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THE BRITISH COLUMBIA FISHERIES

THE BRITISH COLUMBIA FISHERIES

By

W. A. CARROTHERS

With a Foreword by

H. A. INNIS

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FOREWORD

THIS volume is significant in its contributions to an understanding of the problems of the fisheries of the Pacific coast of North America, which followed from efforts to apply administrative machinery developed in relation to the demands of the fisheries of the Atlantic coast. In the British North America Act, fisheries were placed under the jurisdiction of the federal government for the purpose of securing effective financial support for protection against encroachment from American fishing vessels within the three-mile limit, and against smuggling incidental to encroachment and a federal tariff. The administration of the fisheries by the federal government was sufficiently effective to prove important in securing the Washington Treaty (1873-85) which enabled Canadian vessels to carry their fish to American ports, and secured direct pecuniary advantage in the Halifax Award. On the other hand, continued insistence of Canadians on their rights contributed to the termination of the Washington Treaty and to the international controversies which followed. Problems arising from the Atlantic fisheries had implications for the Pacific.

The Pacific coast fisheries differed sharply in character from the Atlantic fisheries with the result that machinery effective for the latter was inadequate for the former. Cod was significant to the Atlantic, salmon to the Pacific. The cod and other Atlantic fish were taken by hook in inshore waters and on the banks, the salmon on the Pacific by nets and seines near the mouths of rivers. The Atlantic fish were cured by salt or handled fresh by the fishermen, the salmon were chiefly canned at points near the fishing areas. The uniform character of the product facilitated the application of machinery. The Pacific coast fishery developed along different lines[1] from that of the Atlantic. On the Pacific

[1]There were evidences of borrowing in that those first interested in canning came from New Brunswick. About 1900, G. Robertson introduced a hand-laid sturgeon twine from Labrador to take the place of linen twine. The main developments were indigenous to the Pacific coast. The Columbia River boat proved more satisfactory in setting nets. The purse-seine was introduced about 1904. Its effectiveness was enormously enhanced by the use of the gasoline engine, which made it possible to close the seines much more quickly. Five "iron Chinks" were installed in British Columbia canneries in 1906. The rotary cutter and the filling machine greatly increased the speed of the processes. Cans were lacquered by machinery after 1901. Double cooking ceased after 1898.

coast the inshore and river fisheries were important, whereas on the Atlantic coast the offshore fisheries on the banks were important. In a sense the trend of development in the Atlantic was toward the sea and on the Pacific toward the land. The importance of the land involved problems of jurisdiction between province and Dominion and between state and federal government which were not evident in fisheries dominated by the sea.

The sheltered waters of the Pacific coast and the habits of the Pacific salmon in returning to the important rivers to spawn favoured the concentration of a large aboriginal population at strategic points along the coast. Salmon as a basic food left an indelible stamp on the aboriginal culture.[2] European fur traders from the East followed up the rivers of the eastern slope of the Rocky Mountains and obtained a slight hold on the fur trade of the Pacific coast drainage basin by dependence on the salmon which penetrated to the upper reaches of its rivers. They began to compete with the Indian villages at the mouths of the rivers which served as channels for the trade in furs to the interior and to vessels which traded at these points along the coast. The Hudson's Bay Company attempted to organize the trade around a central depot at Fort Vancouver on the Columbia River and to check the flow from the interior to the Indian coastal villages and the coasting vessels, but, failing in this, it began the systematic construction of forts, such as Fort Langley on the Fraser and Fort Simpson on the Naas River. It gradually obtained a position in which it could take advantage of the complex trade of the American coasting vessels, and salt-cured salmon was exported from Fort Langley to the Hawaiian Islands. The salmon fishery was an important determinant of the fur trade of the Pacific coast.

The rapid influx of population which followed the gold rush to British Columbia in the late fifties brought an important domestic market for salmon. The decline in yield of the gold fields compelled population to turn to the exploitation of other resources, notably the forests and the fisheries, for the production of exports. The canning industry was established on the Fraser River in the seventies and the foundations were laid for rapid expansion after completion of transcontinental railways to the northwest Pacific states and British Columbia, with access to the markets of the

[2]See Clark Wissler, *The American Indian* (New York, 1917), pp. 14-16 and *passim*.

East and of Great Britain. A commodity based on abundant natural resources and with high food value withstood the heavy freight charges of long distances by rail and water.

From the completion of the Canadian Pacific Railway to the turn of the century, the industry was characterized by small regionalized units[3] chiefly centring on the Fraser River. Technique was limited in character and capital demands were relatively small. The drift gill net was introduced on the Fraser as early as 1875 and in the delta by 1885. The industry was exposed to the full impact of low prices, especially in the depression of the nineties, and bankruptcies were numerous. Canners were dependent on agents who supplied twine nets, tin plate, and other goods, and disposed of the canned product, charging 5 per cent commission on both transactions, and few firms escaped their domination. The period was characterized by rapid and haphazard development.[4]

[3]See *infra*, pp. 7-10. Also see O. W. Freeman, "Salmon Industry of the Pacific Coast" (*Economic Geography*, April, 1935).

[4]Findlay, Durham, and Brodie (British Columbia Canning Company of London, England) built a cannery on Deas Island in 1873 and organized the Delta Canning Company in 1878. Holbrook and Company purchased a cannery at Sapperton, that used by Captain Edward Stamp, in 1872. The company disappeared in 1879. In 1877 English and Company and Finlayson and Lane started canneries, the latter succeeded by Lane, Pike, and Nelson, in 1878, but lasting only to 1879. Haigh and Sons built a cannery at Coquitlam in 1879, but the firm was reorganized and taken over by the Bon Accord Company in 1884. King and Company started a cannery in 1878 but it was burned in 1880. The floating cannery of J. Spratt, started in 1883, disappeared after a couple of years. Adair and Company (Wellington Packing Company) began operations in 1880 and Laidlaw and Company in 1881. British Union Packing Company (Harlock), the British American and J. H. Todd and Sons (Richmond) started in 1882. The Holly Cannery on Lulu Island, built in 1887, was largely destroyed by tide [Flood] in 1894. A plant built by H. Croasdale on the Naas River in 1881 was dismantled after four years because of its inaccessibility to steamers, and moved to Naas Harbor. The Douglas Packing Company plant, built in 1882 in the same region, was operated for two years and in 1888 moved to Mill Bay. The Cascade Packing Company plant, built in 1889, was dismantled in 1893. A plant built at Metlakatla in 1882 by the Rev. John Duncan was dismantled in 1886, and a plant built at Smith's Inlet by John Rood in 1883 was moved to Wannuck, Rivers Inlet, in the following year. A plant at Bute Inlet, built by C. S. Windsor and G. Hobson in 1890, was operated for one season. In 1892 it was claimed that only Findlay, Durham, and Brodie, R. P. Ritchie and Company, J. H. Todd and Sons, and A. Ewen and Company had sufficient capital. In that year the Anglo-British Columbia Packing Company acquired a number of canneries from weak firms, including the British Columbia Packing Company (Annieville),

Difficulties in the depression of the nineties, and low prices incidental to the large run of salmon in 1901, hastened the growth of large organizations and led to demands for amalgamation. The improvement in technique in the use of the purse-seine, and the introduction of the iron chink made greater demands for capital, and provided a larger supply of fish with the result that the British Columbia Packers' Association (British Columbia Fishing and Packing Company, Ltd., 1914) was formed in 1901 to acquire 29 of a total of 48 plants on the Fraser River[5] and 12 in northern British Columbia.[6] It closed down 19 canneries. The Anglo-British Columbia Packing Company also extended its numbers.[7] Other smaller groups emerged in the regions to the north.[8]

Wadhams (1883), British American Packing Company (1882), Canoe Pass Canning Company, Duncan and Batchelor (Britannia), English and Company (Phoenix), the British American (1883), and the North Pacific (1889), the two latter on the Skeena River. (See J. N. Cobb, *Pacific Salmon Fisheries* (Bureau of Fisheries Document 1092, Washington, 1930); also G. G. Strong, "The Salmon Canning Industry in British Columbia" (unpublished essay in University of British Columbia Library, 1934).

[5]These included Ewen and Company, Delta, Harlock, Wellington, Lulu Island, Terra Nova, Pacific Coast, Canadian Pacific, Short and Squair (Imperial), Brunswick (Steveston and Canoe Pass), Dinsmore Island, Sea Island, Fisherman's Packing Company, Reliance, Atlas, Boutiliar, Hume, Anglo-American, Provincial, Westham Island, Westminster Packing Company, Premier, Cleve, Welsh Bros., Currie, McWilliams and Fowler, Colonial, Greenwood, Wurzburg and Company, Aeme.

[6]It bought the Balmoral (1883), Cunningham (1883), and Standard (1890) canneries in 1902. The Alexandra (1904) and the Dominion (1906), all on the Skeena River, were purchased later, and also canneries at Alert Bay built by D. A. Spencer in 1881, at Bella Coola built by John Clayton in 1900, and at Lowe Inlet, all in 1902. The China Hat cannery, built by Toms, Morris and Fraser, was bought and dismantled. On Rivers Inlet, canneries at Wannuck built in 1884 and at Vancouver in 1897, were acquired and dismantled and Wadhams, built in 1897 and Brunswick in 1896, were acquired and enlarged. The plant built by Henry Croasdale in 1881 and moved to Naas Harbor in 1888, was purchased by B.C. Packers' Association in 1912.

[7]In 1911 it purchased the Pacific Northern (built in 1903 and sold to John Wallace in 1905 and moved to Arrandale), the Port Nelson Canning and Salting Company cannery built in 1905, and the Glendale Cove Cannery (built at Knight Inlet in 1907 and moved to Glendale Cove in 1910).

[8]Wallace Bros. Packing Company (Wallace Fisheries, Ltd., 1911) purchased the Claxton cannery (1892) on the Skeena River in 1899 and the Strathcona cannery (1906), built by Bain and Wilson on Rivers Inlet, in 1911. They built a cannery at Naden Harbor in 1912 but moved it to Masset Inlet in 1919. They

Still further improvements in technique with the use of Diesel engines favoured large-scale operations after the War. Decline in the sockeye run on the Fraser after 1913 hastened the trend toward large control and toward development of the northern regions. In the prosperous period of the twenties large capital organizations were formed. The British Columbia Fishing and Packing Company, which had absorbed British Columbia Canning Company in 1923, and Wallace Fisheries, Ltd., in 1926, and Gosse-Millerd Packing Company,[9] were absorbed by British Columbia Packers, Ltd., formed in 1928. It had control of 39 canneries, 5 reduction plants, and 3 cold-storage plants. At the same time the Canadian Fishing Company, Ltd., a subsidiary of the New England Fish Company, owned 17 canneries, 3 salteries, 4 mild cure stations, 6 cold storage plants, and 3 reduction plants. It purchased plants of Western Packers, Ltd.,[10] in 1923 and of Northern British Columbia Fisheries, Ltd.,[11] in 1926. Maritime Fisheries, Ltd.,[12] and Western Salmon Packing Company[13] were smaller organizations.

The tendency toward amalgamation was in part a reflection of the problems of the fishery which followed decline on the Fraser River. It was part of a movement involving a shift from the more valuable to less valuable species of salmon, from less valuable to

bought the Wm. Hickey Canning Company plant (1902) on Smiths Inlet in 1912 and the Dawson and Buttimer plant (1903) at Alberni Canal in 1911. They built a cannery at Quatsino Sound in 1911 but dismantled it in 1914.

[9]The Gosse-Millerd Packing Company built plants at Sunnyside in 1916 and at San Mateo in 1919. It purchased a cannery at Bella Bella (1912) in 1915 which was burned in 1923. It purchased the Captain Cove Canning Company on the Skeena and the Nitinat Packers, Ltd., in 1927 and took over the Somerville Canning Company and Canadian Fish and Cold Storage plant at Prince Rupert.

[10]Western Packers built a plant at Marguerite Bay in 1917 and in the same year purchased a cannery at Warke Island (built in 1911 by John Wallace to pack Gardiner Canal fish) and at Shushartis Bay.

[11]It acquired canneries at Namu (1893) and Kimsquit (1901) built by Robert Draney (Draney Fisheries, Ltd., 1912) in 1918. They also purchased a Tallheo Fisheries, Ltd., cannery (1917) and the Mill Bay cannery (that of the Douglas Packing Company, built on Naas River, 1882, operated two years and moved to Mill Bay in 1888, sold to Kincolith Packing Company, 1908) in the same year. They also built new plants at Kumeon and at Port Edward and purchased the Skeena River Commercial Company plant at Port Essington.

[12]It purchased a plant at Aliford Bay (1912) in 1917 from the bankrupt British Columbia Fisheries, Ltd. It built a plant at Haysport in 1919.

[13]It built plants at Lagoon Bay and at Summerville in 1918.

more valuable processes, i.e. canning to fresh fish, from salmon to other species of fish, and from the Fraser River to other regions. In 1902 sock-eye constituted 85 per cent of the pack and in 1933 about 20 per cent. Cohoes became more important after 1900. Chums which were canned for the first time in 1899 were 23 per cent of the pack in 1933 and pinks increased from about 5 per cent in 1902 to 42 per cent in 1933. Spring salmon also increased in importance.

Severe fluctuations on the Fraser incidental to a long-run decline and to the importance of the "big run" were offset by steadier supplies in other regions, especially after 1913. Increasing reliance on cheaper brands of salmon compelled dependence on lower income and less dependable markets. The broker,[14] handling over three-quarters of the pack, was in a stronger position. Competition from Siberia, Japan, and the United States was felt more acutely, particularly as the domestic market in Canada was limited and in sharp contrast with that in the United States. A large proportion of the total pack was sold in the export market. Conservation measures enhanced the burden of the canneries in reducing the time in which salmon could be taken and in restricting the use of more efficient methods, particularly of traps, while increased mechanization added to the overhead costs.

In the Fraser River area the important position of the independent fishermen enabled the canneries to shift a part of the burden of overhead costs, but in other regions, canneries, in addition to substantial investments and commitments in advance necessary to take full advantage of the short season, gave more extensive credits to outfit the fishermen. Independent fishermen in the Fraser River and Gulf of Georgia regions sold the product in a competitive market and in the north prices were arranged between representatives of the fishermen and the canning companies. These labour costs in the northern part of the province on the other hand accentuated the use of machinery.

The problem of labour has been closely interwoven with the problem of control. The Privy Council's decision in 1898 permitted

[14]The broker played an important role in maintaining standards. He purchased the cans at a fixed price minus 5 per cent as brokerage and one-half per cent for claims. When he added the label he was allowed 20 cents per can half flats and 15 cents for one of "talls," i.e. tall cans. The label "sockeye" was apparently introduced by the Bell-Irving Company in 1894-5.

both the province and the Dominion to impose licences on the fishery. In 1901 the province enacted legislation imposing licence fees and created a Department of Fisheries. In 1908 the Dominion refused to license new canneries and limited the number of boats in each region, but the Act was declared *ultra vires*. With the defeat of this attempt to control the number of Japanese by the Dominion, the province introduced similar legislation in 1910 and attempts were made to encourage the employment of white labour. In the post-War period the demands for restriction of Japanese fishermen became more insistent. Licences to Japanese were reduced after 1922 and they were compelled to seek employment in lumbering, agriculture, or trade.[15] On October 15, 1928, the Privy Council upheld the Supreme Court of Canada in a decision limiting the powers of the Dominion to fishing operations only. In 1930 the province introduced legislation providing for five-year licences to canneries.

The amalgamation movements of the early nineties, the early part of the century, and the twenties were accentuated by increasing mechanization within the canneries and the consequent increasing demands for mechanization of the primary process of taking the fish. On the one hand, this development was linked to the problem of labour and on the other, to the problem of conservation. In contrast with Nova Scotia, for example, the province[16] was compelled to take an increasing interest in the fisheries. The personal element which characterized the small individual cannery became less important with the death or disinterest of families and the increasing importance of company and large-scale organization. On the other hand, the Dominion was compelled to take a more active interest in conservation which limited the supply of raw material, intensified competition, and increased the peak load of the industry and in turn the labour costs. Conservation involved co-operation with the United States, or, since the fisheries were under the control of the states rather than the federal government, with the State of Washington. The long delay in the adoption of conservation measures followed the constitutional handicap. In

[15]See C. H. Young, H. R. Y. Reid, and W. A. Carrothers, *The Japanese Canadians* (Toronto, 1938), chap. III.

[16]See a valuable account of the work of the Province of Quebec after securing control of its fisheries, Louis Bérubé, *Coup d'œil sur les pêcheries de Québec* (Ste-Anne de la Pocatière, 1941).

the Atlantic fishery the problem of treaties concerned the federal governments of Canada and the United States; on the Pacific coast the character of the salmon fishery involved a conflict between the federal government of Canada and the State of Washington. A boundary line which had been drawn previous to the emergence of the salmon fishery on a large scale created vested interests in the state which opposed conservation in the Dominion. The ease with which conservation measures in relation to halibut were adopted by the two federal governments is in sharp contrast with the difficulties in the salmon industry.

The delay had repercussions for the economy of British Columbia. Opposition to conservation measures in the United States accentuated the need for conservation measures in Canada. Restrictions in Canada hastened the trend toward amalgamation. In turn the problems of labour became more acute and Chinese, Japanese, and Indians dominated the industry. Legislation was designed to secure employment for the white population, and the Japanese in particular were compelled to compete in other industries. Depletion of the Fraser River salmon fishery was followed by more rapid exploitation of other resources, including other fisheries.

In suggesting these developments in British Columbia the volume is intended to supplement the study by H. E. Gregory and Kathleen Barnes, *North Pacific Fisheries with Special Reference to Alaska Salmon* (New York, 1939). Grateful acknowledgment is here made of the support of the Institute of Pacific Relations in facilitating publication.

H. A. I.

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PART I

THE SALMON FISHERY

CHAPTER I

THE PACIFIC SALMON

SALMON found in Pacific waters are distinct species from those found in the Atlantic and include the sockeye, spring, cohoe, pink, and chum. These differ in appearance, average weight at maturity, composition of the flesh, and length of life. The pink lives only two years and weighs from three to six pounds, the average weight at maturity being approximately four pounds. The cohoe lives three years and varies in size from five to fifteen pounds, the average weight at maturity being about six pounds. The chum lives three or four years, and its average weight is from eight to ten pounds. The sockeye lives from four to six years, and its average weight at maturity is from five to seven pounds, but fish weighing as much as twelve pounds have been caught. The spring salmon has the longest life span of eight years. It is the largest species, and reaches an average weight at maturity of about twenty pounds, but fish weighing one hundred pounds have been caught.

Salmon are born in fresh water, but their mature life is spent in the sea; they are anadromous. Whether they go far to sea, or whether they stay near the coast, is a question which is still in doubt. When the spawning impulse comes upon them they turn their way toward a spawning ground in the river system where they themselves were spawned. Possibly, they return to the very stream where they were spawned, certainly they go back to the same system. When these migrations to the spawning grounds are in progress the fishermen make their great salmon catches. Year after year, when the migrations have begun, the fish swim along in their multitudes, in prime condition, their bodies stored with fat. The troll, the gill net, the purse seine, the trap, and the drag seine reap the harvest. The Dominion Department of Fisheries takes strict care to regulate fishing operations so that the salmon may reach the streams of the province in numbers sufficient to ensure adequate seeding of the spawning areas and the maintenance of future runs.

Once started back to the spawning grounds from salt water the salmon takes no thought of feeding. The stored-up body fat apparently suffices them. The stomachs of the migratory salmon are always practically empty and, indeed, even free from living bacteria. Reaching the streams, the fish make their way against the current, mount rapids, by their own efforts, or perhaps, with the aid of fishways constructed and maintained by the Department of Fisheries, fight steadily onward, until they reach the spawning bed. Their store of fat has been used up in the long struggle against the current and in the formation of eggs. Some of the muscle protein and of the flesh colouring like the fat have entered into the development of the eggs.

When the spawning grounds are reached, each female salmon, guarded meanwhile by the male, deposits her eggs to the number of several thousand in a little basin which the fish scrape out in the river bed with snout and fin. When the eggs have been fertilized, the male and female fish join in covering them with gravel. The life cycle of the parent fish is ended. Unlike the Atlantic salmon, the Pacific salmon spawns but once, and death follows.

One generation is dead before the next arrives. For a time, that particular "run" or family is represented only by millions of eggs tucked loosely in the gravel of a thousand mountain streams. There they lie for some time, depending upon the temperature of the water, until a tiny fish begins to form, the first thing visible being the eye. Gradually a backbone appears and then other features until a tiny fish is formed and most of the egg material has been used for food and transformed into a living fish. The little ones emerge from the gravel and seek other foods. Their enemies swarm about, and a large percentage fall victim to the avaricious birds, Dolly Varden trout, and other large fish. Some escape and learning from experience, become as wary and as agile as their enemies. Gradually descending the river, stopping for a while in favourable pools or lakes, they approach the ocean. Some go into the salt water when only a few months old, while others wait until their second year, when they may be six inches or even larger in size.[1]

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[1] *The Salmon Fishery of British Columbia* (Ottawa, 1931), p. 4; and W. A. Clemens, "Pacific Salmon in British Columbia Waters" (Report of the Commissioner of Fisheries, British Columbia, 1934, p. 103).

CHAPTER II

THE FISHERIES TO 1900

SALMON formed the main food of the aboriginal population,[1] being eaten fresh in summer and dried or smoked in winter, and were an important article in the diet of the early fur traders. Indian tribes erected barricades across the rivers, in which fish traps were constructed to interrupt the migration of the salmon to the spawning grounds and to facilitate their capture. Large quantities were taken and the existence of the salmon was so endangered that their use by the Indians was forbidden.[2] It has been estimated that the average consumption of fish by Indians in British Columbia amounted to about twenty million pounds per year: about seventeen and one-half million pounds of salmon, three million pounds of halibut, and one-quarter million pounds of sturgeon, herring, trout, and other fish, as well as eighty thousand gallons of fish oil valued at $4,885,000 in 1879, and at $3,257,000 in 1885. The Hudson's Bay Company bought salmon from the Indians on the Fraser River and preserved them by salt curing. From 1835 to 1858 it exported yearly to the Hawaiian Islands and the continent of Asia three to four thousand barrels of this product.[3] It was also

[1]Report of the Inspector of Fisheries, British Columbia, 1879 (*Canada, Sessional Papers*, no. 9, 1880, appendix 17, pp. 288-302).

[2]An inspector visiting Babine Lake and the headwaters of the Skeena River in 1904 gives an interesting description of the operations of the Indians: "The banks of the Babine river have a lovely appearance at this place and a most wonderful sight met our eyes when we beheld the immense array of dried salmon. On either side there were no less than 16 houses 30×27×8 feet filled with salmon from the top down so low that one had to stoop to get into them, and also an immense quantity of racks, filled up outside. If the latter had stood close together they would have covered acres and acres of ground, and though it was impossible to form an estimate, we judged it to be nearly three-quarters of a million fish at those two barricades, all killed before they had spawned, and though the whole tribe had been working for six weeks and a half it was a wonder that so much salmon could be massed together in that time." It was estimated that each Indian family used about one thousand salmon per year; a total for the Indian population of that district alone of about one million fish. Fish was the principal food of the multitude of dogs. Salmon were used as an article of commerce and formed a sort of legal tender, ten salmon being equivalent to a dollar. Dried salmon were sold to miners, merchants, and packers operating dog sleighs.

[3]*The Salmon Fisheries of British Columbia* (Ottawa, 1931), p. 3. See Frederick Merk, *Fur Trade and Empire* (Cambridge, 1939), p. 121.

used for local consumption and was transported to various posts.

Immediately following the influx of population after the gold rush, the fisheries[4] expanded rapidly. In 1859, "salmon and herring twine, cod fish hooks, salmon and herring nets" were advertised for sale.[5] "The sloop *Leonede* cleared today for the Fraser River carrying a party who intend to engage in salmon fishing at the mouth of the river. We hope to see the time when we shall be able to record the sailing of 300."[6] In 1863, Captain William Spring established a salting and curing plant at Beechy Bay, and in the following year Messrs. Annandale and Ewen commenced similar operations on the Fraser. The canning of salmon had been carried out on the Columbia River in 1862 and on the Sacramento River in 1864. The first attempt at canning on the Fraser was begun as an experiment by James Symes in 1867, but the plant of Alexander Loggie and Company, established in 1870 at Annieville, about three miles below New Westminster, introduced the first commercial operations. It was almost entirely hand-operated. By 1882 there were thirteen canneries on the Fraser River, with an output of 250,000 cases. In 1889, a total of thirty-five canneries were in operation, using 835 boats, employing 7,158 people, and packing 473,936 cases of salmon (Table 1). The industry had spread from the Fraser River northward along the coast to the Skeena,[7] where the first

[4]"Every effort shall be made to increase our population, to foster agriculture, and to develop our mines and our *fisheries* and promote the interests of commerce and manufactures" (*British Colonist*, Dec. 11, 1858, p. 2). "No country ever had better or more valuable salmon fisheries, nor more easily developed, than our own" (*ibid.*, Feb. 5, 1859, p. 1).

[5]*Ibid.*, June 29, 1859, p. 3.

[6]*Ibid.*

[7]"The chief fisheries of the salmon are at present on the Fraser River, near the mouth, and thence upwards as far as New Westminster. The business is prosecuted with much energy by three firms; but others purpose entering the business, and there is of course room for many more. The fish are caught by means of drift nets and are cured by either canning in a fresh state or salting in barrels. North of the Fraser, near the mouth of the Skeena River, discharging into Port Essington, another fishery has been established during the past summer. This last concern, known, I think, as the North West Fishing Company, was originated in San Francisco; and the capital necessary for its operations is owned, I believe, chiefly in that city and partly in Victoria" (Report of the Inspector of Fisheries for British Columbia, 1876, *Canada, Sessional Papers*, no. 5, 1877, appendix 21, p. 339).

TABLE I

SALMON CANNERIES IN EXISTENCE IN BRITISH COLUMBIA IN THE SEASON OF 1890

Name of Owner	Name of Cannery	Where Located	Year first operated	No. of boats licensed in 1889	No. of hands employed	Total pack (cases)
Fraser River						
M. M. English	Phoenix Cannery	Lulu Island	1877	22	290	20,917
J. H. Todd & Son	Richmond Cannery	Lulu Island	1882	20	175	17,170
J. H. Todd & Son	Bearer Cannery	Lulu Island	1889	18	205	14,253
E. A. Wadhams	Wadham's Cannery	Ladner's Landing	1883	24	266	18,334
Ben. Young, manager	British American Packing Company (Limited)	Canoe Pass	1882	24	335	25,000
D. Drysdale, manager	Canoe Pass Canning Company (Limited)	Canoe Pass	1889	18	245	14,300
R. P. Rithet H. E. Harlock	Harlock Cannery	Ladner's Landing	1882	20	166	15,480
British Columbia Canning Company of London, England	Fraser River Cannery	Deas Island	1876	20	229	21,056
C. J. Hobson C. S. Windsor H. O. Bell Irving E. Renney W. W. Wells E. H. Tophan H. W. Tophan	Garry Point Canning Company	Lulu Island	1889	18	240	15,106
P. Birrel B. Douglas H. Elliott	British Columbia Packing Company	Annieville	1878	22	185	21,056

TABLE I—*Continued*

Name of Owner	Name of Cannery	Where Located	Year first operated	No. of boats licensed in 1889	No. of hands employed	Total pack (cases)
Fraser River						
W. A. Duncan, J. Batchelor, Eli Harrison	Britannia Cannery	Lulu Island	1890	17	192	12,753
A. Ewen & Company	Bon Accord Fishing Company	Tree Island	1879	22	240	17,771
A. Ewen & Company	Sea Island Canning Company	Sea Island	1889	18	225	18,225
R. P. Rithet, F. Page, Thos. E. Ladner	Wellington Packing Company	Canoe Pass	1880	24	316	20,100
Alex. Ewen	Ewen's Cannery	Lion Island	1876	31	380	33,700
R. P. Rithet, Jas. A. Laidlaw	Laidlaw & Company	Sapperton	1881	24	320	22,150
R. P. Rithet, Jas. A. Laidlaw	Delta Canning Company	Ladner's Landing	1878	24	320	22,150
Alert Bay						
S. A. Spencer	Alert Bay Packing Company	Malcolm Island	1881	S. 2	71	7,162
Bute Inlet						
C. G. Hobson, C. S. Windsor	Bute Inlet Cannery	Bute Inlet	1890	G N 15– S. 1	130	3,000

TABLE I—*Continued*

Name of Owner	Name of Cannery	Where Located	Year first operated	No. of boats licensed in 1889	No. of hands employed	Total pack (cases)
Skeena River						
British Columbia Canning Company (Limited) of London, England	Windsor Cannery	Aberdeen	1878	40	199	8,772
H. C. Beeton J. H. Turner	Inverness Cannery	Inverness	1875	40	225	8,125
R. S. Byrnes M. Cuthburt	Balmoral Cannery	Balmoral	1886	40	225	9,081
John Mohrer A. R. Johnston J. E. Jinkins J. A. Carthew A. G. McCandless	North Pacific Canning Company (Limited)	Inverness	1889	40	225	9,995
Gus. Holmes, manager	British American Packing Company (Limited)	Port Essington	1883	40	225	12,337
R. Cunningham & Son	Skeena Packing Company	Port Essington	1883	40	225	10,100
R. P. Rithet Jas. A. Laidlaw John Irving	Standard Cannery	.....	1890	29	110	10,600
Low's Inlet						
R. Cunningham & Son John Rood	Low's Inlet Canning Company	Low's Inlet	1890	S. 2	113	6,000
Smith's Inlet						
R. P. Rithet Jas. A. Laidlaw	Quashella Packing Company	Smith's Inlet	1883	S. 1	12	.....

TABLE I—*Continued*

Name of Owner	Name of Cannery	Where Located	Year first operated	No. of boats licensed in 1889	No. of hands employed	Total pack (cases)
River's Inlet						
British Columbia Canning Company (Limited) of London, England	River's Inlet Cannery	Head of River's Inlet	1882	40	204	16,700
British Columbia Canning Company (Limited) of London, England	Victoria Cannery	Mouth of Wannock River	1882	40	132	10,000
A. McNeill, W. McDowell, S. McDowell	Wannock Packing Company	Midway of River's Inlet	1884	30	185	9,022
Naas River						
A. J. McLellan	McLellan's Cannery	Naas Harbour	1888	30	200	10,200
British Columbia Canning Company (Limited) of London, England	Naas River Cannery	Naas Harbour	1881	34	193	5,000
R. P. Rithet, Jas. A. Laidlaw, D. R. Harris, M. Strouse	Cascade Cannery	Echo Cove	1889	30	67	4,600
Gardner's Inlet						
Archibald Coats, H. M. Price, P. Coats, W. Coats	Price's Salmon Canning and Preserving Company	Gardner's Inlet	1890	25	88	3,721
TOTALS				835	7,158	473,936

cannery was built in 1875. In 1895, of a total of forty-eight canneries, thirty-one were on the Fraser, sixteen on the northern coast and one on the west coast of Vancouver Island (Table II).

With the commencement of railway construction, scarcity of labour[8] led to the adoption of labour-saving devices including a soldering machine and a filling machine which operated on the cans as they moved on an endless chain. In 1879, nearly 2,500 men were employed in the canneries on the Fraser River, including a number of Indians and Chinese. The latter were employed mainly in cleaning the fish and making cans by hand. This labour was

TABLE II

BRITISH COLUMBIA SALMON CANNERIES, 1876-98

Year	Number	Year	Number
1876	3	1888	21
1877	4	1889	28
1878	10	1890	32
1879	9	1891	26
1880	9	1892	27
1881	12	1893	37
1882	18	1894	32
1883	24	1895	36
1884	17	1896	47
1885	9	1897	54
1886	17	1898	51
1887	20		

supplied largely on the basis of contract, a common method of securing Chinese labour in the fisheries and in other types of work. The cans were hand-filled, cooked at 212°F., then pierced by an awl, soldered, and recooked at 240°F.

