover thousands of acres of the sea, so that if the fishermen were provided with the necessary fishing appliances, if they had a

ready market, they could easily in a few days, even before the beginning of the cod fishery, catch enough herring to realize thousands of dollars.

I assert with confidence that if in Canada this industry were conducted on a scale proportionate to its importance and the abundance of herring in our waters, if companies were formed to provide our fishermen with boats and fishing implements like those used in Europe, our herring fishery instead of two would bring every year five or six million dollars. Nor are the markets wanting for this fish, which is cheap and can be bought by the poorest; for besides our own market we should have those of the United States, of England, Germany, and the West Indies. The population of Europe and of South America is growing rapidly, and the products of the fisheries of these countries are far from being sufficient to meet the demand. We have there an almost unlimited market for our pickled fish, if carefully prepared and packed.

Mackerel fishery.—I am happy to say that the energetic and progressive fishermen of the United States have no longer the almost exclusive monopoly of mackerel fishing in Canadian waters—a monopoly that they have enjoyed for a number of years. Wearied with beholding the success of the Gloucester fishermen, who year after year came to our doors to reap an abundant crop, the fishermen of Nova Scotia and New Brunswick set to work and have succeeded very well. They are to-day carrying on mackerel fishing on a large scale and deriving good profits from it. They can show a fine fleet of vessels so improved in symmetry as to bear fair comparison with the American schooners, which are reputed to be the finest vessels and the best sailers of their class in the world. Nor are they merely owners of splendid vessels fitted out with the utmost care; they have adopted the most modern fishing appliances, and are prosecuting this industry with great tact and intelligence; for the mackerel fishery is difficult, precarious, and uncertain. A schooner may cruise in the gulf for a week, without taking a fish, while another gets filled in a fortnight or less. It requires, therefore, to be carried on with sagacity and perseverance—two qualities which distinguish the fishermen of our maritime provinces; but then it is generally successful, brings in large profits, and is certainly worthy of the attention of the capitalists.

The tourists who, during the dog days, run away from the heat of our cities to breathe the pure and vivifying air of the Gulf of St. Lawrence and make the journey by water, have often, in the course of their visits to the maritime provinces, met with fine mackerel schooners and mistaken them for a small squadron of yachts, so beautiful are their masts and sails, so neat and clean are they kept. But, on a nearer approach, this is found to be an error; for on the decks of these vessels are to be seen crews of from 10 to 20 men, all occupied either in catching fish, in repairing fishing implements, or in splitting and salting the fish that has been taken; and what is more striking is the order that reigns on board these schooners, whose decks and holds are almost always full of fish, fish barrels, salt, etc. These schooners are generally of from 60 to 100 tons burden. They have little depth of hold, great breadth of beam, rake very much fore and aft, and carry large cotton sails which enable them to sail fast even with a light breeze. Their decks are roomy, and on them the whole work of salting and barreling is carried on. Mackerel is met with off the coast of Nova Scotia, in the Bay of Fundy, and in the Gulf of Canso; but nowhere is it more plentiful than in the Gulf of St. Lawrence, off the coast of Prince Edward Island, and in the numerous coves and bays formed by the Magdalen Islands.

The mackerel is one of the most valuable fish visiting the Canadian coasts. A

good proportion of our catch is sent fresh to the markets, some in tins, and the largest quantity pickled and packed in barrels. Our best market for either fresh, canned, or pickled mackerel is the United States, although Great Britain and the West Indies also buy some of it. From the last statistical returns we see that the mackerel fishery produced \$1,550,000, but it could certainly afford employment to many additional vessels and employ thousands of additional hands.

The lobster and oyster fisheries.—It seems to be the tendency of this age of competition to overdo any business which promises to be lucrative. Not more than ten years ago, when the retail price of lobsters was two or three for a half-penny, a New Brunswicker came to Prince Edward Island and commenced the business of preserving in tins. Attracted by his success, a few other persons engaged in the same pursuit. The business gradually augmented until three or four years since, when it became endued with much more life, and has, at length, sprung into great dimensions. We have now no less than 662 canneries in operation, and last year this industry contributed \$2,000,000 to our export trade.

I need hardly mention here that this industry is of considerable importance in the general economy of the Dominion. Every one understands that the erection of buildings, tin and iron work, boat-building, fuel-cutting, truckage, etc., cause a large amount of money to circulate among our fishing population and fair wages to be paid to thousands of hands—men, women and children. Great Britain is our best market for preserved lobsters. We also export annually some 3,000,000 cans to the United States. France takes about 200,000 cans, and the remainder is divided between the West Indies, Germany, Brazil, and some other markets of South America.

