SK
471
M3A4
1911

UC-NRLF

QB 33 748

UNIVERSITY

YC 20199

MANITOBA FISHERIES COMMISSION

1910-11

REPORT AND RECOMMENDATIONS

(With Appendices.)

COMMISSIONERS:

J. R. HUGG, Winnipeg

D. F. REID, Selkirk

EDWARD E. PRINCE, Ottawa
(Chairman)

OTTAWA
GOVERNMENT PRINTING BUREAU
1911

MANITOBA FISHERIES COMMISSION,

1910-11

REPORT AND RECOMMENDATIONS

(With Appendices.)

COMMISSIONERS:

J. B. HUGG, Winnipeg

D. F. REID, Selkirk

EDWARD E. PRINCE, Ottawa
(Chairman)

OTTAWA
GOVERNMENT PRINTING BUREAU
1911

100
100
100

SK471.
M3A4
1911

CONTENTS.

	PAGE.
Introduction.	5
Fish licenses first issued, 1887.	6
S. Wilmot and various Orders in Council.	6
Alberta separated and domestic and commercial licenses dropped.	7
Over-fishing.	8
Average Whitefish catch, Lake Winnipeg, 1904-9.	9
Extent of waters.	10-11
History of the fisheries.	11-17
Methods of fishing (winter and summer).	17
Closing of summer fishing unnecessary.	18-19
Fall fishing.	20
Alleged depletion of Manitoba waters.	21
Control of foreign companies.	22
Middlemen.	22-23
West will require more fish.	23
Decrease in size of fish and proposed remedy.	23-24
Under-sized whitefish on the market.	24-25
Sturgeon and caviar export prohibited.	25
Close seasons (permit for cold storage).	25-26
Tullibee close season abolished.	26-27
Improve routine of issue of licenses.	27-28
Fewer and better paid officers.	28
Patrol boats.	29
St. Andrew's Rapids and Walhalla dam	29-30
Fishways necessary.	30
Royalty on fish.	30-31
Hatcheries—failure of some, Big Island, &c.	31-32
Gold-eye worthy of attention.	32
Stocking waters—pickerel, bass.	32-33
Biological investigations in Manitoba, need for.	33
Claims of Indians and settlers.	34
Ample notice of change in regulations.	35
Lowering of Lake Dauphin.	35
Annual statistics—more details necessary.	36
Extensions of time.	36
Regulations recommended—General.	37-38
Lake Winnipeg, &c.	38-43

REPORT OF THE MANITOBA FISHERIES COMMISSION.

Hon. L. P. BRODEUR,
Minister of Marine and Fisheries.

SIR,—We have the honour to submit the complete and final report on the Fisheries of the province of Manitoba and part of the waters to the north, in the district of Keewatin. These fisheries we were authorized to investigate by order in council, dated March 16, 1909, in which order in council we were constituted a commission to inquire into and report on the conditions and requirements of the fisheries in question, in view of the fact that the necessity appeared for a complete revision of the fishery regulations, in order to meet the changed conditions in this western portion of the Dominion of Canada.

Appointment of the
Commission.

From time to time regulations have been enacted, which as the fisheries developed, it became necessary to amend or to entirely recast. So long ago as 1865, the necessity was realized by the inhabitants of the enforcement of legal restrictions respecting the fisheries, and the Governor and Council of Assiniboia received in the year named a petition bearing 180 names, calling attention to the state of the fisheries in the Red river and Assiniboine. It was pointed out in the petition that the fishery had been injured by the erection of barriers, or weirs, which, it was stated, had caused a great destruction of fish, and had prevented a majority of the people from obtaining a fair share of fish food, upon which so many were largely dependent. It was decided as appears from the minutes of the Council of Assiniboine, held May 30, 1865, that 'It shall be unlawful to erect any weirs or barriers in any part of the Red river or Assiniboine, and on receiving information of the existence of any such weirs or barriers, any magistrate shall be empowered after July 1, to order any constable to remove the same.' This is apparently the first fishery regulation enacted in respect to these western fisheries.

Early Fishery
Regulation, 1865.

In his report for 1873, the Commissioner of Fisheries pointed out that, included amongst other services assumed by the Dominion of Canada in the Manitoba Act, was the protection of the fisheries, and he called attention to the minute passed by the Northwest Council in September, 1873, which invited action by the Federal Government. In this minute the council stated that, 'They are of opinion that the time has arrived when steps should be taken with a view to preventing any serious diminution of the supply of whitefish. That in view of the fact that in certain portions of the Northwest Territory, and more especially in the vicinity of Norway House, the inhabitants are entirely dependent upon fish for food, the council suggests that steps should be taken by the Dominion government to prevent persons from setting nets or weirs in the main channels of rivers, or at any points through which fish are in the habit of passing to their spawning grounds in such a manner as to prevent the ingress of the fish, and to enforce such regulations as may, from time to time, appear necessary for the preservation of the fish. The council also desire to

suggest to the Dominion government that measures should be adopted to prevent the accumulation of sawdust in rivers and streams in such parts of the Northwest Territories wherein saw-mills have been or are about to be erected.'

For some years after confederation, no special regulations having Dominion authority were in force in Manitoba; but in the session of the Dominion Parliament of 1873-74, a statute was passed, 37 Victoria, Cap. 28, providing for the extension of the Fisheries Act to Manitoba, as well as to Prince Edward Island and British Columbia, by proclamation. In a report, dated December 31, 1874, the Commissioner of Fisheries stated that the provisions of this Act were not all of them appropriate to the fisheries of the provinces named, and special local regulations would be necessary. He added that to ascertain what regulations were advisable, an investigation had been made and many valuable suggestions had been forwarded to Ottawa, but further investigations were desirable before adopting any system of regulations and restrictions similar to those in force in the more eastern provinces.

Application of
Fisheries Act, to
Manitoba.

First licenses
issued 1887.

In 1887, the license system was introduced in Manitoba. In the eastern provinces, fishing under license had been systematically carried on from the time of confederation, but there was no such system in force in the west until the date named, and it proved to be from the commencement quite a successful experiment. Official reports state that the method of licensing was most successful, and prevented violations of the law as well as defined the respective fishing locations of the licensees. At the start, 130 gill-nets licenses were issued, and three drag seine licenses, but pound-nets which had been used for sturgeon, were prohibited.

Among the early regulations applied to the province was a close season for whitefish from October 20 to November 1, but the regulations, six in number, passed July 18, 1889, altered this close season to October 5 to November 10, and provided also a close season for pickerel (dore) from April 15 to May 15; and a sturgeon close season from May 1 to June 15, as well as a trout close season from October 1 to January 1. There was also a prohibition of the use of explosives in fishing, and a provision providing that waters might be set apart for the sole use of Indians for food purposes.

Investigation of
Manitoba Fisheries
by the late
Mr. Wilmot.

In July, 1890, Mr. Samuel Wilmot, Superintendent of Fish Culture, Ottawa, visited the waters of Lake Winnipeg, and, under instructions from the Minister of Marine and Fisheries, he fully inquired into the alleged depletion of whitefish, and reported on desirable regulations, which were submitted to the minister in a detailed memorandum, printed in the Department of Marine and Fisheries' report for 1890, to which memorandum reference is made in subsequent portions of the present report. A new set of regulations based on Mr. Wilmot's report was thereafter framed, and these, with various amendments which have been made from time to time, have practically remained in force until the present time. The regulations were amended in 1892, 1893 and in 1894, and on May 8, 1894, they underwent a further recasting and assumed the form which has continued to the present time.

Various changes
in Regulations,
1892-1910.

In these regulations a distinction was made between—

(a) Commercial and domestic licenses, the former being valid from May 1 to August 31, and the latter from the date of issue to December 31, of each year.

(b) The limit of net specified as ten thousand yards to each fishing tug, and three thousand yards to each sail boat; but no company or firm was entitled to have more than a total of twenty thousand yards of net. License conditions.

(c) It was intended to limit all gill-net fishing after 1894, to domestic licenses in Lake Winnipeg, though pound-nets were to be used under commercial licenses, four to each company, the mesh being $4\frac{1}{2}$ inches in the pot. This really abolished commercial gill-netting, had the prohibition been carried out, but as a matter of fact, it was not carried out, and pound-nets were never adopted generally by the commercial fishermen in Lake Winnipeg. Gill-nets were also permitted of four-inch mesh for tullibee; drag seines of four-inch mesh, and gold-eye gill-nets in the Red river of three-inch mesh.

(d) The following close seasons were at this time in force: —
Whitefish, tullibee, &c., October 5 to December 15, though on Lake Winnipeg, for settlers, the close season was fifteen days shorter, namely, from October 5 to November 30. Close seasons.

Pickereel, April 15 to May 15.

Trout, September 15 to May 1.

Sturgeon, May 15 to July 15, and finally a weekly close time was enacted from six p.m. Saturday to six a.m. Monday of each week.

(e) Indians, it was provided, might have free licenses for food, but not for sale.

(f) One condition was applied to all commercial licenses, viz.: that fishing under such licenses could be carried on only outside certain prescribed limits, or, as the regulation expressed it, 'outside the excluded limits as shown on the map descriptive of Lake Winnipeg, which accompanied the annual fisheries report of 1890.'

In 1897 the regulations were again thoroughly revised, and received new authority by order in council, dated October 14, 1907. Under these revised regulations the distinction between commercial and domestic licenses still remained. The excluded limits above referred to continued; the permission to use pound-nets under the former conditions was allowed, but certain changes were made in the close time annually and weekly, and in the mesh of nets used for various fishes. All the various sets of regulations described were framed so as to apply to the whole of the western provinces of Canada, excepting British Columbia. They were described as Fishery Regulations of the provinces of Manitoba, Saskatchewan, Alberta and the Northwest Territories. One of the most important parts of our work has been to change this system of applying the same regulation to all these western provinces, and the time has come for eliminating from the Manitoba and Keewatin Regulations all references to the more western waters. These Manitoba waters differ in so many marked respects from the waters to the west, that the regulations which were designed to apply to all have never proved very satisfactory, and those which we now recommend are applicable, and are intended to apply, to the waters only of Manitoba and the adjacent waters of the district of Keewatin to the north.

Regulations applied to all Western Canada, except B.C.

The one marked abuse in connection with the regulations which have for over twenty years been in force, has been that, while a distinction was drawn between commercial licenses and domestic licenses, there actually existed no such distinction in practice. Domestic licenses have universally and constantly been used for commercial purposes, and it has been a matter of common criticism Distinction between Domestic and Commercial licenses not really carried out.

that the idea of the domestic license has never been carried out at all. In our present recommendations we meet this difficulty by abolishing the commercial and domestic license and by providing for fishing licenses only, apart from the settler's permit for fishing for his own use.

It has appeared to us necessary to provide for only one type of fishing license, namely, the license to be used by the genuine fisherman, one license for summer fishing and another license for winter fishing and, instead of the domestic license to be used for food purposes, it has appeared to us that the issue of a settler's permit would amply suffice. Under this permit any settler or Indian can fish at any time for his own domestic needs.

Inasmuch as tugs are absolutely necessary on the lakes, we have provided for a special tug license, which will enable these vessels to do limited fishing, otherwise there was the possibility that steam tugs would not be operated in towing boats of the fishermen, an important accommodation, unless such tugs had some fishing privilege accorded them. As a matter of fact, this commission has abolished the Commercial Company's license altogether, the object being to remove all control by commercial companies or combines, and to place the fisheries, as far as possible, in the hands of the *bona fide* fishermen.

In tracing back the history of the Manitoba fisheries there are certain points which have been prominent in all discussions in the past, viz.: the alleged overfishing and excessive destruction, especially of whitefish, and the waste of fish when actually caught, and similar abuses. Under the old regulations a fishing company could use 20,000 yards of gill-net and the use of this quantity of gill-net by the fishing companies, it was alleged, led to excessive catches, more than could be conveniently handled. The fishing was carried on over too long a period, late into the fall, so that, when the autumn storms came up, the nets drifted away and vast quantities of fish decayed and were lost. Fishing was also carried on in bays, and, in some cases in the mouths of some of the important rivers, which was, another cause of excessive destruction of fish. There was also a vast destruction of spawning fish. The commercial fishermen made great captures of whitefish actually at the spawning time for the purpose of securing quantities of eggs for conversion into a kind of bait, used especially in the French sea fisheries, and for purposes of caviar. All these unfavourable conditions tended to intensify the prevalent popular opinion that the Lake Winnipeg fisheries were being grossly abused, and that their total depletion was only a question of a few years if such conditions had continued. These abuses have been very largely, if not altogether, met by the passing of one restrictive regulation after another, so that the amount of commercial net to each company was reduced. Reserved limits inshore were defined, and commercial netting excluded therefrom—the period of commercial fishing each year was reduced to two months and a half, and a number of other restrictions were instituted which have had a very beneficial effect.

The commission, in reviewing the reports and records of the Manitoba fisheries for over thirty years, has been struck by the continual recurrence of the complaint that the Lake Winnipeg and Manitoba waters were being over-fished, and that the total depletion of the fisheries was threatened. These fears have happily never been realized, and it is a proof of the wonderful productivity of Lake

Winnipeg and the Manitoba waters that, in spite of the abuses to which we have referred, and in spite of the over-fishing, the yield of fish has marvellously kept up, and that, notwithstanding a prevalent feeling of uneasiness in regard to the present condition of these waters, with the restrictive regulations which we now recommend there is, in our opinion, no fear of the exhaustion of these fisheries in the immediate future.