By the end of the century the industry had been largely mechanized. In 1905 it was stated:

> It may now be claimed that after the fish leaves the boat from which it was captured, all handling of it ends then and there. After it is thrown up on the wharf by the fisherman it is handled thenceforward practically solely by machinery and the arrangements for so doing are very perfect. . . . Each machine is evidently the result of careful study by men fully aware of the

[8]Report of the Inspector of Fisheries, British Columbia, 1881 (*Canada, Sessional Papers*, no. 5, appendix 6, p. 202).

necessities of the business. The salmon are, by recent methods, taken from the boat by a huge conveyor which conveys them to the inside of the building and dumps them down on the floor, where the operator is waiting, standing before the huge machine known as the Iron Chink. This name arises from the fact that the machine will easily perform the work of many China-

TABLE III

CAPITAL EQUIPMENT IN THE FISHING INDUSTRY IN BRITISH COLUMBIA, 1877-98

YEAR	FISHING BOATS (sail and row boats)		FLAT BOATS (collecting vessels, scows)		TOTAL BOATS, etc.	
	No.	Value (thousands of dollars)	No.	Value (thousands of dollars)	No.	Value (thousands of dollars)
1877.....	137	9	21	1	158	10
1878.....	366	20	18	3	384	22
1879.....	354	19	12	1	366	20
1880.....	317	15	16	2	333	17
1881.....	375	17	35	4	410	21
1882.....	654	33	47	6	701	39
1883.....	874	41	66	7	940	48
1884.....	878	42	65	6	953	47
1885.....	867	40	42	5	909	46
1886.....	994	49	64	8	1,058	56
1887.....	991	42	96	15	1,087	57
1888.....					1,090	54
1889.....					1,364	69
1890.....					1,471	82
1891.....					1,478	68
1892.....					1,485	63
1893.....					2,287	94
1894.....	2,399	92		3	2,399	95
1895.....	2,600	106		6	2,600	112
1896.....	3,718	164		20	3,718	184
1897.....	4,917	228		8	4,917	237
1898.....	5,080	218		33	5,080	252

SOURCE: Annual reports of the Department of Fisheries (*Canada, Sessional Papers*).

men. No longer will it be necessary to have line after line of industrious Chinamen or Indian operators standing before their benches waiting with knives ready for the fish. They formerly cleaned the fish, but the Iron Chink does that part of the work. Fitted as it is with an intricate arrangement of knives and cutters, the machine takes the fish as they come from

the water, and rapidly cuts off the head, fins and tail, and cleans the entrails out. This is done very rapidly, so rapidly that thousands of fish each hour will pass through. Each salmon is then taken to the big revolving cutter, which cuts it into slices ready for the tin. It is then carried on trays, fresh and clean, to the canning benches, where it is carefully placed in the cans. Passing down a long belt, the can is covered and finally soldered, all by machinery, and thoroughly cleaned. Passing still further down it is cleaned again, and then taken over to the test tanks. These are capacious tanks of water where the cans are submerged, and, should they exhibit the slightest defect in sealing, as shown by bubbles, they are at once taken out. The cans are then taken to the retorts, first passing through another cleaning process, and there, after being tested, are put into the large retorts or ovens and allowed to remain an hour at a high degree of heat. As they have previously passed through about 150 degrees this cooks the fish thoroughly. The cans are then ready to be labelled. But to reach the room where the labels are put on, the cans must go through another cleansing process, this time being finally cleaned and sprayed. They then pass to the rooms where they are labelled by machinery, and are ready to be packed in strong wooden cases and sent out.[9]

Pink and chum salmon had been important and favoured articles of diet among the Indians, but little attempt had been made to preserve them. In 1897, 600,000 pounds of cured chum salmon was shipped to Japan as an experiment.[10] In the following year about 4,000,000 pounds were salted. They were shipped as dried salmon for dog food to the Yukon during the gold rush. They were mostly caught by fishermen when fishing for cohoes for the canneries and formerly thrown away. Canning of these fish began in 1899 and in 1900, 5,700,000 pounds of salted chum salmon were exported, and 6,340,000 pounds were canned, constituting a very valuable extension to the industry. The growing demand for salted chum salmon led to the development of this industry on the Queen Charlotte Islands. In 1898 herring were smoked or "kippered" in considerable quantities and found a market in the interior as well as in the cities. As yet other varieties of salt water fish were not exported and were only caught in sufficient quantities to supply the local demand.

Salmon were handled in cold storage with the establishment of two plants on the Fraser River with a capacity of 320,000 pounds in 1887. Fish from cold storage were shipped to the United States

[9]*British Columbia Fisheries Commission, 1905-1907, Report and Recommendations* (Ottawa, 1908), p. 14.

[10]Report of the Department of Fisheries, 1897 (*Canada, Sessional Papers*, no. 11A, 1898, appendix A, p. 321).

and Eastern Canadian markets and arrived in good condition, but high freight charges and competition from the Columbia River and Atlantic fishermen were a handicap. Salmon from the Pacific coast commanded a lower price than Atlantic salmon, and Washington operators had the advantage of lower freight rates. In 1895 salmon was being shipped in cold storage to Europe and Australia.

In 1892, a Commission was appointed to investigate the salmon

TABLE IV

BRITISH COLUMBIA SOCKEYE SALMON PACK, 1876-98

Year ended June 30	Fraser River (cases)	Northern waters (cases)	Puget Sound (cases)	Salt or pickled (barrels) ‡	Fresh*	Smoked†	Total value (thousands of dollars)
1876...	9,847			1,140			79
1877...	64,387	3,000		3,561			466
1878...	105,101	8,499		5,465		167	782
1879...	50,490	10,603		2,160		225	423
1880...	42,155	19,694		2,487			436
1881...	142,516	34,760		4,917			1,143
1882...	199,104	55,957		5,057	1,126		1,459
1883...	109,701	86,591		4,717		3,994	1,211
1884...	38,437	102,802		5,637		3,670	931
1885...	89,617	18,900		3,468		3,700	652
1886...	99,177	62,087		3,006	8,256	227	926
1887...	130,088	73,995		4,459	22,266	311	1,457
1888...	76,616	107,424		4,241	24,770	134	1,397
1889...	303,875	110,419		3,749	21,870	129	2,673
1890...	241,889	167,089		2,994	17,390	583	2,603
1891...	178,954	135,939	5,538	1,353	20,909	1,213	1,767
1892...	79,715	148,755	2,954	2,348	29,355	1,355	1,727
1893...	457,797	132,432	47,852	5,688	35,942	1,432	3,151
1894...	363,967	130,403	41,781	4,825	19,700	605	2,505
1895...	400,368	166,027	65,143	3,148	17,959	466	3,103
1896...	356,984	244,586	72,979	2,413	12,296	414	3,143
1897...	860,459	155,018	312,048	5,011	18,145	860	5,186
1898...	256,101	228,060	252,000	2,600	9,149	2,010	2,662

*Also the following items: 1880, 22,687 pieces; 1881, 153,800 pieces; 1883, 110,174 salmon; 1884, 173,056 salmon; 1885, 204,700 salmon.

†Also the following items: 1879, $800; 1880, $950; 1881, $1,450; 1882, $1,630.

‡Kits of 40 and 30 respectively must be added to the figures for 1879 and 1880.

fisheries of British Columbia, particularly the adaptability of the general fishery regulations and the question of the disposition of fish offal into the waters of the Fraser River. Offal, consisting of

TABLE V

EXPORTS OF CANNED SALMON—BY VALUE AND QUANTITY, 1873-98

Year*	Canadian export† (thousands of dollars)	Canadian export† (cases)	Exports to U.K. (thousands of dollars)	Exports to U.K. (cases)	Exports to U.S. (thousands of dollars)	Exports to U.S. (cases)	B.C. production‡ (cases)
1873..	63		38		22		
1874..	204	27,999	175	20,434	25	7,013	
1875..	251	32,204	199	25,296	20	2,720	
1876..	96	15,900	51	8,350	27	4,513	9,847
1877..	82	12,198	55	8,302	3	499	67,387
1878..	408	69,321	162	25,090	203	37,545	113,601
1879..	615	103,438	400	66,412	165	28,210	61,093
1880..	303	60,252	265	52,321	33	7,052	61,849
1881..	298	59,254	279	55,499	18	3,487	177,276
1882..	897	156,000	845	146,021	31	5,828	255,061
1883..	1,156	228,692	1,130	223,694	5	761	196,292
1884..	802	153,092	681	129,041	98	19,301	141,239
1885..	511	105,020	423	86,076	28	5,751	108,517
1886..	414	85,150	366	75,453	15	3,102	161,264
1887..	602	111,146	527	97,504	23	3,368	204,083
1888..	919	172,983	806	148,606	2	388	184,040
1889..	753	140,385	592	110,504	16	2,891	414,294
1890..	2,070	373,418	1,923	347,828	64	10,129	408,978
1891..	1,745	331,994	1,521	282,836	2	396	314,893
1892..	1,255	257,670	1,156	235,941	5	1,604	228,470
1893..	870	171,240	847	166,368	0.296	46	590,229
1894..	2,387	500,877	2,328	486,656	1	241	494,371
1895..	2,009	427,591	1,935	411,910	0.033	8	566,395
1896..	2,537	468,367	2,476	455,443	15	3,762	601,570
1897..	2,856	582,539	2,776	564,695	0.321	83	1,015,477
1898..	3,430	867,646	3,238	816,221	6	1,590	484,161

SOURCE: British Columbia Production Figures, Annual reports of the Department of Fisheries (*Canada, Sessional Papers*).

*The export figures are for the fiscal years only, ending June 30.

†The following figures are taken from the Customs reports of exports from British Columbia. They differ from production figures presumably because of delays in sales.

‡These figures for the calendar year.

TABLE V—*Continued*

Year	British Columbia exports (thousands of dollars)	(cases)	Year	British Columbia exports (thousands of dollars)	(cases)
1873	8		1886	406	83,715
1874	39	4,434	1887	602	110,981
1875	104	14,463	1888	918	172,815
1876	50	8,500	1889	750	139,995
1877	71	10,142	1890	2,067	372,929
1878	393	66,687	1891	1,741	331,257
1879	585	99,078	1892	1,253	257,469
1880	295	58,775	1893	870	171,187
1881	297	59,099	1894	2,377	498,626
1882	896	155,837	1895	1,994	424,873
1883	1,153	228,259	1896	2,415	439,617
1884	798	152,583	1897	2,811	573,794
1885	504	104,220	1898	3,349	826,330

the heads, tails, fins, and viscera of the fish, was produced in considerable quantities, amounting to almost nine million pounds each season. Much of it consisted of flesh suitable for consumption, estimated to be equivalent to 280,000 salmon.[11] Regulations were made prohibiting the throwing of offal into the river, but were not properly observed. The Commission recommended their enforcement, but without avail. In 1898 a company was formed to manufacture fish oil and fish guano from the offal and in that year produced about 12,000 gallons of fish oil and 2,000 tons of guano or fish meal.[12]

[11] *Report of the British Columbia Salmon Fisheries Commission, 1892*, p. 1.

[12] Report of the Department of Fisheries, 1898 (*Canada, Sessional Papers*, no. 11A, 1900, appendix A, p. 197).

CHAPTER III

THE FISHERIES AFTER 1900

As a result of the very large run of sockeye salmon in 1901, the canneries were unable to handle all the fish, and would accept only a limited amount from the fishermen. Nets were sunk and lost on account of the weight of the fish caught. The pack amounted to 962,682 cases of 48 pounds each, or 46,208,736 pounds. Part of the pack was unsold in 1902 and the catch in that year dropped to 293,477 cases. Owing to the abundance of sockeye a smaller proportion of chum and pinks were packed. The pack of chums and pinks was determined rather by market conditions than by the supply of fish available.

In 1904 British Columbia fishermen were allowed to operate traps[1] and in that year thirty-three trapping licences were taken out. Only four traps were actually operated, one of these being

[1]The "trap" used on the Pacific coast is in the nature of an obstruction in the pathway of the salmon, built out from the shore, with a device at the outer end designed to entrap the fish in their efforts to pass around this obstruction. "Traps may vary in minor details but their general plan is as follows: A 'leader,' made by driving long heavy poles or piling into the bed of the water and fastening to these poles a fence of wire or net webbing, is built out from the shore whatever distance may be necessary, perhaps nearly half a mile. At the outer end of the 'leader' is the first of two 'hearts' of net, fastened to piling. They are really enclosures with small entrances along the 'leader.' As the salmon strike the 'leader' they turn seaward to get around it and are thus diverted into the 'hearts' which are designed to collect and concentrate the fish. The second 'heart' lies directly behind the first and is attached to it, serving largely as a safeguard against the escape of fish that have entered the first. Beyond the second 'heart' is the 'pot,' the final unit of the trap proper, and the fish, in a renewed effort to escape, find their way into it by means of a narrow 'tunnel' from the 'heart.' This entrance is cleverly disguised from the inside of the 'pot' and the fish cannot find their way out. In most traps there are also one or two square enclosures or 'spillers' into which the fish may swim from the 'pot.'

"When the time comes to remove the fish—'lifting' the trap is the fishermen's phrase—the 'spiller' net is raised within a couple of feet of the top of the water, several men in a rowboat enter the enclosure and gradually pull up the net, thus driving the fish into an end or pocket of the net. A 'brailer,' or large scoop of heavy netting, operated by power from a fish tender or tugboat alongside, dips out the salmon and drops them into a scow. When the trap has thus been emptied, as is done once a day, or once every other day, the tender tows the scow to the cannery or salmon curing plant and there the fish are prepared for market."

near Victoria, and another on Pender Island. In 1910, several traps were successfully used on the south-west coast of Vancouver Island, particularly in the capture of spring salmon, although the traps at Sooke, near Victoria, captured considerable quantities of sockeye. The catch of salmon particularly in northern waters was affected not only by the quantity of salmon but by weather conditions and the amount of gear used.

Cold storage was facilitated by the erection of a plant at New Westminster in 1908. The Dominion government, commencing in 1909, attempted to foster the consumption of fish from the Atlantic and the Pacific in interior points in Canada by giving freight subsidies on fish shipped in less-than-carload lots. Shipments in carload lots were made from British Columbia to Toronto and Montreal, but the demand for fish in Alberta, Saskatchewan, and Manitoba was not sufficient and the higher rates of less-than-carload lots hindered development of this market. One-third of the ordinary freight charges on fresh fish shipments from British Columbia to points in the Prairie Provinces was borne by the Dominion government. This trade necessitated the development of a cold storage system and the establishment of properly equipped fish stores. The policy met with satisfactory results.

By 1917 the demand for halibut and salmon had grown to such an extent that it was difficult to satisfy. Consequently the practice of subsidizing freight charges on these fish was discontinued and an attempt was made to increase the consumption of other fish available in British Columbia waters. Two-thirds of the transportation charges on shipments of other fish, whether shipped by express or freight, or whether in carloads or in less-than-carload lots, was borne by the Dominion government. As a result it was possible to place other fish on the markets in the Prairie Provinces at a price of 10 cents per pound. The need for conservation of food during the war was a factor leading to adoption of the policy, and after the armistice the subsidies were discontinued. The following table shows the amounts paid by the Dominion government on shipments from the Atlantic and from the Pacific from 1909 to 1919.

In the large run years, 1897, 1901, 1905, 1909 and 1913, the Fraser River pack of sockeye averaged 798,700 cases, whereas the average for similar small run years, 1898, 1902, 1906, 1910, and 1914, was 216,240 cases. In 1913, disaster to the Fraser sockeye salmon followed the construction of the Canadian Northern Rail-

TABLE VI

FREIGHT PAYMENTS BY DOMINION GOVERNMENT, 1909-19

Fiscal year	On shipments from east	On shipments from west
1909–10	$15,162	$13,542
1910–11	16,898	21,897
1911–12	19,621	35,315
1912–13	29,969	39,277
1913–14	37,819	44,114
1914–15	26,667	34,529
1915–16	27,123	34,873
1916–17	32,718	36,800
1917–18	49,551	46,372
1918–19	37,366	53,481

SOURCE: Annual reports of the Department of Fisheries (*Canada, Sessional Papers*).

way through the Fraser canyon along the banks of the river. Hell's Gate, where the bed of the river narrows and the waters rush through with terrific force, was a difficult point of passage for salmon, but a small sheltered bay permitted the fish to rest and recover strength for the final passage. Shortly before the sockeye run in 1913, rock blasting operations on the Canadian Northern resulted in a rock slide which filled this sheltered bay. Strenuous efforts were made to remove the obstacle, but only a small part of the run succeeded in getting through to the upper waters of the Fraser, and millions of fish died in the lower part of the river without spawning. Although those familiar with the habits of the salmon pointed out that a large pack could not be expected in 1917 fishermen refused to heed the warning and the smaller run of that year was over-fished. Only 148,164 cases of sockeye salmon were packed on the Fraser as compared with 719,796 cases in 1913. In 1921 the pack declined to 39,631 cases. The Fraser River no longer enjoyed its big year, and even the smaller years showed a marked decline since the absence of a large run tended to lead to over-fishing in the small years.

The pack of pink and chum salmon increased particularly with the decreasing runs of sockeye on the Fraser River (Table VII). Had it not been for the development of a market for the coarser grades of salmon, the industry would have been practically ruined.

TABLE VII

BRITISH COLUMBIA SALMON PACK, 1899-38

(*cases*)

Year*	Sockeye				Salmon other than sockeye
	Fraser River	Northern waters	Puget Sound	Canadian traps in Juan de Fuca Straits	
1899....	510,383†	153,949	499,646		68,105
1900....	316,522†	97,280	229,800		171,611
1901....	990,313†	164,404	800,000§		81,439
1902....	293,477	237,959	372,301		94,546
1903....	204,809	163,908	167,211		104,957
1904....	72,668	250,538	109,264		142,668
1905....	837,489	243,184	825,453	26,149	86,787
1906....	183,007	276,672	178,748	4,220	169,781
1907....	59,815	254,259	93,122	2,802	233,385
1908....	62,126	260,449	170,951	11,448	207,666
1909....	542,248	255,006	1,097,904	43,187	127,479
1910....	133,045	415,483	248,014	17,387	196,286
1911....	58,487	325,022	127,761	4,330	565,456
1912....	108,784	320,883	184,680	15,095	551,864
1913....	684,596	252,382	1,673,099	52,065	381,723
1914....	185,483	338,513	335,230	12,700	574,343
1915....	89,040	384,912	64,548	2,090	688,659
1916....	27,394	182,634	84,637	4,752	780,285
1917....	123,614	191,684	411,358	24,550	1,217,637
1918....	16,849	256,762	50,723	2,848	1,350,279
1919....	29,628	330,591	63,346	6,194	1,023,711
1920....	44,598	303,006	62,654	3,801	836,211
1921....	35,900	124,283	102,967	3,731	439,634
1922....	48,744	243,392	48,566	3,088	990,722
1923....	29,423	302,992	47,402	2,232	1,007,020
1924....	36,200	329,860	69,369	3,543	1,375,710
1925....	31,523	357,133	106,064	3,862	1,326,766
1926....	83,589	251,323	44,569	2,091	1,728,178
1927....	57,085	246,659	96,343	4,337	1,052,582
1928....	26,530	174,243	61,044	2,769	1,832,087
1929....	60,407	219,708	111,856	3,480	1,117,493
1930....	93,416‡	373,986	352,194	5,334	1,744,141
1931....	38,507‡	250,517	83,728	2,440	393,640
1932....	61,769‡	218,586	78,319	4,000	796,676
1933....	43,745‡	205,642	125,738	8,721	1,006,942
1934....	133,159‡	238,606	352,579	6,117	1,206,022
1935....	57,212‡	287,622	54,677	5,610	1,178,578
1936....	164,408‡	229,955	59,505	3,837	1,449,695
1937....	66,583‡	225,564	60,259	6,152	1,183,841
1938....		260,656			1,260,348

FOOT-NOTES TO TABLE VII

SOURCE: Annual reports of the Department of Fisheries (*Canada, Sessional Papers*). For northern waters and salmon other than sockeye see Annual reports of the Commissioner of Fisheries, British Columbia.

*From 1899 to 1906 inclusive, years ended June 30; from 1908 to 1916 inclusive, years ended March 31; since and including 1917, years ended December 31. No statistics are available for the nine-month period ended March 31, 1907.

†These figures include the whole pack of all varieties, particulars of different species not being available. The packs were nearly all sockeye.

‡Does not include sockeye canned on Fraser and caught in other districts; 1930 pack allows for 14,480 cases sockeye caught in other districts and packed in the Fraser district; 1934 pack at Fraser River canneries includes 5,643 cases sockeye caught on Fraser River and canned in other districts; 1936 pack at Fraser River canneries includes 18,320 cases sockeye caught on Fraser River and canned in other districts.

§Approximately.

Canning of spring salmon for commercial purposes began in 1912,[2] and in the same year at Victoria an additional 700,000 pounds of spring salmon for foreign markets was preserved by mild curing. The use of the troll method of fishing was developed mainly in connection with the catching of this species.

[2]Report of the Department of Fisheries, 1912-13 (*Canada, Sessional Papers*, 1914, no. 22, p. 297).

TABLE VIII

Salmon Caught and Marketed in British Columbia
1899–1938

Year*	Value (thousands of dollars)	Quantity						
		Caught and landed (cwt.)	Salted or pickled†	Fresh (cwt.)	Canned‡ (cases)	Smoked (cwt.)	Dry-salted (cwt.)	Mild cured (cwt.)
1899	4,007		3,450	18,736	732,437	2,155	30,000	
1900	3,392		4,950	17,280	585,413	3,010	57,000	
1901	6,568		7,931	21,288	1,236,156	3,010	64,762	
1902	3,758		6,680	21,955	625,982	3,888	104,571	
1903	2,963		7,075	25,069	473,674	5,108	63,256	
1904	3,353		6,250	25,480	465,894	4,320	151,198	
1905	8,331		5,220	84,570	1,167,460	4,460	154,946	
1906	5,097		2,180	51,565	629,460	4,259	145,033	
1907–8	4,373		980	56,593	547,459	4,179	128,515	7,993
1908–9	4,288		1,254	36,243	542,689	4,285	89,940	7,950
1909–10	7,764			42,907	967,920	3,485	130,090	11,700
1910–11	6,744	937,827		50,138	762,201	16,150	122,429	18,308
1911–12	9,852	1,103,666		75,908	948,965	3,937	107,200	15,724
1912–13	9,540	1,221,057		84,441	996,626	5,019	134,000	51,042
1913–14	10,244	1,509,354		118,300	1,353,901	13,525	123,445	25,202
1914–15	8,019	1,369,740	900	214,102	1,111,039	7,904	118,430	26,372
1915–16	10,727	1,369,394	1,070	204,616	1,164,701	4,382	19,634	10,309
1916–17	10,544	1,196,432		319,496	995,065	893	13,913	14,783
1917	16,829	1,601,520		262,067	1,557,485	1,418	12,670	8,611
1918	17,207	1,493,502			1,626,157			
1919	17,537	1,668,353		441,779	1,393,156	7,147	8,235	5,857
1920	15,129	1,262,864	134	198,519	1,187,616	2,660	33,645	8,924
1921	8,578	842,026	595	237,712	603,548	1,293	64,205	9,801
1922	13,074	1,509,075	3,807	251,526	1,285,946	1,264	96,671	27,691

TABLE VIII—*Continued*

YEAR*	VALUE (thousands of dollars)	QUANTITY						
		Caught and landed (cwt.)	Salted or pickled†	Fresh (cwt.)	Canned‡ (cases)	Smoked (cwt.)	Dry-salted (cwt.)	Mild cured (cwt.)
1923	11,937	1,514,765	1,732	228,087	1,341,677	373	103,116	14,624
1924	13,027	1,965,159	3,244	272,189	1,745,213	638	155,191	79,798
1925	14,974	1,873,376	450	204,319	1,719,282	655	138,454	27,770
1926	18,777	2,125,555	1,584	189,302	2,065,190	834	139,858	13,950
1927	14,254	1,490,395	384	210,096	1,360,634	432	81,170	21,918
1928	17,346	2,257,455	10,520	253,131	2,035,629	536	170,253	21,467
1929	14,266	1,514,038	233	206,314	1,398,770	438	77,362	21,913
1930	16,611	2,296,213	851	249,777	2,221,819	1,328	116,223	25,095
1931	7,195	1,287,041	136	214,033	685,104	177	386,693	9,149
1932	7,586	1,291,487	206	183,613	1,081,031	263	127,289	12,141
1933	9,184	1,410,504	279	214,138	1,265,049	439	82,875	18,262
1934	12,402	1,659,900	122	169,649	1,582,926	139	90,981	31,988
1935	12,099	1,789,431	2,027	288,347	1,529,022	85	169,480	20,368
1936	13,387	1,995,499	2,589	211,753	1,881,026	68	149,533	13,321
1937	11,908	1,691,736	23	261,363	1,508,577	81	108,983	26,238
1938	14,544				1,707,798§		71,580§	

SOURCE: 1899-1918, Annual reports of the Department of Fisheries (*Canada, Sessional Papers*); 1919-38, Dominion Bureau of Statistics, Fisheries statistics.

*From 1899 to 1906 inclusive, years ended June 30; from 1908 to 1916 inclusive, years ended March 31; since and including 1917, years ended December 31. No statistics are available for the nine-month period ended March 31, 1907.

†From 1899 to 1908 inclusive, the figures are in barrels; from 1914 to 1938 they are in cwt.

‡Annual reports of the Department of Fisheries (*Canada, Sessional Papers*, 1930-1); Reports of the Inspector of Fisheries, British Columbia, Statements 1, 2, 3, 4, and 5 for the years 1899-1901; Annual report of the Inspector of Fisheries, British Columbia, for the years 1902-38.

§SOURCE: Annual report of the Commissioner of Fisheries, British Columbia, for the calendar year 1938.

TABLE IX

EXPORTS OF CANNED SALMON—BY VALUE AND QUANTITY, 1899–1938

Year*	Canadian export (thousands of dollars)	Canadian export (cases)	Exports to U.K. (thousands of dollars)	Exports to U.K. (cases)	Exports to U.S. (thousands of dollars)	Exports to U.S. (cases)	B.C. production† (cases)
1899	2,407	540,462	2,296	501,209	47	19,398	732,437
1900	2,883	771,089	2,646	708,178	19	4,513	585,413
1901	2,889	736,321	2,322	585,582	336	93,976	1,236,156
1902	5,013	1,027,139	4,736	955,575	25	6,281	625,982
1903	2,590	485,885	2,459	451,570	0.45	115	473,674
1904	1,772	327,658	1,533	254,501	3	660	465,894
1905	1,679	269,763	1,334	195,958	16	4,038	1,167,460
1906	4,943	957,878	4,353	850,035	222	32,283	629,460
1907	1,992	319,842	1,622	254,314	52	7,390	547,459
1908	2,898	469,273	2,362	375,036	39	7,303	542,689
1909	2,468	377,529	2,099	308,850	17	2,958	967,920
1910	4,368	722,835	3,825	620,149	14	2,466	762,201
1911	3,669	534,081	2,936	409,582	21	3,098	948,965
1912	3,830	629,019	2,919	478,947	19	2,581	996,626
1913	3,484	479,199	2,605	333,315	2	234	1,353,901
1914	6,631	1,272,863	5,437	1,017,970	115	24,608	1,111,039
1915	4,949	721,981	4,018	528,856	17	5,724	1,164,701
1916	6,306	1,023,810	4,931	733,855	3	390	995,065
1917	6,288	1,006,919	4,899	724,435	43	11,828	1,557,485
1918	8,479	912,025	4,687	439,944	142	18,617	1,626,738
1919	10,298	996,119	7,116	609,690	354	40,350	1,393,156
1920	12,067	1,281,850	7,582	646,773	682	129,683	1,187,616
1921	7,581	642,871	5,585	351,369	237	25,594	603,548

TABLE IX—*Continued*

Year*	Canadian export (thousands of dollars)	Canadian export (cases)	Exports to U.K. (thousands of dollars)	Exports to U.K. (cases)	Exports to U.S. (thousands of dollars)	Exports to U.S. (cases)	B.C. production† (cases)
1922	6,433	908,831	3,474	331,258	18	11,352	1,285,946
1923	4,490	670,768	1,358	129,758	179	12,333	1,341,677
1924	7,721	1,126,323	3,430	317,981	146	14,777	1,745,213
1925	10,425	1,619,300	4,738	553,669	247	30,167	1,719,282
1926	10,468	1,397,677	4,319	345,598	24	4,396	2,065,198
1927	9,717	1,253,206	3,233	266,148	311	45,144	1,360,634
1928	9,151	1,196,867	3,401	285,306	51	6,483	2,035,629
1929	9,108	1,356,458	1,903	216,369	9	1,652	1,398,770
1930	8,302	1,141,185	1,858	189,227	2	300	2,221,819
1931	6,318	890,389	3,116	301,275	1	192	685,104
1932	6,079	985,577	3,646	427,454	164	62,519	1,081,031
1933	3,604	600,596	1,986	212,919	47	18,198	1,265,049
1934	5,773	1,047,994	2,602	269,215	227	82,569	1,583,866
1935	5,990	817,335	3,266	297,160	6	673	1,529,022
1936‡	7,345	1,069,000	4,190	400,000	235	490,000	1,864,504
1937‡	6,970	1,155,000	3,396	384,000	113	236,000	1,509,677
1938‡	7,351	1,133,000	3,822	394,000	299	624,000	1,707,798

SOURCE: Prior to 1924, *Canada, Sessional Papers*; 1924-38, Dominion Bureau of Statistics, Department of Trade and Commerce, *Trade of Canada*; British Columbia Production Figures, 1899-1902, Annual report of the Department of Fisheries (*Canada, Sessional Papers*); 1903-38, Annual report of the Commissioner of Fisheries, British Columbia.

*The export figures are for the fiscal years only, ending March 31. Prior to 1907 the fiscal year ended June 30.

†These are figures for the calendar year, except for the period from 1907 to 1917, when they are figures for the fiscal year ending March 31.

‡The export figures in "cases" have been found by dividing the number of pounds exported by 48 pounds.

CHAPTER IV

CAPITAL INVESTMENT

THE technique of the fishing industry in British Columbia assumes a heavy capital investment. Canneries represent a substantial outlay and involve to an important extent support from corporate organization. Data available through the operation of legislation affecting companies operating in British Columbia throw light on the source of capital. Information on original investment can be obtained from the figures of authorized and issued capital, but this may bear little relation to present value of assets which may have been increased by reinvestment of profits, by borrowing, or by levies on shareholders. Information is available with regard to the source of this capital, whether Canadian, American, or British, but not to the total amount of foreign capital invested in the fishing industry (Tables X, XI, XII).

The number and total authorized capital at the time of incorporation or registration of fishing, fish packing, fish storage and fish export companies incorporated, licensed or registered in British Columbia in the calendar years 1882-1939 inclusive, are shown in Table XIII. Companies included in this table which, prior to December 31, 1939, had been struck off the register or whose registration or licence to do business in British Columbia had been cancelled are shown in Table XIV. Companies in final liquidation but which have not as yet been struck off the register are considered as though struck off in the year in which they went into liquidation, because of the interval which often elapses between the time when a company ceases to do business and the date when its name is removed from the register. Dissolutions and cancellations beyond the date for incorporations and registrations are also shown. These tables show that the total authorized capital in fishing, fish packing, fish storage, and fish export companies incorporated, licensed, or registered in British Columbia in the period 1882-1939 amounts to approximately $75,015,750; and the total authorized capital of such companies having ceased to do business in the same period as approximately $47,571,250; leaving a total original authorized capital of such companies still operating of $27,444,500.

TABLE X

EXTENT AND VALUE OF CAPITAL EQUIPMENT IN PRIMARY OPERATIONS IN BRITISH COLUMBIA, 1900–37

YEAR	Salmon canneries		Fish-curing establishments		Steam trawlers		Steam vessels and tugs		Sailing and gasoline vessels		Sail and row boats		Gasoline boats§		Carrying smacks and scows		Fishing piers and wharves		Freezers and ice houses	
	No.	Value (thousands of dollars)	No.	Value (thousands of dollars)	No.	Value (thousands of dollars)	No.	Value (thousands of dollars)	No.	Value (thousands of dollars)	No.	Value (thousands of dollars)	No.	Value (thousands of dollars)	No.	Value (thousands of dollars)	No.	Value (thousands of dollars)	No.	Value (thousands of dollars)
1900	78	1,775	7	4			118‡	629					5,594	489‖						
1910	86	2,605	54	138													38	1,183		
1919	75	13,980*	20	921	3	190	20	523	268	1,910	3,175	259	3,567	1,795	126	302	67	566	15	1,330
1920	64	10,098*	33	2,458	4	265	21	642	256	2,399	3,485	401	3,371	2,762	68	168	2	1	5	215
1921	57	10,636*	42	2,832	4	265	10	255	247	1,617	3,271	457	3,074	2,263	185	219	34	175	7	51
1922	64	12,916	70	2,312	4	265	10	335	333	1,944	3,345	367	2,720	1,921	155	160	18	27	3	18
1923	60	12,759	44	3,812	4	265	10	530	310	1,690	3,055	278	2,185	1,002	152	161	9	14	3	18
1924	60	8,457	62	4,023	3	180	7	53	372	2,081	2,642	218	2,596	1,453	147	126	13	13	10	22
1925	65	9,163	66		3	180	7	160	437	2,489	2,899	260	2,834	1,723	155	173	14	11	6	13
1926	76	16,355	63	3,761	3	180	8	159	610	4,333	3,345	334	3,341	2,171	281	314	11	9	10	14
1927	77	11,581	50	4,482	3	180	8	167	749	5,901	3,692	419	4,186	2,415	418	375	13	10	9	13
1928	61	12,477	46		1	63	6	150	636	6,024	3,061	297	4,064	2,825	132	175	12	17	8	3
1929	63	15,103	50	4,521	1	60	9	202	606	6,028	3,010	280	4,866	3,525	116	176	17	22	9	441
1930	60	17,920	46	4,113	1	60	6	150	551	5,704	2,429	209	4,844	4,004	379	462	31	43	6	4
1931	35	8,554	49						228	2,083	1,942	116	4,931	3,407	279	322	19	28	1	3
1932	44	7,377	29	2,357†			1	35	245	2,384	2,256	172	5,031	3,341	158	134	15	26	3	15
1933	48	7,536	33	2,441†			4	100	192	2,021	2,393	174	5,461	3,512	250	1,417	11	12	4	14
1934	49	8,198	35	2,917†			6	150	281	2,507	2,100	148	6,205	3,823	288	1,195	10	12	5	17
1935	43	7,761	33	3,122†			5	125	283	2,599	1,655	107	6,113	3,780	314	1,148	9	11	4	16
1936	46	9,342	31	2,609†			6	150	294	2,677	1,488	87	6,605	3,965	323	1,308	12	14	3	14
1937	37	8,377	31	2,460†			6	150	308	2,803	1,230	61	6,858	4,119	224	351	10	11	11	29

SOURCE: Dominion Bureau of Statistics, Fisheries statistics.

*Includes 1 clam cannery.

†Includes "Freezing Plants." There were 2 freezing plants with a capital of $83,750 in 1900 and 8 with a capital of $887,950 in 1910. Two plants are included in 1932, 1934, 1935, 1936, and 1937; one in 1933.

‡Includes steam trawlers, steam vessels, tugs, and sailing and gasoline vessels.

§

Year	Gasoline boats (and Diesel) No.	Value (thousands of dollars)
1910–11	2,129	602
1911–12	2,098	576
1912–13	1,334	706
1913–14	2,434	1,018
1914–15	1,961	916
1915–16	2,413	995
1916–17	2,217	1,043
1917	3,172	1,581

‖Includes sail and row boats, gasoline boats, carrying smacks and scows.