A word about the oyster fishery naturally finds its place here. This mollusk, so well known by epicures of all countries, is still comparatively abundant in Canada. In Europe, owing to its scarcity, it sells at a fabulous price, and wealthy people alone can indulge in this luxury; but on our coasts almost everybody can, from time to time, enjoy a good oyster soup. We have the Malpeque, the St. Simon, the Caraquet, and many other varieties, deriving their names from the localities where the banks from which they are taken are situated. Oyster fishing is carried on chiefly on the coasts of Prince Edward Island and New Brunswick, and yields annually about \$260,000.

Fresh-water fisheries.—The inland waters of Canada teem with salmon, whitefish, salmon trout, pickerel, bass, speckled trout, ouinaniche, sturgeon, muskellunge, etc. In 1892 the salmon fishery yielded \$2,500,000. Of all the provinces of the Dominion, British Columbia is the most celebrated for its salmon fishery, and within the last few years this industry has attained there almost colossal proportions. Whitefish and trout fisheries are carried out on a large scale, chiefly on the great lakes of Ontario, which are all well known to you. The most valuable is the whitefish, the catch of which amounted to 24,000,000 pounds last year, valued at \$1,500,000.

The salmon rivers of Quebec and New Brunswick are justly famous, as every lover of the gentle art in the United States well knows. The salmon pools of the Restigouche, of the Metapedia, of the Cescapedia, of the Miramichi, of the Grand River, of the Nisissiguit, of all the rivers of the north and south shores of the St. Lawrence, are celebrated throughout the whole world and are every year increasing in value. Only a few days ago the salmon-angling privilege of the Grand Cascapedia River was let for \$6,125 per year to an American syndicate. Who has not heard of the sport of ouinaniche fishing in the St. John Valley, near Quebec? Almost innu-

merable in that neighborhood are the lakes and rivers where you will find all kinds of good game fish. Wealthy gentlemen from Europe and America are coming by hundreds every season to enjoy the fly fishing in our lakes and rivers, and thus is established this reciprocity of which we have heard so much lately—we give them amusements and pleasure, and they give us money.

Protected by judicious laws which are strictly enforced, and assisted by a large force of fishery officers and armed cruisers, there is no danger of our supply of fish being exhausted by overfishing or by the prevalence of injurious practices. To still further aid natural reproduction, fourteen hatcheries are in operation in the several provinces of the Dominion. From these, fully 140,000,000 fry of young fish, chiefly salmon, whitefish, salmon trout, and lobsters, were planted in 1892.

Canada is one of the rare countries where fish-breeding is carried on under the direct control of the government, and if our hatcheries have not yet produced all the practical results which they were expected to give, they have proved, however, that, carried on judiciously, they can help in a good measure to replenish some of our lakes and rivers where indiscriminate fishing has been indulged in rather extensively.

The advantage of the fishery intelligence bureaus, inaugurated in Canada on a modest scale in 1889, became so apparent that there are now 55 reporting stations distributed all along the Atlantic coast from New Brunswick to the Magdalen Islands, and the coasts of Labrador and the Gulf of St. Lawrence. The object is to keep masters of fishing vessels advised of the movements of the fish. The compilation of these reports will, in a few years, enable our government to put up charts on which the migrations of the different kinds of commercial fish will be easily followed.

The pursuit of an industry such as that of fishing within 900 miles of the coast is necessarily attended with many dangers and peculiar drawbacks. Exposure of life and property is frequent. Success depends very much on the seasons. Many kinds of fish of erratic habits are eccentric in their movements. Plenty and scarcity may alternate in places, from which the settlers depending wholly on any fishery have to escape. Within 20 miles of a settlement, on a barren and uninhabited coast, the fish may strike and remain without any possibility of their whereabouts being known; at other places they may be abundant beyond the capacity of shoremen and vessels to catch them, and yet fisherman not far distant may be unable to procure even a sufficient quantity for their winter's supply. Vessels may return empty in one season from fishing-grounds where previously or afterwards the fish abound. Some may lose the greater and best part of each season in searching after the shoals. Still the waters teem with fish, and sooner or later they approach the shore or frequent the shallows.

The fishery intelligence bureaus have in some measure provided against these vicissitudes. They have proved of material assistance to the fishermen, and aided considerably in developing the fisheries in our country. Besides affording greater inducement and security to employers of capital and inspiring confidence to those exposed to danger and hardships, they will undoubtedly enable us to increase production and enlarge our exports.

Canada was glad of the opportunity offered by the management of the World's Columbian Exposition to show the extent and the richness of its fisheries; and it has made there one of the largest, most complete, and best displays in the Fisheries Building, and in its competition with the rest of the world its exhibit has come out with flying colors, as may be ascertained by the number of awards it has received.