ANNUAL CATCHES ON LAKE WINNIPEG AND SUGGESTED LIMITATION.

We have taken special pains to ascertain with as much accuracy as possible, the total annual summer catches of whitefish in recent years. The difficulty of collating from the official published reports accurate totals of the catches in different years has been great, owing to the lack of uniformity in the statistics, and the inclusion of winter-caught and fall-caught fish, and other confusing methods, however, we have elsewhere referred to, the following figures we believe to be as accurate as it is possible for such fishery returns to be. In compiling these accurate returns from the figures on their books, the fish companies have most willingly aided us, and the inspector of fisheries, Mr. W. S. Young, took special pains and much trouble to get at the exact figures and enable us to compile the returns.

SUMMER-CAUGHT WHITEFISH—LAKE WINNIPEG.

	In the round.
1904	5,244,194 lbs.
1905	3,780,188 "
1906	3,565,908 "
1907	1,272,000 "
1908	2,335,000 "
1909	2,162,298 "
	<hr/>
Total	18,359,590 "

Or an average of 3,100,000 lbs.

During the past year, 1910, we have included statistical investigations in our work, and have amassed a variety of returns of the takes of fish, and we find that on Lake Winnipeg the summer-fishing for the season of 1910, totalled up to 2,469,845 lbs. of whitefish in the round. This we consider a far more satisfactory showing than might have been anticipated. The total catch specified in the regulations for 1910 required that not more than 2,400,000 lbs. of whitefish should be taken; but the last lifts of fish, just before the season legally closed were far heavier than the most experienced men could have foreseen. As a matter of fact, during the last few days of the season, a reduced amount of net was placed in the water in order to avoid any excess in the catch over the specified legal quantity, but the total catch was as stated above. There was also an undoubted misunderstanding in regard to the total catch as defined in sub-section 4 of section 12 of the regulations, dated April 18, 1910, which was regarded as applying to whitefish 'in the round,' whereas on the lake it was generally understood by the fishermen and the fish buyers that the total quantity specified was to apply to 'dressed' fish. In the recommendations we make in the present report, the limit we specify is for 'dressed' whitefish. It is generally held by practical men in the fish business that the difference between the 'dressed' fish and fish in the 'round' is about one-eighth of the total

No signs of
complete exhaustion

'dressed' v.
'round' fish.

weight, and we have found in the course of our investigations at the fishing stations that this is a pretty accurate estimate, and that the entrails and waste products in the fish constitute about one-eighth, or $12\frac{1}{2}$ per cent of the weight of the 'round' fish.

As evidence that there is still an abundance of whitefish in Lake Winnipeg may be instanced the early date on which the fish companies closed down operations. Although fishing operations were allowed by the regulations to end on August 15, each company had secured its allotted quantity before that date, and closed down on the following dates respectively:—

Northern Fish Company, George's Island, July 1.
 Northern Fish Company, Black river, July 3.
 Northern Fish Company, Warren's Landing, July 7.
 W. Robinson Company, Black river, July 7.
 W. Robinson Company, Warren's Landing, July 9.
 Roderick Smith, Sandy Island, July 20.
 S. Sigurdson, Selkirk Island, August 5.

EXTENT OF THE WATERS.

Very few persons who have not visited the large lakes of Manitoba have any adequate idea of the vastness of these waters. Their productive character has astonished all who have investigated the fish and fisheries of Manitoba; indeed it is estimated that the lakes and rivers of this province form about one-fifth of its total area, the area of its various lakes being as follows:—

	Square miles.
Area of the several lakes.	Lake Winnipeg. 9,460
	Lake Winnipegosis. 2,086
	Lake Manitoba. 1,775
	Lake Dauphin. 196
	Lake St. Martin. 125
	Swan Lake. 121
	Sheal Lake. 102
	Waterhen Lake. 76
	Dog Lake. 64
	Ebb and Flow Lake. 39

Tributaries of Lake Winnipeg.

A total area of more than 14,000 square miles. Such a lake as Lake Winnipeg covers an area which makes it rank amongst the great lakes of the continent. It extends from latitudes 50-54 N. Lat. It has a very large number of important rivers emptying into it, the principal rivers being the Great Saskatchewan, the Winnipeg river, the Red river, the Little Saskatchewan, the Brokenhead, the Bear, the Black, the Bloodvein, the Beaver, the Catfish, the Bad Throat, the Pigeon, the Berens, the Pelican, &c. Moreover, some of these larger rivers have already received important tributaries before entering the lake. Thus, the principal rivers discharging into the Red river are the Assiniboine, into which again empties the Qu'Appelle and the Souris, the Little Saskatchewan and the Bird-tail; and, still further up in the United States territory, there are, it is said, about twenty important streams pouring into this river. It is impossible to give the list of streams and of lakes which empty into the Winnipeg river. Some of them like the English river and the Rainy river—the latter in its course receiving the waters of

countless lakes and tributaries and flowing into Lake of the Woods which empties into Winnipeg river. The tributaries of the Rainy river are very numerous. Some of the lakes, like Lac Seul, are of large size, over a hundred miles long. Thus, by the Red river and the Winnipeg river an immense territory between the Mississippi to the south and the height of land west of Lake Superior on the east, and to the height of land on the northeast bordering the Hudson Bay region, every lake and stream empties into Lake Winnipeg. The Great Saskatchewan from the Rocky Mountains receives the Sturgeon, Vermilion, Battle, and other rivers, and, not least, the South Saskatchewan into which the Red Deer river, the Bow and Elbow rivers empty far away to the west. All these immense tributaries pouring into Lake Winnipeg empty by the Great Nelson river to the north with its vast expanse of lakes like the Play-Green lakes and others. It is not too much to say that a body of water like Lake Winnipeg, receiving the drainage of such an immense area of country, provides all the conditions for an abundant fish supply which, with proper care, can only be described as inexhaustible. There is little doubt that most of these lakes have contained, at some time or other, whitefish, though various natural causes and the destructive character of man's fishing operations may have diminished their abundance in some cases, or perhaps exterminated them. Archbishop Taché, in his sketch of the Northwest, speaks of the Attihawmeg, which is found throughout the country, the lakes, large and small, being nearly all frequented by them, and they, providentially, swarm even in some of the lesser lakes, which otherwise would be without resource, and many parts of the country would otherwise be uninhabitable. 'I am entitled to speak on the subject,' said the Archbishop, 'for I have lived for whole years on whitefish as my principle food and frequently the only food.'

Whitefish very
widely distributed.

HISTORY OF THE FISHERIES OF MANITOBA.

The history of the fisheries of Manitoba is a story of marvelous development. Thirty years ago whitefish were so abundant that it was claimed by the authorities that restrictive or protective measures were really not required in order to preserve the fish in abundance, so plentiful were the swarms of fish in these waters. In an old (fisheries) report of the Department of Marine and Fisheries, for the year 1872-3, there is, however, a fear expressed that, as the population increases, some preservative laws might be advisable to prevent the serious diminution of the supply of so valuable and esteemed a food fish as the Manitoba whitefish. At the time referred to, the total catch of fish on Lake Winnipeg was estimated at 160 tons, or between 70,000 and 80,000 fish. The Hudson's Bay Company's employees are stated to have taken annually at Fort Alexander 30,000 whitefish on an average, while the Indians and half-breeds, to whom the fish was a staple article of food, consumed 40,000 or 50,000 more. The market price was stated to be sixteen shillings per hundred, that is, about one dollar per 100 pounds, or a cent a pound, and 'a large number of whitefish are brought down from the lake for sale at Winnipeg.' The total value of the whitefish catch was estimated at £640 stg. or a little over \$3,000 per annum. The commercial utilization of this fish must have been carried on in a somewhat desultory way, though Fishery Officer D. Gunn, in a report dated October 14, 1875, referred to a joint stock company having

Growth of the
Manitoba Fisheries.

Fear of depletion
years ago.

Lake Winnipeg
Fish Co., 1872.

been formed in 1872 by a few enterprising men to supply the city of Winnipeg with fish. This joint stock company built a half-decked boat of some tonnage, and had a supply of drag seines and other nets on board, and made several trips from Winnipeg to the Little Saskatchewan river where they established their fishing station. They brought in their catches to Winnipeg, chiefly whitefish, fresh and salted, but the enterprise did not prove to be a paying one, and they gave it up, and confined their boat to freighting goods and provisions to the various points on the lake.

Pioneer Commercial
Fishing Co.—
Messrs. Reid &
Clark.

The first real commercial fishing enterprise for supplying the market with fish was commenced in 1882 by Messrs. Reid and Clark, who began with one sailboat on Lake Winnipeg, and they brought down their catches to the city of Winnipeg. The operations were, to a large extent, an experiment, but the results were encouraging, and in 1883, they increased their operations, employing two sail boats, and their catch was as follows:—

1883—Catches on
Lake Winnipeg.

	Lbs.	Value.
Whitefish	72,867	\$3,041
Pike	51,850	1,061
Pickarel or dore	2,400	480
Total	127,117	\$4,582

First fishing tug on
Lake Winnipeg,
1884.

In 1884, the firm named placed a steam tug, the *Lady Ellen*, on the lake. This was the first steam fishing tug placed on Lake Winnipeg, and the catches made by it largely increased the total output of fish. The catch in 1884 increased five-fold, the fish being chiefly exported to the United States, as that was at the time the only available and readily reached market. The following were the amounts of fish:—

	Lbs.	Value.
Whitefish	359,000	\$14,036
Pike	561,833	13,855
Total	920,833	\$27,891

In 1885 the exports of Lake Winnipeg whitefish to the United States were:—

	Lbs.	Value.
Whitefish	759,730	\$32,500
Pike	670,433	21,877
Pickarel (dore)	33,515	1,340
Tullibee	1,600	80
Total	1,465,278	\$55,797

Other fishing
companies, 1885.

The above fish were cleaned and salted and also shipped in a fresh condition while a proportion were frozen, winter-caught fish. Messrs. Reid & Clark handled about 167 tons of fresh fish and 2,270 half barrels salt whitefish. Other parties now entered into the industry; Captain Banfield placed a schooner on the lake, while Messrs. Matheson, J. Hanson and D. McGregor each had a sail boat employed in carrying on the fishery. In 1886 another firm entered the business, the well-known firm of Messrs. C. W. Gauthier & Co., of Sandwich, Ont., who brought to the lake a plant valued at \$1,500, and who secured a catch of fish which they shipped to Windsor, Ont., and

which was valued at \$1,206. Messrs. Reid & Clark operated two large barges, the *North Star* and the *Wallace*, and expended about \$20,000 on ice houses, freezers, &c., to provide for a largely increased business. The total export of fish from the lake was, however, little more than that of the preceding year in quantity, viz.: a million and a half pounds, valued at \$54,360. The death of Mr. Clark, of the pioneer fishing firm on the lake, in 1887, resulted in the dissolution of the firm of Messrs. Reid & Clark, and Captain William Robinson took over the plant and continued their operations. Freezers and ice houses increased, more tugs and boats were employed and the total yield of the fisheries doubled in extent and value. No less than seven tugs and barges and 65 sail boats were engaged on Lake Winnipeg at this time, and the total catch was 2,677,547 pounds, valued at \$114,808, of which 1,591,247 pounds of the value of \$65,441 were exported to the United States and the remainder were sent to Ontario or used locally. Lake Winnipeg catch, 1887.

In 1892 the Manitoba Fish Company was formed, and took over the business of Messrs. Gauthier & Co., and this year the limit of net for each commercial company was reduced from 40,000 yards to 20,000 yards, commercial operations being confined to the specified limits at the north end of the lake, and the weekly close time during which the nets were to be raised for 36 hours were carried out.

In 1893, there were 13 steam tugs and 30 sail boats, and a total of 67,350 fathoms of gill-nets used on the lake. The total value of the boats and gear was \$190,800, and the total catch of fish was 3,873,281 pounds, about 140 men being employed in the fisheries in that year. Lake Winnipeg fishing outfits, 1893.

On the other lakes of the province, the development of the fisheries was less marked. On Lake Manitoba, in 1855, commercial fishing was commenced by Messrs. Smalley and Chantler, of Westbourne, who handled 100,000 pounds of fish in that year. Mr. Hugh Armstrong, of Portage la Prairie, handled 240,000 pounds, Peter McArthur 75,000 pounds, and R. Bullock, of Selkirk, 77,000 pounds, a total catch of 492,000 pounds, and the operations were wholly carried on through the ice in winter. Lake Manitoba Fisheries.

In respect to Lake Winnipegosis, so late as the year 1894, commercial fishing can scarcely be said to have been carried on, as the fishermen on the lake operated only in a limited way and sold their fish to the trading firms or to the recognized fish companies. Fisheries of Lake Winnipegosis late in developing.