TABLE XI

BOAT EQUIPMENT IN BRITISH COLUMBIA, 1899-1917

YEAR	FISHING BOATS (sail and row boats)		FLAT BOATS (collecting vessels, scows)		TOTAL BOATS, etc.	
	No.	Value (thousands of dollars)	No.	Value (thousands of dollars)	No.	Value (thousands of dollars)
1899.....	4,829	250		17	4,829	268
1900.....	5,113	314		18	5,113	332
1901.....	4,938	301		19	4,938	321
1902.....	4,283	254	150	30	4,433	284
1903.....	5,024	307	150	30	5,174	337
1904.....	4,786	307	190	38	4,976	345
1905.....	4,793	306	277	63	5,070	369
1906.....	5,242	347	186	46	5,428	393
1907–8.....	5,406	326	190	48	5,596	374
1908–9.....	5,012	336	172	45	5,184	381
1909–10.....	5,450	349	185	69	5,635	419
1910–11.....	3,013	175	121	327	5,263	1,105
1911–12.....	3,267	202	141	368	4,744	1,146
1912–13.....	2,468	189	143	432	3,945	1,327
1913–14.....	3,076	218	190	76	5,700	1,236
1914–15.....	3,666	265	155	63	5,737	1,244
1915–16.....	3,536	248	176	100	6,125	1,343
1916–17.....	3,779	263	171	117	6,167	1,422
1917.....	3,479	256	168	145	6,819	1,983

SOURCE: Annual reports of the Department of Fisheries (*Canada, Sessional Papers*).

TABLE XII

NETS IN BRITISH COLUMBIA, 1900–37

YEAR	Gill-nets		Salmon drift-nets		Salmon trap-nets		Salmon purse-seines		Salmon drag-seines	
	No.	Value (thousands of dollars)	No.	Value (thousands of dollars)	No.	Value (thousands of dollars)	No.	Value (thousands of dollars)	No.	Value (thousands of dollars)
1900..		634			1	3			24	6
1910..		505			9	98				66*
1928..	126	15	5,739	1,311	5	25	353	512	21	6
1929..	2,846	641	2,703	764	18	47	485	865	14	4
1930..	97	9	5,611	1,283	6	95	395	767	19	11
1931..	38	5	4,559	851	6	95	242	481	29	17
1932..	59	4	5,147	868	4	60	149	239	42	16
1933..	92	6	5,717	967	4	60	203	308	41	17
1934..	55	4	6,291	1,050	5	75	265	320	13	6
1935..	47	7	5,808	954	5	75	320	356	9	5
1936..	28	5	6,238	1,027	4	61	188	207	9	6
1937..	39	7	5,887	934	5	75	208	259	21	11

*Includes salmon purse-seines and other seines.

TABLE XIII

FISHING, FISH PACKING, FISH STORAGE AND FISH EXPORT COMPANIES INCORPORATED, LICENSED, OR REGISTERED, 1882–1939

YEAR	COMPANIES INCORPORATED IN B.C.		EXTRA-PROVINCIAL COMPANIES LICENSED OR REGISTERED IN B.C.			
			British		Other	
	No. of companies	Total authorized capital (thousands of dollars)	No. of companies	Total authorized capital (thousands of pounds)	No. of companies	Total authorized capital (thousands of dollars)
1882....	1	16			1	(not
1891....	1	500	1	200		available)
1892....	1	200				
1893....					1	500
1897....	1	50	1	50		
1898....	2	275	1	40		
1899....	4	1,055	1	10		
1900....	4	125			1	375
1901....	10	654				
1902....	3	150			1	4,000
1903....	5	446				
1904....	5	405			1	1,000
1905....	8	525			1	200
1906....	8	380	1	5	1	2,500
1907....	3	1,710				
1908....	5	815				
1909....	7	270			1	10
1910....	11	6,150				
1911....	7	2,800	1	20	2	818
1912....	17	2,475	1	250	1	500
1913....	13	2,465				
1914....	4	400				
1915....	12	715				
1916....	16	574				

TABLE XIII—*Continued*

YEAR	COMPANIES INCORPORATED IN B.C.		EXTRA-PROVINCIAL COMPANIES LICENSED OR REGISTERED IN B.C.			
			British		Other	
	No. of companies	Total authorized capital (thousands of dollars)	No. of companies	Total authorized capital (thousands of pounds)	No. of companies	Total authorized capital (thousands of dollars)
1917....	20	1,355				
1918....	22	3,779			1	1,000
1919....	17	875				
1920....	22	1,375				
1921....	9	4,185				
1922....	17	490			4	9,500
1923....	10	635			1	100
1924....	8	225				
1925....	17	1,495			1	250
1926....	18	1,095				
1927....	14	1,010				
1928....	11	640			2	5,600
1929....	15	1,345				
1930....	9	390			1	50
1931....	7	1,265				
1932....	8	330				
1933....	6	135				
1934....	15	420			1	50
1935....	4	100				
1936....	9	900				
1937....	3	395			1	20
1938....	3	60				
1939....	1	100				
TOTAL ..	413	45,754	7	575	23	26,473

TABLE XIV

FISHING, FISH PACKING, FISH STORAGE, AND FISH EXPORT COMPANIES WHICH CEASED TO DO BUSINESS IN BRITISH COLUMBIA, 1892-1939

YEAR	COMPANIES INCORPORATED IN B.C. DISSOLVED		EXTRA-PROVINCIAL COMPANIES WHICH CEASED TO DO BUSINESS IN B.C.			
			British		Other	
	No. of companies	Total of original authorized capital (thousands of dollars)	No. of companies	Total of original authorized capital (thousands of pounds)	No. of companies	Total of original authorized capital (thousands of dollars)
1892....	1	16				
1904....	1	500				
1908....			1	50		
1910....					1	4,000
1912....	45	3,790			2	10§
1913....	1	35				
1914....	13	1,835				
1917....	1	25				
1918....	4	120				
1919....	13	1,115				
1920....	7	719				
1921....	14	2,800				
1922....	32	1,930			1	1,000
1923....	15	905			1	68
1924....	9	1,800				
1925....	24	1,625	2	290	3	3,200
1926....	2	175				
1927....	12	625				
1928....	24	5,579			1	1,000
1929....	15	2,760	1	10		
1930....	8	365			1	250
1931....	12	680			1	1,000
1932....	15	895				
1933....	8	270*				
1934....	1	500	1	5	3	1,400‖
1935....	5	235				
1936....	5	2,420			1	200**
1937....	4	520†			1	
1938....	10	465				
1939....	37	2,097.5‡				
TOTAL ..	343	33,221.5	5	355	17	12,628

FOOT-NOTES TO TABLE XIV

*This amount does not include authorized no par value stock of B.H. Fisheries Limited, and of Columbia Canners, Limited.

†This amount does not include the authorized no par value stock of Chinese Canadian Salt Herring Company, Limited.

‡This figure includes $1,480,000 of authorized capital of 26 companies which are in process of liquidation or are about to be struck off the Register of Companies.

§The British America Packing Company, registered March 8, 1882, is included in the "number of companies" but not in the "total authorized capitalization" as the records do not show the capitalization of this company.

||This amount does not include the authorized no par value stock of Otteson Fish Company of Canada, Limited.

**The Atlantic Coast Fisheries Company, Limited, which was dissolved during this period had 1,000 shares of no par value.

The value of the total authorized capital and the reported value of shares issued in fishing, fish packing, fish storage, and fish export companies as of December 31, 1939, by place of residence of controlling stock for companies incorporated in British Columbia only, is shown in Table xv. Of the total reported value of shares issued of $10,400,856, the place of residence of the controlling stock of $2,154,300 is in the United States, $7,137,856 in Canada, and $1,108,700 in the United Kingdom. Of $7,137,856 with place of residence of controlling stock in Canada, $5,795,856 has place of residence of controlling stock in British Columbia. Residents of Eastern Canada and the Prairie Provinces hold shares to the value of $1,260,800, and $81,200 respectively, but these amounts do not consist of controlling interests. Of controlling shares 20.7 per cent is held in United States, 10.7 per cent in the United Kingdom, and 55.7 per cent in British Columbia, while 12.9 per cent of non-controlling shares is held in Eastern Canada and the Prairie Provinces. The table shows the place of residence of controlling stock and the shares of subsidiary companies are given the place of residence of the controlling interest of the controlling company. There is a duplication of interest to the extent of the shares of one fishing company held by another. The total $10,400,856 does not represent the amount invested in British Columbia in fishing, fish packing, fish storage, and fish export companies as of December 31, 1939 (even apart from the exclusion of companies incorporated since 1930), in so far as it does not take account of profits ploughed back for which stock certificates have not yet been issued, nor of that part of the investment which is in "Notes Payable," or in "Sub-

TABLE XV

VALUE OF TOTAL AUTHORIZED CAPITAL AND REPORTED VALUE OF SHARES ISSUED IN FISHING, FISH PACKING, FISH STORAGE, AND FISH EXPORT COMPANIES
December 31, 1939*
By Place of Residence of Controlling Stock
(Companies incorporated in British Columbia only)

	Number of companies	Authorized Capital		Shares Issued	
		Total authorized capital	Per cent of total	Reported value of shares issued	Per cent of total
		$		$	
TOTAL	61	8,499,000†	100.0	10,400,856	100.0
United States	8	3,440,000	40.5	2,154,300	20.7
United Kingdom	1	2,500,000	29.4	1,108,700	10.7
Eastern Canada‡				1,260,800	12.1
Prairie Provinces‡				81,200	0.8
Japanese residents in British Columbia	9	380,000	4.5	143,420	1.4
British Columbia	43	2,179,000	25.6	5,652,436	54.3

*This table includes only those companies that are in good standing with the Registrar of Companies for British Columbia.

†Authorized no par value stock not included in this total:
B.C. Oyster Company, Ltd.....$ 7,000 issued
J. H. Todd & Sons, Ltd..... 3,299,764 issued

‡Investors in Eastern Canada and the Prairie Provinces have no *controlling* interests in these B.C. incorporated companies.

scribed Capital Stock." Nor can $2,154,300 be taken as representing the actual investment of United States capital in British Columbia fishing industries, since it represents the total issued capital of companies in which United States residents hold the controlling interest.

Similar information for extra-provincial companies, by location of head office, is given in Table XVI. The value of shares issued in Canada outside British Columbia was $4,889,300, and in the United States $4,137,582. These figures represent the total capital of the companies concerned and not merely that part which applies to operations carried on in British Columbia as such details are not available. Location of head office does not indicate the actual

TABLE XVI

VALUE OF TOTAL AUTHORIZED CAPITAL AND REPORTED VALUE OF SHARES ISSUED IN FISHING, FISH PACKING, FISH STORAGE, AND FISH EXPORT COMPANIES
December 31, 1939

By Location of Head Office

	AUTHORIZED CAPITAL			SHARES ISSUED		
	Number of companies	Total authorized capital	Per cent of total	Number of companies	Reported value of shares issued	Per cent of total
United States....	3	$2,781,200	34.0	4	$4,137,582	28.7
United Kingdom .	2	£600,000	35.5	2	£372,000	12.5
Eastern Canada..	1	$2,500,000	30.5	2	$4,889,300	33.8
British Columbia.				1	$3,600,000	25.0
TOTAL*.....	6	$5,281,200†	100.0	9	$12,626,882	100.0

*The difference between the number of companies with authorized capital and the number of companies with shares issued is due to the inclusion of companies with no par value stock under the heading "Shares Issued."

†Authorized no par value not included in this total:

British Columbia Packers, Limited, Vancouver, B.C.....$3,600,000 issued
New England Fish Company, Portland, Maine..... 1,847,139 "
British Columbia Fishing and Packing Company, Limited, Toronto, Ont..... 1,791,800 "
Consolidated Whaling Corporation, Limited, Toronto, Ont. 597,500 "

location of the ownership of the shares. Extra-provincial companies are required to file only the shares held by residents in British Columbia and the names of such shareholders, and consequently no list of stockholders is available to show the actual residence of the stockholders. In a majority of cases, however, a distribution by location of head office gives a reasonable indication of the source of control.

Combining Tables XV and XVI, it will be seen that the total reported value of shares issued by companies operating in British Columbia fisheries and controlled in the United States is $6,291,882, or 25.3 per cent of the total; by companies controlled in the United Kingdom, about $2,912,900 or 11.8 per cent; by companies controlled in Eastern Canada and the Prairie Provinces, 25.1 per cent; and by companies controlled in British Columbia, $9,395,856 or

37.8 per cent. The difference between the total original authorized capital of firms engaged in the British Columbia fisheries and incorporated or granted extra-provincial licence or registration in the period 1882-1939 and the total original authorized capital of such firms which ceased to do business in the same period amounted to approximately $27,444,500. The total authorized capital of the firms covered in Tables, XV and XVI is approximately $16,690,200. The difference of over ten million dollars is due to the omission of certain no par value shares in the authorized capital in Tables XV and XVI and to reorganization of a few of the larger companies which led to a reduction on nominal capital. The British Columbia Fishing and Packing Company, Limited, and the Consolidated Whaling Corporation, Limited, are two cases in point.

CHAPTER V

FISHERY REGULATIONS IN BRITISH COLUMBIA

WHEN British Columbia entered Confederation in 1872 there was no code of regulations governing its fisheries such as existed in the Eastern Provinces. The fisheries had not been developed on a commercial[1] basis and regulation did not appear necessary. After Confederation administration of its fisheries was carried out by the British Columbia Agent for the Department of Marine and Fisheries at Ottawa. The character of the fisheries is such that it is not possible to administer rigid regulations. The coast line of British Columbia is approximately eleven thousand miles in length, and considerable variety exists in different places even in the same type of fishery. A degree of elasticity must exist, and successful administration depends to a large extent on the good judgment of the Inspector and his staff in relation to temporary and local conditions. In 1875, the Dominion Commissioner of Fisheries recommended that the Fisheries Act be made to apply to British Columbia, and that after inquiry special regulations be drawn up. In the following year a proclamation was issued extending the application of the Fisheries Act[2] to British Columbia, to become effective on July 1, 1877. The Fisheries Act, framed with particular reference to the Atlantic fisheries, did not apply in all respects to conditions in British Columbia. The Inspector of Fisheries reported: "I have, therefore, assumed that such portions, only, of the Act, as are obviously of general application, with such other portions as, on more minute inquiry, may be found to be of particular application, shall be locally adopted. Without, therefore, interfering captiously, and injuriously as I conceive, with existing practice, I shall continue, as hitherto, to exercise a watchful surveillance for the common benefit; reporting from time to time, the result of my

[1] "The fisheries of British Columbia are probably the richest in the world; in 1873 little had been done to develop them. They were then hardly spoken of as an interest, or industry; with the exception of an attempt at putting up salmon in tins on the Fraser River, and one or two whaling enterprises of a few years' standing, no efforts appear to have been made to develop the resources of the province in this respect" (Report of the Department of Fisheries, *Canada, Sessional Papers*, 1894, no. 11, p. cx).

[2] 31 Vic., c. 60.

observations, and under your sanction, extending such further protective portions of the law as may be found necessary or expedient."

General fishery regulations for the province were approved on July 18, 1889, and consisted of three sections, referring to fishing for salmon and trout and the use of explosives. In 1890, a Commission was appointed to investigate the fishery regulations with special reference to salmon fishing for canneries. An investigation of the Fraser River fishery was made by the Commissioner who visited the seventeen canneries operating on the river and obtained the views of those engaged in the industry. The result was a modification of the regulations considerably restricting the activities of the fishermen.

These restrictions caused much dissatisfaction and were severely criticized. Another Commission was appointed in 1891 to make further investigation and report. On the basis of the knowledge obtained from these various investigations an Order-in-Council[3] of March 3, 1894, with new regulations, was issued. It made special provision for greater liberty for the Indians who were so largely dependent on fish as an article of food. It covered the licensing of fishermen, the type of gear to be used in fishing and the areas in which such gear could be used, the period during which fishing could be legally carried out, weekly close period in the case of salmon, information to be given to the Inspector, the size of salmon which could be caught, and the prohibition of the use of fire-arms and explosives.

The Provincial Fisheries Department was organized in 1901, mainly as a result of requests from the canning interests who found themselves in disagreement with certain policies of the federal government. In the delimitation of authority between the two governments, a *modus vivendi* was adopted by which the provincial government was to retire from the field of licensing and taxation. Taxes and fees from licences were to be collected by the Dominion government which was to pay to the provincial government all moneys received in excess of operating expenses. This arrangement was not carried out and the provincial government again entered the field of licensing and taxation. Eventually the question was taken to the Privy Council which gave the decision that the regulation of the fisheries in British Columbia was the function of the federal government, but that the provincial government had the

[3]See appendix A.

right to levy taxation for revenue purposes, and, still more important, that the fish once they were removed from the water came under the control of the provincial government by virtue of the clause in the British North America Act giving the provinces control over property rights. Consequently, through its power of licensing, the provincial government can exercise a degree of control over the industry. The provincial and federal departments work in close co-operation with each other and with the industry.

In 1905, a federal Fisheries Commission was appointed to investigate the British Columbia fisheries with special reference to the salmon fishing and canning industries. It reported in 1907 and changes in the regulations of 1894 were made. The main object was conservation, but the international character of the fisheries hindered the attainment of the objective. The regulations were modified from time to time on the basis of greater experience or of changes within the industry. For the better administration of the industry and to facilitate the application of local regulations, the province was divided into three divisions,[4] each of which was placed under the direct charge of a district supervisor, who reported to the Chief Inspector. These districts were subdivided into smaller districts, each having an officer in charge of administration. In addition, temporary fishery guardians are employed from time to time.[5]

[4]"District No. 1 . . . that portion of the coast and waters tributary thereto of the mainland inside of a straight line drawn in a southeasterly direction from Gower Point at the northwesterly entrance of Howe Sound to the most westerly point of the international boundary line lying on the 49th parallel of north latitude in the Gulf of Georgia.

"District No. 2 . . . the coast and waters tributary thereto of the mainland from a straight line drawn due west from Cape Caution northward to the northerly boundary of the province, as well as the coasts and waters of the islands opposite that portion of the mainland coast.

"District No. 3 . . . the remainder of the province, and shall be subdivided as follows:—

"West Coast Area—. . . all the territorial waters of British Columbia on the west coast of Vancouver Island between Beachy Head on the south and Cape Scott on the north.

"East Coast Area—. . . all the territorial waters of British Columbia between the east coast of Vancouver Island and the mainland from Beachy Head at the south end of Vancouver Island to an imaginary straight line drawn from Cape Scott to Cape Caution on the north, except those portions thereof as are specifically exempted elsewhere in these regulations." (Digest of British Columbia Fishery Regulations, Western Fisheries, July, 1936).

[5]"Evidence of the Deputy Minister of Fisheries" (*Proceedings of the Special Committee on Sealing and Fisheries in Pacific Waters*, 1934, no. 1, pp. 10-12).

In 1910, regulations covering the maximum number of boats in certain areas in the northern part of the province were issued to prevent too intensive fishing in any one area. In 1912, a certain proportion of this number was reserved for white fishermen who were British subjects and owned their own boats and nets, in order to encourage their permanent settlement in the north.

Considerable feeling arose between the whites and the Orientals, particularly the Japanese, who were rapidly displacing the whites. In 1920, the policy was adopted of granting unlimited licences to all British subjects of the white race and to Indians,[6] and of restricting the number of licences to others. It was suggested that the Japanese should be excluded and a Royal Commission was appointed in 1922. Its report stated that

> Our investigations have made it clear to us that all the interests concerned, excepting of course Japanese Fishermen's Associations and allied interests, profess to be at one as to the desirability of having white fishermen employed to a greater extent in the salmon fishery of British Columbia.
>
> Members of the House of Commons from the Pacific province, white fishermen's associations, Indian fishermen and their representatives, organizations such as the G.W.V.A., and the people of British Columbia generally, have consistently and strongly urged that steps be taken towards restoring the fishery to white fishermen and Indians. Those canners who appeared before the Committee of the House last session expressed themselves as also desirous of seeing more white fishermen in the industry, and suggested a slight reduction in the licenses issued to oriental fishermen to start with.
>
> As a result of this pressure the Department, in June last, decided to gradually eliminate the oriental fishermen from the fishery by beginning in 1923 with the following reduction in the number of licenses issued in 1922: Gill netting, Fishing Districts Nos. 1 and 3, a 15 per cent reduction; Fishing District No. 2, Rivers and Smiths Inlets, a 50 per cent reduction; Fishing District No. 2, Skeena and Naas Rivers, a 10 per cent reduction.
>
> In the remainder of the province and on all kinds of licenses a 15 per cent reduction.
>
> It should be explained that as a result of urgent representations in the beginning of the year 1922, the number of licenses to orientals for trolling was reduced by 33⅓ per cent, while a reduction of 25 per cent is being made effective in 1923.
>
> It will thus be seen that the question we have to consider in this connection is not whether Oriental licenses should be reduced in number, but what percentage of reduction should be decided upon in order to bring about the displacement of Orientals by white fishermen in the shortest possible time without disrupting the industry.[7]

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[6]Annual Report of the Department of Fisheries, 1920 (*Canada, Sessional Papers*, 1922, no. 40).

[7]*Report and Recommendations, British Columbia Fisheries Commission*, 1922, p. 11.

The Commission, assuming the validity of the claims of the white interests, proceeded to outline a programme by which the gradual elimination of the Japanese could be carried out, and recommended a general reduction in 1923 of 40 per cent below 1922. Japanese licences[8] were reduced from 3,933 in 1922 to 2,627 in 1923 and slight annual reductions continued until 1927, when the number

TABLE XVII

NUMBER OF SALMON LICENCES ISSUED IN BRITISH COLUMBIA
1912–37

Year	Gill-net	Troll	Purse-seine	Drag-seine	Trap-net	
1912	3,640		92	139	12	3871
1913	4,782		74	124	17	4980
1914	4,857		61	107	12	5025
1915	4,951		61	109	12	5121
1916	4,600		80	115	10	4795
1917	5,286	1,370	99	136	16	6871
1918	5,073	1,786	122	147	24	7128
1919	4,598	2,260	138	104	21	7100
1920	4,761	1,855	155	45	19	6816
1921	4,777	1,452	59	35	8	6323
1922	4,483	1,513	147	40	4	6185
1923	3,969	1,416	223	31	6	5639
1924	3,696	1,553	242	32	6	5523
1925	4,226	1,821	329	37	19	6413
1926	4,850	2,416	445	41	6	7752
1927	5,643	3,093	552	46	7	9334
1928	5,179	2,987	397	22	7	8585
1929	5,609	2,630	371	22	7	8610
1930	6,061	3,115	343	21	7	9540
1931	4,893	3,115	228	21	7	8257
1932	5,359	3,033	157	30	7	8579
1933	6,113	2,880	238	31	8	9262
1934	6,826	3,099	296	9	8	10230
1935	6,216	3,002	293	9	8	9520
1936	6,620	3,511	287	9	7	
1937	6,095	3,162	291	9	5	

SOURCE: Annual reports of the Department of Fisheries (*Canada, Sessional Papers*).

[8]See W. A. Carrothers, "Oriental Standards of Living" (C. H. Young and H. R. Y. Reid, *The Japanese Canadians*, Toronto, 1939, p. 258, also pp. 36-41).

was 1,999. There was an increase in 1928 to 2,261, when the policy of eliminating the Japanese was abandoned. In 1935, 2,023 licences were issued to Japanese, and from 1928 to 1935 the average annual number was 2,201.

The number of purse-seines used in salmon fishing increased from 92 in 1912 to 445 in 1926,[9] and it became necessary to extend the prohibited areas to protect the schools of salmon, particularly in shallow waters. Districts Nos. 2 and 3 were divided into twenty-seven areas within which the use of the purse-seine was permitted, while the gill-net or drift-net only was permitted in certain other areas, particularly the estuary of the Naas and Skeena Rivers, Rivers Inlet, Smith Inlet, Butedale, Bella Coola, Dean Channel, and Namu. These areas were defined in such a way as to embrace as nearly as possible a complete system of waterways or salmon runs, and they were arranged to conform with the districts covered by each individual fishery inspector, and with areas used for the collection of statistical information. An allotted number of purse-seines is given to each area, and, while no properly qualified person is refused a salmon purse-seine licence, if the allotment is exceeded, the weekly close period in that area is increased. This has been a potent factor in reducing excessive fishing in certain areas.

[9]Report of the Department of Fisheries (*Canada, Sessional Papers*, 1926).

APPENDIX A

1. Fishing by means of nets or any other fishing apparatus whatever for any kind of fish without licences from the Minister of Marine and Fisheries is prohibited in any of the waters of the Province of British Columbia.

(*a*) Provided always that Indians may, at any time, with the permission of the inspector of fisheries, catch fish for the purpose of providing food for themselves and their families but for no other purpose, but no Indian shall spear, trap or pen fish on their spawning grounds, nor catch them during the close season, or in any place leased or set apart for the natural or artificial propagation of fish, or in any other place otherwise specially reserved.

2. Nets for catching "quinnat" or spring salmon in the tidal waters of British Columbia shall only be used from the first day of March to the 15th day of December, both days inclusive, and the meshes of such nets shall not be less than $7\frac{3}{4}$ inches in extension measurement, and nothing shall be done to practically diminish the size of meshes.

3. The meshes of nets for catching salmon, other than quinnat or spring salmon in the tidal waters, shall not be less than $5\frac{3}{4}$ inches in extension measurement, and shall only be used between the 1st day of July and the 25th day of August, both days inclusive, and between the 25th day of September and the 31st day of October, both days inclusive, in any year, and nothing shall be done to practically diminish the size of the meshes.

4. No salmon shall be taken in any of the waters of British Columbia from the 15th day of September to the 25th day of September, both days inclusive, nor from the 31st day of October to the last day of February following, both days inclusive.

5. No nets other than drift-nets shall be used for catching salmon of any kind, and such drift-nets shall only be used in tidal waters.

6. No nets of any kind shall be used for catching any kind of salmon in the inland lakes or in the fresh or non-tidal waters of rivers or streams. But Indians may, with the permission of the inspector of fisheries, use dip-nets for the purpose of providing food for themselves and their families, but for no other purposes.

7. Drift-nets shall not be used so as to obstruct more than one-third of the width of any river or stream or any branch or channel thereof, and nets shall be kept at least 250 yards apart.

8. No seines shall be used within the distance of five hundred yards from any point in any direction whatever from an imaginary line drawn across the mouth of any river or stream in British Columbia, and the points between which the said line shall be drawn shall be fixed by the inspector of fisheries.

9. No one shall fish for salmon from Saturday morning at six o'clock until the following Sunday afternoon at six o'clock. All other nets or other fishing gear set or used and all fish caught during this period shall be deemed to be illegally used or caught, and shall be liable to seizure and confiscation, and the person or persons so violating the law shall also be liable to the fines and penalties provided by the Fisheries Act.

10. Before any net or fishing boat or other fishing apparatus is used the owner or person interested in such net, fishing boat or fishing apparatus shall cause a memorandum in writing, setting forth the name of the owner or person interested, the length of the net or boat, and the description and size of any fishing apparatus it is the intention to use and the place where it is proposed to use the same, to be filed with the inspector of fisheries, and if no valid objection exists, the inspector of fisheries may, subject to such instructions as he may receive from time to time from the Minister of Marine and Fisheries, issue a fishery licence for the same. Any net, fishing boat or fishing apparatus, used before such licence has been obtained and any net, fishing boat or fishing apparatus used and not included in the description contained in such licence shall be deemed to be illegal and liable to forfeiture, together with the fish caught therein, and the owner or person using the same shall also be subject to the fines and penalties provided by the Fisheries Act.

11. All nets and fishing boats shall be numbered, and every boat shall have its number and the name of its owner painted on it in a conspicuous manner, and every net shall have the name of its owner or owners as well as the numbers legibly marked on buoys of wood or metal painted white, and floating on the water, attached to each end of the net, and such names and numbers shall be permanently kept on such nets and boats during the fishing season and shall be so placed and kept as to be visible without taking up the net or nets, and any net or fishing boat used without such marks shall be liable to forfeiture.

12. Each bona fide fisherman, being an actual resident of the province of British Columbia, shall be entitled to obtain one licence to fish for salmon.

13-16. Each firm, company or person actually engaged in the business of freezing and export of fresh salmon; each firm, company or person actually engaged in the business of shipping or exporting fresh salmon on ice not frozen or canned; each firm, company or person actually engaged in dealing in salmon for home consumption; and each firm, company or person carrying on the business of salting, curing or smoking salmon for the domestic or foreign markets shall be entitled to obtain not more than *seven* licences.

17. Each firm, company or person actually engaged in canning salmon for the domestic or foreign markets, shall be entitled to obtain not more than *twenty* licences.

18. The holder of every licence shall at the end of each fishing season make a true return of all fish caught under such licence.

19. No licence shall be granted to any company, firm or person unless each member of such firm or company or such person is a British subject, and such firm or company or person must be the actual owners or proprietors of the business, nets, boats and fishing gear for which the licences are granted, and all salmon caught for the purpose of being frozen, canned, salted, cured or smoked shall be so frozen, canned, salted, cured or smoked in the province of British Columbia.

20. No licence shall be transferable under any circumstances, unless the written consent of the Minister of Marine and Fisheries has first been obtained.

21. All licences granted under sections 12, 13, 14, 15, 16 and 17, shall

be called a "commercial" licence, and no net to be used under any such "commercial" licence shall exceed in length *three hundred yards*, and the fee for such "commercial" licence shall be ten dollars ($10.00).

22. Every settler or farmer actually residing on his lands or with his family, being a British subject, shall be entitled to obtain one licence, by applying therefor to the inspector of fisheries, and under such licence may fish in any of the waters of British Columbia, except in any prescribed limits at the mouths of rivers or streams or during the close seasons, or in any place leased or set apart for the natural or artificial propagation of fish or in any other place otherwise specially reserved. Such licence shall be called a "domestic" licence. No net to be used under any "domestic" licence shall exceed *three hundred yards* in length. The meshes shall be of the same size as those under "commercial" licences, and such nets shall only be used for obtaining fish for the use of the owners' families and not for sale, trade or barter; the fee for a "domestic" licence shall be one dollar ($1.00).

23. No person shall fish for, kill, buy, sell or have in possession in the province of British Columbia any young of the salmon, such as fry, parr, smolt or grilse under three pounds in weight, and if any such young are caught by accident in nets or other fishing apparatus, they shall be liberated alive at the cost and risk of the owner of such net or apparatus.

24. Holders of licences for using nets to catch salmon-trout and whitefish in the lakes in the province of British Columbia, may use gill-nets, such nets not to exceed *one thousand yards* in length, with meshes not less than five inches extension measure. The fee for a licence to catch salmon-trout and whitefish shall be five dollars ($5.00).

25. No one shall fish for, catch, buy, sell or possess in the province of British Columbia any salmon-trout or whitefish from the first day of October to the thirtieth day of November, both days inclusive.

26. No one shall fish for, catch, kill, buy, sell or possess any brook-trout of any kind, or speckled-trout, between the fifteenth day of October and the fifteenth day of March, both days inclusive. But Indians may at any time catch such trout for the purpose of providing food for themselves and their families, but for no other purpose.

27. No one shall at any time fish for, catch or kill brook-trout of any kind or speckled-trout by means other than angling with hook and line, and this restriction shall apply to Indians.

28. The use of firearms of any kind, explosive materials, spears of any description, or torch or other lights to kill fish is prohibited in the province of British Columbia.

29. All materials, implements, nets, appliances or gear of any kind used, and all fish caught, taken, killed, bought, sold or possessed in violation of any of the above regulations shall be seized and confiscated, and any person or persons, or company violating any of the above regulations shall also incur the other penalties provided by the Fisheries Act.

30. The above regulations shall come into force on the first day of May, 1894, and thereafter all former regulations relating to the fisheries in the province of British Columbia shall be superseded and repealed.

CHAPTER VI

TREATIES AND TARIFFS

A. Primary Products

According to Article 3 of the Treaty of Paris, 1783,

> . . . the people of the United States shall continue to enjoy unmolested, the right to take fish of any kind on the Grand Bank and all other banks in Newfoundland, also in the Gulf of St. Lawrence and at all other places in the sea where the inhabitants of both countries used at any time heretofore to fish; and also, that they shall have the liberty to take fish of every kind on such part of the coast of Newfoundland as British fishermen shall use, but not to dry or cure the same on that island; and also, on the coasts, bays, and creeks of all other of His Britannic Majesty's dominions in America; and that the American fishermen shall have liberty to dry and cure fish in any of the unsettled bays, harbors, and creeks of Nova Scotia, Magdalen Islands and Labrador, so long as the same shall remain unsettled, and so soon as the same or either of them shall be settled it shall not be lawful for the said fishermen to dry or cure fish at such settlements without a previous agreement for that purpose with the inhabitants, proprietors or possessors of that ground.

The War of 1812 abrogated the treaty, and the Convention of 1818[1] permitted United States fishermen to fish and to cure fish along parts of the coasts of Canada only when the coast was not settled. On settled parts of the coast, fishing could be carried on only outside the three mile limit. The Reciprocity Treaty of 1854 provided for reciprocal fishing privileges in certain territorial waters of each country. With its termination in 1866, the provisions of the Convention of 1818 again came into force. A system of licensing foreign vessels was adopted which allowed American fishermen the rights they had enjoyed under the Reciprocity Treaty on payment of a licence fee.[2] Increases in the fees led American fishermen to enter Canadian waters without licences, and conflicts between the Canadian and American fishermen ensued. The system was discontinued in 1870.

The Washington Treaty was signed in 1871 and again provided for reciprocal fishing privileges in Canadian and American waters. Provision was made for the establishment of an arbitration board

[1] H. A. Innis, *The Cod Fisheries* (New Haven, 1940), pp. 246-8; Hugh L. Keenleyside, *Canada and the United States* (Toronto, 1929), chap. VII, p. 267.