The fisheries of Lake Winnipegosis remained comparatively undeveloped until about twenty years ago. Settlers began to come into the country at that time, and fishing operations were carried on in the first instance for their own use and soon developed into a commercial fishery. In 1896, there were representations made to the Dominion government to allow commercial fishermen from outside to come on to the lake, and the district inspector was asked to report. He reported that the settlers already on the shores of the lake, and who were coming in in considerable numbers, could do all the fishing and that any commercial fishing should be confined to the north end of Birch island, that is the north end of the lake, which had heretofore not been very much fished, that region being comparatively inaccessible. Lake Winnipegosis at this time had no railway communication, but in 1897 the railway reached the lake and gave a great impetus to the fishing. One tug was placed on the lake and 63 fishing boats, and a large number of eastern fishermen sent in applications to operate commercially; but in order to prevent danger Recommendation that fishing be confined to residents, 1896.

Cedar Lake
sturgeon fishery.

Summer fishing
stopped on
Lake Manitoba,
1905.

Summer fishing
stopped on
Lake Winnipegosis,
1906.

Waste of fish in
summer fishing.

Requests to re-open
summer fishing on
Lake Winnipegosis.

of depletion the licenses were confined to actual settlers, and a maximum number of 100 licenses was fixed by the department. This action prevented a number of the fishermen from the east coming on to the lake. One fishery carried on in these waters or, rather, in the waters of Cedar lake, was the sturgeon fishery, a great many of these valuable fish being shipped from the north via Lake Winnipegosis. At this time there were two companies operating on the lake which, as was generally recognized, were under the control of large United States firms. These companies carried on their own fishing operations during the summer, but in the winter the fishing was carried on chiefly by the settlers and by fishermen who sold their catches to the companies. Strong representations were made, that, in order to preserve these lakes (Lakes Winnipegosis, Manitoba, &c.) and to benefit the local population, the summer operations should be either still more curtailed or should be stopped altogether. On March 13, 1905, an order in council was passed prohibiting summer fishing altogether on Lake Manitoba, so that no summer operations could be carried on from April 1 to November 30 in each year. Similar action was taken next year in regard to Lake Winnipegosis, and, on March 28, 1906, an order in council was passed closing Lake Winnipegosis, Lake Dauphin and tributaries, from April 1 to November 30 in each year, thus entirely doing away with summer fishing operations on these lakes. The main ground for the action taken was that, in the view of the department, the benefit of summer fishing to the local population was small as compared with the great benefit resulting from winter fishing, as, in addition to the earnings from the actual fishermen, there was considerable benefit to the farmers teaming the fish, and much money circulated in supplies; while, in addition better prices were obtained by the fishermen for their winter-caught fish than for summer-caught fish. Indeed, it was stated to the department that the difference in price received by fishermen in winter was considerable, being $4\frac{1}{2}$ c. to 5c. per pound, whereas the price for fish caught in summer was $2\frac{1}{2}$ c. per pound or even less. Moreover, it was asserted that 25 per cent of the summer-caught fish were lost owing to storms which prevented the overhauling regularly of the nets, and the fish being left in the meshes died and polluted the lakes. In order to afford greater protection to fishermen on the lake, and to further the interests of the residents, the Indians, half-breeds, &c., living around the lakes, it was regarded as wise and necessary to maintain the summer fishing prohibition referred to, although actual settlers were still permitted to fish for food for their own use but not for sale.

During the sittings of the commission, strong representations were made on several occasions urging that Lakes Winnipegosis and Manitoba be re-opened for summer fishing operations, but in our interim report, we, as a commission, decided that it was desirable to continue the prohibition with a view to restoring the abundance of whitefish and pickerel; and it is interesting to note that a number of the prominent parties who urged the removal of the summer prohibition, have since commended the commission for their decision to maintain the closure of summer fishing on these two lakes.

METHOD OF FISHING.

It is desirable to briefly state some of the features in the methods of taking fish in the waters of Manitoba. Whereas in more

easterly waters, as on the Great Lakes, &c., there are at least ten different methods of taking fish, that is, ten different kinds of gear, on Lake Winnipeg and Manitoba waters generally, gill-nets only are used. There is considerable hook fishing for cat fish and coarse fish with baited hook, and in the Red river drag seines are operated and a few dip nets. The large destructive pound nets, which are so commonly used in eastern waters, have not been permitted for at least 20 years in Manitoba waters, excepting in certain lakes in the Keewatin district where a special concession was made chiefly for the purpose of capturing sturgeon. A quarter of a century ago, the Selkirk Fish Company and Messrs. Gauthier & Co., experimented with pound nets in Lake Winnipeg, but they did not appear to be as successful as in eastern waters. Pound nets are used every fall for Dominion hatchery purposes on grounds where the parent whitefish assemble for spawning purposes, and the method is much preferable to taking the fish in gill-nets as the quality of the spawn in gill-netted fish is not only inferior but often quite useless for hatchery purposes.

Gill-nets the principal gear used in Manitoba.

Pound nets unsuccessful.

Gill-netted whitefish useless for hatchery purposes.

The Commission found that very widespread criticism was being expressed by the public in regard to the methods adopted for supplying the Winnipegosis hatchery with spawn by the use of gill nets. It was asserted and the assertion was supported by much evidence given at the sittings of the commission, that the privilege of gill-netting whitefish in the close season for hatchery purposes had been very seriously abused, and had proved a total failure, as comparatively few eggs were obtained, and these were altogether in too bad condition for hatchery purposes. Notwithstanding the small quantity of spawn which was sent to the hatchery, a very large quantity of whitefish was obtained which were transported from the lake in carloads and bought and shipped by the fish companies.

Abortive trial of gill-nets for Winnipegosis hatchery.

Gill-netting, as at present carried on, includes steam tug fishing, sail boat fishing and skiff fishing, while the winter fishing operations are carried on by nets fished through holes made in the ice. The tugs used vary in tonnage from 10 to 25 tons, and each tug is allowed to use a specified quantity of nets, namely, 5,000 yards. Large steamers are provided by the companies for carrying fish both in a fresh and frozen condition, these steamers being valued at from \$10,000 to \$30,000. The sail boats are about 32 feet long, two-masted and half-decked, and are built principally in Selkirk. A sail boat costs about \$400, fitted with sails, &c. The skiffs employed are light carver-built row boats, costing probably about \$15 each, some costing more, others less. Gasoline motor boats have been tried experimentally in the lake fishing, but have not been up to this time adopted.

Fishing tugs.

Fishing sail boats.

Fishing skiffs.

The gill-nets used in summer fishing are Scotch twine (linen), about No. 40, and are 18 to 24 meshes in depth, an increase in the depth of nets as compared with a few years ago, when, on an average the nets were about 15 meshes; but for winter fishing much shallower nets are used. In most places, indeed, many of the nets are not more than from 6 to 12 meshes deep, according to the depth of the water of the localities fished.

Gill-nets for summer fishing.

The method of reaching the summer fishing grounds is as follows: The fishing boats are towed out from the fishing station usually about daybreak by the fish company's tugs. The fishing stations, it may be explained, are usually at some point conveniently accessible to the fishing grounds, either on an island or at some prominent

Procedure of fishermen in fishing grounds.

point where there is good harbour accommodation. There are seven fishing stations belonging to the four companies now on Lake Winnipeg, and, at these stations there are fish houses, freezers, net-reels, and boarding and dining accommodation for the fishermen. Indeed, each fishing station is a miniature fishing village and usually includes a store where the fish company sells supplies. On arriving at the fishing ground, one to thirty miles distant from the fishing station, each boat pays out its net, about 18 pieces of 166 yards or more each, to the limit of the 3,000 yards allowed by law. These pieces of net are leaded along the bottom line and corked along the top line, so that they hang upright in the water, and they are lowered to the bottom where the schools of fish congregate. In paying out the net, the buoy is thrown out first, and the anchor stone attached to the same line is lowered to the depth desired, and the net attached to it is gradually paid out until the whole net is at the bottom of the water. A second anchor stone is then dropped over board, and a second buoy put out when the whole of the net is paid out, so that there is a floating buoy marking the one end of the net and a second buoy marking the termination or other end of the net, showing the spot where the net lies anchored at the bottom. Each boat takes up its position at a sufficient distance from the other boats, the boats being dropped off from the tug as the various grounds are reached, until all are located and the tug then waits for the last boat to set. If there is a fair wind, and the weather is very favourable, the boats, instead of being towed back, hoist their sails and sail back to the harbour. After the net has remained in the water about twenty-four hours, that is over night, the tug returns with the boats to their respective fishing locations, and each boat proceeds to haul up its nets and to take the fish out. The fishermen pull the fish out of the meshes by hand, as each part of the net is hauled up over the gunwale. There are usually three men in each boat, and, as the tug takes the boats back to the fishing station, the crew clean the fish and sort out the various kinds. On arrival at the dock of the fishing station, the fish from each boat are weighed in boxes, and credit is given to it for its respective catch. Part of the catch may be cleaned at the station, and in rough weather the whole of the catch is usually brought in and cleaned on the dock. In warm weather, each boat takes its supply of ground ice in order to chill the fish as they are taken from the nets and to keep them in good condition until they are brought to the fishing station. After lifting the gang of nets, the boat crew proceeds to re-set them, usually moving a little according to the direction the fish are found to be running, though they may set partly on the same ground occupied during the previous 24 hours. The fish are carefully washed after reaching the dock at the station, and are assorted in metal pans—that is, the fish are graded as to size in three sizes, eight fish to the pan, six fish to the pan, and four fish to the pan, which are called respectively, ‘small,’ ‘large’ and ‘jumbos.’ The galvanized iron pans, as they are filled with fish, are placed in bins and a layer of ground ice and of coarse salt is spread over each row of pans, which are thus iced and piled up in successive layers. The bin, when all the pans are placed in position, is filled up with ice and closed up. From this method of packing them in pans, it will be seen that neither the ice nor the salt touches the fish at all, the pans being so arranged as to admit none of the ice or salt which surround them outside. The following

Taking up the
catch of fish.]

The fish—how
handled.

Grading the fish
as to size.

Freezing the fish.

day they are taken out and the pans are opened. Each cake of frozen fish is then dipped in water and a thin coat of ice is thus formed around it. The fish thus treated are then packed in wooden boxes, each holding about 125 pounds; the boxes are nailed down and placed in the freezer to await the arrival of the steamer which will carry them to the large freezers at the shipping points, such as Selkirk. Each steamer has a capacious freezer in which the boxes of fish are placed for the trip down the lake.

In addition to the freezing method described, an increasing quantity of fish is shipped without being frozen in pans at all. The fish is kept fresh by being covered with broken ice, in boxes, one hundred and fifty pounds in each box, and they are shipped in the same manner as the frozen fish; but, on arrival at the main shipping point, they are transferred immediately to refrigerator cars and to the express companies for despatch without delay to market for immediate consumption.

Fresh fish.

The winter fishing is an entirely different enterprise. The fishermen generally go out late in the fall to some distant fishing ground, being conveyed by the last steamer leaving for the north before the winter ice forms. The men are conveyed to the winter fishing camps, many of them as much as 200 miles from their homes. They have full winter supplies with them and dog-trains, and each fisherman is allowed 1,500 yards of net. The mode of operation is as follows:—A hole is cut through the ice and a long pole, thirty or forty feet in length, is inserted through the hole and pushed along under the surface of the ice which is usually not more than three or four inches thick at that time, so that the pole is readily seen through the ice, and as it is pushed along holes are made at intervals through which a forked stick is inserted for working the pole further along until it has traversed a distance the full extent of the net to be fished. To the pole a line is attached, and when the full length of line has been paid out the net is attached to one end and can thus be easily pulled through the water under the ice. An anchor-stone is attached to the net which causes it to sink to the bottom, while the upper line, or cork line, keeps it floating in an upright position in the water. The net is left down at the bottom, say, for 24 hours, and if the weather permits it is hauled up through one of the holes and the fish taken out and the net replaced or reset as before. The net, as it is hauled up through the ice with its catch of fish, of course freezes at once and the fish taken out of the meshes are soon frozen hard so that they cannot be cleaned, and they are usually shipped to the market in the round condition. To protect the fishermen from the severity of the winter winds, a canvas screen is often placed around the upper hole to enable the men to work sheltered from the blast. As a rule, two men work together on the same gang of nets, one being, generally, the owner of the gear and the other an assistant. The fish piled up on the ice after being taken from the net, are either boxed up at once or are piled up on the sleigh and conveyed by dog-team to the different camps where they may then be boxed up ready to be loaded on the teams which take them to the railway shipping points, a distance it may be of from a few miles to two hundred miles. These teams are provided by the farmers, principally, and they receive for freighting the fish on an average one cent per pound per mile per hundred miles. The fish companies at the commencement of the season usually make a contract with each fisherman (see copy of contract, Appendix No. 1) so that each com-

Winter fishing methods.

Taking up the catch.

Teaming the fish from the camps.

Fisherman's
contract with
buyers.

Small freezers
for fall fish.

Tests of fishing
grounds made by
Commission.

Summer closure
on L. Winnipeg,
by O.C. April 18,
1910.