[2] Innis, *The Cod Fisheries*, pp. 364-5.

to rule on the British claim that under the Treaty more valuable rights and privileges had been surrendered than had been received in return. The Board met in Halifax in 1877 and awarded Canada $5,500,000, one million of which went to Newfoundland. From this fund an annual grant of $160,000 was provided to assist in the development of the deep sea fisheries of Canada and in the encouragement of building and equipping of improved fishing vessels.

In the debates leading to ratification of the Washington Treaty by the Canadian Parliament in 1872, representatives of the new Province of British Columbia held that its provisions applied to that province. According to Mr. Wallace, representing Vancouver Island, "It gave a free market for the fish and oil, the trade in which was now carried on at a loss. He spoke from large experience of the fishing interest of British Columbia where at present there was practically no market. The ratification of the Treaty would open up the Maritime Trade and produce the most beneficial results."[3] The United States claimed[4] that it did not apply to British Columbia, since the Treaty had been drafted and signed before the province entered Confederation. Thus, until 1885, when the application of the fishery clauses of the Treaty of Washington was terminated by the United States government, duty was paid on fish entering the United States from British Columbia, while fish from the rest of Canada was admitted duty free. On the other hand, since British Columbia had entered the Dominion as a province, all rights to the control of tariffs had passed to the government at Ottawa, and fish from the United States entered British Columbia duty free in accordance with the terms of the Treaty. In 1888, failing to arrive at a satisfactory solution of the international problems of the fisheries, a *modus vivendi* was arrived at between Canada and the United States, by which American fishermen purchasing licences were allowed the use of Canadian harbours and bays for the purchase of bait, ice, seines, lines, and other supplies and outfits, and for the trans-shipment of catch and the shipping of crews. A licence fee of $1.50 per ton was paid. It was intended as a tem-

[3] *Canada, House of Commons Debates*, 1872, p. 526.

[4] In 1876 Mr. Amor de Cosmos said: ". . . we are aware of the action of the United States authorities, as well as their reasons, so far as communicated by the Customs Officers. They maintain that British Columbia, not having been a part of the Dominion at the date of the negotiation of this Treaty, cannot be admitted to the enjoyment of its benefits" (*ibid.*, 1876, p. 215).

porary solution until such time as a satisfactory treaty could be negotiated, but since no treaty was negotiated the arrangement continued until 1918.

The tariff on fish entering Canada is of comparatively little significance. In the Crown colony of British Columbia fish were at first not subject to duty. In 1859, they were taken off the free list and the Customs Amendment of 1860 placed a duty of one penny per pound on dried fish and one-half penny per pound on salt fish, fresh fish being classified amongst unenumerated articles paying 10 per cent. In 1865, dried fish paid 30 per cent, preserved fish 12½ per cent, and fresh fish were free. In 1867, a duty of 15 per cent was imposed on preserved, dried, and salted, and frozen fish. Fresh fish, fish oil, and whale bone were admitted free. Reciprocity with the United States was discussed at the request of the Governor by the Colonial Legislative Council in 1869. A Committee recommended that reciprocity in certain articles should be negotiated, the enumerated articles such as fish of all kinds, fish oil, tar, pitch, and cotton canvas[5] to be given freedom of trade or a small rate of duty determined mutually.

The Canadian tariff extended to British Columbia in 1872 admitted fresh fish free, but imposed a duty of one cent per pound on salted or smoked fish, as compared with a duty of 15 per cent under the British Columbia tariff. The Washington Treaty admitted American fish to the British Columbia market free but did not admit British Columbia fish to the American market free. In 1879, fish, whether fresh, salted, or smoked, entering from countries other than the United States paid a duty of one cent per pound. On the termination of the Washington Treaty in 1885, mackerel, pickled salmon, and all other fish, except herring, pickled in barrels, paid a duty of one cent per pound. Herring, pickled or salted, and all fish, n.o.p., imported otherwise than in barrels or half barrels, whether fresh, dried, salted, or pickled, paid a duty of one-half cent per pound. The duty on fish, smoked and boneless, was one cent per pound; on shelled oysters in bulk, 10 cents per gallon; and on oysters in the shell, 25 per cent. The duties of 1885 were similar for the most part to those imposed on similar products entering the United States. The only element of free trade in fish and fish products which remained between the two countries was under Section 3 of the Revised Tariff of 1886, where provision was made

[5] *Journals of the Legislative Council of British Columbia*, Jan. 15, 1869.

"for the remission of duties on fish from the United States and Newfoundland by proclamation of the Governor-in-Council, which may be issued whenever it appears to his satisfaction that the Governments of the United States or Newfoundland have taken off or reduced the duties on Canadian products going to those countries."[6] Similarly, the Tariff Act of 1888 provided that "any or all of the following things, that is to say, fish of all kinds, fish oil, products of fish and of all other creatures living in the water, may be imported into Canada free of duty, or at a less rate of duty than is provided for by any Act at the time in force, upon the proclamation of the Governor-in-Council, which may be issued whenever it appears to his satisfaction that similar Canadian articles may be imported into the United States free of duty or at a less rate of duty. . . ."[7]

In 1890, the duty on salmon, pickled or salted, and on all other fish pickled or salted in barrels, was made one cent per pound. In 1895, the following item, 199a, was introduced: "Salmon, fresh, n.e.s., one-half cent per pound, provided that such salmon may be imported free of duty, upon proclamation of the Governor-in-Council, which may be issued whenever it appears to his satisfaction that fresh salmon may be imported into the United States from Canada free of duty."[8] In the same year, a proclamation issued on August 13 permitted fresh salmon to be imported free of duty until further order.[9] In the Tariff Act of 1897 a duty of one-half cent per pound on fresh salmon was restored.

American and Canadian canners of sockeye salmon supplemented their supply in case of scarcity by importing fresh salmon across the border, but in 1904 the Canadian government prohibited the export of fresh sockeye salmon to Puget Sound for canning purposes. The price was higher in the United States than in Canada as a result of the greater size of the American market and of certain features of the organization of the salmon industry in the United States. The larger canneries for the most part used their own traps for catching salmon, while the smaller canneries bought in the open market. The larger canners, in competition with the smaller canners, paid an artificially high price for salmon to independent fishermen, even though in many cases they did not need the extra

[6] *Revised Statutes of Canada*, 1886, chap. 33, sec. 3.
[7] *Statutes of Canada*, 1888, chap. 15, sec. 9.
[8] *Ibid.*, 1895, chap. 23. [9] *Ibid.*, 1896, Proclamation, Aug. 13, 1895.

source of supply. Had Canadian fishermen been free to sell fresh salmon on the American market, they would have received the artificially high price. It would have been difficult for Canadian canners to secure a supply of sockeye and the existence of the industry in British Columbia would have been endangered.

In 1907, fish became subject to the three tariffs—British preferential, intermediate, and general—and all fish—fresh, pickled, or salted—were subject to a duty of $\frac{1}{2}$, $\frac{3}{4}$, and 1 cent per pound. Duty on "all other articles the produce of the fisheries, n.o.p." was increased to 15, 20, and 25 per cent. In 1908, a Trade Agreement between France and Canada provided that the French minimum tariff should apply on many of the fish and fish products of Canada. The duties were still high, and it is questionable whether the Treaty was of much benefit to the Canadian industry.

The Underwood tariff of 1913 permitted Canadian fish to enter the United States market duty free. "Added impetus to all branches of the fisheries has been lent by the removal of the duty upon fresh fish entering the United States. Halibut, herring, cod, and other fisheries have benefited by this. The demand for pickled herring is a noticeable feature in this connection, and already one firm at Nanaimo and another in the north are preparing to cater to this market."[10] Although provision had been made by the Canadian government previous to 1907 for reciprocity in the duties imposed on fish and fish products, it did not attempt to meet the terms of the Underwood tariff. The special War Revenue duty imposed in 1915 of 5, $7\frac{1}{2}$, $7\frac{1}{2}$ per cent on British preferential, intermediate, and general tariffs, applied on all fish except those coming from Newfoundland and fish caught by fishermen in Canadian boats. Fish and fish products were, however, exempted from the provisions of this Act in 1919.

The Fordney-McCumber tariff of 1922 resulted in decreased exports of fish to the United States. It imposed duties on fresh or frozen halibut, mackerel, or salmon, of 2 cents per pound; all other fresh or frozen fish, 1 cent per pound; dried fish, $1\frac{1}{4}$ cents per pound; pickled herring and mackerel, 1 cent per pound; cod oil, 5 cents per gallon (formerly 3 cents); green-salted cod, $1\frac{1}{4}$ cents per pound. The only attempt made by Canada to remove the disabilities imposed was to amend the Customs Tariff, 1907, by the inclusion of a section which provided that if the United States would reduce the

[10] *Report of the Commissioner of Fisheries, British Columbia*, 1913, p. 8.

tariff on certain fish products of importance, then Canada would make concessions to certain articles imported into Canada from that country.

A new Trade Agreement between Canada and France in 1923, admitted fresh, dried, salted, or smoked fish, and fresh, preserved, or prepared lobsters, on the French minimum tariff but only lobsters have been exported in any quantity. In 1925, a Treaty with Australia granted to Canada her British preferential tariff on fresh, smoked, dried, or frozen fish, and on fresh oysters. A similar agreement was made in the same year with New Zealand.

In 1934 the use of traps by United States fishermen was prohibited and the artificially high price for sockeye salmon to the American fishermen disappeared. Canadian and American canners of salmon operated on an equal basis. In these circumstances the embargo on the export of fresh salmon became a hardship to the Canadian fishermen, and was unnecessary as a protection for the Canadian canner. The Member for Comox moved in the session of the Dominion Parliament in 1935: "That, in the opinion of this house, the section of the special fishery regulations for the Province of British Columbia which prohibits the export of sockeye salmon in a fresh condition, is against public policy and should be rescinded."[11] The embargo imposed in 1904 was removed and the United States market for fresh sockeye was opened to Canadian fishermen.

B. Manufactured Fishing Products

Canned salmon was probably admitted free under the general provisions for fish prior to 1859. Fish oil was probably subject to the duty of 10 per cent which applied to "all goods not enumerated." From 1859 to 1865 the duty on canned fish was presumably 10 per cent.

The Canadian tariff of 1872 imposed a duty of 15 per cent on canned fish, oysters, and lobsters in tins or kegs, and fish oil, but canned fish entered free from the United States under the provisions of the Treaty of Washington. By the tariff of 1879, fish oil was admitted duty free, but medicated cod liver oil and sperm oil paid 20 per cent. In spite of the Washington Treaty, the United States imposed a duty of $1\frac{1}{2}$ cents per pound on all canned goods in 1879. In retaliation Canada placed a duty of $1\frac{1}{2}$ cents on each

[11] *Canada, House of Commons Debates*, 1935 (unrevised ed.), p. 1114.

quart container with fish. The Minister of Finance stated that "It was intended to counteract the effect of American legislation by which the trade of the United States had an advantage over our people of 18 cents per dozen on all canned fish."[12] With the expiration of the Washington Treaty in 1885, canned fish was subject to a duty of 25 per cent and the duty on fish containers continued. By Order-in-Council of 1886, fish skins and fish offal for the making of glue were admitted free.

By the French Trade Agreement of 1894 the French minimum tariff applied to "fish preserved in their natural form," and assurance was given in the Canadian Parliament that canned salmon was definitely included.[13] In 1903, however, shipments from British Columbia were forced to pay the French general tariff.[14] In 1908, the treaty with France definitely admitted canned salmon as well as canned lobsters, fish oils, spermaceti, and roe of cod or mackerel, under the French minimum tariff.

The tariff of 1907 placed a higher duty on canned fish of various kinds. Anchovies, sardines, and sprats, were made dutiable according to weight instead of size of box. The duty on other fish preserved in oil was changed from 30 per cent to 20, 30, and 35 per cent. Canned salmon and other preserved fish had a duty of 17½, 27½, and 30 per cent. The duty on fish oils was changed from 20 per cent to 12½, 20, and 22½ per cent. The Customs Tariff War Revenue Act applied to canned fish, but this item was exempted in 1918.

In 1923, canned salmon shipped from British Columbia to Canadian ports on the Atlantic coast by way of the Panama Canal were considered to be dutiable, but arrangements were made which provided that if the ship did not call at intervening points, or if, having called, it did not break bulk, the cargo should not be dutiable. Since there was no Canadian Customs official in New York at that time, if a cargo of canned salmon was transferred at that point to a coastal steamer for transportation to a Canadian port, it had to bear the duty on entering Canada.[15]

In the Treaty of 1923 between Canada and France, "lobsters, preserved or prepared, fish oils, spermaceti, roe of cod and of

[12]Budget Speech for 1880, taken from S. J. McLean, *The Tariff History of Canada* (Toronto, 1895).

[13]*Canada, House of Commons Debates*, 1894, p. 5576.

[14]*Ibid.*, 1903, p. 7799. [15]*Ibid.*, 1923, pp. 2615 and 3275.

mackerel" were subject to the French minimum tariff. "Fish, preserved by pickling, or otherwise prepared," were allowed a reduction of 60 per cent of the difference between the French general and minimum tariffs. This meant an increase from 25 to 35 francs per 100 kilograms in the duty on canned salmon which previously had the privilege of the French minimum tariff.[16] Canada gave France the benefit of specific duties on anchovies, sardines, sprats, and other fish packed in oil, which were considerably lower than those of the Canadian intermediate tariff. The Treaty did not alter the situation as far as the eastern fishing industry was concerned, but was adverse to the fishing industry in British Columbia.[17] The reduced advantage was of value, however, as American salmon entered France at a duty of 50 francs per 100 kilograms.

The Trade Agreement between France and Canada in 1932 gave Canadian canned salmon, lobsters, fish fats, spermaceti, and roe of cod and mackerel, the French minimum tariff, and in return Canada granted France her intermediate tariff on anchovies, sardines, sprats, pilchard, and herring, packed in oil, or otherwise, in sealed containers. French sardines were also permitted to enter Canada at the intermediate tariff rate, less a discount of 20 per cent. This Agreement again placed British Columbia canned salmon on an equality with salmon imported from Japan.

In 1925 a Trade Agreement between Canada and Australia gave canned salmon the important advantage of the British preferential tariff of one cent per pound. The Australian Trade Agreement of 1931 gave Canadian canned salmon a preference of 6 cents per pound over that of other countries, and practically secured the market for British Columbia.

In 1931, the preference of $1.25 per case which New Zealand had granted on Canadian canned salmon was removed, presumably because of the increase in the Canadian tariff on New Zealand butter.[18] The New Zealand Trade Agreement of 1932 gave Canadian canned salmon a preference of $1\frac{1}{4}$ pence per pound.

In 1931, the duty on crabs and clams in sealed containers was increased from $17\frac{1}{2}$, $27\frac{1}{2}$ and 30 per cent to $17\frac{1}{2}$, 40, and 40 per cent (British preferential, intermediate, and general tariffs). The Trade Agreement with South Africa of 1932 provided for a preference of

[16] *Ibid.*, p. 2006. [17] *Ibid.*, p. 2235.
[18] *Ibid.*, 1931, p. 2525.

1½ pence per pound on all Canadian canned fish. The Trade Agreement with the United Kingdom gave free entry to canned salmon and other canned fish, cod liver and other fish oils, and in addition a preference of 10 per cent on canned salmon and other fish. The following table shows the preferential position of Canadian fish products in the British market under this Agreement.

Article	Preferential rate	General rate
Fish, fresh, sea	free	10 per cent
Salmon, canned	"	10 "
Fish, other, canned	"	10 "
Codfish	"	10 "
Salmon, chilled or frozen	"	1½d. per lb.
Oysters, June-February	"	30 per cent
Oysters, March-May	"	10 "
Shell fish, other, fresh	"	30 "
Cod liver oil	"	1s. 4d. per gal.
Other fish oils	"	10 per cent

It was doubted, however, that the 10 per cent preference would be sufficient to protect the Canadian product against Japan and the Soviet Republic.[19] Keen competition in canned fish products was met from Japan and Russia, particularly in the European markets, partly as a result of marketing policy, and partly from more favourable tariff provisions in the case of Japan.

The Trade Agreement between Canada and the United States, which became effective January 1, 1936, brought considerable reduction of duty on fish and fish products by both countries.

C. Equipment

Primary Industry

It would be difficult, if not impossible, to determine the effect of the Canadian tariff on fishing equipment on the Pacific coast fishing industry. Prior to the union of the colonies of Vancouver Island and British Columbia in 1866, Vancouver Island was a free trade area with Victoria as its port of entry, but on March 25, 1867, the customs duties of the colony of British Columbia were extended to Vancouver Island. The advantages of Vancouver Island fishermen were brought to an end.

[19] *Ibid.*, 1932-33, p. 534.

In 1858, when British Columbia was made a Crown colony, Sir James Douglas issued a proclamation establishing a tariff. At first it was small, and no specific mention is made of fishing equipment, which entered the colony under the item of "all goods not enumerated," and paid an *ad valorem* duty of 10 per cent. In 1859 considerable quantities of fishing nets were imported from Scotland, and nets and lines were brought in from San Francisco.[20] Salt was admitted free and still remains on the free list when used commercially in the fishing industry. In 1864, Ordinance No. 16 provided that "all machinery for steam-boats and all materials bona fide intended and used for ship-building within the Colony" should have free entry. In 1865, in a complete revision of the tariff, a duty of 12½ per cent was imposed on rope and cordage, hardware and iron-

TABLE XVIII

CUSTOMS DUTIES, 1865
COLONY OF BRITISH COLUMBIA

No. 3, *An Ordinance to Amend the Duties of Customs, Feb. 1865*

ITEM	DUTY
Equipment	
	Per cent
Rope and cordage	12½
Hardware and ironmongery	12½
All kinds of machinery	free
All materials required for ship or boat building	free
Tar and pitch	12½
Raw Materials and Goods Consumed in Production	
Salt	free
Tin and tinware	12½
Woodware (barrels)	12½
Products	
Dried fish	30
Fish (preserved)	12½
Fresh fish	free
Oils (would include fish oil)	15
All goods not enumerated	12½

[20]List of imports in *British Colonist*, Aug. 3, 1859.

mongery, and tar and pitch, but all machinery and materials used in ship or boat-building were admitted free (Table XVIII). In 1867, the duty on rope, cordage, and twine was reduced from 12½ per cent to 5 per cent. Lead, copper, and wire were admitted free (Table XIX). These duties remained in force until 1872 when British Columbia accepted the Canadian tariff.

The opponents of Confederation pointed out in the debates of the Legislative Council of British Columbia in 1870 that the Canadian tariff on all commodities was 7 per cent lower on the average than that of British Columbia. In spite of this it was urged that

TABLE XIX

CUSTOMS DUTIES, 1867

COLONY OF BRITISH COLUMBIA

No. 18, *An Ordinance to Amend the Duties of Customs in British Columbia*

FISHING INDUSTRY—PRIMARY

ITEMS	DUTY
Equipment	
	Per cent
Rope, cordage, and twine	5
Hardware and ironmongery	12½
Lead in pipe, sheets, and bars; wire (iron and brass); copper sheets; tar and pitch; oakum and jute; patent metal for ships; anchors; cables, chains, and copper bolts for ship building; ships blocks and junk	free
Hemp canvas	2½
Ship building materials:	
Manufactured sails	20
Cotton canvas	5
Salt	free
Woodenware (barrels, kegs, pails, etc.)	12½
FISHING INDUSTRY—SECONDARY	
Machinery	10
Raw Materials and Goods Consumed in Production	
Tin	free
Tinware	25
All goods not enumerated	12½
Coal, per ton	$1.25

the Canadian tariff policy would be detrimental to British Columbia since it was designed to protect manufactures rather than agricultural products and staple commodities. The policy of British Columbia was to protect agricultural and other primary products, and to admit free, or at a low rate of duty, articles which would assist in the development of its industries. The fishing industry would be stimulated by the fostering of low costs of equipment and salt. Fish-hooks, nets, and seines had free entry into Canada, while they had to bear a duty of 12½ per cent when imported into British Columbia. Lines and twines, cordage for ships' purposes, sail-cloth and canvas for ships, entered Canada free and paid a duty of 5 per cent when entering British Columbia. Tin, including tin-plate, which was important in the growing salmon-canning industry, was admitted free in British Columbia.

On March 27, 1872, when the duties in force in Canada were extended to British Columbia, practically all equipment, as well as salt, bait, and muriatic acid, used in the fishing industry was admitted free. All other raw materials paid a duty of 15 per cent. The duty on tin-plate was 5 per cent. In 1874 the duties were amended and a 5 per cent duty placed on equipment and articles for boats and ships, cordage and sail-cloth or canvas for boats, and iron wire. Wire rigging for ships was still admitted free.

With the National Policy in 1879 and its sharp upward revision of the tariff, the fishing industry lost the advantage of free entry for much of its equipment. A duty of 20 per cent was placed on cordage, 10 per cent on copper wire, 15 per cent on iron and steel wire. Duties were imposed on metals used by fishermen for the manufacture of equipment; for example, 10 per cent on sheet brass, lead, and tin-plate, although by Order-in-Council[21] provision was made for a drawback on tin-plate of 34 cents per box of tin used in the manufacture of packages for articles exported. A duty of 25 per cent was imposed on sails. Wire rigging, oakum, and anchors remained on the free list, but a duty of 10 per cent was placed on foreign-built boats. A duty of 20 per cent was placed on muriatic acid, and 25 per cent on barrels, and the duty on all unenumerated articles was increased to 20 per cent. Fish-hooks, nets, seines, lines, and twines continued to have free entry. In 1880 the drawback on tin-plate was increased to 50 cents per box and in 1882 the duty was removed. Tin-plate was imported direct from England

[21]Order-in-Council, June 11, 1879.

to the Pacific coast. The 10 per cent duty on foreign-built boats was made in 1882 to apply only to the hull and rigging of the ships, but on all of the ship's machinery it was increased to 25 per cent. In 1883, old brass, copper, iron and steel wire were placed on the free list.

In 1884, "labels for fruit, vegetables, meat, fish, etc.," were introduced into the tariff schedule and a duty of 10 cents per pound and 20 per cent *ad valorem* imposed.[22] It was increased in 1887 to 15 cents per pound and 25 per cent *ad valorem*.[23] In 1886, the duty on cordage was changed to $1\frac{1}{4}$ cents per pound and 10 per cent *ad valorem*, which meant a decrease in the duty on expensive cordage and an increase in that on cheaper grades. New items were added to the equipment list, including: fishing rods, 30 per cent; waterproof clothing, 35 per cent; rubber boots used by fishermen, 25 per cent. Minor changes were made in all items of equipment from time to time, but were not of an extent to be significant. In 1896, the duty on cordage and twine was changed to 25 per cent *ad valorem*, and in 1897 the duty on labels to a straight 35 per cent *ad valorem*. In the same year, olive oil for canning fish was placed on the free list.

The outstanding change in the tariff revision of 1897 was the adoption of a "reciprocal" tariff, which was one-eighth lower than the general tariff. This "reciprocal" tariff was at once applied to the United Kingdom, and later extended to other countries as a result of trade treaties with the United Kingdom which contained the "most-favoured-nation" clause. It disappeared in 1898 when the British preferential tariff was adopted by Canada as follows:

> Articles which are the growth, produce, or manufacture of any of the following countries, may when imported direct into Canada from any of such countries, be entered for duty or taken out of warehouse for consumption in Canada at the reduced rate of duty provided for in the British Preferential tariff set forth in Schedule D to this Act: (*a*) The United Kingdom; (*b*) Bermuda; (*c*) British West Indies; (*d*) British Guiana; (*e*) any other British Colony or Possession the Customs tariff of which is as favourable to Canada as the British Preferential tariff herein referred to is to such Colony or Possession.[24]

The amount of reduction was at first 25 per cent of the ordinary duty, but in 1900, $33\frac{1}{3}$ per cent. In 1904, the general reduction was abandoned and the policy of a low preferential rate on each

[22] *Statutes of Canada*, 1884, chap. 30. [23] *Ibid.*, 1887, chap. 39.
[24] *Ibid.*, 1898, chap. 37, sec. 2 as amending sec. 17 of chap. 16, 1897.

imported article followed. In 1907, the present system of three different duties, the British preferential, intermediate, and general, was adopted.

By 1907 fishermen were beginning to use internal combustion engines in their boats, and were affected by the tariff on oils. Diesel oil, which was largely used, was admitted free, but gasoline carried a duty of $1\frac{1}{2}$, $2\frac{1}{4}$, and $2\frac{1}{2}$ cents per gallon.

In 1915, the Customs Tariff War Revenue Act established additional duties of 5, $7\frac{1}{2}$, and $7\frac{1}{2}$ per cent respectively on the British preferential, intermediate, and general tariffs with certain exceptions which affected the fishing industry. Olive oil, cottonseed oil, and peanut oil[25] were exempted. Certain modifications were made in the classification of items affecting the fishing industry entering under the free list. A duty of $7\frac{1}{2}$, $12\frac{1}{2}$, and $12\frac{1}{2}$ per cent had been placed on tin-plate. In 1919, the 5 per cent additional duty on the British preferential tariff was removed, the intermediate and general tariffs remaining the same.

In 1922, a reduction of the duty on gasoline for fishing boats was proposed as a special concession for fishermen. When it was pointed out that this reduction would be of small benefit to fishermen on the Pacific coast as most of the power boats used distillate, the latter was included and the duty on both reduced to $\frac{1}{2}$, $\frac{3}{4}$, and 1 cent per gallon. The duty on tin-plate was reduced in 1926 to free, 5 per cent, and 5 per cent on "tin-plate of a kind not made in Canada," while "tin-plate, n.o.p." still paid the duty of 7, $12\frac{1}{2}$, and $12\frac{1}{2}$ per cent. A drawback of 99 per cent was provided for tin-plate used in the export trade.

In 1927, the Customs Tariff Act of 1907 was revised and consolidated. The principal tariff changes as applied to the fishing industry involved, in general, an extension of the free list and reduction of the duties on equipment and materials used commercially. Duties of $\frac{1}{3}$, $\frac{1}{2}$, and $\frac{1}{2}$ cents were placed on diesel oil in 1927, and duties were imposed on lubricating oils. In 1930, the duty on gasoline and engine distillate used by fishing boats was increased to 2, $2\frac{1}{4}$, and $2\frac{1}{2}$ cents per gallon.

In November, 1928, Connor Bros., Ltd., packers of sardines, asked the Tariff Board to investigate the duties on tin-plate with a view to reduction. In its brief the Company pointed out that a

[25]In 1902, refined cottonseed oil used for canning fish had been placed on the free list, and in 1914 similar provision was made for peanut oil.

tin cartel of manufacturers of tin-plate in South Wales and the United States had parcelled out the markets for tin-plate. The Canadian market had been given to the American producers. Although tin-plate from England was free and from the United States paid a duty of 5 per cent, they were forced to buy their tin from the United States. They claimed that tin-plate producers in South Wales would not quote a reasonable price to consumers in Canada. The cartel raised the price of tin-plate generally.[26] The result of the petition was only an upward revision in 1930. The duty on tin-plate of a kind not made in Canada remained free, 5 per cent, 5 per cent, but the duty on tin-plate, n.o.p., was increased from 7½, 12½, 12½ per cent to 7½, 12½, 15 per cent. An additional amendment in 1930 lowered the British preferential tariff on containers made of tin-plate from 15 per cent to 10 per cent. Prior to this date they had entered Canada under the item 344, "Tinware, japanned or not and all manufactures of tin," and paid a duty of 15, 22½, and 25 per cent.

The Royal Commission on Maritime Fisheries in 1928 was asked to remove the tariff on gaskets. "In sealing sardine tins, it is necessary to use a rubber gasket which is not manufactured in Canada, and which, because of patent rights, cannot be manufactured by the packer who manufactures cans."[27] The report of the Tariff Board on Sardines and Herrings in November, 1928, recommended a reduction in the duty on these rubber gaskets which came in under item 618, "manufactures of india-rubber and gutta percha, n.o.p." and paid a duty of 15, 25, and 27½ per cent.[28] In 1929, the duty on "gaskets of rubber for use in sealing of containers for food products" (item 618a) was reduced to free, 7½ per cent, and 10 per cent.[29] In the Special Session, 1930, item 618a was struck out of the tariff, and the duty reverted to 15, 25, and 27½ per cent under item 618.[30]

In the first revision of the tariff in 1932-3, the duties on tin-plate of a class or kind not made in Canada were changed from free, 5 per cent, 5 per cent, to free, 15 per cent, 15 per cent, and on tin-

[26]Advisory Board on Tariff and Taxation, Reference 108, Hearing on Sardines and Herrings, November, 1928.

[27]*Report of the Royal Commission on the Maritime Fisheries*, May, 1928, p. 5.

[28]Advisory Board on Tariff and Taxation, Reference 108, Hearings on Sardines and Herrings, November, 1928.

[29]*Statutes of Canada*, 1929, chap. 39.

[30]*Ibid.*, 1930-1, chap. 3, special session, 1930.

plate, n.o.p. from 7½, 12½, 15 per cent, to free, 20 per cent, 20 per cent—a decrease in the British preferential and an increase in the intermediate and general tariffs. In addition, a 10 per cent duty was placed on olive oil for canning fish under the intermediate and general tariffs, making the duty free, 10 per cent, 10 per cent.[31] Under the United Kingdom Trade Agreement, Canada agreed to give a margin of preference to Great Britain on olive oil of 10 per cent, and on tin-plate made in Canada of 20 per cent, and on tin-plate not made in Canada of 15 per cent. The duty on olive oil was repealed at a later date in the same session, 1932-3, presumably with the permission of Great Britain.[32]

Secondary Industry

Secondary fishing industries, such as the production of fish meal, fertilizer, oil, bone meal, etc., were exposed to tariff burdens. The importance of fish oil is shown in a comparison of exports with those of fish from 1867 to 1870.[33] In 1858, machinery used in the extraction

Article	1867	1868	1869	1870
	$	$	$	$
Fish.....	3,112	7,679	4,603	13,394
Fish oil.....	2,919	26,642	19,878	18,467

of fish oil paid a duty of 10 per cent on entering the colony of British Columbia. In 1865, all kinds of machinery entered free but a duty of 10 per cent was again imposed on machinery in 1867.

In 1872, under the Canadian tariff, the duty was 15 per cent. It was reduced in 1874 to 10 per cent on machinery which was not manufactured in Canada. The National Policy tariff of 1879 imposed a duty of 25 per cent on "steam engines and boilers and other machinery composed wholly or in part of iron," which had previously come in under goods n.o.p. paying 15 per cent in 1872, and 17½ per cent in 1877. In 1887, the duty on machinery was further increased to 30 per cent; in 1897, it was reduced to 25 per cent; and in 1907 it was again increased to 27½ per cent, the British preferential and intermediate tariffs being 15 and 25 per cent respectively.

[31] *Ibid.*, 1932-3, chap. 6. [32] *Ibid.*, chap. 37.

[33] *Canada, Sessional Papers*, 1871, no. 6, Colony of British Columbia.

Machinery was subject to the provisions of the Customs Tariff War Revenue Act of 1915, so that from 1915 to 1919 the duties on machinery were 20, 32½, and 35 per cent; on leather belting, 20, 27½, and 30 per cent; and on belting, n.o.p., 25, 32½, and 35 per cent. In 1920, the duties reverted to the tariff of 1907.

In 1923, an important concession was given to the fish-reducing industry when "machinery, of a class or kind not made in Canada, and parts thereof, for the manufacture of fish meal, stock and poultry food and fertilizer, from fish and the waste thereof" was placed on the free list.[34] Mr. Fielding, the Finance Minister, stated: "It is represented to us that vast quantities of fish waste are destroyed in Canada which could be converted into useful material, such as fertilizers, poultry feed, and so forth, and we propose that machinery of a class or kind not made in Canada, designed for that purpose, shall be admitted free."[35]

In 1930, the duty on machinery, whether of a kind made in Canada or not, for converting fish waste, etc., was changed to free, 15 per cent, and 20 per cent. This was a reduction since all of the machinery was being made in Canada and had been subject to a tariff of 15, 25, and 27½ per cent. Machinery for the manufacture of keys for opening cans containing food products was admitted at a duty of free, 15 per cent, and 20 per cent. This was of minor importance to British Columbia since only small quantities of fish products are packed in cans requiring a key for the opening. It was again raised in 1931 to 15, 27½, and 35 per cent. The duty on leather belting was increased to 20, 30, and 35 per cent. In 1935, the duty on diesel and semi-diesel engines and complete parts thereof was reduced from 15, 27½, and 35 per cent, to free, 25 per cent, and 30 per cent. This type of engine is used in some fish canneries for power purposes.

[34] *Statutes of Canada*, 1923, chap. 42.

[35] *Canada, House of Commons Debates*, 1923, p. 2645.

CHAPTER VII

CONSERVATION AND THE FRASER RIVER SOCKEYE SALMON

THE most important Canadian-American fisheries problem pertains to the sockeye salmon of the Fraser River district. The sockeye salmon returns to fresh water in the fourth year after first entering salt water. Before they return to the river, the fish are in first-class condition, well-fed; and their flesh, rich, oily, and red, is exceptionally fine for canning purposes. During the sockeye salmon run in the summer, hordes of fishermen, equipped with nets, congregate in the waters through which the fish pass on their way from the open sea to their spawning-grounds. They dispose of their catch at the canneries on the banks of the river.

If in any year too many sockeye are caught before they reach their spawning grounds, the run four years later will be relatively small; if, year after year, excessive catches are made, the runs will sooner or later become so poor as to render commercial fishing for sockeye unprofitable. The need for regulations to limit the amount of salmon caught becomes apparent: there must be shorter "open" seasons; nets must have meshes large enough to ensure that a percentage of the fish will escape; the number of fishermen must be limited, and they must not be permitted to fish too close together, lest the passage of the fish be almost completely blocked.

Effective precautions in Canada have been impossible since the Fraser River sockeye, on their way back to their Canadian birthplace, pass through American waters. American rules and regulations have been more lenient than the Canadian, and have permitted a larger annual catch on the American side than on the Canadian. The Americans, or at least an influential element amongst them, opposed the introduction of greater limitations in their waters, while the Canadians were unwilling to limit their own catch further unless the Americans were willing to co-operate.

Various endeavours have been made by the two countries to solve the problem. The sockeye fisheries in the waters contiguous to British Columbia and the State of Washington first became a subject of international action as a result of a conference between the American Secretary of State and a Canadian fisheries delegation at Washington, D.C., on February 15, 1892. As a result, Senator

J. W. Foster of the United States proposed on October 4, 1892, to the Canadian government that two experts, one representing Canada and the other the United States, should by mutual agreement be appointed to enquire into the following questions:[1]

(*a*) The limitation or prevention of exhaustive or destructive methods of taking fish or shellfish in the territorial and contiguous waters of the United States and her Majesty's possessions in North America, respectively, and also in the waters of the open seas outside the territorial limits of either country to which the inhabitants of the respective countries may habitually resort for the purpose of fishing.

. . . . . .

(*c*) The close seasons expedient to be enforced or observed in such contiguous waters by the inhabitants of both countries as respects the taking of the several kinds of fish and shell-fish.

(*d*) The adoption of practical methods of restocking and replenishing such contiguous and territorial waters with fish and shellfish, and means by which such fish life may be thereafter preserved and increased.

The Canadian government immediately agreed to the proposal, and an exchange of notes bringing the agreement into effect was completed on December 6, 1892.[2] Dr. Wakeham was appointed Canadian representative and Mr. Rathbun represented the United States. On December 31, 1896, a report was finally submitted. The investigations covered all the boundary waters of the two countries, but only those pertaining to British Columbia will be discussed here.

The Commission observed that the waters under the control of Canada and the State of Washington respectively[3] were subject to rules and regulations which differed widely. In British Columbia, commercial fishing was restricted to tidal waters. Nets were not permitted to exceed 300 yards in length, and were to have a mesh not less than $5\frac{7}{8}$ inches if used for sockeyes. They were to be separated by at least 250 yards and were not to obstruct more than one-third the width of the river. The close season for the sockeye extended from September 16 to 25 inclusive and from November 1 to March 1. Resident fishermen were granted one licence each, while canners and dealers were allowed from two to twenty, accord-

[1] "Report, Joint Fisheries Commission" (*Canada, Sessional Papers*, 1897, no. 11D, p. vi).

[2] *Hertslet's Commercial Treaties*, vol. XIX, 1895, pp. 907-8.

[3] In Canada, the federal government has jurisdiction over the coastal fisheries; in the United States, this jurisdiction belongs to the various states.

ing to the size of their establishments.[4] In Washington, the only regulations relating to sockeyes in the open waters of Puget Sound applied to trap-nets. It was stipulated that the "lead" into the trap-net should not exceed 2,500 feet, the end passageway was to be at least 600 feet, and the lateral passageway between nets at least 2,400 feet.

The Commission's conclusions endorsed the majority of the Canadian regulations and recommended that, with one or two modifications, they should be extended under some form of joint control[5] to the American side. The modifications chiefly concerned the use of purse-seines and trap-nets. Purse-seines were numerically so unimportant as to create no problem, and therefore were not restricted in any way. The Commission felt that the use of trap-nets was acceptable so long as care was taken to ensure that a reasonable percentage of fish could escape. These views were dictated by the belief that there was no prospect of a shortage in the near future in the Fraser River fisheries. The opinion of the Commission on fish culture is instructive:[6] "As no evidence of a decrease in the abundance of any of the salmon species has been obtained, we do not feel justified in recommending joint action at present in the matter of their artificial propagation. While we feel confident that the natural supply can best be maintained by early compliance with suitable protective measures, we found it generally admitted that the efforts made by the Canadian Government to increase the stock of sockeye salmon on the Fraser River by fish-cultural methods have been beneficial, the annual run of the fish being made more constant and the off seasons being improved."[7]

The international agreement, under the terms of which the

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[4]The report did not point out that in British Columbia trap-nets and purse-nets were limited by licence to such an extent as to be relatively unimportant. Gill-nets were, and still are, the typical equipment.

[5]This suggestion was not developed by the Commission, but it is, in view of the recommendations of later commissions, worth noting.

[6]"Report, Joint Fisheries Commission" (*Canada, Sessional Papers*, 1897, no. 11D, pp. 145-6). See, however, page 52 for the opinion of the Fisheries officials.

[7]It is fairly evident that the Commission was not distinguishing clearly between an increase in the salmon run and an improvement in the methods of catching fish. These are very different things. The phrase "off seasons" has reference to the three small runs which at that time came between the regular fourth-year "big run."

Commission had been appointed, contained a clause which provided that: "so soon as the reports of the commissioners shall be laid before them . . . the respective governments will consider the same and exchange views thereon, to the end of reaching, if expedient and practicable, such conventional or other understanding as may suffice to carry out the recommendations of the commissioners, by treaty, or concurrent legislation on the part of the respective governments or the legislatures of the several states and provinces, or both, as may be found most advisable, but nothing herein contained shall be deemed to commit either government to the results of the investigation hereby instituted."[8] Since, however, the findings of the Commissioners indicated that there was no acute fisheries problem in the Fraser River district, no such action was taken.

Commercial fishing in the State of Washington waters of the Fraser River system for sockeye salmon began in 1891 with the installation of traps in the vicinity of Point Roberts. These traps proved very effective in the capture of salmon and were looked upon as a source of danger by Canadian fishermen.[9] In 1898 a strong protest was made.

> It is the opinion of everyone who, from observation and study of the subject is in a position to form an opinion thereon, that the Fraser River is the breeding place and nursery of practically all the salmon that enter the Gulf of Georgia by way of the Straits of Juan de Fuca. Mr. A. C. Little, Fish Commissioner for the State of Washington, a gentleman who is well qualified to form an opinion, has stated that "his investigation has led him to feel certain that from 75 to 90 per cent of all sockeye salmon caught in the Sound, are Fraser River salmon." Mr. Little's estimate is none too large. In my opinion practically all the sockeyes which frequent the waters mentioned, are Fraser River fish. Now, when it is considered that the Juan de Fuca Straits and all the waters between its entrance and the mouth of the Fraser River, are practically an estuary of the Fraser, the obstructing of every available place and channel, with gear and appliances, so devised as to kill, or lead to destruction, salmon of all sizes, which, of necessity, must come in contact therewith, when in accordance with the law of their nature, they are seeking to enter their native rivers, in order to propagate their species,—it is apparent that, unless some protective measures are enforced to restrain the cupidity of the fishermen, the future of the salmon fishing industry of the Fraser River and the State of Washington as well, is menaced.

[8] "Report, Joint Fisheries Commission" (*Canada, Sessional Papers*, 1897, no. 11D, p. vii).

[9] Report of the Inspector of Fisheries, British Columbia, 1893 (*Canada, Sessional Papers*, no. 11, 1894, appendix 11, p. 383), and Report of the Inspector of Fisheries, British Columbia, 1894 (*Canada, Sessional Papers*, 1895, appendix 13, p. 369).

Another source of danger to the salmon of the Fraser River consists in the overflow of sand and clay, from the large hydraulic mining enterprises on the upper waters of the Fraser, and its affluents, which affect some very important spawning grounds, by the debris, or tailings, overflowing or covering the gravel beds, and also by dams built across rivers, notably a dam across the South Fork of the Quesnelle River, formerly an important spawning place for salmon, but from which they are now excluded.[10]

Writing in 1900, the Canadian Deputy Minister of Fisheries stated:

> In the Straits of Juan de Fuca and Puget Sound the number of U.S. trap-nets built was greatly in excess of the number erected in 1898, which in turn had a larger number of traps than had been in operation before that year. . . . The number of boats engaged in U.S. salmon fishing also greatly increased, and the time has come when the question of licensing Canadian trap-nets in the Straits of Juan de Fuca must be seriously considered. The department has been collecting all available information on the effects and possibilities of salmon trap-nets in the straits, and has under careful consideration the propriety of licensing such trap-nets to British Columbia fishermen.[11]

The competition of American fishermen with their more efficient trap-nets[12] and purse-seines had become so vigorous that, on January 24, 1902, the Canadian government, by Order-in-Council, appointed a Commission, under the chairmanship of Professor Prince, Dominion Commissioner of Fisheries, to "investigate the proper protection and future development of the various branches of the salmon fishing industry in British Columbia."[13] Work was begun immediately and "sixteen sittings were held, at which evidence was heard from fishermen, canners, merchants and fish dealers, official representatives of various public bodies, and other parties interested in the great salmon industry on Pacific waters." A request by American fishing interests for permission to lay their case before the Commission was met with the response that the latter had been authorized to deal with the Canadian salmon industry only, and therefore was forced to confine its hearings to representations of the Canadian fishing interests. The Commission soon

[10] *Ibid.*, 1898, p. 196.

[11] Report of the Department of Fisheries (*Canada, Sessional Papers*, 1900, 11A, p. xv).

[12] At this time the Canadian government licensed only a few trap-nets in Boundary Bay. These were not in the main course of the salmon run and were never very successful.

[13] Report of the Department of Fisheries (*Canada, Sessional Papers*, 1903, no. 22, pp. xi, xii).

discovered that the Canadian interests were split into two factions. The canners agitated for permission to use trap-nets and purse-nets (seines) freely, contending that their use in the Straits of Juan de Fuca would enable Canadian fishermen to obtain their fair share of the catch by intercepting the salmon before they reached American waters. The canners, moreover, would be assured a plentiful supply of fish at prices more nearly in line with those paid by American canners, since the greater effectiveness of the trap-nets and purse-seines would enable the fishermen to sell their fish more cheaply than they were able to do when using the relatively ineffective gill-nets.[14] These views were opposed by the fishermen who were not able to afford the expensive trap-nets and purse-seines,[15] and who realized that if they were introduced the competition of such fishermen as were financed by the canneries in the purchase of the more efficient nets would soon drive them out of work.[16]

The evidence raised questions which called for a wider and more thorough investigation than the Commission had been authorized to make. The report, therefore, confined itself to indicating the complexity of the problem and refrained from making comprehensive recommendations.[17] The run of 1901, a "big year," was very satisfactory, and the real issue was the distribution of the catch between Canadian and American fishing interests. Limitation of the total catch was not regarded as a matter of paramount importance, and the fishing interests believed that future runs would be assured by increased fish culture rather than by a limitation of fishing activity.[18] The season of 1902 was such a failure,[19] however, that J. P. Babcock, the British Columbia Fisheries Commissioner, stated:[20] "Our fishermen should be permitted to take only that portion of the run which is in excess of the number necessary to the

[14]*Daily Columbian*, Jan. 28, 1902; *Daily Colonist*, Feb. 4, 5, 1902.

[15]Trap-nets cost from $3,000 up; purse-seines from $1,000 up.

[16]The canners were only moderately successful in their agitation. By an Order-in-Council of May 2, 1904, the Canadian Commissioner of Fisheries was authorized to issue licences for the operation of trap-nets in the Straits of Juan de Fuca, but only a few were issued.

[17]Report of the Department of Fisheries (*Canada, Sessional Papers*, 1903, no. 22, pp. xii-xiv).

[18]*Daily Colonist*, Feb. 5, 1902.

[19]The British Columbia pack of Fraser sockeye salmon for 1902 was 293,477 cases. This was a comparatively small "small year" pack.

[20]*Report of the Commissioner of Fisheries, British Columbia*, 1902, p. G4.

perpetuation of the species. The present regulations for the Fraser river do not accomplish the object of their enactment. Those in force in 1901 were shown to be effective, and no further restrictions should be placed upon fishing in that stream in the known years of abundance. It was demonstrated in 1902 that these regulations did not produce the desired result, so it is evident that more stringent restrictions should be enforced during the years of poor runs."[21]

Babcock fully appreciated the difficulties, particularly that further reduction of fishing in Canadian waters would mean that Canadian fishermen and canners would be penalized for the benefit of the American fishing interests.[22] T. R. Kershaw, Fisheries Commissioner for the State of Washington, also saw the injustice of the situation and visited Babcock at Victoria in order to discuss the possibility of establishing an American fish hatchery on the Fraser River. Kershaw's conference with Babcock (who was supported by Eberts, the British Columbia Attorney-General) was not encouraging, so he approached Professor Prince at Ottawa and Senator Foster at Washington, D.C. International correspondence followed, but the Canadian government was not favourably inclined towards the suggestion, resenting the implication "that Canada should lend herself to the enlistment of the services of a foreign government for pecuniary aid in the furtherance of her own national and domestic obligations."[23] George Bowers, the United States Fish Commissioner, thereupon suggested that "the only mutually satisfactory arrangements relating to the question would be the adoption by the state of Washington and the government of Canada of identical regulations for the Fraser river and its affluents and the establishment by each party of hatcheries on identical scales."[24] He proposed that a conference should be called between representatives of his own bureau and of the Washington State Fisheries Commission, the Canadian Department of Marine and Fisheries, and the Fisheries Department of British Columbia.[25]

Meanwhile the situation in the Fraser River fisheries was

[21]The four-year cycle of sockeye runs was at that time characterized by three consecutive poor years followed by a "big year."

[22]*Report of the Commissioner of Fisheries, British Columbia*, 1902, pp. G4, G5.

[23]George Bowers (U.S. Fisheries Commissioner) to John Hay (American Secretary of State), Nov. 25, 1903 (*Report, Washington State Fish Commissioner*, 1903-4, pp. 20-4).

[24]*Ibid.* [25]*Ibid.*

becoming strained. The catch of 1903 (204,809 cases on the Canadian side, 167,211 cases on the American), was a very poor one and both sides were ready to put the blame on the other. Commissioner Babcock claimed that the Americans were primarily to blame because of their refusal to impose limitations "either of time or method" in respect of Puget Sound fishing.[26] The Americans contended that British Columbia regulations were ineffective because of continual evasion. Escapement of fish was supposed to be ensured by the weekly closing time effective in British Columbia waters, but actually the majority of the fish which had been permitted to "escape" were later caught by fishermen who pursued them far up the river.

Realizing the need for expressing an official opinion, the recently-created Puget Sound Salmon Association held a meeting on July 6, 1904, and decided in favour of an international conference such as that proposed by Commissioner Bowers. It was at first believed that the Rathbun-Wakeham report of 1896 should be used as a basis of negotiations, but a close study demonstrated that its recommendations did not meet the present situation.[27] Commissioner Bowers's proposed conference did not take place. Canada took the initiative when Professor Prince, after a visit to the Pacific coast, recommended the early appointment of a British Columbia Fisheries commission "having all the requisite powers for fully investigating the fisheries as a whole, and taking evidence, visiting the fishing grounds, and making an exhaustive survey of the whole subject. The commission would possibly include in its work a mutual conference with a United States Commission in the State of Washington."[28] His proposal, supported as it was by numerous urgent petitions from Fraser River fishing interests, led to the appointment of an investigating commission by an Order-in-Council of July 22, 1905. Although the Commission was appointed ostensibly to examine the fishery situation on the entire British Columbia coast, stress was laid on the fact that the Fraser River question urgently demanded solution. The Commission was enjoined to investigate: "close seasons; mesh, depth and length of nets; limitations of net-

[26] *Report of the Commissioner of Fisheries, British Columbia*, 1903, F1-2.

[27] Kershaw to Foster, July 28, 1904 (*Report, Washington State Fish Commissioner*, 1903-4, pp. 28-9).

[28] Report of the Department of Fisheries (*Canada, Sessional Papers*, no. 22, 1905).

ting in Fraser river and estuary; conditions in granting of leases and licenses . . . ; limitations of amount of gear; areas for pound-nets or trap-nets and other nets; limitation of canneries and suggested abolition of canners' fishing licenses."[29]

The work of the Commission (of which Professor Prince was Chairman) commenced on September 19, 1905. After a year of sittings, hearings, and trips, and a conference with the Washington Special Fish Commission recently appointed by the State of Washington, the Commission was ready to make certain interim recommendations to its government, provided that the Washington State Commission would make similar recommendations to its government. At a second conference of September 19, 1906, the Washington Commission agreed to this stipulation. The Prince Commission thereupon made the following recommendations to Ottawa: salmon nets should be limited to a maximum depth of 60 meshes and a maximum length of 900 feet (150 fathoms); the weekly "close time" in the waters between New Westminster bridge and Mission should be 60 hours (instead of 36) in the poor years; such Canadian trap-nets as were permitted to operate (at Boundary Bay and off the south-west coast of Vancouver Island) should be closely regulated and heavy fines should be imposed for infractions of the rules; and an effective, speedy, launch patrol should be established. Similar recommendations were made by the Washington State Commission to its government, with a proposed "close time" for sockeye salmon fishing commencing in the latter part of August and running three weeks.[30] The final report of the Commission, made in 1907, differed little in its international aspects from the interim report of 1906.

[29]Instructions appended to Order-in-Council of July 22, 1905 (*Report, British Columbia Fisheries Commission*, 1905-7, p. 8).

[30]*Report, British Columbia Fisheries Commission*, 1905-7, appendix A. To offset the declining run of sockeye an increase in the number of hatcheries designed for artificial propagation was advocated. It was also suggested that fishing for sockeye be prohibited absolutely for a period by both United States and Canadian fishermen. Provision was made by the State of Washington for a weekly close period of thirty-six hours similar to that adopted on the Canadian side. Unfortunately there was a lack of knowledge as to the rate at which the fish proceeded towards the spawning grounds which limited the value of the close season. It was necessary to adjust the dates at different points on the route of the fish, otherwise those allowed to escape at one point were liable to be caught nearer the Fraser River. (Annual report of the Department of Fisheries, *Canada, Sessional Papers*, no. 22, 1906, appendix 10, p. 202).

Action was first taken by the State of Washington. An Act of March 19, 1907, introduced a weekly closing time for sockeye salmon extending from 6 P.M. Friday to 6 A.M. Sunday, and an annual closing time of three weeks, beginning on August 25 and ending on September 15. A more satisfactory method of closing the trap-nets was required, and a stiff penalty was authorized for failure to observe this requirement. The Act took effect immediately upon its passage.[31] Canadian action was tardier but somewhat more comprehensive. By an Order-in-Council of June 8, 1908,[32] the fishing regulations for the Province of British Columbia were rescinded *in toto* and a new set, comprehending the substance of the recommendations of the Commission, promulgated. The only important deviation from the recommendations was the reduction of the closing time in the Mission-New Westminster fisheries from 60 hours to 48 hours. The new regulations also introduced a stricter cannery licence system which in effect gave the Minister of Marine and Fisheries the power to check the expansion of the canning industry beyond prudent limits.

While these negotiations between Canada and Washington were helpful, they promised little for the future. The degree of co-operation was bound to vary spasmodically with changes in the complexion of political affairs on each side of the line. The paramount need was a joint commission with control of the international waters. Such a joint commission could not be established through negotiations between the Canadian and Washington governments, for the latter had not the necessary treaty-making powers, these being reserved by the constitution to the federal government. Hence negotiations between the two federal governments commenced, and on April 11, 1908, the Bryce-Root Treaty was signed.[33] Ratifications were exchanged on June 4 and on July 1, 1908, the treaty was proclaimed. It provided for the establishment of an international commission, consisting of one expert named by each government, which was empowered to draw up regulations concerning: (1) the time, seasons, and methods of fishing in all waters contiguous to both the United States and Canada; (2) the nets, engines, gear,

[31] *Washington Sessional Laws*, 1907, chap. 247.

[32] Order-in-Council, *Statutes of Canada*, 1908, pp. ccxxix-xxxiv.

[33] *Treaties, Conventions, International Acts, Protocols and Agreements between the United States of America and Other Powers, 1776-1909*, vol. I (1910), pp. 827 *et seq.*

apparatus, and appliances, which might be used in such waters. All such regulations were to be international in scope, that is, they were to apply indiscriminately to the waters in question. The Commission was also to study the problem of fish culture and make periodical recommendations. It was to exercise its control throughout the duration of the convention; and its regulations were to remain in force for a period of four years from the date of their executive promulgation, and thereafter until one year from the date upon which either government notified the other of its desire for a change in the regulations. Any alterations made by the Commission would require the executive promulgation of the government before becoming valid.

The Commission consisted of Dr. David Starr Jordan of Stanford University for the United States and Professor E. E. Prince, Canadian Commissioner of Fisheries. The code of regulations agreed to on May 29, 1909, contained the following general regulations: (1) there should be an adequate and efficient hatchery system; (2) there should be a concurrent and uniform system of licences for fishing in treaty waters; (3) enforcement of regulations should be attended to in Canadian waters by Canadian officials and in American waters by American officials; (4) violations of regulations by Canadians should subject them to penalties imposed by Canadian laws, and by Americans to those imposed by American laws. Certain recommendations specifically applicable to the Fraser River fishing district were made: (1) there should be a close season for all salmon between the dates August 25 to September 15 inclusive, except that cohoes might be caught outside the Straits of Juan de Fuca between September 1 and 15; (2) there should be a 48-hour close time, the period to begin and end 12 hours earlier in Washington than in British Columbia treaty waters, so that at these periods the fish entering such waters would have a clear run through them; (3) trap-nets should be constructed to permit effective sealing of the "leads" during the closing times. Regulations calculated to ensure the salmon a moderately clear passage of escape between the trap-nets were also proposed. Drag-seines were not to be used within a mile, and purse-seines within three miles, of river-mouths. Gill-nets were not to exceed 900 feet in length nor 60 meshes in depth.[34]

Canada amended the Fisheries Act during the following parlia-

[34] *Report of the Commissioner of Fisheries, British Columbia*, 1909, pp. 124-7.

mentary session to permit of the proclamation of these regulations whenever the United States should see fit to adopt the necessary legislation, but political activity in the State of Washington was too strong. In the next session of the Washington State Legislature the following resolution was passed:

Be it resolved by the House, the Senate concurring, That the people of the State of Washington, through the legislature now assembled, most emphatically and earnestly protest against the Federal Government of the United States assuming or attempting to assume the jurisdiction and control of any of the fisheries within the territorial limits of the State of Washington, and we particularly protest against the joint control of any part of said fisheries by the United States Federal Government and the Dominion of Canada as proposed by a treaty convention between the United States and Great Britain.[35]

The State of Washington hereby affirms its title to all the public fisheries within its territorial limits, and insists that it has the exclusive right, by virtue of its sovereignty, to keep, control and regulate all the fisheries within its borders without Federal interference.

Be it resolved further, That a copy of this resolution be forthwith transmitted to the United States senators and representatives from the State of Washington, and that they hereby be requested to use all honorable means within their power to prevent any action of the Congress tending to ratify[36] or make said treaty effective.[37]

Against such opposition, the bill to make the International Commission's proposed regulations effective made little headway in Congress, and finally disappeared from view. By 1914 the Canadian government had become extremely impatient at the delay in the passage of the bill and notified the United States government that it would abrogate the treaty unless the latter took the legislative steps necessary to make the convention effective. An appeal by President Wilson that Congress expedite the passage of the required bill[38] was ignored, and on October 19, 1914, the Canadian government notified the United States that it intended to resume its liberty of action in the matters with which the treaty was concerned.[39] Thus these negotiations, which had promised so much, came to an

[35]Acting for Canada.

[36]The American Senate had already ratified the treaty, but had not passed the legislation necessary to give effect to the regulations proposed by the Joint International Commission.

[37]*Washington Sessional Laws*, 1911, p. 656.

[38]*New York Times*, Feb. 28, 1914.

[39]*Treaties and Agreements Affecting Canada in Force between His Majesty and the United States of America, etc., 1814-1913*, p. 181.

ignominious end. Politics and petty sectionalism had triumphed over broader considerations.

Satisfied that its sovereign rights were not impaired, Washington State resumed its 1906 policy of negotiating with the Canadian federal government. On March 6, 1915, the Washington Legislature approved a statute which was to become effective only if comparable Canadian laws were passed which would: (1) prohibit at all times the taking of sockeye salmon above New Westminster bridge; (2) close the other Canadian waters of the Fraser River fishing district to *all* fishing (not merely *net* fishing) during the period August 25 to September 15; (3) provide for a 48-hour weekly close time in all Fraser River fisheries on the Canadian side; (4) prohibit during the month of June the taking of salmon in the open sea within three miles from the entrance to the Straits of Juan de Fuca.[40]

The strained feeling between Canada and the United States, which obtained until the latter country entered the war, constituted an effective barrier to international fishery negotiations. In 1917, however, the entry of the United States into the war, the shortage of food, and the failure of the expected "big run" of Fraser River sockeye due to the rock-slide at Hell's Gate, all combined to renew the willingness of the two countries to resume negotiations for an international fisheries treaty. The run of 1917 (the spawn of 1913) consisted for the most part of sockeye spawned in the Fraser River system below Hell's Gate,[41] and was comparatively very poor.[42] Canners of British Columbia and Washington packed only 559,702 cases of sockeye, which was a very meagre showing for a "big year" compared with the "big year" (1913) with a pack of 2,409,760 cases.[43]

The situation was considered sufficiently serious to justify the appointment of an investigatory commission, and a Canadian-

[40] *Washington Sessional Laws*, 1915, chap. 31, sec. 54-59.

[41] J. P. Babcock, "The Fraser River Situation a Reclamation Project" (*Report of the Commissioner of Fisheries, British Columbia*, 1919, appendix v).

[42] Under normal circumstances the "big year" was characterized by heavy spawning in the upper reaches of the river. It is now generally believed that the "big year" of pre-war times is to be explained by a prehistoric rockslide or other obstruction which for three years prevented the salmon native to the upper portion of the Fraser from reaching their spawning grounds; but which by the time the fourth year came around was washed away, and thus permitted the normal amount of spawning above the temporarily-obstructed point.

[43] See Table III, p. 12.

American Fisheries Conference was appointed in December, 1917, composed of J. D. Hazen, G. J. Desbarats, and W. A. Found, representing Canada; and William C. Redfield, E. F. Sweet, and H. M. Smith, representing the United States. An extensive survey revealed that conditions in the Fraser River fisheries had become extremely serious, a thirty million dollar industry having fallen to a three million dollar one, and being threatened with complete extinction by over-fishing. The attitude of the Canadian fishermen was one of injured innocence. They claimed that they were forced to observe regulations which greatly restricted their catch, while the American fishermen, with their free use of purse-seines and trap-nets, caught two-thirds of the salmon. On the other hand, the Washington fishing interests contended that in proportion to capital invested their catch was not excessive, and that their appliances were those best suited to their waters, which were too clear to permit gill-net fishing.[44] While both sides were apparently eager for international action, the situation was complicated by the unwillingness of the United States Fisheries Commissioners to invade the sovereign rights of the State of Washington.

The draft treaty drawn up by the Hazen-Redfield Commission was obviously based on the 1908 treaty, and need not, therefore, be considered here. Negotiations for the conclusion of a new international treaty commenced. This convention was approved by the Canadian House of Commons on October 21, 1919,[45] but

[44]The gill-net is constructed to catch and hold the salmon by the gills, and may be as long as 1,200 feet. Its use is most efficient in water which is not clear and in which it is difficult for the salmon to see the meshes as at the mouth of the Fraser, the waters of the Fraser passing well out into the Gulf of Georgia forming an area suitable for the use of these nets. In American waters nets have been coloured to reduce the possibility of being detected by the fish.

The purse-seine, which runs from 900 to 1,200 feet in length, is a device for capturing the fish by an enclosing movement and is used from a power boat. When a school of salmon is sighted, one end of the net is put overboard and fastened to a buoy or a stationary row boat and the power boat then circles the school while the net is paid out over a roller at the stern. The circle is completed and the net is closed or "pursed" by means of ropes which pass through iron rings fastened on the bottom of the seine.

In trolling, a hook and line is used from a rowboat or a power boat. Several lines may be used, some from the stern and others on poles projecting from the sides of the boat. This method is used mainly in the capture of springs and cohoes. A "spoon" or piece of bright metal is attached to the hook to attract the fish, and the depth is controlled by lead sinkers of varying weight.

[45]*Canada, House of Commons Debates*, 1919, pp. 1176-81.

Washington State requested the Senate to refuse to ratify and effectively killed the treaty.[46] The Canadian government then dispatched a delegation to the Pacific coast to take up the matter "with the Fisheries Board of the State of Washington, which had recently been appointed with administrative power sufficiently wide to enable it to take whatever steps were necessary for effectively dealing with this matter."[47] In December, 1921, a conference was held between the negotiants and both sides agreed to the desirability of *stopping all fishing in the Fraser River fishing district for a period of five years.* The Canadian representatives, supported by the British Columbia Fishermen's Association, demanded that at the end of the proposed five-year close period purse-seines should be prohibited and the use of trap-nets and gill-nets properly regulated, their claim being that otherwise the benefits of the fishing truce would soon disappear. Washington State representatives were unwilling to accede to this proposition and the conference broke up abruptly.

The Chief Inspector for the Dominion government stated in 1921:

> The runs in recent years show conclusively that in the past there has not been a sufficient escapement of parent fish of the sockeye variety to the spawning grounds. That being the case and if fishing operations were carried on with no greater intensity than up to several years ago, the necessity for some curtailment would still be apparent, but in the light of the last few years' experience when larger quantities of gear were used and in spite of which the catch became smaller, the necessity for some drastic action is much more evident and there is no alternative but to provide immediately for a much larger escapement.
>
> Undoubtedly the first consideration of the administration is the conservation of the supply as it can be readily realized that if the supply of raw product is not maintained it will only be a matter of time when the salmon fishing industry will be a thing of the past. The most efficacious way of assuring an adequate escapement of parent fish is by means of curtailing the fishing in the way of increased weekly closed periods, a shorter fishing season, the lowering of the fishing boundaries, or all *three methods* at the same time increasing to the greatest extent possible fish cultural operations and efforts in the way of clearing from the salmon streams all obstructions to the ascent of the parent fish to the spawning beds.
>
> To insure a sufficient escapement of salmon it may become necessary to so curtail fishing operations as to make them unprofitable to both fishermen and canners and other branches of the industry until the runs have been again built up. In this way the salmon supply would be preserved but it is

[46] Cf. Before the Committee on Foreign Relations of the United States Senate (in re Sockeye Salmon Treaty).

[47] *Report, British Columbia Fisheries Commission*, 1922, p. 14.

possible that the industry, which is already in a precarious position financially owing to the last few years' experience, may be irretrievably injured and the situation is so serious as to require the most careful consideration.

On the other hand if no prompt and adequate action is taken and if the runs are permitted to decrease each season it will be only a very short time before the runs of sockeye are so depleted as to result in the loss of employment to thousands of fishermen who now depend on the sockeye fishing and in addition the numerous canning establishments will be unable to operate for lack of a supply of this particular variety of salmon.[48]

The Dominion government, realizing that the abrupt termination of the conference nullified what might have proved to be a very satisfactory convention, determined to renew its parley with the State of Washington. A Canadian Order-in-Council of July 10, 1922, appointed still another fisheries commission to take up the threads of negotiation where they had been abruptly dropped by the previous delegation. On arrival in British Columbia, it discovered that Canadian opinion in respect to a five-year closure period for fishing had undergone a considerable change. While a few canners and fishermen were still in favour, the majority had swung around to the view that a close time at the height of the salmon run combined with a longer weekly close time would prove a more feasible solution. "Their attitude would appear to be due to a somewhat selfish point of view, inasmuch as they seem to be satisfied to continue so long as the few are left alone to deal with the diminished runs. In fact we were told by the head of one of the largest canning companies in British Columbia, who closed ten of their canneries but operated four of the ten in operation on the Fraser last year, that he had benefited by the closing of so many canneries, especially competitors' canneries, and was able to get along with things as they are, and did not want to be prevented from packing sockeye for five years."[49] The Commission found the Washington State Fisheries Board, however, opposed to all proposals favouring partial closing during the height of the salmon run. It still favoured, or pretended to favour, the almost impossible "five-year plan." It was therefore agreed in conference that the representatives should report to their respective governments in favour of such a plan. By far the most constructive recommendation made by the Commission was that which had already been made

[48]Report of the Department of Fisheries, 1921-2 (*Canada, Sessional Papers*, 1923, no. 6, appendix 1, p. 46).

[49]*Report, British Columbia Fisheries Commission*, 1922, p. 16.

by two previous commissions: the establishment of a joint international fisheries commission. In this case, however, it was proposed that the two administering powers involved should be the Canadian and Washington State governments, not the two federal governments. The Commission did not seem to understand that under the terms of the American constitution the State of Washington had not the treaty-making powers necessary to conclude such an arrangement. It is hardly necessary to add that the recommendations received scant consideration from the two governments.

The years following the unsuccessful negotiations of 1922 were relatively quiet. The sockeye salmon run in the Fraser River, although much poorer than in pre-war days, was sufficient to keep in operation those canners who were "satisfied to continue so long as the few are left alone to deal with the diminished runs."[50] But the international fisheries question was by no means definitely settled. In spite of constantly improving methods of fish culture, the Fraser River fisheries showed little improvement during the period 1922-8. The combined Canadian-American sockeye pack for 1928 (90,343 cases) was indeed one of the three poorest on record since the infant days of the industry.[51] As a consequence negotiations for

[50]The total British Columbia and Washington sockeye packs for the following four-year periods are:

1897-1900.....	3,236,958	1913-1916.....	3,235,634
1901-1904.....	3,010,043	1917-1920.....	841,333
1905-1908.....	2,496,330	1921-1924.....	431,165
1909-1912.....	2,580,922	1925-1928.....	518,806

It will be observed that the pack for the period 1925-8, though showing a slight improvement over the previous four-year period, was less than 17 per cent of the 1913-16 pack.