Limit specified for
total summer catch
O.C., April 18, 1910.

pany receives its quota of the winter catch for which the contract was signed before the fisherman left for the fishing grounds. As the companies usually furnish supplies to the fishermen, these contracts are a guarantee for repayment by means of the catches of each fisherman. It is interesting to note that along the west shore at the south end of Lake Winnipeg, a number of small freezers have been built by Icelandic settlers and by fish companies, the purpose of these small freezers being to store the catches of pickerel and coarse fish taken in the fall, in September, October and early November. This fall fishery is far less extensive than the winter fishing and much less so than the summer fishing operations; but it occupies the local men in the interval between the summer fishing and the winter fishing operations. And, as many of these small freezers are carried on upon co-operative principles, this is a desirable feature as encouraging thrift and enterprise amongst the actual fishing population.

THE QUESTION OF CLOSING SUMMER FISHING.

We have already presented in the interim report, dated November 26, 1909, certain important conclusions, thirteen in number, to which the evidence received at our public sittings led us; and to these conclusions we shall refer in more detail and support them by the further information we have received. This information was gained in our extended tour of investigation made to the fishing grounds of Lake Winnipeg by the whole of the members of the commission during the summer operations, and by special visits to Lake Winnipegosis and Lake Manitoba and to the northern fishing areas of Lake Winnipeg for the purpose of testing the alleged exhausted fishing grounds there after the close of the summer operations, and, finally by an investigation during the fall fishing, these last visits being made by a sub-committee of the commission. The report of this sub-committee forms Appendix.....

To the main portion of the interim report, unanimously agreed to by the commission as a whole, there were added two majority reports, each bearing the signatures of two members of the commission—one report distinguished as addendum A (Page 11 of the interim report) which urged that Lake Winnipeg had reached such a serious condition in the opinion of the majority that the total closing of the lake to all summer fishing was justifiable, commencing with the present year 1911, such closure to continue until evidence was forthcoming that the fishery resources of the waters named had recovered in a measure their former plentitude. This recommendation for closing Lake Winnipeg was adopted by the department, and would have come into force during the present year, 1911, in the ordinary course of events. By order in council, dated April 18, 1910, Sec. 12, Sub-sec. 9, it is provided that—‘after the year 1910, commercial summer fishing shall be prohibited in Lake Winnipeg.’

The second majority report, distinguished as Addendum B. (page 12 of the interim report), suggests that there should be a limit imposed on the annual catch of whitefish taken during the summer season, June 1 to August 15, and this recommendation of two out of three of the commissioners was adopted by the department commencing with the summer fishing operations of 1910. By order in council above named, Sec. 12, sub-sec. 9, it was provided that—‘During the summer commercial season of 1910, not more than two million four hundred thousand (2,400,000) pounds in the

round of whitefish shall be taken. As soon as such quantity is caught, the inspector of fisheries shall order all nets to be taken out of the water.'

With respect to the closing of Lake Winnipeg, we feel bound at once to call attention to the important fact, that evidence of the decline of the fishery resources of Lake Winnipeg to the serious extent generally alleged has not been amply borne out by our subsequent investigations; but that, in spite of the excessive fishing, or over-fishing, as has been alleged, the supply of whitefish in Lake Winnipeg is still enormous and gives no sufficient ground for serious fear as to the future. The sub-committee which visited the fishing ground after the end of the summer fishing operations, and personally tested special localities which had been abandoned because of the supposed total depletion of fish, found evidence by setting nets that the depletion was far less serious than had been alleged, and that the means taken for thoroughly investigating the state of these grounds established this remarkable result, that the fears anticipated by many were not realized and that the areas referred to did not show signs of the danger of immediate exhaustion. It is true that the size of the fish appeared to have decreased somewhat, but the quantity of whitefish abounding in these areas had not decreased to the extent that had been commonly claimed. We do not think, therefore, that, in view of this evidence, and in view of the facts ascertained, the continuance of the prohibition of summer fishing is justifiable; and we strongly recommend, therefore, that the first part of sub-section 9 of section 12 of the order in council of April 18, 1910, be rescinded. To close down summer fishing operations in any case would be a most serious step and have far-reaching consequences on the industries of the province. And this important fact must be borne in mind, that Lake Winnipeg is the only source of supply for fresh whitefish on which the western Canadian and other markets in the Dominion can depend, and the closing down of summer fishing would therefore deprive a large part of our population of any supply of fresh whitefish during the summer season. The summer fishing is carried on in a part of this great lake, the shores of which are almost entirely without population and not likely to be settled for a considerable time on account of the special nature of the country and its not being adapted for agricultural purposes. The somewhat satisfactory signs which our further investigations have shown as to the state of the fish supply in the northern portion of Lake Winnipeg, would not justify, in our opinion, the industrial dislocation to which we refer, viz.: the stoppage of an important fishery enterprise, and the cutting off of a valued and necessary supply of fresh fish for our own local needs in the west and for eastern markets. An additional safeguard against any danger of depletion was provided by the limit of the total summer catch, which was placed at 2,400,000 pounds last season. Considerable dissatisfaction arose from the fact that in the order in council the expression 'In the round' was used, which, of course, considerably reduced the total amount of fish, and the proportions which by arrangement each company was prepared to handle. From the information which has been placed before us there is strong reason to believe that the limit of 2,400,000 pounds was not originally intended to refer to 'round' fish, but to 'dressed' fish, and our recommendation would, therefore, be, that a maximum limit of the summer catch be provided, but that it be placed at 2,500,000 pounds of whitefish in a dressed condition.

Danger of immediate depletion of Lake Winnipeg, not borne out by Commission's tests.

Not necessary to carry out closure of summer fishing on L. Winnipeg.

Fresh fish in summer important for the province.

Shores not populated where summer fishing is carried on.

Limit of 2,500,000 lbs. of whitefish recommended on L. Winnipeg.

FALL FISHING.

Grounds for not enforcing closure of fall fishing, 1910.

In our special interim report, dated at Winnipeg, July 12, 1910, and forwarded to Ottawa at that time, we recommended that the prohibition of fall fishing be not enforced pending the presentation of the final report of the commission, in which this matter of fall fishing would be dealt with on the basis of the further investigations carried on by us. We pointed out, in the report mentioned, that ample notice had not been given of the change in the regulations; that if the fall fishing were suddenly closed down without ample notice, financial loss would be incurred by a deserving class of local fishermen; that the necessary gear was prepared ready for use; that supplies of wood had been cut, and ice had been put up as in former years; and that all these preparations had been made in the belief that, if any prohibition of fall fishing were contemplated, it would not be enforced suddenly or without sufficient notice. The recommendation made by us, that the prohibition be in the meantime postponed, was adopted by the Hon. the Minister of Marine and Fisheries, and the prohibition was not enforced during the fall of 1910. In view of the strong representations made and petitions laid before the commission from actual settlers living along the shores of the south end of Lakes Winnipeg and Manitoba, and in view of the fact that the said settlers had been located for the past 25 years on their homesteads along the shore, principally on account of the fishing which they carried on in a small way for the purpose of aiding in enabling them to make a living, we regard their case as one deserving special consideration. The fishing which they have carried on has been only a limited one, conducted during a part of the fall when they secured small quantities of pickerel, jackfish and coarse fish, these fish being put on the market in a fresh condition; and, were the fishery entirely stopped, there would actually be no fresh fish available for the markets of the province, excepting fish from other provinces. In all the other provinces of the Dominion there is a considerable fall fishery, and supplies of fresh fish reach the markets of these provinces, and we think it desirable that such a source of fresh fish for the Manitoba markets should not be closed down entirely by a prohibition in the fall. We have above referred to the fact that, along the west shore of Lake Winnipeg, at the south end, the local settlers have, in recent years shown considerable enterprise by building small icehouses and freezers for the special purpose of receiving the catches of fish made in the fall. These icehouses, 15 in number, together with 14 freezers, are owned solely by Icelanders, and are valued at nearly \$17,000; they are located at various points from Big Island to Winnipeg Beach, especially at Gimli, at Nes and at Arnes. Attention was called to the hardship and financial loss which would follow on account of the freezers and icehouses owned by the settlers being put out of operation, if fall fishing was entirely stopped, and at a meeting of the council of the municipality of Bjfrost, May 26, 1910, resolutions were passed laying stress upon this important consideration, and the resolution was forwarded to the department at the time. Other representations have followed, the last being a series of resolutions passed at a meeting held at Nes last January, when fishermen from Nes, Arnes and Hnausa were present, and they expressed the view that the pickerel and coarse fish were increasing in the south part of Lake Winnipeg, and that it would be a great hardship for them were they pre-

vented from taking them, and that, owing to the local conditions on the lake, winter fishing cannot be carried on there to any extent. Under these conditions therefore, we think that fall fishing might be allowed in Lake Winnipeg, south of an imaginary line drawn east and west from the northernmost point of Big Island, and in the southern part of Lake Manitoba, in the waters adjacent to the locations of the actual settlers along the lake shore, the limits to be defined by the fishery inspector, who would require to see that this fall fishing was not carried on upon recognized whitefish grounds. We are of opinion that a limit of 1,000 yards of gill net of not less than 4-inch extension measure is desirable, and that the license fee be \$3 and the period of fishing from September 1 to October 15. It seems also necessary to require that skiffs only, not sail boats, should be used in this fishery, as we are satisfied that ample fishing could be done if skiffs only were allowed, and it would tend to keep the fishery within proper limits. When in our interim report we recommended the closing of the lakes to fall fishing, we had in view principally the protection of the white fish and the undersized pickerel, which it was alleged had been largely taken during these fall operations. By prohibiting the use of the 3½-inch mesh, the taking of small pickerel will be obviated, and there is less danger to the whitefish as the particular grounds which we have specified are regarded as mainly coarse fish waters.

Allow fall fishing under conditions stated.

ALLEGED DEPLETION OF MANITOBA WATERS.

In our interim report, we stated our conclusion that: 'All the lakes of Manitoba have been over-fished, and that some of the more valuable species such as the whitefish and yellow pickerel have decreased very seriously in size and in abundance, and that the sturgeon, the most valuable fish found in these waters, is on the point of extinction and can only be preserved by stringent measures.'

Depletion and methods of avoiding it.

But with the continued prohibition of summer fishing in Lakes Winnipegosis and Manitoba, and the limitations we have recommended in Lake Winnipeg, namely, (1) the considerable decrease in the amount of net and gear to be fished by the fishing tugs; (2) the limitation of total annual summer catch of whitefish; (3) the delimitation of the area to be commercially fished in summer; (4) by a strict observance of the shortened fishing season; and (5) by confining the main fishing operations strictly to the actual fishermen residing in the province, we think these safeguards will suffice at present to preserve the supply of fish, and indeed ensure permanent abundance, with the aid of hatcheries. It is, however, necessary in our opinion, that there should be increased strictness in requiring the observance of the regulations, that the limitations previously in force, and those which we now recommend, should be most rigidly adhered to. In our former report, we pointed out that such regulations as those relating to the quantity of net fished by tugs and by boats, and the size of the mesh prescribed by law, had not been scrupulously observed, though we still adhere to our opinion that the close seasons have, on the whole, been well observed, and that fishing operations have ceased on the date, or even before the date, specified in the existing regulations. Of course, over the area so vast as the waters of the province of Manitoba, it is difficult, with a limited staff of officers, to see that all parties everywhere carry out the law. Infractions of the regulations can indeed be effectively prevented

Stricter observance of regulations necessary.

only by some more efficient patrol or an improved system of official supervision, and to this matter we refer at length in our present report.

Control of foreign combines in the past

We have laid stress in our interim report on the control so long exercised by foreign fish corporations and combines. We stated that we had 'abundant evidence that the Manitoba fisheries have been unduly controlled by foreign fish operators who have dictated the prices of fish and have secured the major portion of the profits. The people of Manitoba have benefited little from these great lake fisheries. Moreover, inferior grades of fish have been sold in the Canadian market, while the better grades, including the larger size fish, have been exported to the United States markets.' The commercial crisis which affected so seriously the large United States fish companies about four years ago had this result, that the property really owned by these companies in Manitoba was disposed of and was bought by Canadians; and, so far as we can ascertain, the freezers, ice-houses, tugs, boats and gear at present employed in the fisheries of the province are owned by Canadians and not by United States citizens. An important change such as this should benefit the province in numerous ways. Canadian labour will now be solely employed in the fishing and handling operations, and the catches taken by our fishermen will in no way be directly controlled by United States fish firms. These foreign firms occupy now merely the position of purchasers of fish after they are caught by our own fishermen and handled by Canadian fish companies. Such being the case, there is every reason to hold that Canada will not only benefit in the ways indicated, but will henceforth be able to secure supplies of the best qualities of fish, and not be supplied merely with inferior grades and with 'culls' that the United States markets decline to take, and which were formerly placed on our own markets.

Canadians now own the outfits of Manitoba fisheries.

Canadian market will secure more and better fish.

U.S. firms buy Manitoba fish.

Middleman's disproportionate profits.

Responsibilities of Canadian fish firms.

While the United States companies now are simply the purchasers of our catches of Canadian fish, they are such heavy purchasers, having contracts with Canadian companies whereby a regular supply of fish in accordance with the requirements of the fish business is secured, that entire freedom from the control of the large firms on the other side of the boundary line is well nigh impossible. The high price of fish which the Canadian consumer complains about arises, it must be admitted, from the methods of the middlemen who acts as a medium between the fish companies and the small retail dealers. The evidence secured in Winn-peg showed that the middle man may make as much as three cents per pound profit on whitefish, whereas the fisherman himself receives on the lake not more than three cents per pound for his fish, and the Canadian companies who handle the fish and store them in their freezers, or ship them fresh on ice, do all this work on a very small margin of profit. It must be remembered that the Canadian companies not only erect and operate freezers and store supplies of ice, build and supply the tugs which are such a convenience to the fishermen in their fishing operations, furnishing supplies and in a multitude of ways facilitating the fishing operations, but they also have the responsibility of the rise and fall of the market, and of maintaining the channels of business generally. These companies operate the fishing stations, supply nets, and make advances to the fishermen without which the industry could not be carried on, and they do all this on a far less margin of profit than the middlemen who merely sells the fish to the retail dealers,

It will thus be seen where the price of fish becomes excessive, and we are of opinion that fish caught in our Canadian waters by Canadian fishermen should be sold to the retail dealers at the same rate per hundred pounds as it is sold to United States buyers or to what are called middlemen. We had abundant evidence that retail dealers applying to the fish companies for supplies of fish were refused on the ground that, under the existing system of selling to middlemen, the fish companies declined to sell to the retail Canadian dealers. If it is possible, by some departmental measures, to carry out such an arrangement whereby the fish companies shall sell directly to the retail dealers at the lowest possible prices, Canadians may then secure as cheap fish and as good quality as the customers of the large companies in the United States, and a great object will in this way be accomplished. There is really no reason in the nature of things why Canadians should be content with inferior qualities of their own fish; they should have the best quality of fish at lower prices than buyers in foreign markets pay for them.

Public would benefit if fish sold direct to retail dealers.

If the recommendation we make is feasible, as we think it is, the price of fish would be much lower to the ordinary consumer. Under present conditions the Canadian citizen, when buying fish, actually pays a profit to four different persons engaged in the fish business: (1) a profit to the fisherman, (2) to the wholesale fish dealer, (3) to the jobber or middleman, and (4) to the retail fish dealer. These accumulated profits, some of them altogether disproportionate undoubtedly cause the prices of fish in the retail markets of Canada to be far higher than there is justifiable reason for. Our Canadian fish markets should be supplied not only with the best qualities of fish, but with fish at the lowest prices.

Consumer pays from profits.

THE GROWING WESTERN POPULATION WILL REQUIRE FISH.

One very important point to which we referred in our former report was the increasing demand for an ample supply of fish which will be required by the vast population which is pouring into the Canadian West. We said that it could not be denied that the main market has been hitherto in the United States and the home market has been limited. With the wonderful development of Canada and the rapid growth of new towns in the west, the demand for fish is rapidly increasing. It is imperative that every effort should be made to restore these fisheries to their former plenitude, in order to provide a great staple food for the future populations of the Dominion.

Greater demand for fish in Canada.

This increased demand has already become a reality, and several important fish merchants in their evidence alluded to the larger proportion of whitefish which they could now dispose of in the Dominion as compared with the small demand a few years ago, when practically 90 per cent of the whitefish was shipped to United States markets, and the Canadian demand was so very small that it was practically ignored by some of the fish companies. One large Selkirk fish dealer stated that over one-third of his catch of whitefish was sold in Canada and he was satisfied that over 300 tons of other fish were used in the Dominion.

DECREASE IN THE SIZE OF FISH.

We adverted to the alleged decrease in the average size of whitefish and pickerel and our further inquiries have convinced us that a minimum size limit for the more important food fishes is abso-

Increased mesh of net to improve the size of fish.

Fish should be
mature before
capture.

lutely necessary. We, therefore, recommend that certain sizes of fish should be specified in the regulations, below which no fish can be legally captured. We also recommend that the legal mesh of the various nets should be increased.' An increase in the size of the mesh of nets means, of course, that quantities of net hitherto legally and now legally in use would become useless unless sufficient notice of a change were given and time allowed for wearing out the present nets and for obtaining a supply of new nets of larger mesh. We, therefore, in our present recommendations, have adopted the plan of gradually increasing the size of mesh with a sufficient interval of time to allow the fishermen to provide themselves with nets in accordance with the proposed new regulations. We cannot resist the conclusion that by gradually increasing the mesh in this way less hardship will be felt by the fishermen and the fish firms and the average size of fish taken will, of necessity, be improved. The question has been discussed at great length by the Commission as to the minimum size of whitefish which matures or produces eggs. The view has been widely expressed that a large quantity of the whitefish taken in the waters of Manitoba, say two pounds or under, have not reached maturity and have never had the chance to spawn. Of course, if vast quantities of fish are captured before they have had a chance to spawn, the result must be serious for the future of the fisheries, and, whatever the facts may be, it seems desirable to increase the average size of fish taken so that the majority of the fish shall have a chance of depositing their eggs or of reaching a mature condition, when their eggs can be utilized for hatchery purposes.

UNDER-SIZED WHITEFISH ON THE MARKET.

During the present winter the fact was called to the attention of the Commission that several carloads of whitefish, caught in the waters at the north end of Lake Manitoba, were found by the buyers after purchase, to be fish of such small average size, that it was necessary to hold them back until catches of larger size fish could be secured to mix with them before exporting the whole. In this way alone was it possible to raise the average of the shipment to a marketable size. These small whitefish, it is well known to the fishermen, are really a drug in the market, there is so little demand for them. There is practically no sale for such under-sized fish, not exceeding 2 pounds in weight, and a large quantity of such whitefish, caught during the preceding winter (1909-10) are, the Commission is aware, still held in cold storage at Winnipeg because there has been found to be no sale for them. There appears to be no way of effectually stopping this capture of whitefish, immature and of small size, so long as pickerel or doré nets, of a mesh so small as $4\frac{1}{2}$ or $4\frac{3}{4}$ -inch extension measure, are used on grounds frequented by whitefish.

We are convinced that it will be absolutely necessary to require the use of nets of not less than $5\frac{1}{4}$ -inch extension measure if such a destruction of small whitefish as that we refer to is found to continue. It would in our opinion be the duty of the Inspector of Fisheries to see if the abuse we refer to ceases and if the capture of small whitefish continues, in the way we have described, the Department should on the report of the Inspector refuse to sanction the issue of licenses for nets of less mesh than $5\frac{1}{4}$ -inch extension measure, on grounds known to be the resort of whitefish. Small meshed nets should not be permitted on any area in the lakes of the province where there is a certainty of whitefish being captured in any considerable quantities.

The evidence as to the existence of whitefish grounds and of pickerel grounds, that is, of areas where either of these fish predominated during the various fishing seasons, was somewhat contradictory, and the Commission had great difficulty in deciding whether or not any areas of large extent, or defined by fairly definite bounds, could be distinguished and regarded as whitefish grounds, or, on the other hand as pickerel grounds. Fishermen of large experience assured the Commission, in their evidence, that such grounds could be distinguished, while other witnesses stated that both fish occurred on the various fishing grounds and no distinct areas could be separated in the way claimed by other witnesses. The only feasible course appears to be to rely upon the opinion of the Inspector of Fisheries. He could readily ascertain before recommending licenses if it was safe to allow small-meshed pickerel nets or refuse them, and in this way reduce, or entirely put an end to, the destruction and shipment of small under-sized whitefish for which there is no demand.

STURGEON.

In our interim report of November 26, 1909, page 10, we recommended that the export from the Province of Manitoba of sturgeon and of caviar, which is the prepared and cured roe of the sturgeon, be prohibited on and after January 1, 1910. Four reasons had weight with us in making this recommendation, namely: (1) the undoubted decline in the supply of sturgeon in the lakes and rivers of the province. This decline is much greater than the published statistics indicate; and, indeed, the returns during the last four or five years have not indicated catches of sturgeon in Manitoba waters proper, but have included large takes of sturgeon in the Nelson river and in the northern waters in Keewatin, never before commercially exploited. (2) Sturgeon have always been a staple article of food with Indians, and in past years the Department has laid stress on the importance of this fish as a source of sustenance for the Indian tribes, especially the northern tribes. (3) The increased value and the increased demand, especially in foreign markets, for caviar and smoked sturgeon; and the greatly increased prices consequent on this growing demand has stimulated a desire on the part of fish firms to make large catches of sturgeon. Wherever sturgeon occur in Canada, there has been, in recent years, every effort made to capture them, and, it must be added, to exterminate them. (4) The action of the International Fisheries Commission, which, in the code of regulations prepared by them, provide that sturgeon fishing should be stopped for four years, is of weight in this connection. Their regulation No. 14 (International Regulations, dated May 29, 1909) recommended that the Dominion and United States governments should carry out a total prohibition of sturgeon fishing in the boundary waters along the international border for a period of four years. The ground for this regulation was the critical state of the sturgeon supply. We, therefore, adhere to the recommendation we made, that the export of sturgeon and sturgeon products be totally prohibited for the present.

Allow no export of sturgeon.

ENFORCEMENT OF CLOSE SEASON.

We pointed out, in our former report, that fish, whether caught in Manitoba waters or elsewhere, should not be possessed or handled during the close seasons specified by the regulations; but it is a matter of general knowledge that a vast quantity of fish caught in

Fish not to be handled in close season.

the legal season is held in cold storage during the period of warm weather until it can be marketed later in the year with safety. Considerable quantities of fish are indeed sold during the close season on the ground that they are fish shipped from other provinces where the close seasons do not coincide with the Manitoba close seasons. We are of opinion that this state of things is bound to lead to abuse as it is impossible for officers to distinguish between the fish of the same kinds from different provinces, and the only effective method of dealing with this abuse is to wholly prohibit the sale of a particular kind of fish during the period prohibited by law in the Province of Manitoba. We think it necessary, as we have already stated, that dealers having legally-caught fish in cold storage should be allowed to hold them in storage under authority of a written permit from the Inspector of Fisheries. If such a system were carried out, it would secure that fish illegally caught in close season could not so readily be possessed or sold. The Commission, when visiting the fish markets and the fish dealers' stores in Manitoba, found that there was a regular sale of fish in the close season, and that the law was indeed being openly and widely violated; but the excuse offered was that some of the fish so detected had been shipped from Ontario where the law allowed them to be caught and handled at a time when they were prohibited in the Province of Manitoba. The strict enforcement of the close season would, of course, involve this, that no whitefish whatever could be sold for two months, from September 15 to November 19, and that no pickerel, or dore, could be sold from the 15th of April to the 19th of June each year.*

TULLIBEE CLOSE SEASON ABOLISHED.

In the regulations prior to 1907, tullibee and lake trout were included in the whitefish close season, as has been the case for many years, and the capture of this fish has, therefore, been prohibited from October 5 to December 15; but in our interim report, section 9, subsection 2, page 9, we pointed out that a tullibee close season was unnecessary and any reference to that fish be eliminated from the close season regulations. We did so for several reasons, amongst others: (1) because tullibee are extremely abundant, and, indeed, are superabundant, and, while other fish have decreased in recent years, they have shown not only no decline but a considerable growth in abundance; hence no special protection seems, at present, necessary for this fish. (2) They are a fish not held in much estimation. They are not a good quality of fish for the market or for ordinary food purposes. They are very frequently affected by parasites, and vast numbers of this fish show the back perforated by a parasitic worm, this parasitic worm being especially noticeable in winter, though the members of the Commission examined specimens at the fishing stations taken during the summer fishing which are full of these whiteish parasitic organisms. There is a sale for tullibee in United States markets when the herring are scarce, but in a general way they are regarded as a poor food fish. There is little demand for them, and they bring very low prices, and it is not justifiable to enforce a close season to keep up their abundance. We

Tullibee not
esteemed.

* The Legislature of the State of Nebraska, it is stated, is taking steps to prohibit the storage of fish during close season, taken from the public waters. The proposed law will also prevent the importation of fish into the State during the close season, vide N. Y. Fish Gazette xxvii., 6. 1911.

have had strong views placed before us in favour of the small meshed net, 3 $\frac{1}{4}$ -inch, for tullibee, on the ground that tullibee cannot be taken in quantities in a larger mesh net, and that they form an important part of the feed for dogs, also the Indians and half-breeds have depended on supplies of tullibee for food during the summer, and that it would be quite a hardship if they were not allowed to take them with the appropriate mesh of net for their own use, and the net to be of short length, not more than fifty fathoms. In the interests of the fisheries as a whole, we have not recommended any mesh less than 4 inches in the lake, and we adhere to this recommendation because we think it is in the interests of the fisheries in general. The tullibee is a peculiar fish, and a word or two descriptive of it may be appropriate. It is a representative western fish, not characteristic of the eastern waters, and belongs to the whitefish family. It may be correctly described as a lesser whitefish, but it is altogether inferior to the recognized whitefish, or even the true fresh-water herrings, such as the gold eye, which as we have stated, is in increasing demand as a smoked fish on the markets. Tullibee have been said to occur only along the north shore of Lake Superior in the east, but they are certainly very abundant in Manitoba waters and certain lakes in the Northwest.

ISSUE OF LICENSES.