[51]The others were 1918 (70,420) and 1923 (79,057 cases). "The Fraser River basin contains 1,514,000 acres of spawning area. That area has not been lessened or contaminated. It is as extensive and as suitable for the propagation of sockeye as formerly. The vast lake-waters of the Fraser are as rich in the natural foods of the young sockeye as ever. The channels of the river are open and free to the passage of such fish as are permitted to enter them. All that is required to produce the abundant runs of former years is a sufficient number of fish to seed them as abundantly as they were seeded in those years. No other waters afford so alluring a field for exploitation.

"The restoration of the sockeye salmon fisheries of the Fraser River System is the greatest reclamation project in which Canada and the United States can jointly engage." The pack of sockeye in waters other than the Fraser remained reasonably constant, and methods of control which were not dependent on international agreement were effective. The lack of proper restrictions on the capture

the conclusion of an international fisheries treaty again began. Except in one important respect the new treaty differed little from its precursors of 1908 and 1919. The difference lay in a clause which provided that the international commission, the establishment of which the treaty contemplated, was to devise regulations which would ensure an approximately equal division of the season's sockeye catch between Canadian and American fishermen. This clause was introduced to silence the Canadian complaint that American fishermen secured two-thirds of the catch even though the fish were spawned in Canadian waters.

While the treaty in its broader aspects was satisfactory to the Conservative opposition in Parliament, it did not please them in its details. Certain clauses which proposed to give considerable powers to the Commission in connection with the acquisition of property for fish culture operations were vigorously opposed. Furthermore, a new development on the Pacific coast promised to make the treaty ineffective. In this season of 1928, large numbers of American purse-seine fishermen decided to try the extra-territorial waters west of the entrance to the Straits of Juan de Fuca. Here, subject to no restrictions, they found a salmon fisherman's paradise, for they were able to intercept the fish before they entered the straits. Partly because of this new development, and partly because of the minor objections suggested above,[52] legislative consideration of the treaty was temporarily halted, and the document was revised so as to lessen the powers of the contemplated international commission, and to introduce provisions for the control of all nationals of either country who fished in the extra-territorial waters beyond the Straits of Juan de Fuca.[53] In this amended form the treaty was approved by the Canadian Commons on May 29, 1930.[54] It was not ratified,

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of Fraser River sockeye which passed through both American and Canadian waters gave encouragement to the greed of fishermen on both sides of the line (J. P. Babcock, "A Canadian-American Salmon Reclamation Project," *Paper read at a meeting of the American Fisheries Society, Seattle, Washington, Aug. 30, 1928*, p. 3).

[52]These were greatly magnified in importance by the *Mail and Empire*, a Conservative organ: "It is felt that the proposed treaty in giving the United States equal authority in Canadian Territory is creating a precedent that may strike a deadly blow at Canadian independence" (May 20, 1929).

[53]*Canada, House of Commons Debates*, 1929, pp. 2630, 3186-9; also, 1930, pp. 2798-2814.

[54]*Ibid.*, 1930, p. 2814.

however, by the United States Senate and remained as pending until 1936, mainly through the opposition of interests in the State of Washington. In the meantime, attempts were made to overcome opposition to the treaty. In 1935, Governor Martin of Washington brought the question to the attention of the Senators from that state, to the representatives of the fishing industry, and to the Washington State Planning Council, so that a satisfactory understanding could be reached with regard to an international arrangement for the protection of the Fraser River sockeye. Negotiations in which representatives of the fishery interests in British Columbia were included, were carried on, and eventually it was agreed to recommend the ratification of the 1930 treaty with certain amendments. On January 16, 1936, the following resolution of ratification was passed by the Senate:

> Resolved (two-thirds of the Senators present concurring therein), That the Senate advise and consent to the ratification of Executive M, Seventy-first Congress, second session, the convention between the United States and Canada for the protection, preservation, and extension of the sockeye salmon fisheries of the Fraser River system, signed at Washington on May 26, 1930 subject to the following understandings to be made a part of such ratification:
>
> (1) That the International Pacific Salmon Fisheries Commission shall have no power to authorize any type of fishing gear contrary to the laws of the State of Washington or the Dominion of Canada;
>
> (2) That the Commission shall not promulgate or enforce regulations until the scientific investigations provided for in the convention have been made, covering two cycles of sockeye salmon runs, or 8 years; and
>
> (3) That the Commission shall set up an advisory committee composed of five persons from each country who shall be representatives of the various branches of the industry (purse seine, gill net, troll, sport fishing, and one other), which advisory committee shall be invited to all non-executive meetings of the Commission and shall be given full opportunity to examine and to be heard on all proposed orders, regulations, or recommendations.[55]

The first amendment was due to fear that the International Commission might permit the reintroduction of traps which had been prohibited by the State of Washington. The second amendment was passed in order to meet objections that too little was at present known of the life-history and habits of the sockeye salmon to permit of intelligent regulations. The third amendment was made in order to make sure that the Fisheries Commission should avail itself of the advice and assistance of those directly interested in the industry. The treaty was ratified by the Canadian Parliament on July 28, 1937.

[55] *Senate Congressional Record*, June 16, 1936, p. 9729.

PART II

THE HALIBUT AND OTHER FISHERIES

CHAPTER VIII

HALIBUT

HALIBUT are found in both the North Atlantic and North Pacific Oceans, the latter being the more important, and producing about 60 per cent of the world's catch. Of the remainder, about 33 per cent is caught by European countries, and about 7 per cent by countries on the Atlantic coast of North America.[1]

The Pacific coast Indians were almost entirely dependent on fish for food, and halibut was next to salmon in importance. It has been said that one hundred and fifty years ago they caught as much as three million pounds of halibut in one year.[2] It was estimated that they took 3,165,000 pounds in 1885 and that after 1888 British Columbia Indians alone consumed over 600,000 pounds annually. Crude though the hooks appear compared with modern equipment, the Indians were expert in catching halibut.[3] Catches of 100 fish per day to a canoe are recorded.[4] Part of the catch was consumed fresh and the remainder cut in strips and dried for winter use.

Halibut fishing by Europeans did not develop to any extent until the North American continent had been spanned by the first railway. Halibut were shipped in ice by schooner from Puget Sound, Victoria, and the west coast of Vancouver Island,[5] to San Francisco,[6] and apparently arrived in good condition. It was suggested in 1878[7] that this trade showed prospects of increase as there was a constant demand in the San Francisco market, where halibut

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[1] *Report of the International Fisheries Commission*, 1928, p. 6. See J. Q. Adams, "The Pacific Coast Halibut Fishery" (*Economic Geography*, July, 1935, pp. 247-57).

[2] "Dawn of a Great Pacific Industry" (*Western Fisheries*, June, 1936).

[3] A description of the hooks used by the Indians is found in W. F. Thompson and N. L. Freeman, "History of the Pacific Halibut Fisheries" (*Report of the International Fisheries Commission*,, no. 5, 1930, p. 13).

[4] Captain Cook, in 1778, mentioned a catch of 100 halibut in an hour near Chumagan Islands, and Pérouse, Vancouver, and other explorers have references to halibut.

[5] In 1879, halibut were reported as being caught at Nahwitti, situated in the Goletas Channel at the northern extremity of Vancouver Island.

[6] Fresh halibut were shipped in ice to San Francisco by the regular steamers which plied between Victoria and San Francisco three times a month. See Report of the Inspector of Fisheries, British Columbia, 1878 (*Canada, Sessional Papers*, no. 3, 1879, appendix 17, p. 296).

[7] *Ibid.*

retailed at fifty cents per pound. American fishermen objected to the sale of Canadian halibut and attempts were made to restrict it. Canadian fishermen found it difficult to ship full schooner loads, since their operations were limited. They were forced to pay the regular freights and this placed them at a disadvantage in San Francisco and limited them largely to the local market.[8]

International complications developed at an early date. The Inspector reported in 1879 that shortly before his arrival at Nahwitti "an American vessel, provided with ice, had been surreptitiously fishing in the neighborhood, and had recently sailed for San Francisco with a cargo of halibut."[9]

> This vessel the *Emily Stephenson*, Henderson of Astoria, Oregon, on her first voyage in May, proceeded to Knight's Inlet for ice, which she obtained from the glaciers near the village of Sawatti; she then filled up at Newitty with halibut caught on the bar, varying in weight from 50 to 200 pounds each, and aggregating, it is reported, 27,000 pounds. On her second voyage, having retained a sufficiency of her ice cargo on board, she again filled up with halibut to probably a considerably larger amount. These particulars were conveyed to you in my letter of the 15th November, and I then asked for instructions for my guidance in the event of a renewal, only too probable, in the approaching spring of these clandestine invasions.
>
> The fish thus illegally procured entering the markets of San Francisco in a fresh condition, realize to the importer a wholesale price of some twenty cents per pound, since halibut is ordinarily quoted in the market lists as retailing at fifty cents and upwards. Partially, to meet the demand a constant supply is sent from Victoria by dealers by the frequent steamers plying between the two ports. But these legally exported fish are met with the burthen of a heavy import duty, while the others enter free. Putting every other consideration aside the position of the provincial dealer, under this point of view, is certainly a hard one. It is needless, however, to repeat the story of the position with regard to our neighbours which we occupy in consequence of the abrogation, so far as British Columbia is concerned, of the reciprocity provisions of the Washington Treaty, but it may at least be argued that, while on the opposite side the letter of the treaty, as construed with reference to this Province, is rigidly enforced, our fishermen in turn are entitled to a corresponding protection.

The Northern Pacific Railway was completed in 1887, and catches were shipped east from Tacoma in 1888. Because of high freight charges, shipments from Vancouver over the Canadian Pacific Railway were not made until 1892.[10] Few of the early at-

[8] *Ibid.*, 1887 (*Canada, Sessional Papers*, no. 6, 1888, appendix 7, p. 245).

[9] *Ibid.*, 1879 (*Canada, Sessional Papers*, no. 9, 1880, p. 283).

[10] Report of the Department of Fisheries (*Canada, Sessional Papers*, 1889, no. 8, p. 237).

tempts at commercial fishing of halibut were financially successful and most of the fish were still caught by the Indians who used small boats and consequently were confined to the halibut banks in sheltered waters. It was chiefly marketed locally, since difficulty was experienced in shipping the halibut in good condition, and losses were incurred from spoiling. In 1889, 1,777,250 pounds of halibut were landed on the Pacific coast: 605,000 pounds in British Columbia, 685,000 pounds in Washington, and 487,250 pounds in Oregon.[11] Freight charges were high, the cost of ice was an important factor, and eastern dealers were said to be not particularly favourable to the Pacific coast industry. However, the increasing scarcity[12] of halibut on the North Atlantic convenient to the markets in Boston and New York led to a rise in prices which assisted the Pacific industry. Trade connections were developed and improvements made in the handling of the catch.

The halibut banks near at hand were first fished, but gradually the fishery was extended to the grounds six hundred miles north from Cape Flattery. Puget Sound and the inner British Columbia waters were gradually depleted and the fishermen had to go to more unsheltered waters. The American fishermen with sailing schooners encountered difficulty from lack of wind in the sheltered waters of Puget Sound and south-eastern Alaska, which led to delay in transportation or high costs for towing. In British Columbia, steamers were used almost entirely, since vessels going from Vancouver to the British Columbia banks had to pass through a long inside passage.

American fishing vessels continued to trespass, and, as the Canadian fishery became more important, opposition to them increased. In 1897 it was recommended that more efficient protection should be provided against poachers and foreign fishermen "than can be supplied by one small steam launch and an occasional hired tug, which are never found to have the speed or sea-going qualities necessary for effective service."[13] In 1901, a new cruiser was built in Vancouver to increase the efficiency of the protective service.

A halibut fishery was first successfuly developed in 1893 on

[11]Thompson and Freeman, "History of the Pacific Halibut Fisheries."

[12]H. A. Innis, *The Cod Fisheries* (New Haven, 1940), pp. 330-1.

[13]Annual Report of the Inspector of Fisheries, British Columbia, 1897 (*Canada, Sessional Papers*, 1899, no. 11a, appendix 9, p. 223).

Porcher Island, near Freeman's Pass, in Hecate Strait. A plant was erected, and ice for preserving the fish was obtained. The steamer *Capilano*, a small freighter owned by the Union Steamship Company, was chartered and anchored in the harbour while the fishermen went out in their boats. When a sufficient number of fish were caught they were taken to New Westminster and shipped to New York, while the fishermen continued fishing and stored their catch for the following trip. About 200,000 pounds were shipped the first year, but operations ceased in 1894.

Shore fishing could not attain any degree of permanency because the banks near shore were soon depleted, and methods had to be adopted which would enable fishing to be carried on in open water. Boats were towed by steamer to the more distant banks. Dories were first used in 1895 and these increased efficiency as they could be stored on the vessel's decks. In 1894, the New England Fish Company used the *Capilano*, and the American Fishing Company the steamer *Coquitlam* in this way. The *Delaware*, an old stern wheel steamer, was towed out and used as headquarters. The Victoria Fishing and Trading Company operated the steamer *Thistle* at Goshen Harbour. Of the five or six companies engaged in the halibut fishery, only the New England Fish Company, which had trade connections with Boston fish dealers who controlled the halibut market, was financially successful. The other companies either dropped out or were absorbed by it. The New England Company, a strong organization, with headquarters in Boston, pioneered in the efficient handling of fresh halibut and in placing it in first-class condition on the eastern market. It was established first at Port Haney and New Westminster, and later at Vancouver, and made its first shipment to the East in 1890. The Canadian Pacific Railway had no refrigerator cars, but arrangements were made for six of them to be built to the Company's specifications. No shipping charges were to be paid if the shipment arrived in a spoiled condition. The cars proved efficient and the most serious transportation problem of the industry was solved.[14] In 1895, the Company operated the *Capilano*, *Coquitlam*, and the *Thistle* for the accommodation of the fishermen and in transporting the fish to Vancouver. In that year the catch amounted to 900,000 pounds, of which 750,000 pounds were shipped to eastern markets.

The first steamer specially built and equipped for the fishery,

[14] "Dawn of the Halibut Fishery" (*Western Fisheries*, June, 1936).

the *New England*, commenced operations in 1898, and landed 1,600,000 pounds of halibut during six months of the season 1898-9. In the same year, a second steamer, the *Edith*, similarly equipped and operated by a Tacoma company, entered the industry, and later other vessels such as the *Kingfisher*, *Manhattan*, *Flamingo*, *Celestial Empire*, *Onward Ho*, and the *Roman*, were added. These vessels marked the definite decline of the shore fisheries. Steamers made it possible for fishermen to go much further afield. Only a comparatively small part of the British Columbia coast, chiefly the main channels, were properly charted, and the uncharted areas had been surveyed by early halibut skippers. Captain Freeman, a Newfoundlander, who had his training on the Labrador coast, did outstanding work in charting. Halibut were abundant and a vessel could load in a few days. The size of the catch was limited by the market rather than by the quantity of fish available. The period of fishing was affected by the market and limited to the winter months when Atlantic halibut were scarce and prices higher. As the demand for western halibut increased, the period was extended, and in 1900 the *New England* fished throughout the year. The number of steamers operating off the British Columbia coast was six in 1906, eleven in 1909, and thirteen in 1911. Schooners were also provided with power and began to frequent the outer waters. These developments involved fishing in deeper water and the use of more gear.

By 1910, depletion of the inner waters was definite. Halibut had almost completely disappeared from Puget Sound, the banks of Hecate Strait had to be abandoned, particularly by larger vessels, and smaller and poorer fish were caught.[15] Official reports of the Canadian government repeatedly drew attention to depletion, pointing out that the industry was deserting the mainland harbours and passing to the Queen Charlotte Islands and the West Coast of Vancouver Island. Study of the halibut had been merely incidental, and associated with the study of other fish, but in 1914 a preliminary report was made on its life-history.[16] In 1915, an inves-

[15]It requires about twelve years for the halibut to reach maturity, and it is not of commercial size until about five years of age. See W. F. Thompson and R. Van Cleve, "Life History of the Pacific Halibut" (*Report of the International Fisheries Commission*, no. 9, 1936, p. 14).

[16]W. F. Thompson, "A Preliminary Report on the Life History of the Halibut" (*Report of the Commissioner of Fisheries, British Columbia*, 1914, pp. 76-99).

tigation was carried out under the supervision of the British Columbia Department of Fisheries, and its report[17] stated that

> Among the facts presented in the following pages, the one which stands forth most conspicuously is the great effect which the operations of the fishermen have had on the character of the halibut populations of the various banks. Not only have they been very extensively depleted, but the proportions of mature and immature, of large and small fish have been radically changed. . . .[18]
>
> The intense fishery has, it is evident, made its influence felt throughout the whole biological appearance of the species, and in doing so it has rendered precarious the future of the banks, particularly the older or longer known. The number still found on them is so small, and the percentage of mature fish in this population has fallen so low, that it appears imminent that the halibut in the Pacific will drop to a minor position among the food-fishes. It may recede northward as it did from the shores of Massachusetts, and from the coast of England, until it exists only in the more remote and difficult to reach of the banks. It is very difficult to see wherein more proof than is at hand may be adduced to emphasize this tendency, save the final one of the catastrophe of commercial extinction itself.
>
> The rate of decrease shown, over 70 per cent for each decade, is surprisingly large. Yet it must be remembered that the constant shifting to new banks has staved off a portion of the effects of impoverishment. This extension is, in its way, a measure of depletion. Just as a mine may be exhausted and its owners reduced to working over the discarded low-grade ore, so may the halibut banks. The progress from Cape Flattery to Hecate Strait, and from there to Yakutat and beyond, has been at a constantly accelerated rate as the total catch has grown from year to year.[19]

The halibut fisheries, which at first were confined mainly to the waters of Puget Sound, the Strait of Juan de Fuca, and the inner waters of the coast of British Columbia, gradually spread northward until a coast line of about eighteen hundred miles in length was covered. By 1910, it had extended six hundred miles north to Cape Ommaney on Baronof Island, and at that time as many fish were taken from this six hundred mile strip as were taken in the entire coast line of eighteen hundred miles in 1928, at the time of the first report of the International Fisheries Commission. At the latter date, the best fishing was to be found in the vicinity of Kodiak Island in the Gulf of Alaska. Because of expansion of the area, depletion of the banks did not have an immediate effect on the prosperity of the industry. As the industry moved to more unsheltered waters, the cost of the catch increased on the more distant

[17] W. F. Thompson, "Statistics of the Halibut Fishery in the Pacific" (*Ibid.*, 1915).

[18] *Ibid.*, p. 68. [19] *Ibid.*, p. 70.

banks and on the more depleted banks. The price which could be secured for the catch became more significant. The problem was not merely one of depletion of the halibut banks, but of the economic position of the industry as a whole. So long as new banks were available within economic reach of the market the industry could continue to prosper, but its final difficulties were inevitable. They could be postponed by increasing the efficiency of transportation and of fishing methods, but it was clearly recognized that although the total yield was being maintained it could not be continued indefinitely. Artificial propagation of halibut through controlled hatching was extremely difficult because of its habits. It was suggested that the only solution was controlled protection and conservation.

The changes in the location of the fishery may be summarized briefly. In 1888 the fishery commenced, and grew rapidly, most of the fish coming from the Cape Flattery Banks, but about 1895 the banks in Hecate Strait were being exploited. In the early years of the first decade of this century the South-eastern Alaskan and British Columbian banks in more or less sheltered localities were being utilized, resulting about 1910 in their impoverishment. The fishermen then moved to deeper waters in more exposed situations on the outer coasts, fishing in more than 100 fathoms coming into vogue. Those banks lying off the coast of Alaska as far as Icy Strait were in great part depleted by 1913 or before, and at the present date, 1916, the greater part of the catch comes from Yakutat and beyond. . . . This constant movement was not made because richer banks were being discovered, but because the yield from the older banks for the gear employed steadily fell the longer they were fished. It is unfortunate that fishing is still carried on best within those old areas during that season of the year when the young fish are to be caught in greatest abundance. In brief, the history of the fishery is that of a nomadic fleet, stripping the grounds as it goes, but leaving behind a sufficient number of vessels to prevent recuperation.[20]

The rate of depletion may be seen from the decrease in the weight of fish caught per skate[21] or unit of gear used. "There was not only a decline in the catch per unit of gear, but also in the total catch taken from the banks. The catch per unit of standard size

[20] *Ibid.*, p. 75.

[21] A skate of halibut gear varied from time to time and consisted of from six to ten lines of 300 feet each in length. Shorter lines with hooks were attached at intervals of from 10 to 12 feet. The hooks were baited and the lines anchored to the bottom for a definite period of time or overnight according to tidal conditions. An analysis of the results of various skates is found in W. F. Thompson, H. A. Dunlop, and F. H. Bell, "Biological Statistics of the Pacific Halibut Fishery" (*Report of the International Fisheries Commission*, no. 6).

fell from 272 pounds in 1906 to about 36 pounds in 1930 on the grounds off British Columbia. Off south-eastern Alaska the catch fell from 180 pounds per unit in 1914 to 54 pounds in 1928. In the Gulf of Alaska the fall was from 320 pounds per unit in 1915 to 65 pounds in 1930. The total quantity taken from the grounds south of Cape Spencer fell from 60 million pounds in 1912 to 22½ million pounds in 1930."[22]

Since each halibut bank is a unit in itself, it cannot recover by migration from other banks.

> It is evident that there is no extensive interchange of fish between localities, otherwise such differences as are given could not remain permanent. The progressive depletion of the banks from the south northward is therefore comprehensible. It has been like the annihilation of an army in detail, each separate detachment encountering the full force of the fishing fleet, which might be resisted if the resources of the remainder could be called on to aid. Fortunately it does not pay to fish a region over closely when by going a distance an abundance may be obtained, so there are still fish to be caught on the southern banks and presumably propagation continues there. But only when too late does one know when a species has been depleted on a bank past the limit of safety.[23]

The consequences of depletion of the banks were met by a movement of the industry to new areas and the provision of fishing vessels suitable to meet the conditions in more unsheltered waters. From 1903, all new vessels were equipped with power.

The adoption of dories to take the place of the round-bottomed Columbia River boats which could be used only in shore fishing or in areas where they could be rowed, involved devising methods of hoisting the fish on board. At first small straps were fastened around the tail of each fish and they were hoisted in bundles of five. An average of ten fish per minute could be handled, varying with the weather and the efficiency of the men, but this method was slow and unsatisfactory. Another method involved attaching five hooks on short lines to a ring and placing the fish on these hooks. This implement was dangerous and opposed by the men. A third method, involving a net on a hoop with a diameter of two or three feet into which the fish were thrown, was difficult to use in rough weather. In 1902 slings were used, a rope being passed through the gills of the fish and fastened. In the same year landing nets were introduced, the fish being placed in the net which was lifted

[22] *Report of the International Fisheries Commission*, 1936, p. 3.

[23] "Statistics of the Halibut Fishery in the Pacific" (*ibid.*, p. 133).

on board by the vessel's winch. This greatly increased the efficiency of handling and made possible an increase in the amount of gear used and consequently in the fish caught.

In 1910 the industry was definitely established as a deep sea fishery. Prospecting for new banks was carried out, and discoveries of halibut were made in that year off the north-west end of the Queen Charlotte Islands, Forrester Island, and Sitka, while fishing was also carried on to the north in the vicinity of Cape Spencer. The northward movement of the industry is illustrated by the increase in the amount of halibut landed in Alaska.[24]

TABLE XX

HALIBUT LANDED IN ALASKA

Year	Landed (pounds)	Year	Landed (pounds)
1907	4,492,118	1911	17,315,571
1908	5,692,000	1912	16,896,743
1909	5,234,924	1913	13,687,784
1910	21,630,289	1914	14,807,797

It is not possible to make a complete comparison before 1910, since complete statistics of the catch along the whole Pacific coast were not kept. In 1913, Yakutat, on the eastern side of the Gulf of Alaska, was one of the favourite fishing grounds, new halibut banks having been discovered in this area in that year. Other banks were opened in the vicinity of Prince William Sound. The profits to be obtained in the industry at this time led to the building of a considerable number of large power vessels, some of which were so equipped as to be used in either salmon or halibut fishing. Cold storage plants were established in Ketchikan, Sitka, Wrangell, Juneau, and Taku in United States territory. Ships were fitted out with cold storage accommodation, but the experiment was not sufficiently successful to warrant development. The industry continued to expand until the outbreak of the Great War, but the catch in British Columbia waters began to decline.

The introduction of electric lighting systems to the vessels and gear enabled fishing to be carried on succcessfully at night, and was

[24]Reports of United States Commissioner of Fisheries, quoted in *Report of the Commissioner of Fisheries, British Columbia*, 1915, p. 74.

TABLE XXI

PACIFIC HALIBUT LANDINGS* IN CANADIAN AND UNITED STATES PORTS 1911–38

(thousands of pounds)

Year	U.S. ports	Canadian ports	Percentage in Canadian ports	U.S. fleet	Canadian fleet
1911	41,078	15,854	27.8		
1912	39,308	21,127	35.0		
1913	44,195	22,347	33.6		
1914	45,981	21,444	31.8		
1915	36,715	31,970	46.5	50,279	18,406
1916	23,032	25,864	52.9	36,593	12,303
1917	25,568	23,030	47.4	38,697	9,901
1918	19,893	17,793	47.2	31,358	6,328
1919	20,053	20,085	50.0	32,672	7,466
1920	23,382	23,233	49.8	37,999	8,616
1921	22,262	29,892	57.3	41,997	10,157
1922	15,238	26,906	63.8	32,905	9,239
1923	20,284	30,029	59.7	41,163	9,150
1924	22,527	29,998	57.1	42,853	9,672
1925	20,419	29,546	59.1	42,585	7,380
1926	24,170	27,681	53.4	43,907	7,944
1927	27,840	26,825	49.1	46,324	8,341
1928	24,038	30,154	55.6	44,321	9,871
1929	26,750	29,696	52.6	47,182	9,264
1930	24,308	24,797	50.5	41,309	7,795
1931	24,956	18,374	42.4	35,547	7,783
1932	26,574	17,047	39.1	37,209	6,412
1933	29,033	17,027	37.0	37,774	8,286
1934	27,874	18,310	39.6	36,466	9,718
1935†	28,933	17,127	37.2	35,854	10,206
1936†	31,385	16,790	34.6	37,586	10,589
1937†	30,006	18,762	38.5	37,034	11,734
1938†	29,404	19,346	39.7	36,747	12,003

SOURCE: International Fisheries Commission for the years 1911-34; Annual reports of the Commissioner of Fisheries, British Columbia, for the years 1935-8.

*Landings do not include California and Oregon.

†The 1935-8 figures are for area 3, and area 2 laid down under the Halibut Treaty.

important as the industry moved northward into areas in which the period of darkness was longer, particularly in winter. Another important improvement was the use of the diesel engine, which, though invented in 1892, did not come into use in the halibut fleet until 1921. It led to reduction in costs since diesel oil was cheaper and more efficient than the distillate which had been previously used. As a result steamers disappeared from the fleet, only one being in use after 1925.

The New England Fish Company, an American company, in spite of a duty of one-half cent per pound on halibut entering the United States, used Vancouver as a base port because of its natural advantages as a halibut port, as compared with Seattle. In 1896, the duty was raised to one cent per pound, and the Company, no longer able to meet United States competition, petitioned the Dominion government to permit them to ship halibut from Vancouver in bond to the eastern American market. This privilege was granted in an Order-in-Council dated November 8, 1897, which provided "That for the period of six months hereafter next ensuing, foreigners or foreign corporations bringing fresh fish in American bottoms to any port in British Columbia shall be permitted to land such fresh fish at such port, without payment of duties, and transship the same in bond to any part of the United States of America, under such rules or regulations as the Minister of Customs may determine." These privileges were continued yearly by Orders-in-Council.

In 1907, the import duty on halibut entering Canada was raised from one-half cent to one cent per pound which meant that Canadian and American halibut fishermen each supplied the markets of their own country. "As a result of this tariff relationship, and as a result of the privilege of shipping in bond, there was maintained at Vancouver a fleet, partially American and partially Canadian, to correspond with the markets available in the two countries."[25] With the coming into force of the American Underwood Tariff in 1913, fresh halibut was permitted to enter the United States duty free. This was a valuable privilege to Canadian fishermen, who could compete on equal terms with American fishermen in the United States market. In 1915 the bonding concession was extended to fish dealers:[26]

[25]Thompson and Freeman, "History of the Pacific Halibut Fisheries."
[26]Order-in-Council, March 9, 1915.

TABLE XXII

HALIBUT CAUGHT AND MARKETED—BRITISH COLUMBIA
1878–1937

Year*	Quantity (thousands of pounds)	Value (dollars)	Year	Quantity (thousands of pounds)	Value (dollars)
1878.....		3,000	1908.....	17,512	875,652
1879.....		7,220	1909.....	21,706	1,085,325
1880.....		1,182	1910.....	21,906	1,095,395
1881.....		578	1911.....	19,648	1,845,135
1882.....		380	1912.....	25,328	2,461,208
1883.....		1,500	1913.....	22,346	1,734,200
1884.....	150	9,000	1914.....	21,444	1,561,626
1885.....	241	9,540	1915.....	19,489	1,972,290
1886.....	81	8,100	1916.....	12,306	2,026,670
1887.....	386	38,600	1917.....	11,352	1,721,012
1888.....	229	13,075	1918.....	18,622	5,196,539
1889.....	605	30,253	1919.....	21,077	4,617,484
1890.....	636	31,840	1920.....	23,877	4,104,869
1891.....	1,130	56,500	1921.....	32,586	3,036,076
1892.....	1,357	67,875	1922.....	29,318	3,918,441
1893.....	1,375	68,695	1923.....	33,466	6,271,993
1894.....	1,879	93,975	1924.....	33,138	5,427,542
1895.....	2,586	126,835	1925.....	31,824	3,891,819
1896.....	2,276	113,828	1926.....	31,509	4,543,720
1897.....	1,967	98,375	1927.....	27,135	3,467,904
1898.....	1,970	98,500	1928.....	30,282	3,370,670
1899.....	2,075	103,750	1929.....	30,392	4,317,235
1900.....	4,261	213,050	1930.....	25,479	2,446,775
1901.....	5,701	285,050	1931.....	18,200	1,373,679
1902.....	8,417	420,850	1932.....	16,884	960,166
1903.....	10,209	510,450	1933.....	17,081	1,391,941
1904.....	13,281	664,050	1934.....	17,590†	833,829‡
1905.....	8,901	445,070	1935.....	17,127	940,862
1906.....	11,416	570,835	1936.....	16,790	1,039,879‡
1907.....	14,304	715,236	1937.....	18,761	1,190,056‡

SOURCE: 1878-1918, Annual reports of the Department of Fisheries (*Canada, Sessional Papers*); 1919-34, Dominion Bureau of Statistics, *Fisheries Statistics of Canada*; 1935-7, Report of the Commissioner of Fisheries, British Columbia.

*From 1878 to 1906 inclusive, years ended June 30; from 1908 to 1917 inclusive, years ended March 31; since and including 1917, calendar years. No statistics are available for the 9-month period ended March 31, 1907.

†In order to make the halibut series of figures comparable with previous years, 8,492 thousand pounds landed at British Columbia ports by American vessels were added to the 9,098 thousand pounds landed by Canadian vessels at British Columbia ports.

‡These figures include the following values for halibut livers: 1934—$36,439; 1935—$80,513; 1936—$96,311.

During the present calendar year (1915), foreigners or foreign corporations bringing fresh fish in vessels registered in the United States of America to any port in British Columbia shall be permitted to land such fresh fish at such port without payment of duties and transship the same in bond to any port in the United States, or to sell such fish in bond to such local dealer or dealers as may be properly and duly licensed therefor, under the regulations and conditions hereinafter mentioned, which dealer or dealers shall export the same in compliance with the bonding requirements (without the right, however, in either instance, to sell in Canada for consumption therein, or otherwise except in bond, any of such fresh fish so landed); and such foreigners and foreign corporations bringing fresh fish in vessels registered in the United States of America to any port in British Columbia, shall be permitted to purchase supplies, and ship crews for such vessels, at any port in the said Province of British Columbia, the whole under such regulations and conditions as the Minister of Customs may determine.

The privilege of sale to dealers for shipment in bond was of particular value to the small American vessels which found it difficult to ship in carload lots and thus did not benefit greatly from the privilege of direct shipment. At first shipment in bond was only allowed by rail, but later provisions were made for the shipment of halibut by vessels to ports in the United States.

The establishment of a cold storage plant with a capacity of fourteen million pounds at Prince Rupert and the opening of this port as a transcontinental railway terminus in 1915 assisted the northward movement of the industry. Prince Rupert was approximately six hundred miles nearer the main fishing grounds than Vancouver and Seattle, and the use of smaller vessels, capable of operating within a radius of about three hundred miles, was made possible. It became the main halibut port on the north Pacific coast. Its use by United States vessels was encouraged by the Canadian government, which allowed shipments of fish in bond when landed by American vessels. American vessels were also allowed to use the port of Prince Rupert for the purpose of securing provisions, bait, fuel, ice, and crews.

In 1916, foreign vessels bringing fresh fish to a British Columbia port were allowed to purchase bait with the understanding that catches made with such bait would be landed at a Canadian port and from there forwarded in bond to a port in the United States. Successful competition by the port of Prince Rupert led to an attempt on the part of American fishermen to make it impossible for fish landed in bond at a foreign port to enter the United States. A bill was introduced in Congress in 1916 to the effect "That from

and after ninety days from the passage of this Act, no fresh or frozen halibut or salmon from the north Pacific Ocean or its tributary waters shall be admitted into the United States through any foreign country, except when the same shall be in bond from an American port." Although strongly supported, it failed to pass.