We have expressed ourselves very strongly in the interim report on the laxity in the enforcement of the regulations, and pointed out to what causes this laxity was due. But, apart from the question of insufficient supervision and control of fishery operations, there is one point of considerable importance respecting the matter of issuing licenses which we think has had a good deal to do with the laxity on the part of the fishermen and the fishing firms in the observance of the regulations. The method of issuing licenses requires to be greatly improved. We find that it is the rule for all licenses to be made out and issued by the department in Ottawa. The method is as follows:—Applications are sent in by the fishermen to the Inspector of Fisheries in the province, who enters them on official forms and forwards them to Ottawa with his remarks and recommendations and with the requisite fee. For effective supervision of the fishing operations, the license should be issued immediately, so that it may be in the hands of the fisherman before he begins to fish. But this we find is never done, and, under the present cumbersome and roundabout system, the fishermen, as a rule, goes to the fishing grounds, carries on his fishing operations for several months, and, on his return from the fishing grounds may then possibly receive his license, though we have found that as long a period as five or six months may elapse after the fishing is all over, before his license reaches him. Thus, his license which is his authority for commencing to fish and for carrying on fishery operations, is never in his possession until long after the fishing is completed. This grossly lax method has a tendency to render the license, and the conditions attached to it, unimportant the eyes of the fisherman. He goes to the fishing-ground before he has received his license, and not knowing whether he will receive a license at all. He has no means of becoming acquainted with the fishery regulations which are printed on the back of the license, and there is no doubt that a large number of the fishermen never see the conditions of the license until long after the fishing is started. The present system calls for a radical change, but, in

Cumbersome method of license issue.

License should issue before fishermen begin operations.

Laxity in issue of license leads to neglect of regulations.

addition to the serious laxity arising from the non-issue of the licenses, there is an absolute necessity for the reorganization or for the modification of the official fishery staff in the province if any effective improvement in the observance and enforcement of the law is to be accomplished.

Reorganization of officers necessary owing to vast area to patrol.

Central Inspector's office necessary whence licenses should issue.

Weekly returns of licenses to Ottawa.

Better paid and fewer officers desirable.

Criticism of present staff

Existing defects of local officers.

Few people are able to realize the vast extent of the area which the officers have to cover, and the immense waters which should be regularly patrolled if proper supervision is to be exercised. The scale on which the fishing operations is carried on, both in winter and summer, is most extensive, and it would appear that for interests so vast as the fisheries of Manitoba and Keewatin, there should be a division of labour and that one officer should not have to cover such an immense geographical area as the present conditions require. There should be some central inspector's office in the province, established where the principal officer could be consulted by parties on fishery business. He should have authority to issue licenses and save the serious delay which at present is so great an obstacle to the effective working out of the government's policy of protection and preservation of fish. He should make weekly returns to the department of the licenses issued and remit the fees collected. For the reasons which are apparent, we do not favour the present system of a numerous staff of poorly paid fishery overseers, and a still more inadequately paid staff of fishery guardians. The whole territory should be under the supervision of six or eight active and properly paid fishery overseers, who would have their patrols specified by the principal officer or district inspector, and who would report regularly to him as to the way in which the fishery regulations are being observed, and to have the duty of distributing to the fishermen their fishery licenses before they actually commence to fish. We consider it important that, before any fisherman puts his nets in the water, he should have in his possession his license, which is his authority to carry on fishing operations. The present system is not satisfactory, and there is a widespread feeling in the province that some change must be made in the method of official supervision. If the inspector were located in Winnipeg, he would be more central and more accessible for the province generally than at Selkirk; and the overseers, at present, are neither well placed nor have sufficient salary to justify their active efficiency. Moreover, many of the fishery officers have no aptitude for effective patrol duties, while the poorly paid fishery guardians, in many cases, do practically no duty at all, some of them being apparently, not acquainted with the regulations, and, of course, make no attempt to enforce them, often for the reason that they are ignorant of what the law is, but more frequently because most of them are relatives or friends of the local fishermen, and some of them actually engage themselves in the fishing operations. It is hardly to be expected that a local resident with poor pay, will run the risk of the displeasure of his friends and neighbours, and possibly even suffer at their hands, if he attempts to enforce the law, and the necessity is plain, for the patrol duties to be performed by men who are not locally resident, but who have the qualifications to perform their duty as active officers, and a salary sufficient to enable them to devote themselves solely to their fishery officer's work. We are convinced that, by abolishing the present staff of poorly paid officers, and replacing them by a smaller number of properly paid officials, the work would be done far more effectively and without any very material increase in cost.

BOATS FOR MORE EFFECTIVE PATROL.

We have in several places in this report referred to the necessity of better supervision and the inadequacy of the present patrol, and of the boats or means for enabling the officers to make their visits of inspection. We pointed out, on page 6 of our interim report, that with such a boat as the present patrol steamer *The Lady of the Lake*, the inspector cannot carry out a proper supervision, as the boat is not at all suitable for the special work which it has to do. It is too large a boat; and parties engaged in illegal operations can get ample warning of its approach; while, on account of its build, it cannot safely remain on the lake after the ice begins to form in the late fall. At the present time, we may point out, the patrol steamer is in Gull harbour, having been frozen in and unable to reach Selkirk at the commencement of the winter on account of the formation of ice only a few inches thick at the mouth of the Red river. In our opinion, the inspector should have a powerful steamer, low-housed, and so constructed that she could make her way through the thin ice in the Red river, and be able, indeed, to remain on the lake and to be the last boat on the lake at the commencement of winter. If such a boat, powerful and well-ironed, were provided, the patrol work could continue up to the last moment, the comparatively thin ice in the Red river could be kept broken, and she could carry on the hatchery work, collecting and conveying the eggs most effectively, and be able also to be of assistance to the lighthouse keepers, who, at present, are left on the islands late in the fall. It may be claimed that all the steamers on the lake run risks of being kept out by ice, and during the past fall no less than thirteen steamers and tugs had to winter at different points on Lake Winnipeg, and, as we have said, the fishery patrol steamer has had to winter at Gull harbour because she could not get further than the entrance to the Red river early in November, being prevented from getting up the river by the formation of thin ice, and she had to return to Gimli on the west shore of the lake, and put off all her shipment of whitefish eggs, so that they had to be sent by rail to the hatchery at Selkirk, otherwise they would all have been lost. Such a steamer as we suggest, well-ironed and constructed, and able to make her way through a few inches of ice and thus keep navigation open, would, at the same time, be far more effective for following up the illegal fishing in the summer time, and would be generally of far more utility to the fisheries. When it is borne in mind that the lake is open in the fall long after ice is made in the Red river, the importance of such a boat as we have said is apparent. At present, no boats get up the Red river from Lake Winnipeg after the ice is three or four inches thick, but there is no reason why a properly built fishery patrol boat should be unable to reach Selkirk late enough to take the last supplies of whitefish eggs from the Little Saskatchewan river and other points.

On the other lakes, such as Winnipegosis and Manitoba, a small launch, either steam or gasoline, should also be placed for patrol duty during the fall, or spawning season. At present, the officers have no means of making a proper tour of inspection at that important period of the year.

OBSTRUCTIONS ON RED RIVER AND PEMBINA RIVER.

Great complaints have been made that the new government locks at St. Andrews rapids have cut off the supply of fish which formerly

Present patrol steamer not suitable.

Kind of vessel necessary.

St. Andrew's Rapids locks obstruct fish Red River.

Walhalla dam in upper waters.

migrated up and down the Red river. It is claimed that few or no fish can now be secured by the local people in the river above the locks. A similar complaint has been made respecting an obstructing dam on the upper waters of the Red river, or, rather, on the Pembina river, at a point about 140 miles above Selkirk. This dam, at Walhalla, in the state of North Dakota, was visited by a sub-committee of the commission, who interviewed Mr. J. F. Major, the builder of the dam and who was formerly the owner of it, but sold it to the Walhalla Milling Company, of which Mr. F. G. Stearns is manager. Mr. Stearns, when the complaint was brought before him, replied that his company were not prepared to do anything so long as the obstruction built by the Dominion government lower down at St. Andrews rapids, prevented the ascent of fish. He claimed that it was useless putting in a fishway up above if the fish were totally stopped 100 miles below. He stated, however, that the company would be prepared to put in a fishway at the Walhalla dam, which is about 4 feet high (though it can be raised to a height of 7 feet when required), if the Dominion government put in a fishway, or provided some passage for fish, at the obstructing St. Andrews rapids locks below. The Walhalla dam is 100 feet long, though the average width of the Pembina river is not more than about 30 feet. It is a very small, sluggish stream, and appears to be frequented mainly by pickerel, jackfish and suckers, which formerly abounded in great numbers. The United States Consul General, Mr. Jones, Winnipeg, had some correspondence on the matter of these obstructions, and he pointed out that, 'as the Red river is an international stream, its source being within the state of Minnesota, draining a large portion of that state as well as North Dakota, and flowing for three-quarters of its length through the territory of the United States, he would be interested to have an expression of opinion as to the effect of the St. Andrews locks upon the supply of fish in the upper stretches of the river. And it may be added that the feeling along the banks of the river is that the locks have proved most detrimental, and that, if any improvement is to be effected a fish pass will be required at the government locks, and then a fishway can be provided at the Walhalla dam on the Pembina river above.

Fishway necessary.

ROYALTY ON FISH.

Fish firms do not contribute adequate revenue.

Fishermen cannot bear heavy fees.

Fish firms should pay royalty on fish they handle (4c. per pound).

There is a widespread feeling in Manitoba, a feeling which we strongly share, that, considering the immense value of the annual catches of fish made in Lake Winnipeg and the other lakes of Manitoba, the firms who handle the fish, and derive substantial profit, have not contributed in any proper proportion to the revenue of the Dominion. The license fees charged have been ridiculously small, and the commission found that the fish firms were not all unwilling to contribute a larger amount to the revenue in whatever way it might be thought desirable. An increased license fee would practically amount to a heavier payment by the actual fishermen, and it appears unfair to impose a heavier tax on them; hence the most feasible method appears to be the collection of a royalty on the total amount of fish handled by the respective firms. We are of opinion that at the close of the summer fishing and at the close of the fall and winter fishing, each fish firm should be required by law to make a return of the amount of fish which is in their possession or which has passed through their hands. This return it would be easy to compile from

the books of the respective firms, and on these returns, which should be sworn to as correct, a royalty, say of one-quarter of a cent per pound on all whitefish, pickerel and sturgeon, should be collected by the Dominion. An increased revenue of this kind would not only put the fish firms in a fairer position in the public eye, but would justify the government in a larger expenditure both on hatcheries and on the supervision and enforcement of the fishery regulations, and the improvement of the fisheries generally.

HATCHERIES.

In our interim report we urged that increased attention should be given by the department to extend the hatchery operations by erecting new hatcheries and by increasing the efficiency of their operation. We referred to the prevalent feeling in the province respecting the serious mismanagement which happened in certain seasons formerly, whereby some hatcheries practically were not in operation for one or two seasons. Manitoba fisheries during those seasons lost the benefit of the output of young fish which should have been secured had the arrangements been properly and effectively carried out. As a matter of fact, a large quantity of whitefish were taken in the spawning season, and this whitefish, we understand, were shipped by the carload to the markets and sold, but the hatcheries, which should have benefited by the catch of these spawning fish, received either no spawn at all, or the supplies of spawn were in such bad condition that they were practically useless, and the hatcheries could not be properly operated. The evidence brought before the Commission clearly proved that on Lake Winnipegosis this was emphatically the case, and that there was a serious lack of proper management, and that the system adopted for securing spawn was an altogether unreliable and undesirable one. We are aware that the department, when the matter came to its attention, had a special officer sent to Lake Winnipegosis and we have every reason to believe that recently a great improvement has taken place and that matters have been put on a more workable basis. On Lake Winnipeg the supplies of spawn for the Selkirk and Berens river hatcheries are obtained on the Little Saskatchewan or Dauphin rivers, and almost every season, on account of the early making of the ice, there is great risk that the supplies of spawn cannot be brought down from there; hence we think it highly desirable that a hatchery plant should be erected on the Little Saskatchewan river, which could be carried on not only as an independent hatchery but could be used for taking care of the supplies of eggs and holding them for shipment later to other hatcheries, if the conditions at the time were not favourable. The experience of many years has shown that the Little Saskatchewan river can be relied upon for abundant supplies of eggs. We do not think that the Selkirk hatchery is an ideal one for whitefish, which, ever since its construction has been the principal fish included in its operation, and we are of opinion that greater prominence should be given to the hatching of pickerel at this hatchery. The pickerel, or dore, is an increasingly valuable commercial fish, and to keep up the supply in Lake Winnipeg, or in Manitoba generally, or to substantially increase the supply, is most desirable. The Selkirk hatchery being centrally located, it would form an admirable distributing point for shipping whitefish and pickerel to the various parts of the province. The building of other hatcheries in Mani-

New hatcheries
urgent.

Certain hatcheries
failed to operate to
the loss of the fish
industry.

Winnipegosis
scheme a serious
failure.

Little Saskatchewan
hatchery necessary.

Selkirk hatchery
might hatch
pickerel and be a
distributing centre.

Big Island hatchery
would benefit south
end of Lake
Winnipeg.

Gold-eye hatchery
worthy of attention

toba is a matter of urgency, inasmuch as these waters are entirely in Canadian territory and the Dominion benefits fully by the improvement in the fish supply in contrast to the Great Lakes in which any hatchery operations in Canada would benefit the United States fisheries on those lakes. We cannot lay too great stress on the building of new hatcheries, and we strongly recommend that, if investigations show that at Big Island, or in the waters in the neighbourhood, supplies of spawn can be relied upon, a large hatchery should be built in that region, the object of which would be to improve the supply of whitefish in the lower portion of Lake Winnipeg. As a Commission, we would strongly recommend that a trial be made this year as to the possibility of obtaining ample supplies of spawn, so that if the results are favourable, there will be no delay in the erection and equipment of a new hatchery at Big Island. In this connection we would call attention to the increasing importance of that excellent food fish, the gold-eye, which has been acquiring popularity as a smoked fish in recent years. If attention could be paid to the procuring of the eggs of gold-eyes, and planting quantities of them in the lower end of the lake, the gold-eye industry could be, we think, largely increased and developed.

SUGGESTIONS FOR STOCKING WATERS WITH FISH.

More extensive
pickerel hatchery
desirable.

Black bass asked
for Lake Dauphin,

Introduction of
black bass.

The importance of the yellow pickerel, or dore, from a commercial standpoint has vastly increased in recent years. When dressed, they stand handling and shipping even better than whitefish, and are hard and sweet fish, so that amongst certain sections of the population they are even preferred to whitefish, and in some markets command even a higher price than whitefish. Hence, it is highly desirable that the supplies of this fish in the Manitoba lakes and rivers should, if possible, be increased, and we would strongly recommend that more extensive hatching of pickerel be carried on in the Dominion Government hatcheries, and that in such waters as the Red river, Shoal lake, and other waters that might be named, stocking operations should be carried on upon a vastly increased scale, so that this excellent fish, the yellow pickerel, may be obtained in increased quantities for the market. While dealing with the question of introducing fresh supplies of fish fry, and of re-stocking waters with fish, we may mention that the Commission has had brought before it some requests for the introduction of black bass into Manitoba waters. For example, Lake Dauphin, which is rapidly becoming a popular summer resort, is not well adapted for such fish as whitefish, and the local residents strongly urge that black bass be planted in these waters. We have also had brought before us an application for the stocking of Rock lake with black bass, and there are a number of other lakes which are also well adapted for stocking with black bass; and, as this fish is not only a good one for the table but ranks as one of the best game fish, affording great sport to the summer residents and attracting tourists from long distances, we are of opinion that the question of planting black bass in these waters should be given the most favourable consideration.

There are really no game fish in Manitoba, though any number of available lakes exist which, there is good ground for thinking, might be well stocked with sporting fish which would be a great attraction and benefit to the people of the province generally. We realize that indiscriminate stocking of waters with new kinds of

fish is unwise; and we suggest that, in some of the lakes which, on examination, appear to be suitable, enclosures of small area might be made by means of stakes and wire netting, and a comparatively small number of fish, say, ten to twenty live adult black bass, placed therein for experimental purposes. In most cases, local parties interested in the matter would be able to watch the progress of the fish, and report as to their condition, such parties being members of sporting clubs, or if the fishery officer living near be available he could carry on this supervision and report on the success or failure of the experiment. To place black bass, as has hitherto been done, in lakes about which no full or sufficient information has been obtained, is, we are convinced, a mistake and a waste of fish. The suitability or unsuitability of the water in selected lakes could be ascertained before extensive stocking is carried out. The quality of the water, the suitability of the food, the temperature, chemical conditions, &c., would all be included in such an experiment, and if these conditions were not favourable the department would have accurate information concerning them. We also think, in this connection, that some enclosures might be made where whitefish could be placed, especially the fry, or young, of whitefish, so that their growth could be observed. The commission has had one great difficulty facing it, namely, the diversity of opinion as to the size or age at which whitefish reach a mature or spawning condition. Various opinions have been expressed by experts, and perhaps the most feasible method of putting the matter to a test would be to plant whitefish fry in a small lake, say a square mile in area, and have the lake watched and the growth of the fish reported upon from time to time. If such a lake be selected—and there are many lakes available within easy reach of the railway tracks—the experiment would be much more likely to be normal than when the fry are placed in an artificial pond or enclosure where the conditions would be altogether unnatural.

Bass experiments

NEED FOR BIOLOGICAL INVESTIGATIONS IN MANITOBA.

The commission have been continually impressed with the absence of accurate information both as to the habits, growth, the food and other points in the life history of the valuable fishes which have abounded in the waters of Manitoba. The determination of the movements of the fish, of the feeding grounds and spawning resorts of the whitefish, pickerel, sturgeon, gold-eye and other commercial species, could be readily accomplished, if a biological station were founded on Lake Winnipeg or at some suitable place. The views of experienced fishermen are most contradictory on such important matters as the size at which whitefish first contain spawn, or reach the mature breeding stage. The food of the whitefish seems to be a matter still in doubt in the minds of most of the practical men, and as an example it may be stated that a bottle of aquatic organisms was sent to the chairman of the commission as probable food of whitefish, which was wholly different from the food of that fish as studied in the eastern lakes. The question of the grey-back pickerel is another matter which came before the commission, and witnesses claimed that it was a diminutive fish and never reached any size, while others hold the opinion that it may be the young of a larger kind of pike-perch. The food and spawning of the sturgeon

are important matters to decide in Manitoba waters. All these points can be decided by exact biological study, and the time seems opportune for some steps to provide for the province such a station for scientific and fishery research as the Dominion government has established in other provinces. Trained and qualified men can, of course, alone carry on biological researches in such lakes as those of Manitoba, but the University of Manitoba will soon have men equipped for such work, and on the professoriate are already men of distinction in various scientific fields, whose services could no doubt be secured were a biological station established. Two members of the commission had the advantage of meeting Sir John Murray in Winnipeg and he was enthusiastic as to the splendid field awaiting scientific investigation in the Manitoba lakes. A biological station seems a necessary and desirable institution for aiding the fisheries, and as a commission we would urge such a station as a pressing need.

CLAIMS OF INDIANS.

Former needs of
Indians.

One important feature in the fisheries of Manitoba in the past has been the requirements of the Indians in supplying the Indian bands with food and with fish for their dogs, and, in 1890, the late Mr. Samuel Wilmot, when reporting on the fisheries of the province, placed first this matter of the claims of the Indians, and, as he termed it, the interests of the Department of the Interior. He stated that at that time the Indians had suffered from a lack of whitefish, which in former years had been obtained in great abundance, and the decline was attributed to over-fishing at the mouth of the rivers by the fish traders. In the recommendations made at the time, it was provided that while the restrictions and regulations should apply to Indians and Half-breeds just as to settlers and other white people, a special clause was devised whereby the Department of Marine and Fisheries might set apart waters for the exclusive use of the Indians, and grant free licenses to Indians and their bands to fish during the close season to provide for their own necessities but not for sale or traffic.

Settlers' and
Indians' permit for
food purposes.

License for Indians
when fishing
commercially.

In our present recommendations, we do not follow along the lines of this provision, as we think that the time has come when the Indian and the white settler might be given the same privilege in order to enable them to provide for actual food purposes. As the Indians had in recent years more and more been engaging in the fisheries for market, and entering into competition with the white fishermen, we think that the time has come when they should be placed in the same position as the white settler, and be required to take out an ordinary license when engaging in commercial fishing; but that, along with the white settlers they should be allowed free permits to obtain fish for their own actual use but not for sale. Formerly, the Indians resorted to the spawning grounds, such as at the Grand Rapids at the mouth of the Great Saskatchewan, and at the mouths of other rivers, where the whitefish are crowded in spawning schools for the purpose of depositing their eggs. The fish were at that time easily caught, and were prepared as hung fish. The fish, without being cleaned, had simply a cut made in the tail through which a stick was inserted and about ten fish were suspended on this stick which was placed horizontally so that the fish hung head downwards. A cut was made at the gills of the fish so that the blood

Former supplies of
"hung" fish for
Indians' use.

escaped, and if a slight frost came on, the fish were hardened and made quite an excellent food; but there was, no doubt, considerable waste in some seasons owing to warm weather, so that the 'hung' fish became tainted, and often useless for food. These fish were sold in large quantities to the Hudson's Bay Company's stores by the Indians, who, it is stated, during the winter months often repurchased them at considerably enhanced prices. There is now no necessity for this procedure, or for the preparation of 'hung' fish generally. An Indian provided with a net can fish through the ice as readily as the white man and obtain at any time sufficient fish to supply his actual domestic needs. It would certainly be a hardship to deprive either the Indian or the settler of this free permission to obtain the limited quantity of fish which is needed for strictly food purposes: Hence, we recommend the issue of a free permit to Indians and to white settlers; but we do not favour the continuance of the provision that waters may be set aside for the exclusive use of Indians or that licenses be granted to bands of Indians.

It will be noticed that in our recommendations we have suggested the reduction of the fee for jackfish nets and fish hooks and small gear which are mainly used by the Indians, Half-breeds and by the resident settlers for a comparatively limited fishing, limited both as regards amount of gear used and as to the length of time in which the fishing is carried on each season.

AMPLE NOTICE OF CHANGE OF REGULATIONS NECESSARY.

As will be seen from the statements on the preceding pages of this report, the regulations for the province of Manitoba have been repeatedly amended and changed, and some of these amendments have been made at very short notice, so that there has arisen considerable complaint that losses and much dislocation of the fish business have arisen owing to these sudden and unexpected amendments to the regulations. We think this complaint is a very important one, and one which the department should most carefully consider, so that in any changes contemplated in the regulations at any time, there should be ample notice given to the fishermen and to the fish firms, in order that they may prepare for any such contemplated changes. Thus, if it appears necessary to at any time make changes affecting the winter fishing and the fall and summer fishing, notice should at the latest be given on a date at least six months preceding the carrying out of any such change or changes. Such ample notice is absolutely necessary in view of the fact that the nets are manufactured in Scotland, and that any changes affecting the nets and gear involve the ordering of new nets from the Scottish manufacturers, consequently ample notice should be given to all parties interested.

Inconveniences of sudden changes in the law.

Six months notice before changing the regulations.

LOWERING OF LAKE DAUPHIN.

When the commission took evidence at Dauphin, a matter was brought before it having reference to the desire on the part of the settlers around the lake that means ought to be taken for lowering the water in order to facilitate the gathering in of the hay crop. Many of these settlers rely largely on their crop of hay for their living, and, when the lake is high the meadows are overflowed, so that great quantities of fish, especially jackfish are scattered over

Special steps re water level Lake Dauphin, not necessary.

these meadows, and, it is said, they are taken out with pitchforks and other implements. From some of the evidence taken, it appears that the hay meadows are not very frequently overflowed, one witness stating that it was not more than once in ten years that the lake rose so high, and, as Lake Dauphin is becoming a popular residential resort, over 10 cottages having been built on its shores, and Dauphin Beach having acquired a reputation as a holiday resort, we do not recommend that any steps should be taken to lower the lake. We may add that we were not able to visit the lake or see the actual conditions.

DETAILED ANALYSIS NECESSARY FOR ANNUAL STATISTICS.

Owing to the widespread statements that the supply of fish has decreased in Manitoba waters, and that excessive catches have been made, the commission paid a good deal of attention to the returns published in official reports covering a considerable period. They found at every point that it was hardly possible to establish any correct comparisons owing to the manner in which the statistics were compiled by the various fishery officers and reported by the inspector. It is absolutely necessary that the quantities of each kind of fish should be separately stated for each lake or fishing area, and that the summer, winter and fall catches should be all separately detailed. The present system of aggregating the returns renders it impossible to find exactly how the catches of fish have risen or declined in particular waters or localities. Thus, in the returns of fish taken in Lake Winnipegosis, the catches include the takes of fish in the altogether separate waters of Water Hen and Dauphin lakes, and similarly in the returns for Lake Manitoba the catches on Lake St. Martin are included; and the returns from Lake Winnipeg include all its tributaries. In some of the former reports the returns are most confusing, the catches on the Red river being classified along with the returns of the islands of the north end of Lake Winnipeg, such as Berens, Reindeer and Selkirk islands. There has been, and still is, no uniformity in the method of compiling these returns, and for statistical purposes the figures given are practically useless. It would be not difficult to devise a complete statistical form whereby the catches in all the separate lakes and localities could be given and the totals made out in such a way that from year to year comparisons could be made and the increase or decrease of the fish, locally as well as generally, accurately ascertained. The suggestion we make that the fishermen should be required to make sworn returns, and that the fish companies or fish dealers should also be required at regular intervals to furnish accurate sworn returns of the quantities of fish handled by them, should be effective in bringing about a more satisfactory state of things, so that in the future the annual statistics of the fisheries of the province would have some value and some accuracy. The takes of fish under settler's and Indian permits would require to be included in the classified returns.

EXTENSIONS OF TIME UNDESIRABLE.

The department is, at times, strongly pressed to temporarily modify the regulations, especially in regard to the length of the fishing season. Requests for extension are sent to Ottawa and urged

Uniformity not observed in statistical returns.

Different catches for each fishing area should be recorded.

Fishermen and fish firms should make sworn returns.