The Canadian government suggested that the whole question of the fisheries on the Atlantic and the Pacific coasts as between Canada and the United States was fundamentally similar and that an attempt should be made to arrive at a final solution. It proposed:[27]

(1) That the modus vivendi be extended to all fishing vessels, by whatever means they may be propelled, that it be applied to the Pacific coast as well as to the Atlantic, and that the annual fee be reduced from one dollar and fifty cents per registered ton to the nominal sum of one dollar per vessel. Also that the renewal of the licenses from year to year be not conditional on an Order in Council, but form part of the arrangement itself.
(2) That United States fishing vessels on both coasts be allowed to sell their fish in Canadian ports for the Canadian markets, subject to customs duty, as well as to sell in bond.
(3) That Canadian fishing vessels be allowed to purchase bait in United States ports or waters, on equal terms with American fishing vessels.
(4) That Canadian fishing vessels be allowed to take their catches to United States ports and sell them there, subject to customs duties, if any.
(5) That fishing vessels of either country visiting ports in the other be given clearances for the fishing grounds if so desired.
(7) That such arrangements be in force until the expiration of two years after either party thereto shall give notice to the other of its wish to terminate the same.

The United States government suggested the appointment of a Joint Commission of inquiry to report on the whole situation. The proposal was accepted by Canada and a Joint International Fisheries Conference was appointed. It reported that the objections of the American fishermen to the Canadian suggestions was founded in the main on erroneous information. The United States section of the Conference recommended that, at least for the term of the War, the restrictions imposed on Canadan fishing vessels in United States ports should be removed. This was agreed to by the President and an Order was issued to the Collectors of Customs: "To promote the vigorous prosecution of the war and to make the utmost use jointly

[27] *Report of the Canadian-American Fisheries Conference*, 1918, p. 10.

of all the resources of the nations now co-operating, you will permit, during the war, Canadian fishing vessels and those of other nations now acting with the United States to enter from and clear for the high seas and the fisheries, disposing of their catch and taking on supplies, stores, etc., under supervision as in the case of merchant vessels entering and clearing for foreign ports, except as to tonnage tax and other charges specifically imposed on entry from and clearance for foreign ports." Similar recommendations were made to the Canadian government by the Canadian section of the Conference, and an Order-in-Council was approved on March 8, 1918:

> The Minister of the Naval Service recommends, under the authority of the War Measures Act, Chapter 2, of the Statutes of 1914, that during the war, United States fishing vessels, in addition to their treaty rights and privileges, shall be permitted to enter any port in Canada, without the requirement of a license or the payment of fees not charged to Canadian fishing vessels, for any of the following purposes:
>
> (*a*) The purchase of bait, ice, nets, lines, coal, oil, provisions and all other supplies and outfits used by fishing vessels whether the same are of like character to those named in this section or not;
> (*b*) Repairing fishing implements;
> (*c*) Dressing and salting their catches on board ship;
> (*d*) The shipping of crews;
> (*e*) The transshipment of their catches;
> (*f*) The sale thereof locally on payment of the duty.
>
> The Minister further recommends that the fees paid on licenses already taken out for the present calendar year be remitted.

These orders applied to both Atlantic and Pacific ports.

The United States orders were cancelled in 1921, and in 1922 licence fees for American vessels were introduced by the Canadian government. A proposed Halibut Treaty between the United States and Canada was drawn up, embodying reciprocal port privileges, the elimination of customs duties on halibut, close season from November 16 to February 15, a joint investigation of the life-history of the halibut, and the prohibition of nets in certain fresh waters, but it was not finally negotiated.

In 1922, the Fordney-McCumber Tariff imposed a duty of two cents per pound on fresh halibut entering the United States. This placed Canadian fishermen at a disadvantage as compared with Americans who had equal port privileges with the Canadians, and could ship their halibut catch to the United States without paying duty. The imposition of the new duty was very definitely felt by the Canadian fleet which had expanded during the period when

halibut was on the free list. The suggestion that the United States duty was in retaliation for the Canadian duty on United States halibut was difficult to substantiate because market conditions were such that the Canadian duty could not seriously affect the American fishermen. Practically all of the American halibut fishermen's catch, and a considerable proportion of the Canadian, was marketed in the United States. The Member for Skeena in the Dominion Parliament stated in 1923:

> The United States have for years admitted fish free into their country while Canada maintained a duty of one cent a pound on fish coming into Canada from the United States. Now the Fordney tariff has retaliated and has imposed a duty of two cents on Canadian fish. This retaliation has made the situation in British Columbia acute as regards the halibut industry. United States fishermen get all the benefits of the port of Prince Rupert; they market their halibut in this port obtaining 16 cents per pound—this halibut goes in bond through Canada to the Boston and Eastern American markets. Canadian fishermen marketing their halibut in Prince Rupert for shipment to the United States can only get 14 cents a pound for it as they must themselves pay the American 2-cent duty in order to compete with the American fishermen.[28]

The question of conservation of the halibut and the problem of over-production could not be shelved permanently. In 1913 a large quantity of halibut was placed in cold storage which competed with the later catch and a closed season was proposed for winter months. The proposal received support not merely as a method of regulating the supply and market conditions, but as a means of conservation. Reports presented under the auspices of the British Columbia Commissioner of Fisheries gave scientific data which supported the movement for a close period and finally brought its successful conclusion. Had the proposed Halibut Treaty of 1919 not contained controversial provision for reciprocal port privileges between Canada and the United States, the close season for halibut might have been inaugurated at that time. In the winter of 1921-2, American vessel owners proposed a voluntary closing of the halibut season from January 10 to March 15, which was observed by some of the large schooners but not by the fleet as a whole.

In 1922, a Royal Commission, appointed by the Dominion government to investigate the fishing industry in British Columbia, recommended a close season extending from November 15 to February 15 annually, and pointed out that if the question of halibut

[28] *Canada, House of Commons Debates*, 1923, p. 2735.

were dealt with separately, the United States government would be prepared to conclude a treaty. "On the question of protecting the halibut fishery of the Pacific against entire depletion by overfishing, we found all of one mind, namely: that a close season for a period of three months should be arranged in conjunction with the United States authorities, who are equally concerned. We also found much dissatisfaction and impatience as a result of nothing having been done especially in the last two years to hasten the completion of an agreement with the United States dealing specifically with this matter."[29]

The recommendations of the Commission were accepted and a new treaty was formulated in 1922 dealing only with close seasons and with the establishment of an International Fisheries Commission for the investigation of the halibut. After some delay, the Halibut Treaty was negotiated on October 21, 1924, and the necessary legislation to control the halibut fishery passed.[30] In November of that year, the first close season under the Treaty was established. This was the first treaty signed by Canada as a nation by its own agent as representative of the King, and it was also the first treaty between the High Contracting Parties for the joint regulation of a great fishery. Provision was made for the appointment of a commission of four, two members from each country, with power to make investigation into the life-history of the halibut and to regulate the industry subject to the approval of the Governor-General of the Dominion of Canada and the President of the United States of America. These regulations were related to the division of the convention waters into areas, the limit of the catch to be taken in each area, the fishing equipment to be used, licensing and clearances of vessels, collection of information regarding the halibut catch, and the closing of certain areas populated by small, immature halibut.[31] The Pacific coast was divided into four areas: area no. 1 roughly consists of the coast of California and Oregon, and part of Washington; area no. 2 includes all the convention waters from the northern boundary of area 1 to Cape Spencer, and comprises the coast of British Columbia and south-eastern Alaska; area no. 3 extends from Cape Spencer to the Aleutian Islands; area no. 4

[29] *Report and Recommendations, British Columbia Fisheries Commission*, 1922, pp. 22-3.

[30] See appendix 3, Pacific Halibut Fishery Convention.

[31] See appendix 5, Pacific Halibut Fishery Regulations.

includes all the waters not included in areas 1, 2, and 3, and Bering Sea.

W. F. Thompson, who had devoted much study to the Pacific halibut, was appointed director of investigations. Difficulties faced any investigation since the halibut can only be studied at sea and the fishery covers a coast line of about eighteen hundred miles. Captains of fishing vessels, however, co-operated fully and the Commission secured "extensive records of the individual catches, from which the yield per unit of fishing effort, the 'skate,' has been ascertained for each section of the coast. These cover every season and are for years as far back as 1906."[32] After three years' work a report was presented, covering records of the catch, the biology of the halibut, physical characteristics and growth of the different varieties, and the drift of the halibut eggs. It was recommended that power be given the proper governmental authorities:[33]

1. (*a*) To establish areas, within each of which, if deemed necessary for the preservation of the fishery there, the total catch of halibut may be reduced by a predetermined percentage annually, commencing not less than one year after the putting into force of this recommendation, until the fishery therein shall reach a state of stability of yield.

   (*b*) To determine upon the amount of this percentage reduction, and to revise the same from time to time as may be found necessary, the intent being to restrain any increase in the amount of fishing within such area.

2. To close permanently to all fishing the two areas herewith defined, and known to be populated by small, immature halibut, and to close such other grounds as may be found by the commission to be populated by a similar class of fish.

3. To prevent the use of any fishing gear deemed unduly destructive.

4. To extend the present closed season for two weeks at its beginning, making the closure for all fishing in all areas from November 1 to February 15, both dates inclusive, and to facilitate future alterations in the length of the closed season.

5. To license all vessels fishing for halibut in treaty waters, under such terms as are necessary for the purpose of the treaty, including statistical returns, and for clearance to regulated waters.

It was found that a closed season from November 16 to February 15 was inadequate. It had led to more intensive fishing of the banks during the open season, and there was actually an increase

[32] *Report of the International Fisheries Commission appointed under the Northern Pacific Halibut Treaty*, 1928, p. 8.

[33] *Ibid.*, p. 13.

in the annual halibut catch.[34] The amount of fishing gear on the older banks was about two and one-half times that employed in 1910. It was found that conditions on the different halibut banks

TABLE XXIII

MEN, BOATS, AND TONNAGE ENGAGED IN PACIFIC HALIBUT FISHERY, 1928-37

American Fleet

YEAR	NUMBER OF MEN		NUMBER OF BOATS		TONNAGE	
	5 or less trips	6 or more trips	5 or less trips	6 or more trips	5 or less trips	6 or more trips
1928	223	1,536	56	253	622	5,856
1929	247	1,689	64	304	879	6,155
1930	213	1,673	58	295	745	6,090
1931	294	1,354	80	243	1,164	5,400
1932	287	1,301	88	234	1,011	5,210
1933	243	1,326	57	244	922	5,114
1934	288	1,244	78	245	1,056	5,217
1935	400	1,237	95	208	1,399	4,552
1936	358	1,376	91	244	1,230	4,959
1937	396	1,412	101	257	1,305	4,934

Canadian Fleet

YEAR	NUMBER OF MEN		NUMBER OF BOATS		TONNAGE	
	5 or less trips	6 or more trips	5 or less trips	6 or more trips	5 or less trips	6 or more trips
1928	158	352	33	79	613	954
1929	89	374	19	87	441	1,083
1930	127	371	23	83	468	997
1931	126	377	29	85	509	1,068
1932	135	215	38	47	394	643
1933	89	245	26	57	294	773
1934	125	329	39	76	433	939
1935	128	366	40	89	459	1,024
1936	168	417	40	95	616	1,191
1937	148	491	37	117	536	1,302

SOURCE: *1938 Year Book, Pacific Fisherman*, p. 223.

[34] *Ibid.*, p. 18.

varied and that special regulations would be necessary for particular areas. Some fishing grounds would be closed altogether. The average age of the halibut caught was from eight to ten years, and it was believed that if the industry was to be preserved, the immediate adoption of conservation measures was necessary. The Halibut Treaty was, therefore, modified in 1930 to extend the closed season to the period from November 1 to the fifteenth of the following February. The halibut landings from areas nos. 2 and 3 were limited to 46,000,000 pounds annually, and certain areas were completely closed.[35] Very little fishing was done in areas nos. 1 and 4.

At the time regulation was adopted, the yield had decreased from 60 million to 22½ million pounds and it was claimed that without regulation the yield in 1936 would have been still less by at least 4 million pounds.[36] Instead there is an accumulated stock, actually some 60 per cent greater than when the Commission began. The increase in the catch per unit of gear is due not so much to any increase in the number of fish coming to commercial size each year, as to the increased length of time that each year's addition of young is allowed to remain on the banks. In other words, there are more generations of halibut on the banks at one time; consequently not only is there a greater number of fish available, but the fish are larger. There are also more fish for spawning, which is extremely important since it is impossible to propagate halibut artificially in anything like sufficient quantities to maintain the industry.

The Commission has achieved marked success in the work of conservation, and is an outstanding example of international co-operation.

Difficulties were encountered in enforcing the regulations since the limitation of the catch involved restricting the activities of individual fishermen. They were most marked in area no. 2, which comprises British Columbia waters, where fishermen were inclined to take advantage of any loop-holes in the regulations to catch as many fish as possible. To meet this situation a Halibut Marketing Board was set up, under the provisions of the Dominion Natural Products Marketing Act and the marketing legislation of the pro-

[35]See appendix 5, *Pacific Halibut Fishery Regulations.*

[36]*Report of the International Fisheries Commission*, 1936, p. 4.

TABLE XXIV

LANDINGS OF HALIBUT BY PORTS FOR 1933-39

(thousands of pounds)

UNITED STATES

Ports	1933	1934	1935	1936	1937	1938	1939
California	324	1,022	652	393	238	304	283
Oregon	493	595	629	314	453	400	740
Seattle	22,086	20,586	22,275	22,571	21,248	20,848	19,978
Neah Bay	145	133	114	155	103	119	61
Vancouver	4		28			19	
Prince Rupert	8,759	8,592	6,899	6,204	7,018	7,324	9,319
Ketchikan	2,879	3,146	3,771	3,574	3,692	2,827	2,261
Wrangell	325	292	112	497	590	432	280
Petersburg	1,067	1,006	473	1,985	1,375	1,963	1,460
Sitka	845	1,184	762	970	990	921	917
Juneau	1,621	1,472	1,403	1,601	1,844	2,046	2,002
Seward	24	53	17	25	6	0.8	
Cordova	17			3	3		1
Donna Lane					148		
Misc. Ports	1	4	0		.5	61	3

CANADA

Seattle	20				18	167	80
Vancouver	1,069	1,236	1,607	1,649	1,992	2,395	2,694
New Westminster	207	375	607	421	342	403	325
District No. 3	244	272	349	399	378	587	445
Butedale	1,041	1,330	1,571	1,153	1,291	1,774	1,843
Claxton	122	95					
Prince Rupert	5,582	6,361	6,065	6,959	7,742	6,844	8,061
Petersburg						12	
Sitka			6	4	3	3	15
Juneau						11	
Misc. Ports	1	49	0	0	0	0	0

SOURCE: International Fisheries Commission.

vincial government, to control the activities of the fishermen. Owing to the improved condition of the halibut banks, it was possible for fishermen to catch their quota in a much shorter period than is provided by the open season. In order to spread the catch over the whole season, boats are compelled on landing their catch

to remain in port for a definite period of time. Definite quotas of catch and tie-up periods have been laid down.[37]

In the Dominion Parliament sessions of 1929, 1930, and 1931 considerable attention was given to the American duty of two cents a pound on Canadian halibut. Two suggestions were made to secure its removal: that the port of Prince Rupert be closed to American fishermen, and that a port duty of 2 cents per pound be charged on all fish landed there. The proposal to close the port to American fishermen was strongly opposed because its use by Americans was of considerable benefit economically and commercially, and neither suggestion was adopted (Tables XXIII-XXIV). A duty was imposed on fresh, pickled, or salted halibut, of $\frac{1}{2}$, 2, and 2 cents per pound[38] (British preferential, intermediate, and general tariffs) in 1931, in order to provide protection against imports from the United States and also possible imports from Japan. In 1929, Japanese landed in Seattle 400,000 pounds of frozen halibut of good quality at the low price of 9 cents per pound.

[37]See appendix B.

[38]*Statutes of Canada*, 1931, chap. 30.

APPENDIX A

Halibut livers, once thrown away, have become a valuable source of income since the discovery that halibut liver contains important vitamins. The demand has continually increased and the price has risen from 12 cents per pound in 1932 to 15 cents in 1933, 20½ cents in 1934, 40¾ cents in 1935, 50 cents in 1936, to 50¼ cents in 1937. The following table shows the amount and value of the Canadian product.

	Pounds	
1932	222,100	$29,571
1933	229,300	45,995
1934	156,200	36,499
1935	181,200	80,513
1936	191,600	96,311
1937	178,200	94,405

In 1937 the combined Canadian and American halibut fleets landed halibut livers valued at $475,350.

APPENDIX B

(1) These regulations shall apply to all fishermen and all captains without regard to the size of the boats on which they operate or the amount of gear with which they fish.

(2) Each fisherman must register his name and name of boat with the Secretary of the Board before the 3rd day of July; and

(3) his own name and the name of his fishermen, and must notify the Secretary of any change made in his crew.

(4) Captains must have a Board license and no halibut captain or fisherman may market any halibut or offer it for sale without a license in good standing for the year.

(5) Captains may not go as fishermen on any other boat than the one on which he is registered during the same season without having spent full tie-up time, as hereinafter defined, in port;

(6) Nor may fishermen fish or go as captain without first spending full tie-up time, other than on the boat he is registered on, providing that in an individual case where one fisherman has left one boat he may be permitted by the Secretary to engage himself as a member of the crew of another boat if by not doing so he might suffer hardship by being deprived of the right to fish.

(7) Captains and fishermen must observe the ordinary tie-up time. Every captain must have his license marked by the Secretary before leaving port to indicate that he and his crew have stayed in port full tie-up time. They cannot market or offer for sale any halibut without having at the date of such marketing or offering for sale previously stayed in port the full tie-up time to the date of last clearance for the fishing grounds.

(8) The tie-up time shall be as follows:

(*a*) Ordinary tie-up time in port shall date from noon of the day on which a vessel first arrives in Prince Rupert, Butedale, Vancouver

or New Westminster if the vessel arrives before noon, and from noon of the next day if the vessel arrives after noon, and shall be as follows: Seven full days for boats carrying three men or less including captain. Eight full days for boats carrying four or five men including captain. Nine full days for boats carrying more than five men including captain.

(*b*) Ordinary tie-up time shall be increased as follows: Two full days for each thousand pounds or fraction thereof above the permitted quota.

(*c*) Ordinary tie-up shall be decreased as follows: One full day for the first full two thousand pounds short of the permitted quota and one full day for each further full one thousand pounds short of quota.

(*d*) Quotas shall be as follows: Area 3—Thirty-eight hundred pounds a man a trip including captain, plus nine hundred and ninety-nine pounds; Area 2—Thirty-one hundred pounds a man a trip including captain, plus nine hundred and ninety-nine pounds.

(*e*) When break-downs necessitate going into port for repairs, all time lost over twenty-four hours shall be deducted from the tie-up time immediately following break-down.

(9) Infractions of the Marketing Act rules shall lead to cancellation of license.

(10) Each captain must report the size of his catch and the area in which it was obtained to the Board within 48 hours after discharge of fish, providing that a captain who regularly furnishes statistical information to the International Fisheries Commission may be exonerated from the above if he authorizes in writing the I.F.C. to turn over their data to the Board.

CHAPTER IX

HERRING, PILCHARD, COD, STURGEON, AND DOGFISH

HERRING ranks third in value of product in the British Columbia fishing industry. The first attempt to put up herring in barrels for export was made in 1877 by a New Westminster firm, but a defect in the process of packing spoiled the product and it could not be marketed. About the same time oil from herring was extracted on a commercial basis in Burrard Inlet. "The apparatus is described as being a kind of steam boiler, which supplies steam to four vats in which the herring are steamed, and afterwards pressed, by means of powerful screws attached to the vats. The oil flows out through perforations in the bottom. The whole outfit is estimated to cost about $1,000. Messrs. Hanson and Rouster, in addition to their own labor employ five men, and use one boat with eighty yards of net."[1] The scow in which the operations were carried out was moved from place to place. It was later taken over by a Mr. Spratt and popularly known as "Spratt's Ark." The work was expanded considerably and fish scrap was dried for fertilizer. Oil was also extracted from salmon offal. The factory burned down in 1886.[2] By that time the herring had largely left Burrard Inlet and no other firm attempted to engage in the herring oil business.

In 1882 about seven hundred barrels of salted herring were packed for export to Australia,[3] but the market was largely local as British Columbia herring was considered inferior as a result of being caught in the spring in the shallow waters in which they had spawned. Small quantities were salted and smoked but demand was limited.[4] The herring in northern waters were found to be of better quality, and by 1890 the local demand was increasing and small shipments were made to the Canadian prairies. Demand

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[1]Report of the Inspector of Fisheries, British Columbia, 1878 (*Canada, Sessional Papers*, no. 3, 1879, appendix 17, p. 291).

[2]*Canada, Sessional Papers*, no. 16, 1887, appendix 7, pp. 247-79.

[3]*Ibid.*, no. 7, 1883, appendix 6, p. 1881. In 1877, 263 bbls. of pickled herring were valued at $2,104. In 1879, 20 bbls. valued at $80 were taken; in 1880, 50 bbls. valued at $300; in 1881, 200 bbls. at $1,200; in 1882, 1,290 bbls. and 423 kits valued at $11,691; in 1883, 36 bbls. and 150 kits valued at $926. In 1891, 202 cwt. were valued at $909; in 1892, 145 cwt. at $653; in 1893, 250 cwt. at $1,500; in 1894, 510 cwt. at $3,060; in 1896, 1,000 cwt. at $5,000.

[4]*Canada, Sessional Papers*, no. 6, 1888, p. 246.

increased during the nineties, and with the development of the halibut industry herring was used as bait.

The Inspector of Fisheries for the province objected to the use of herring for the production of oil in a memorandum submitted to the Fisheries Commission in 1892: "Herring are valuable as a food fish, they are sold in large quantities in the markets of Victoria, Nanaimo, New Westminster and Vancouver, and are highly prized as food by settlers on the coasts and Island of the Province, and also by the Indian population. They are also the principal bait fish of our waters. Destroying them in immense quantities for their oil is a useless waste, as the dog fish on the coast which are very destructive to all other kinds of fish, are sufficiently numerous to supply all the oil for which a market can be found at present." The Commission recommended "That the great destruction of herring now practised to supply a few crude oileries on the coast and elsewhere should be prevented by departmental enactments and thus avoid the too great and rapid depletion of an important factor as bait for carrying on the deep sea fisheries of the B.C. coast."[5] The catching of fish for use as manure had been prohibited in 1894,[6] but the enactment was evaded by classifying fertilizer as a by-product of the reduction of fish into oil.

Professor Prince, the Commissioner and General Inspector of Fisheries for the Dominion, paid tribute to the enormous numbers.

> Herring are caught on every part of the British Columbia coast. Those in the more southerly areas, while incredibly plentiful, are of smaller size than the less abundant schools of the north, where the herring reach a size almost equalling the large Labrador herring. In the Straits of Georgia the schools in certain months of the year, usually the fall, may extend for many miles. Indeed in 1893 I was informed that a small tug passed for three hours through a continuous mass of migrating herring in the month of June, while I myself have seen in February dead herring thickly covering the surface of the sea near Nanaimo for a distance of over two miles. Purse-seines of 1-inch extension measure were tried 14 or 15 years ago in March and April with considerable success. There seems to be little doubt that, if the movements of the schools could be ascertained, as, indeed, is possible only by an accurate scientific survey, herring could be captured in enormous quantities during the whole year as in Scottish and English waters. Until the present time, the fishermen have been content to await the arrival of the herring in the bays and inlets usually frequented by them at the close of the year and in the

[5] "British Columbia Salmon Fisheries Commission, 1892, Record of Proceedings" (*Canada, Sessional Papers*, 1893, 10C, p. 411).

[6] *Revised Statutes of Canada*, 1906, s. 51 (enacted 57-58 Vic., c. 51, s. 5).

New Year. The principal centre of the fishery is Nanaimo and the vast schools, as a rule, move in about the middle of November.[7]

The question of damage by the use of herring for reduction into oil and fertilizer was investigated by the British Columbia Fisheries Commission, 1905-7. In 1910 the reduction of herring into oil and guano was prohibited.[8] The prohibition continued in force until 1925[9] when it was removed for the Vancouver and Prince Rupert Districts. Permission to reduce herring has also been granted intermittently on the west coast of Vancouver Island, particularly when there was an insufficient run of pilchards to give the reduction plants a profitable year's business.

In order to obtain the best quality of fish it was necessary to take the herring in deep water, rather than with drag or beach seines in the shallow bays and inlets. A change in the method of catching was necessary, in any case, because the bays were being gradually deserted by the larger schools. By 1905 the use of gill nets was common at Point Grey, near Vancouver, and also at Departure Bay and Nanaimo. The device was so successful that the supply was threatened in certain areas, and attention was drawn to the

[7]"The Pacific Fishing Industries of Canada" (*Canada, Sessional Papers*, 1906-7, no. 22, special appended reports, p. lxvii).

[8]Ed. VII, 1910, c. 20, s. 51.

[9]HERRING OIL AND MEAL MARKETED IN BRITISH COLUMBIA, 1927-37

(*calendar years*)

Year	Oil		Meal	
	(thousands of gallons)	(thousands of dollars)	(tons)	(thousands of dollars)
1927.....	170	62	1,838	97
1928.....	68	24	831	44
1929.....	37	14	437	23
1930.....	60	19	1,774	74
1931.....	111	14	3,904	172
1932.....	186	23	6,195	208
1933.....	316	38	4,078	127
1934.....	105	11	2,570	89
1935.....	307	69	5,262	147
1936.....	782	200	10,085	350
1937.....	1,284	287	14,427	460

SOURCE : Dominion Bureau of Statistics, Fisheries statistics.

danger of unrestricted seining.[10] Drag-seines and gill nets had become inadequate for supplying the demand for herring which had developed rapidly between 1905 and 1910, largely as a result of the growing market in the Orient for dry-salted herring, and the increased use of herring as bait.[11] The purse-seine was being generally used on the east coast of Vancouver Island by 1910. It was finally legalized, outside of certain restricted areas, in 1913, and was an important factor in building up an extensive herring fishery on the coasts of Vancouver Island.

The market for fresh herring is largely limited to local demand, although small amounts have been exported, fresh or frozen, to Seattle. In 1904, 14,000 hundredweight were shipped fresh to Puget Sound. There was a large increase in the use of fresh herring from 1912 to 1918, probably a result of the stimulus given to the consumption of fish by the war.[12] There has been a small local market for smoked herring since the beginning of the industry,[13] although the quantity in recent years has diminished.

In 1904, 2,000 barrels of herring were packed. An expert, J. J. Cowie from Scotland, was employed to make experiments in curing. As a result of his work there was an increase in the use of pickled herring. War demand and high prices led to a great increase in the pack. During the war, Scotch-cured British Columbia herring was shipped to points on the United States Pacific coast and to Chicago, and New York, and Australia. Some of the product was badly cured and had an adverse effect on the market. With the close of the war, the demand for Canadian herring in the United States was materially reduced. The Fordney-McCumber Tariff gave Alaska a tariff advantage of one cent per pound over British Columbia, and the competition, particularly in the eastern United States markets, of herring caught in the North Sea which could be placed in New York at a lower price than the British Columbia

[10] *Report of the British Columbia Fisheries Commission, 1905-7* (Ottawa), pp. 47-50.

[11] From 1910 to 1935 an average of 28,208 barrels of herring were used annually as bait, amounting in value to an average of $62,325 per annum.

[12] Agitation for the protection of the herring industry of British Columbia led to an increase in the duties from 35, 45, and 50 cents per 100 pounds to $\frac{1}{2}$, $\frac{3}{4}$, and 1 cent per pound in 1931.

[13] See Tables XXV and XXVI. In 1877, it was estimated that $1,200 of smoked and kippered herring were put up, in 1878, 75 bbls. valued at $1,450; in 1879, $240; 1880, $1,590; 1881, $2,500; 1882, $2,600; 1883, $5,000.

product, further restricted the market. More recently the demand for the Scotch-cured herring has been local, and in 1935 only 117 barrels were sold.

The canning of herring has not developed as an established industry. In 1903, 3,500 cases ($14,000) were put up to utilize cans which had been left over from the poor salmon run. Canning was resumed in 1915, when 11,468 cases of herring were canned at a value of $68,808,[14] and increased rapidly until 1919, when 64,002 cases were put up at a value of $345,571. Following the war, this branch of the industry in common with the others suffered a decline, and has been practically non-existent since 1926, with the exception of 1934 when 2,295 cases were canned.

Dry-salted herring forms the most important branch of the industry, the market being entirely in the Orient, particularly in China. This industry began in 1904 when 4,500 hundredweight of salt fish were shipped to Japan. The salteries were located mainly on Vancouver Island in the neighbourhood of Nanaimo, although they were established also on the mainland at Pender Harbour, New Westminster, and Vancouver. In 1911, the industry spread to the west coast of Vancouver Island, where salteries, established at Clayoquot and Barkley Sounds, rapidly expanded. Salteries on a small scale were later established in the northern part of the pro-

[14] CANNED HERRING CAUGHT AND MARKETED IN BRITISH COLUMBIA

Year	Cases	Thousands of dollars
1915–16	11,468	69
1916–17	36,153	221
1917	46,650	304
1919	64,002	346
1920	19,968	124
1921	4,149	27
1922	2,114	11
1923	3,099	16
1925	391	2
1926	433	2
1931	43	0.2
1934	2,295	7
1936	51,695	155
1937	27,365	87

SOURCE: 1903-18, Report of the Department of Fisheries, (*Canada, Sessional Papers*); 1919-37, Dominion Bureau of Statistics, Fisheries statistics.

TABLE XXV

HERRING CAUGHT AND MARKETED IN BRITISH COLUMBIA, 1884–1910

Year*	Fresh (cwt.)	Fresh (dollars)	Smoked and kippered (cwt.)	Smoked and kippered (dollars)	Total value of all herring and herring products §
1884	346‡	1,728‡	.....	6,500	8,228
1885	366	1,830	560	7,000	8,830
1886	380	1,140	45	900	2,040
1887	2,056	6,168	145	1,450	7,618
1888	1,229	6,145	80	800	6,945
1889	1,900	9,500	330	3,300	12,800
1890	3,295	16,475	275	5,500	21,515
1891	3,350	16,750	313	3,756	21,415
1892	4,600	23,000	210	2,520	26,173
1893	4,580	22,900	87	870	25,270
1894	3,780	11,340	176	1,760	16,160
1895	2,495	7,485	275	2,753	10,238
1896	1,910	5,730	211	2,105	12,835
1897	4,300	12,900	517	5,165	18,065
1898	5,650	16,950	1,270	12,700	29,650
1899†	6,250	18,750	1,870	18,700	37,450
1900	9,450	28,350	2,000	20,000	48,350
1901	9,600	28,800	1,825	18,250	47,050
1902	16,536	82,680	4,465	44,649	127,329
1903	36,200	176,000	5,684	56,844	246,844
1904	46,730	233,665	6,378	63,776	297,441
1905	44,955	224,775	1,837	18,365	243,140
1906	89,340	446,250	1,879	18,790	465,040
1907–08	193,465	193,465	1,922	19,220	212,685
1908–09	449,652	449,652	1,816	18,160	467,812
1909–10	581,460	511,960	3,037	35,940	547,900

SOURCE: Annual report of the Department of Fisheries (*Canada, Sessional Papers*).

*From 1884 to 1906 inclusive, years ended June 30; from 1908 to 1910, years ended March 31. No statistics are available for the nine-month period ended March 31, 1907.

†Figures for years 1899 to 1909-10 inclusive include salted.

‡These figures are for herring and smelts together.

§From 1884 to 1910 inclusive, the value of herring oil was included in the value of all fish oils.

vince, but at present all of them are on Vancouver Island. Unlike other branches of the industry, exports of dry-salted herring declined during the Great War. Since the war, decline in the market for other products has led to a stimulation of interest in the dry-salted product and it has accounted for by far the greater amount of the green weight of herring caught and marketed. Unsettled conditions in the Orient, together with depressed market conditions, have led to a decrease, the value of the product having decreased from $1,489,501 in 1928 to $203,401 in 1937. The industry and a considerable part of the trade with China is largely in the hands of the Japanese. In 1937 the Japanese government, by applying exchange control laws to salt fish, caused still greater restriction. In 1938 the quantity sold was reduced to 4,940 tons, as compared with 8,000 in 1937, but in 1939 had increased to 7,701 tons.

A further factor in the decline has been the inefficient methods of marketing, particularly in consignment shipments, with their adverse effects on prices. The industry sought to take advantage of authority under the Dominion Natural Products Marketing Act to set up a Board to control production and sale. A Board was established in 1934, and it limited production to an amount which it was considered the market could absorb in an orderly manner. "Consignment shipments were prohibited by a system of export licensing, licenses to ship being issued to cover firm sales or sales covered by letters of credit, cash against documents."[15] Production was limited to 20,000 tons in 1934 and to 23,000 tons in 1935-6, 10,000 of which was allocated to Kobe, 7,000 to Shanghai, and 5,500 to Hong Kong. Licences to operate twenty-one herring dry salteries were issued by the provincial Department for the 1935-6 season, and the west coast of Vancouver Island was allotted 7,200 tons and the east coast 15,800 tons. The minimum price of herring was regulated and the quantities marketed controlled. In the season 1936-7, 18,000 tons of herring were sold. In spite of difficulties both in the fields of production and of marketing, the activities of the Board have stabilized the industry. The policy of abolishing sales on consignment has made it possible to stabilize prices, and the control of the quantities sold has done away with the situation in which high prices were obtained for the herring in

[15] *Annual report of the Commissioner of Fisheries, British Columbia*, 1934, p. 13.

TABLE XXVI

HERRING CAUGHT AND MARKETED IN BRITISH COLUMBIA, 1910-37

(thousands of dollars)

Year	Caught and landed	Fresh	Salted	Smoked and kippered	Pickled	Used as bait	Total value of all herring and herring products*
		Used fresh	Dry-salted				
1910–11.	363	8	189	37	25	69	328
1911–12.	565	58	268	54	4	31	415
1912–13.	823	338	449	123	54	53	1,017
1913–14.	708	356	470	98	4	27	956
1914–15.	609	389	359	62	34	32	877
1915–16.	517	370	312	53	163	43	1,010
1916–17.	580	309	301	37	76	65	1,009
1917†...	677	341	329	29	118	72	1,193
1918....	.....	.....	.....	.....	.....	.....	1,743
1919....	696	92	467	82	70	36	1,110
1920....	868	90	872	62	13	66	1,228
1921....	636	63	667	60	29	118	963
1922....	807	46	650	44	7	92	851
1923....	903	51	1,088	58	23	103	1,338
1924....	764	52	1,174	74	2	89	1,393
1925....	992	65	1,528	49	0.5	74	1,718
1926....	1,006	45	1,331	54	1	96	1,529
1927....	1,342	71	1,483	54	3	94	1,867
1928....	1,413	77	1,490	52	1	120	1,809
1929....	961	88	1,249	51	2	59	1,487
1930....	717	80	961	39	0.8	49	1,222
1931....	632	23	776	27	2	43	1,058
1932....	183	30	214	23	0.9	38	536
1933....	469	26	509	19	0.6	19	739
1934....	201	24	433	24	2	38	629
1935....	287	68	229	34	0.9	33	580
1936....	383	28	347	32	0.2	30	1,526
1937....	440	54	203	26	0.8	64	1,622

SOURCE: For the years 1910-18, Annual report of the Department of Fisheries (*Canada, Sessional Papers*); 1919-37, Dominion Bureau of Statistics, Fisheries statistics.

*From 1910 to 1926 inclusive, the value of herring oil was included in the value of all fish oils. The totals also include canned herring.

†From 1910 to 1917 inclusive, years ended March 31; since and including 1917, calendar years.

TABLE XXVI—*Continued*

(*quantities only*)

Year	Caught and landed (cwt.)	Fresh (cwt.)	Salted (cwt.)	Smoked and kippered (cwt.)	Pickled (barrels)	Used as bait (barrels)
		Used fresh	Dry-salted			
1910–11.....	275,193	7,688	189,354	3,234	3,125	34,534
1911–12.....	545,442	14,150	267,933	5,196	939	31,195
1912–13.....	729,567	42,708	299,395	8,856	18,765	51,894
1913–14.....	649,062	42,014	313,178	7,938	1,643	26,935
1914–15.....	563,406	96,631	236,461	7,310	6,544	15,270
1915–16.....	467,452	73,942	183,704*	5,791	8,890	17,180
1916–17.....	496,030	88,330	172,988	4,014	7,590	28,757
1917†.....	487,241	87,173	161,865	6,263	7,923	28,785
1918.....	636,921	.....	.....	.....	.....	.....
1919.....	567,868	26,999	255,058	9,979	6,796	17,100
1920.....	1,001,357	47,327	512,168	8,034	1,431	25,043
1921.....	944,866	21,533	479,971	8,133	2,417	40,477
1922.....	1,002,519	13,150	522,768	6,946	755	41,507
1923.....	1,035,823	10,893	744,036	6,728	1,970	36,708
1924.....	1,157,625	13,891	853,543	8,948	146	29,971
1925.....	1,437,875	19,973	1,083,174	5,622	52	25,598
1926.....	1,301,269	11,070	938,647	6,199	80	30,359
1927.....	1,724,246	21,674	1,048,190	15,005	138	29,774
1928.....	1,535,118	18,693	1,072,188	6,187	65	47,971
1929.....	1,315,667	76,520	923,848	5,580	187	25,098
1930.....	1,229,962	53,386	805,973	4,713	46	16,628
1931.....	1,481,080	8,204	788,227	2,315	142	31,676
1932.....	1,003,204	58,352	269,420	2,894	50	20,985
1933.....	1,077,373	8,005	513,024	2,445	100	12,848
1934.....	820,362	13,236	414,626	3,213	132	20,106
1935.....	1,008,507	35,050	302,710	4,386	117	18,899
1936.....	1,620,625	15,908	383,337	4,335	28	14,227
1937.....	1,929,795	23,511	203,401	3,601	68	29,335

SOURCE: For years 1910-18 inclusive, Annual report of the Department of Fisheries (*Canada, Sessional Papers*); for years 1919-37 inclusive, Dominion Bureau of Statistics, Fisheries statistics.

*This figure is given as barrels instead of cwts.

†From 1910 to 1917 inclusive, years ended March 31; since and including 1917, calendar years. No statistics are available for the nine-month period ended March 31, 1907.

the early part of the season and disastrously low prices at the end.[16] The effect of the operation of the Marketing Board has been to place the industry, although it is smaller in size, on a more profitable basis. The position of the British Columbia Salt Fish Board was affected by the opinion rendered by the Supreme Court of Canada that the Dominion Natural Products Marketing Act was *ultra vires*. The question arose during 1936 of the actual power of the Board to control the marketing of salt fish, but through co-operation with the provincial government which has the power to license dry salteries, sufficient power was acquired for the Board to function.

* * *

The pilchard, like the herring, move from the open sea to the inlets of the west coast in vast schools, but unlike the herring, do not spawn in these inlets but in the open sea—at which time and in what manner is not definitely known.

The canning of pilchards on a commercial basis commenced in 1917, with a comparatively small market for the canned or fresh product. In 1924 an Order-in-Council authorized the use of pilchards in British Columbia for reduction purposes for oil and meal, and the catch increased[17] from a yearly average of 39,352 to 1,067,966 hundredweight. In 1925, pilchard oil to the value of $211,774 and pilchard meal to the value of $2,103,000 were produced.[18] About 95 per cent of the pilchards taken are used for meal and oil. The fishery became a deep sea operation after 1927 as the fish ceased to a large extent to frequent the bays and inlets. Seine boats increased in size and purse-seines were used almost exclusively. In 1928, more than four million dollars was invested in plants and gear and over one thousand men were employed. The oil is used in the manufacture of shortenings, oleomargarine, soap, certain types of paint, linoleum, waterproof fabrics, and in tanning and tin-plating. Comparatively little pilchard oil is used in the raw state in Canada, and the larger proportion is exported for refining.

[16]The Board also controls the sale of dry-salted salmon. In 1934 production was 5,345 pounds, and in 1935, 8,734 pounds. Practically all of it is exported to Japan where it forms a specialized branch of the dry-salted salmon trade. The British Columbia dry-salted salmon, the chum being the principal species used, are larger than those received in Japan from other waters and are used during the Christmas and New Year holiday season as presents for which their size makes them particularly desirable.

[17]J. L. Hart, *The Pilchard Fishery of British Columbia* (Bulletin no. XXXVI, Biological Board of Canada).

[18]*Annual report of the Commissioner of Fisheries, British Columbia*, 1929.

TABLE XXVII

PILCHARDS CAUGHT AND MARKETED IN BRITISH COLUMBIA, 1917-37

Year	Quantity (cwt.)	Value (thousands of dollars)
	(caught)	(marketed)
1917	1,363	12
1918	72,723	414
1919	65,624	372
1920	88,050	540
1921	19,737	102
1922	20,342	106
1923	19,492	92
1924	27,485	83
1925	318,973	183
1926	969,958	1,257
1927	1,368,582	1,839
1928	1,610,252	2,563
1929	1,726,851	2,200
1930	1,501,404	1,590
1931	1,472,085	808
1932	886,964	384
1933	121,013	77
1934	860,103	550
1935	911,441*	670
1936	889,037	667
1937	961,485	903

*SOURCE: Report of the Commissioner of Fisheries, British Columbia, 1935.

The Inspector of Fisheries for British Columbia in 1876 reported: "The cod caught in the narrow waters is an inferior fish, but I believe that on the outer shores there are banks on which a superior variety is found. . . . A bank lying off the North West angle of the Queen Charlotte Islands is specially noted for the production of some of the finest cod; and these when dried appear to be quite equal in quality to the dried fish of the Atlantic."[19] In 1880, twenty-two vessels, financed from San Francisco, were operating, and in 1889, stations were established on the west coast of the Queen Charlotte Islands by Captain C. A. Lundberg, who endeavoured to increase the attractiveness of this fish by a process of filleting, but without much success. The local demand was small and the termination

[19]*Canada, Sessional Papers*, 1877, no. 5, appendix 21, p. 344.

TABLE XXVIII

PILCHARD AND SALMON OIL AND MEAL MARKETED IN BRITISH COLUMBIA, 1926-37

Year	Pilchard				Salmon			
	Oil		Meal		Oil		Meal	
	(thousands of gallons)	(thousands of dollars)	(tons)	(thousands of dollars)	(thousands of gallons)	(thousands of dollars)	(tons)	(thousands of dollars)
1926...	1,899	734	7,948	371				
1927...	2,674	983	12,169	617				
1928...	3,996	1,475	14,500	767				
1929...	2,857	1,128	15,826	657				
1930...	3,204	678	18,934	688				
1931...	2,552	230	14,200	433				
1932...	1,316	166	8,848	202	10	0.8	149	3
1933...	276	35	1,108	34	64	9	719	23
1934...	1,635	207	7,626	230	124	17	1,108	34
1935...	1,649	359	8,681	226	61	11	806	21
1936...	1,217	290	8,715	274	171	39	2,083	67
1937...	1,707	514	8,483	277	169	42	1,845	59

SOURCE: 1917-18, Annual report of the Department of Fisheries (*Canada, Sessional Papers*); 1919-37, Dominion Bureau of Statistics, Fisheries statistics.

of the Washington Treaty made it impossible for British Columbia fishermen to compete in the American Pacific coast market.[20] Very little increase in the catch was made until 1909 when 10,827 hundredweight of cod were taken. There were further increases in succeeding years,[21] particularly after 1915 when the kippering of black cod began. Cod taken on the halibut hooks, previously thrown away, became valuable, and were sold fresh, frozen, hard salted, pickled, kippered, and smoked. The industry has maintained a steady position, and in 1937, 72,375 hundredweight of cod were caught, with a market value of $485,400.

* * *

Sturgeon were caught and used by the Indians in the Fraser River area, particularly at Pitt Lake, about fifty miles, and at Harrison Lake and Harrison River about eighty miles, from the mouth of the Fraser. Sturgeon weighing as much as 1,100 pounds are said to have been taken, while fish ranging from 700 to 1,000

[20] *Ibid.*, 1881, appendix 12, p. 266.

[21] See Table XXIX, p. 121.

pounds were common. Ordinary nets were too weak to hold them, and strong rope nets were specially constructed. The maximum catch was made in 1897, when 1,187,691 pounds of sturgeon were

TABLE XXIX

COD* CAUGHT AND MARKETED† IN BRITISH COLUMBIA, 1888-1937
(*calendar years*)

Year‡	Quantity (cwt.)	Value (thousands of dollars)	‡Year	Quantity (cwt.)	Value (thousands of dollars)
	(caught)	(marketed)		(caught)	(marketed)
1888	1,248	10	1913	29,220	202
1889	3,513	34	1914	47,161	367
1890	2,558	29	1915	35,870	300
1891	1,743	31	1916	63,771	555
1892	1,925	31	1917	87,532	888
1893	4,774	28	1918	74,238	755
1894	3,302	20	1919	57,851	525
1895	2,990	15	1920	59,885	524
1896	3,012	15	1921	49,773	386
1897	3,085	15	1922	47,203	355
1898	5,445	27	1923	45,930	357
1899	5,595	28	1924	58,713	441
1900	5,725	29	1925	46,592	397
1901	4,960	25	1926	49,463	452
1902	5,550	28	1927	66,507	548
1903	6,637	33	1928	64,416	491
1904	7,820	36	1929	64,405	566
1905	6,685	37	1930	66,063	483
1906	7,170	39	1931	58,460	293
1907	7,449	41	1932	49,109	220
1908	6,300	38	1933	51,521	263
1909	10,827	65	1934	67,008	375
1910	20,334	127	1935	91,808	459
1911	25,065	190	1936	87,493	422
1912	28,500	209	1937	72,375	485

SOURCE: Annual report of the Department of Fisheries, 1888-1918 (*Canada, Sessional Papers*); Dominion Bureau of Statistics, Fisheries statistics, 1919-37.

*Includes "cod," "black cod," "ling cod," and "red and rock cod."

†"Caught and landed" for the years 1910-34 inclusive.

‡The "black cod" figures were expressed in 200-lb. barrels in *Canada, Sessional Papers*, 1905, no. 22. Appendix II, p. 217, gives the weight of a barrel in pounds.

marketed.[22] The profitableness of this catch drew attention to the sturgeon and there was a large increase in the number of fishermen.

TABLE XXX

STURGEON CAUGHT AND MARKETED IN BRITISH COLUMBIA, 1880-1937

Year	Quantity (cwt.)	Value (thousands of dollars)	Year*	Quantity (cwt.)	Value (thousands of dollars)
	(caught)	(marketed)		(caught)	(marketed)
1880.....	800	3	1909–10.....	5,000	25
1881.....	703	4	1910–11.....	5,500	27
1882.....	797	5	1911–12.....	5,168	78
1883.....	690	4	1912–13.....	5,051	76
1884.....	3,529	18	1913–14.....	1,090	16
1885.....	3,545	18	1914–15.....	1,149	23
1886.....	1,149	6	1915–16.....	811	16
1887.....	2,490	15	1916–17.....	735	13
1888.....	2,155	11	1917.....	445	10
1889.....	3,186	16	1918.....		
1890.....	3,960	20	1919.....	222	6
1891.....	3,245	16	1920.....	143	4
1892.....	5,205	26	1921.....	197	5
1893.....	3,300	16	1922.....	322	6
1894.....	5,021	25	1923.....	574	11
1895.....	3,750	19	1924.....	306	7
1896.....	3,805	19	1925.....	274	6
1897.....	11,377	57	1926.....	275	6
1898.....	7,500	37	1927.....	359	8
1899.....	2,787	14	1928.....	279	6
1900.....	1,050	6	1929.....	314	7
1901.....	650	3	1930.....	277	6
1902.....	335	3	1931.....	252	4
1903.....	300	3	1932.....	202	3
1904.....	350	3	1933.....	367	5
1905.....	200	2	1934.....	212	3
1906.....	250	2	1935.....	436	7
1907–8.....	1,000	5	1936.....	140	2
1908–9.....	1,800	9	1937.....	82	1

SOURCE: 1880-1918, Annual report of the Department of Fisheries (*Canada, Sessional Papers*); 1919-37, Dominion Bureau of Statistics, Fisheries statistics.

*From 1880 to 1906 inclusive, years ended June 30; from 1908 to 1917 inclusive, years ended March 31; since and including 1917, years ended December 31. No statistics are available for the nine-month period ended March 31, 1907.

[22] *Canada, Sessional Papers*, 1906-7, no. 22, p. lxix. See also Table XXIX, p. 121.

The fishery was depleted and in a few years only a fraction of the former amount was taken. Sturgeon were frozen or chilled and shipped to New York and other cities, where they were cured and smoked and sold mainly to Russian, German, and other immigrants, amongst whom there was a great demand. In 1898, 164 net licences for sturgeon fishing were issued: in 1899, 88; in 1900, 23; and in 1901, 22. "The Fraser river sturgeon were cleaned out in a period of five or six years, as the industry brought to the fishermen no less than $67,000, but a few years later the value had fallen to $3,350 (1902)."[23] The industry continued on a small scale, 436 hundredweight being caught in 1935, with a value of $6,936.

Dogfish[24] has been largely used for reduction into oil and fertil-

[23]Professor E. E. Prince, Commissioner of Fisheries, "The Canadian Sturgeon and Caviare Industries" (*Canada, Sessional Papers*, 1905, no. 22, p. lix).

[24] GREY FISH OIL AND MEAL MARKETED IN B.C., 1930-37

Year	Fish oil		Fish meal	
	(thousands of gallons)	(thousands of dollars)	(tons)	(thousands of dollars)
1930	115	22	899	45
1931	170	19	1,010	35
1932	35	5	264	7
1933	118	13	786	24
1934	204	25	1,135	40
1935	122	24	768	23
1936	165	35	1,065	35
1937	124	28	833	27

FISH OIL AND FISH MEAL, N.E.S., MARKETED IN B.C., 1925-35

Year	Oil		Meal	
	(thousands of gallons)	(thousands of dollars)	(tons)	(thousands of dollars)
1925	851	313	4,094	203
1926	231	88	1,746	94
1927	375	138	2,512	145
1928	411	119	3,198	174
1929	460	123	2,404	121
1930	68	22	362	16
1931	71	8	447	13
1932	..	..	..	..
1933	6	0.6	91	3
1934	9	1	215	6
1935	64	14	573	14

SOURCE: Dominion Bureau of Statistics, Fisheries statistics.

izer. The table showing the fish oil and fish fertilizer marketed indicates the importance of this branch of the industry. Fish oil is used for a great variety of purposes, and fish meal has proved valuable as feed for cattle, swine, sheep, and poultry.[25]

TABLE XXXI

TOTAL FISH MEAL AND OIL MARKETED—BRITISH COLUMBIA, 1921-37

(*calendar year*)

Year	MEAL*		OIL (excluding whale oil)	
	(tons)	(thousands of dollars)	(gals.)	(thousands of dollars)
1921	359	23	44,700	7
1922	633	34	75,451	23
1923	523	31	180,318	65
1924	1,508	84	241,376	89
1925	4,094	203	850,506	313
1926	9,694	465	2,129,571	822
1927	16,519	860	3,219,456	1,183
1928	18,529	985	4,475,425	1,618
1929	18,667	801	3,353,418	1,264
1930	21,969	824	3,447,067	741
1931	19,561	653	2,904,406	272
1932	15,456	421	1,547,554	195
1933	6,782	211	779,652	95
1934	12,654	398	2,076,858	261
1935	16,090	431	2,203,596	476
1936	21,948	726	2,335,565	564
1937	25,630	824	3,285,480	871

*SOURCE: Dominion Bureau of Statistics, Fisheries statistics.

[25]Rodney DeLisle, "Edible Fish-Meal, Its Composition and Value with Instructions for its Use in Feeding Cattle, Swine, and Poultry" (*Annual report of the Commissioner of Fisheries, British Columbia*, 1930, pp. 67-144).

CHAPTER X

WHALING AND SEALING

In 1790 a British vessel sailing around Cape Horn established a sperm whale fishery. In 1835, whaling was carried on in the vicinity of Kodiak Island, and the Alaskan Peninsula. It passed to the coast of Kamchatka in 1843, and vessels had passed through Bering Strait into the Arctic Ocean in 1848. In 1846, the American Pacific whaling fleet numbered 729 vessels. In 1852, there were 278 sailing vessels engaged in the North Pacific and Arctic Oceans, and in 1860 two American steam whaling vessels were added to the fleet.[1]

Whaling in Canadian waters had attracted attention as early as 1870, but results were disappointing. In 1874, it was reported that:

> The whale fishing experimented upon for three or four years has not proved successful, which must be attributed more to the want of proper appliances than to the scarcity of whales, which are as numerous as ever. In 1887 Inspector Thomas Mowat, after a cruise of investigation along the coast, expressed his astonishment at the neglect of the rich whaling resources of the province, and at the neglect of the special advantages British Columbia possesses in its geographical position for utilizing the great whale resources of the Arctic, the richest areas being in the Canadian waters off the mouth of Mackenzie river. The inspector was at a loss to understand this lack of enterprise, "unless," he adds, "it be due to a scarcity of vessels or for want of properly realizing its importance. These cetaceans are very abundant all along the west coast, and I saw shoals of from 15 to 25 of them in the straits during my voyage last year. The fleet which sailed from San Francisco to the Arctic sea last season is reported to have captured 257 whales valued at $1,285,000, or an average of over $107,000 to each vessel. Considering that our people are situated 750 miles nearer the Arctic fishing grounds than our San Francisco neighbours, I am at a loss to understand why an effort is not made to participate in this remunerative business.[2]

The first Canadian company, the Pacific Whaling Company, was registered in British Columbia in 1905. It was taken over in 1910 by the Canadian North Pacific Fisheries, and later passed into the hands of the Consolidated Whaling Corporation, Limited, at Victoria, incorporated in 1918 and still in operation. In 1905, the

[1] "The Whaling Industry of the North Pacific" (*Natural Resources Intelligence Service, Canadian Fisheries*, Aug., 1926, p. 247).

[2] *Report of the British Columbia Fisheries Commission, 1905-07* (Ottawa), p. 62.

TABLE XXXII

WHALE OIL AND FERTILIZER MARKETED—BRITISH COLUMBIA, 1905-37*

YEAR	WHALE OIL MARKETED		FERTILIZER MARKETED		TOTAL VALUE WHALE PRODUCTS MARKETED (thousands of dollars)
	Quantity (thousands of gallons)	Value (thousands of dollars)	Quantity (tons)	Value (thousands of dollars)	
1905	8	2	75	2	4
1906	.....	.....	.....	.....	93
1907–8	.....	.....	.....	.....	292
1908–9	.....	.....	.....	.....	357
1909–10	.....	.....	.....	.....	315
1910–11	377	158	.....	.....	445
1911–12	1,580	575	3,315	120	760
1912–13	1,369	465	1,484	56	537
1913–14	305	252	1,060	40	303
1914–15	789	242	829	33	277
1915–16	539	95	574	23	123
1916–17	530	251	1,227	51	317
1917	437	342	858	53	418
1918	.....	.....	.....	.....	.....
1919	610	531	1,200	108	649
1920	604	338	1,033	83	435
1922	283	130	230	14	159
1923	707	247	910	36	333
1924	646	310	926	42	360
1925	557	267	835	36	310
1926	468	224	666	37	270
1927	438	193	651	39	241
1928	572	261	754	45	319
1929	713	328	779	46	387
1930	526	192	581	29	228
1933	509	96	223	7	110
1934	814	159	631	18	184
1935	427	89	354	11	105
1936	764	145	687	21	172
1937	662	197	527	17	220

SOURCE: 1905-18, Annual report of the Department of Fisheries (*Canada, Sessional Papers*); 1919-37, Dominion Bureau of Statistics, Fisheries statistics. Statistics of fertilizer for 1913-14, 1914-15, and 1916-17 may include small quantities made from fish.

*Owing to market conditions whaling stations did not operate in 1921, 1931, and 1932.

Pacific Whaling Company operated the Sechart Whaling Station in Barkley Sound on the west coast of Vancouver Island. It paid dividends in 1906-7 of 23 per cent on preferred stock and 16 per cent on ordinary stock. The use of explosives was permitted and greatly increased the efficiency of the fleet.

A decrease in the demand for whalebone led to a reduction in price and a slump in the industry in the North Pacific and the Arctic.[3] Of eleven whaling vessels operating in 1905-6, only one remained in 1912-13. In spite of this the British Columbia industry showed a steady growth from 1905 until the peak year of 1911-12.

The Consolidated Whaling Corporation maintains two whaling stations at Rose Harbour and Naden Harbour in the Queen Charlotte Islands and has a fleet of six specially constructed steam trawlers, each carrying a crew of eleven. Whales are hunted off the Queen Charlottes, running as far out as 110 miles into the North Pacific. The hunting season commences about the middle of May and continues until the end of October. Whales are caught with the harpoon and an explosive cartridge, and when caught are inflated and towed to the whaling station.

Five species of whales are found off the British Columbia coast: the sperm, humpback, finback, sulphur bottom, and sie, the first three being most important from the commercial point of view, and the greater part of the catch consisting of sperms. In 1934, 265 sperms were killed as compared with 71 fins and 14 humpbacks. Sulphur and sie whales are caught only occasionally.

The products of the whale are oil, meal, guano and bone meal, meat and whalebone, the extremely valuable bilious accretion known as "ambergris" used in the making of perfumes, which has been sold for as much as $25 a pound; the teeth of the sperm whale are formed of fine ivory; the hide and the larger intestines can be made into leather; adrenalin is extracted from the supra-renal glands, and it is said that even the milk of the cow whale has been condensed. In 1918, when the food supply of the world was limited, 29,585 cases of whale meat were packed by the Consolidated Whaling Company. It was reported equal to the best canned beef or mutton, but it was not sufficiently popular to become a commercial proposition. Whale oil and fertilizer form the most important products, accounting in 1937 for $214,355 out of a total value of all whale products of

[3]See H. H. Bodfish, *Chasing the Bowhead* (Cambridge, 1936); Tom MacInnis (ed.), *Klengenberg of the Arctic: An Autobiography* (London, 1932).

$220,251. Sperm whales taken in British Columbia waters average between fifty and sixty barrels of oil each.

Canadian whaling is carried on under the provisions of the League of Nations Convention. The purpose of the Convention is to conserve the whale fishery throughout the world, especially the baleen or whalebone whales, which had been almost completely destroyed in the North Atlantic Ocean and were seriously endangered in the Antarctic. In 1930, the whaling fleets of the world destroyed 40,201 whales in the Antarctic Ocean, or more than twice the number which had been taken in the previous ten-year period.[4] Under the treaty, the taking of suckling or immature whales, or females accompanied by calves, is prohibited. The fullest possible use is to be made of the carcasses of all whales. Remuneration of gunners and crews of whaling vessels is based as far as possible on such factors as the size, species, value, and yield of oil of whales, rather than on the number taken. All whaling vessels are to be licensed by the country whose flag is flown. The most complete possible biological information with regard to each whale is supplied to an international bureau for whaling statistics at Oslo.

* * *

In the North Pacific there are three herds of seal which, although belonging to the same genus, have their own peculiar characteristics. The North American herd has its breeding place on the Pribilof Islands in Bering Sea, which became a possession of the United States at the ceding of Alaska in 1867. The Russian herd has its breeding place on Commander Islands, also in Bering Sea. The Japanese herd is located on a small island near Patience Bay off Sakhalin Peninsula which was ceded to Japan at the close of the Russo-Japanese War.

The male seal is a large animal weighing from 350 to 450 pounds, while the female is relatively small, weighing on the average about 70 pounds. The female commences bearing young when three years old and has a life of about thirteen years. The seals are polygamous and, on reaching the breeding grounds, after strenuous battles each male collects around him a number of females, ranging from 35 to over 100, in a harem. The defeated male seals retire from the breeding grounds with the young seals and do not join the

[4] "Canada and the International Whaling Treaty" (*Western Fisheries*, Aug., 1935).

herd again until the breeding season is over. As winter approaches the seals leave the islands and journey southward, not touching land again until they return to the breeding grounds the following May. They proceed southward until in January they are opposite Southern California, when they turn northwards. Because of the habits of the seal, a large number of superfluous males can be killed each year without affecting the herd. Young males about three years old have the most attractive pelts, and by killing only these the industry can be carried on in the most economical way.

When Alaska was ceded to the United States the herd on the Pribilof Islands was estimated at 4,700,000 animals. In 1870, the United States government entered into an agreement with the Alaska Commercial Company, with headquarters at San Francisco, granting to them exclusive sealing rights on the Pribilof Islands. The United States government was to be paid $55,000 a year for the lease and in addition about $2.60 per seal, and a further tax on seal oil. The kill each year was limited to 100,000 young male seals. It was an extremely profitable business both from the point of view of the Company and the government.

The skins were sold at public auction in London and consequently attention was drawn to the trade. Fishermen on the Pacific coast were attracted, and Canadian fishermen, who had no protected sealing area available to them, began killing seals in the open sea. This practice commenced in the early eighties, and both Canadian and United States vessels joined the seal herd in January and followed it north to the islands, killing the seals as they proceeded. It was impossible to discriminate between young and old, male and female, and about 75 per cent of the seals killed were females who were carrying their young.

The Alaska Commercial Company protested against the practice and discussion arose as to the ownership of the seals. It was argued that the seals, having been born on United States territory, were American property. The argument on which action was based was that in the cession of Alaska to the United States, Bering Sea was included, and that section of Bering Sea east of the 180 Meridian was United States territory and was subject to the regulations governing territorial waters. Canadian fishing vessels were seized and representations were made to the British government. Negotiations began between the American and British governments to settle the claims, and, pending settlement, it was agreed that

no sealing should be carried on in Bering Sea during 1891. But the Canadian vessels had already started out, and compensation had to be made to those who returned without catching seals. Some of them did not return, but proceeded to the Commander Islands where they got into trouble with the Russian government. The agreement was continued for two years and, in 1893, Great Britain and the United States agreed to submit the pelagic sealing question, including the international position of Bering Sea, to arbitration. By the Paris Award it was determined that the United States claim could not be sustained and that control in Bering Sea was subject as elsewhere to the three-mile limit. The United States had, therefore, to pay damages to the Canadian sealers for their seizures. Regulations were made governing the catch, and a close season was established during May, June, and July. No killing of seals was permitted within sixty miles of the Pribilof Islands. Spears only could be used in Bering Sea, shotguns in the Pacific Ocean. The use of rifles was prohibited. Provision was made for the revision of the regulations every five years, but since the United States wanted to make them more strict, in fact, to abolish pelagic sealing entirely, while Canadian fishermen wanted to relax them, no revision was made.

Japanese fishermen entered the industry in the late nineties, and the Japanese government paid a bounty on vessels built for sealing. They were not subject to the regulations laid down in the Paris Award and consequently were free to catch the seals anywhere outside the three-mile limit at any time of the year and by any method which they chose.[5]

The seal herd on the Pribilof Islands declined rapidly and, in 1897, the United States prohibited its fishermen from engaging in pelagic sealing. Fewer Canadian vessels were engaged since it became less profitable with the decline of the herd. In 1897 over 94,000 skins had been secured but in 1911 only four Canadian vessels were engaged and secured a return of 2,673 skins. The herd was estimated at from 125,000 to 136,000.[6]

As a result of negotiations between the British and American governments, the Pelagic Sealing Treaty was signed in 1911, accord-

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[5]*Canada, House of Commons Debates*, speech of Mr. Wm. Sloan, M.P., on pelagic sealing in the North Pacific Ocean, Feb. 27, 1908.

[6]Annual report of the Department of Fisheries, 1929-30 (*Canada, Sessional Papers*, p. 37).

ing to which 15 per cent of the skins taken by United States sealers were to be handed over to an authorized representative of the Canadian government. Similar arrangements were made with the Russian and Japanese governments, on condition in each case that the Canadian sealers withdrew from the industry. The amount of skins to be paid by the Japanese government was 10 per cent. Indians are not subject to the terms of the Pelagic Sealing Treaty, but are permitted to fish from small boats without the use of firearms.

Following the Treaty, the United States arranged a closed season of five years for commercial seal-catching on the Pribilof Islands, though the natives were permitted to catch seals for their own use. Similar action was taken by the Russian government, so that during these years the Canadian government received no skins. In 1915, the United States government entered into an agreement with the Funston Fur Company (later the Fouke Fur Company) by which the Company would market all seal skins or other furs taken under United States authority on the Pribilof Islands, that is, skins taken by the natives. The seal-skin market was diverted from London to Saint Louis.

During the closed period the United States advanced on the basis of the treaty arrangement $200,000 and $10,000 per year, or a total, including interest, of $258,000, which was to be repaid when the closed season ended in 1917. According to the treaty the Canadian share of seal skins was to be delivered at the Pribilof Islands at the end of each season, but since this arrangement involved making a special trip to the islands, it was agreed that the United States should sell the Canadian percentage along with her own skins and account to Canada for 15 per cent of the net proceeds. A similar agreement was entered into with the Japanese government. When the sealing was recommenced, it was evident that the closed season had been beneficial to the herds.

Dissatisfaction was expressed with the handling of the skins at Saint Louis. It was claimed that they were less skilfully treated than in London, with consequent loss to Canada. In 1933, Canada's share was delivered at Seattle so that those handling Canadian skins were free to ship them either to London or Saint Louis. Since then Canadian skins have been marketed in both centres. A special Committee of the Senate was appointed in 1934[7] to investigate

[7] *Special Committee on Sealing and Fisheries in Pacific Waters, 1934.*

complaints against the Pelagic Sealing Treaty. It was charged that the annual migration of the seals was a serious threat to the salmon industry in British Columbia, owing to the preying of the seals on this fish. An investigation of the contents of the stomachs of seals obtained from the Indians failed to support the contention. It would appear that herring forms the largest part of the food of the seal, with oulachons, salmon, and squid, to a smaller extent.

TABLE XXXIII

REVENUE RECEIVED UNDER PELAGIC SEALING TREATY, 1912–38

Year	Value of Canada's share received under the Treaty*	
		$
1912–17	United States advances interest provided for by the Treaty	258,157
1917	From Japan and Russia	5,671
1918	From Japan	962
1917–21	From United States	210,308
1921–2		93,226
1922–3		60,343
1923–4		36,261
1924–5		28,770
1925–6		74,859
1926–7		35,789
1927–8		95,028
1928–9		73,548
1929–30		62,923
1930–1		37,168
1931–2		45,140
1932–3		2,629
1933–4		52,483†
1934–5		89,550
1935–6		113,596
1936–7		103,494
1937–8		45,626
TOTAL		1,525,124‡

SOURCE: Annual report of the Department of Fisheries (*Canada, Sessional Papers*).

*The Treaty has not been in full operation as regards the Russian herd because of unsettled diplomatic relations.

†This amount includes the value of sixteen confiscated skins not included under the Treaty.

‡This figure includes $34,253.02, the premiums on exchanges, etc., which the Department received.

The returns to the Canadian government from the sale of skins were first used to recompense sealers who had suffered loss through the withdrawal of Canada from the industry. Later they became part of the revenue of the Department of Fisheries and passed into the general revenue of the Dominion.[8] Total claims of $60,663 were paid under the Treaty. Since the beginning of the operation of the Treaty, Canada's share has amounted to $1,525,124.98.

[8]Return of copy of all correspondence and reports of claims of sealers of British Columbia (*Canada, Sessional Papers*, no. 79, 1916).

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