Extensions of time undesirable and as a rule inopportune.

with great force, owing, in some cases, to a serious shortage in the season's catch of fish. It is pointed out, in behalf of the fishermen and the fish firms, that they were prepared to handle as large, or a larger catch of fish than usual, and that they will suffer serious loss if an extension of time be not granted to enable them to make up for the deficiency in the catch. To this commission it appears strange that, during a season in which the fish appear, for some reason or other to be especially scarce, requests should be made for an increased destruction of them, and that a longer time should be allowed, because of the apparent scarcity of fish. In our opinion, when the fish, for some reason, appear to be scarce, that is precisely the time that they should be conserved, and the extensions asked for appear, therefore, to be unwise and unnecessary from a fish protection point of view. Such extensions, we have information to show, have often proved of no benefit at all to the parties who asked for them. When an extension is asked and the season is lengthened it often results in fishing operations being continued after the stormy season has begun, entailing great loss of gear, and certainly a waste of considerable catches of fish. The seasons specified in the regulations should, in our opinion, be very strictly and closely adhered to both in the interests of the fish supply and in the interests of the parties who are engaged in the fish industry.

DRAFTING OF A NEW SYSTEM OF FISHERY REGULATIONS FOR THE
PROVINCE OF MANITOBA AND PART OF THE DISTRICT
OF KEEWATIN.

As we have pointed out in the body of our report, the existing regulations cover not only the province of Manitoba, but the very different waters of Saskatchewan and Alberta where the conditions are wholly unlike those of the Manitoba waters: Hence, a totally revised set of regulations is necessary, and, as we understand that a new set of regulations is being prepared especially for the more western provinces, we beg to recommend the following series of revised regulations for waters which we were commissioned to investigate and report upon. It will be noticed in this code of regulations which we suggest that a number of provisions are dropped altogether which have long formed part of the Manitoba regulations, but the time has come for a thorough revision, and we, therefore, beg to recommend the following provisions as suited to the present requirements of the fisheries in question.

Alberta and
Saskatchewan
eliminated from
Manitoba
regulations.

GENERAL.

(1) Fishing by means of nets or other apparatus without license or permit from the Minister of Marine and Fisheries is prohibited in the waters of Manitoba and the District of Keewatin.

(2) No license shall be granted to any person unless he is a British subject, resident in the Dominion of Canada, and the actual owner of nets, boats and fishing gear for which the license is granted. Applications from residents living in the immediate locality of the waters applied for shall have the preference in the granting of licenses.

(3) Any resident settler, including Indian, is eligible for an annual fishing permit to fish not more than one hundred (100) yards

of gill-net for domestic use, but not for sale or barter. Such permit shall be issued free, and fishing under it shall be permissible at all times.

(4) No license shall be transferable unless by special permission obtained from the District Inspector of Fisheries.

(5) Every person holding a fishing license or permit shall, at the end of the fishing season, make a sworn return of his total catch of fish to the fishery inspector by whom the license or permit was issued.

NOTE.—As there are two important fishing seasons, namely, the summer fishing season and the fall and winter fishing season, these returns should be made twice a year, namely, on or before September 30 for the preceding summer fishing, and March 31 for the preceding fall and winter fishing.

(6) All boats, buoys and nets shall be legibly numbered, by means of tags or otherwise. Boats shall have their number painted in black on a white ground on either side of the bow, the figure or figures to be not less than 6 inches in height and the numbers on the buoys shall be so placed as to be readily seen without raising them from the water, and the numbered tags on the nets shall be so attached as to be visible when the nets are in boxes or on the net reel. The numbers for all such boats, buoys, and nets shall be furnished by the Inspector of Fisheries for the District at the time of the issue of the license.

(7) Not more net shall be used or operated under any net license than is specified in the said license, and such net shall not be used or operated by any person other than by the licensee or person in whose name the license is issued.

(8) Every person or firm buying fish from fishermen, or handling fish after capture by fishermen, shall make a true affidavit on or before March 31 of each year for the fall-caught and winter-caught fish, and on or before September 30 for summer-caught fish, such sworn return or affidavit to specify the kinds of fish bought or handled by such person or firm, and to state the exact quantities of each respective kind of fish purchased from the fishermen such affidavits to be mailed to the Inspector of Fisheries on or before the dates named above.

(9) Angler's permits. (The General Fishery Regulations dated October 14, 1907, which have hitherto applied to the Manitoba waters and to Dominion waters generally should continue to apply in the province of Manitoba.)

SPECIAL.

Lake Winnipeg—

Summer Fishing.

Whitefish gill-nets for summer fishing, June 1 to August 15.

Length of net and fee—

	Yards.	Fee.
Tug license, not more than.	5,000	\$50
Sail boat license, not more than..	3,000	10
Skiff license, not more than.. . .	1,500	5

Mesh of net—

The mesh of net shall not be less than $5\frac{1}{4}$ in. extension measure until June 1, 1912, on and after which date the mesh shall be not less than $5\frac{1}{2}$ in. Extension measure, and on and after June 1, 1913, the nets shall be not less than $5\frac{3}{4}$ in. extension measure.

Sturgeon gill-nets—

Length—Not exceeding 300 yards.

Mesh—Not less than 12 in. extension measure.

Fee—\$3.

Cat fish gill-nets—

Length—Not exceeding 1,500 yards.

Mesh—Not less than 6 in. extension measure.

Fee—\$3.

Winter Fishing.

Whitefish gill-nets for winter fishing, Novembr 20 to March -1.

Length—Not more than 1,500 yards under each license.

Mesh—Not less than $5\frac{1}{4}$ in. extension measure until March 1, 1912, on and after which date the mesh shall be not less than $5\frac{1}{2}$ in. extension measure, and on and after March 1, 1913, the mesh shall be not less than $5\frac{3}{4}$ in. extension measure.

Fee—\$5.

Pickerel gill-nets—

Length—Not more than 1,500 yards.

Mesh—Not less than $4\frac{1}{4}$ in. extension measure.

Fee—\$5.

Tullibee, Gold-eye or Jackfish gill-nets—

Length—Not more than 1,500 yards.

Mesh—Not less than 4 in. extension measure.

Fee—\$5.

Fall Fishing.

Gill-nets for fall fishing, September 1 to October 15.

Length—Not more than 1,000 yards.

Mesh—Not less than 4 in. extension measure.

Fee—\$3.

NOTE.—(1) The license for fall fishing shall not be granted to any parties excepting applicants who are settlers actually in the locality specified on the license.

NOTE.—(2) Skiffs only, not sail boats, to engage in this fall fishing.

NOTE.—(3) In the two areas in Lake Winnipeg and Manitoba defined in the body of this report, fall fishing should alone be carried on, namely—

(a) South of the north point of Big island, Lake Winnipeg;

(b) In the south portion of Lake Manitoba on grounds which are not recognized whitefish grounds.

The fisheries inspector should determine the exact areas where this fall fishing can be safely carried on. In every case, the areas to be fished must be closely adjacent to the location where the actual settlers live.

*Red River.***Drag seines—*

Length—Not longer than 66 yards.

Mesh—Not less than 3 in. extension measure.

Fee—\$25.

Period of fishing—June 20 to September 1.

Jackfish or grass-pike gill-nets—

Length—Not longer than 1,500 yards.

Mesh—Not less than $3\frac{3}{4}$ in. extension measure.

Fee—\$5.

Period of fishing—Nov. 20 to March 1, following.

Cat fish baited hooks—

Not more than 200 hooks under each license.

Fee—\$2.

Fishing for cat fish with baited hooks may be permitted under license in other rivers at the discretion of the district inspector.

Lake Winnipegosis and Water Hen Lake.

Gill-nets for winter fishing, November 20 to March 1.

Whitefish gill-nets—

Length—Not exceeding 1,500 yards.

Mesh—Not less than $5\frac{1}{4}$ in. extension measure.

Fee—\$5.

Pickrel gill-nets—

Length—Not exceeding 1,500 yards.

Mesh—Not less than $4\frac{1}{2}$ in. extension measure.

Fee—\$5.

Length—Not more than 1,500 yards under each license.

Jackfish gill-nets—

Length—Not exceeding 1,500 yards.

Mesh—Not less than 4 in. extension measure.

Fee—\$5.

In Dawson bay and in the waters of Lake Winnipegosis north of a line running east and west from the north end of Birch island no nets having a mesh of less than $5\frac{1}{4}$ -inch extension measure shall be permitted.

Fishing operations under pickrel and jackfish gill-net licenses shall be permitted only on grounds specified by the local fishery officer.

Lake Manitoba—

Gill-nets for winter fishing, November 20 to March 1.

Whitefish gill-nets—

Length—Not exceeding 1,500 yards.

Mesh—Not less than $5\frac{1}{4}$ in. extension measure.

Fee—\$5.

Pickrel, jackfish and coarse fish gill-nets.

Length—Not exceeding 1,500 yards.

Mesh—Not less than 4 in. extension measure.

Fee—\$5.

*In view of the destructive character of drag seines the commission is of opinion that in and after January 1, 1912, no seine licenses should be granted. This would mean the prohibition of drag seines in all the waters of Manitoba.

Lake Dauphin—

Gill-nets for winter fishing November 20 to March 1, next following.

Jackfish gill-nets—

Length—Not exceeding 1,500 yards.

Mesh—Not less than 4 in. extension measure.

Fee—\$5.

Lac du Bonnet—

Sturgeon gill-nets and baited hooks

(1) Fishermen's sturgeon license authorizing the licensee to use—

(a) Gill-nets.

Length—Not exceeding 200 yards.

Mesh—Not less than 11 in. extension measure.

and

(b) 200 baited hooks.

Fee—\$5.

(2) Settler's sturgeon permit authorizing the licensee to use—

(a) Gill-nets.

Length—Not exceeding 100 yards.

Mesh—Not less than 11 in. extension measure.

(b) 50 baited hooks.

Permit to issue free, on condition that the fish caught be for the licensee's food purposes only.

CLOSE SEASONS.

Pickarel (doré), gold-eyes, pike or jackfish—April 15 to June 20.

Whitefish and trout—September 15 to November 19.

Sturgeon—May 15 to June 15.

None of these fish shall be possessed, bought or sold in Manitoba during this close season, whether such fish be from the waters of this province or other provinces, or elsewhere, provided that a special permit to hold fish in the close season may be issued by the inspector of fisheries.

WEEKLY CLOSE TIME.

Seines, nets or other apparatus used for catching fish, shall be so raised or adapted as to admit of the free passage of fish through, by or out of the same, from six o'clock on every following Saturday afternoon to six o'clock on every following Monday forenoon, and during such close time, no one shall catch fish, by any means whatsoever, and any fish so taken, caught or killed, together with the nets or apparatus used, shall be forfeited, but this shall not apply to fishing operations from November 20 to March 1, both days inclusive.

SIZE LIMITS FOR FISH.

Whitefish.—No whitefish of less than two and one-quarter pounds weight in the round, or two pounds weight dressed shall be had in possession.

Yellow pickerel or doré.—No yellow pickerel or doré of less than one and a quarter pounds weight dressed or one and a-half pounds weight in the round, shall be had in possession, provided that grey-back pickerel or saugers are excepted from this size limit.

Sturgeon.—No sturgeon of less weight than 18 pounds in the round or 12 pounds dressed, shall be had in possession.

PROHIBITIONS.

Closure for three years.—Fishing for sale or commercial purposes is prohibited for a period of three years, 1911, 1912 and 1913 in Shoal lake, Lake St. Martin and Pine Island lake and Playgreen lake.

Closure of Summer Fishing. Fishing is prohibited in Lakes Winnipegosis, Manitoba and Dauphin from March 2 to November 19, both days inclusive.

Fishing with nets during the period from August 16 to November 19 in each year is prohibited in the province of Manitoba, excepting as provided by the fall fishing recommendation on page 39.

Pound-nets and Trap Nets and Bare Hooks Prohibited.—Pound nets and trap nets and bare unbaited hooks or grapnels for fishing purposes are prohibited.

Prohibition of Fishing near St. Andrews' Locks.—No fishing of any kind, other than hook and line fishing, generally known as angling is permitted within a distance of 500 yards from the entrance piers at the lower end of the lock and the upper end of the lock canal, St. Andrews' rapids.

Prohibition of Summer Commercial Fishing in Specified Areas in Lake Winnipeg.—In Lake Winnipeg and certain adjacent waters commercial summer fishing is prohibited in five areas defined as follows:—

(1) South of a line drawn from Dancing point on the west shore of Lake Winnipeg to Saskatchewan point, thence northeasterly to Pigeon Point and thence northwesterly to the northern extremity of Berens island and thence northeasterly and terminating on Sandy Bar about five miles north of Berens River mouth. This area including lake St. Martin and Pine island lake and connecting waters of Dauphin river (or Little Saskatchewan river).

(2) West of a line drawn from the extremity of Long point northwesterly to Selkirk Island and along the west shore of Selkirk island to Ice Harbour, and terminating at Buffalo river on the west shore of Lake Winnipeg and including Cedar lake and Cross lake and the connecting waters of the Great Saskatchewan river and Grand Rapids.

(3) The waters of Limestone bay inside of a line drawn across the entrance of the bay from Limestone point to the west shore of the lake,

(4) The waters north of a line drawn from Montreal point, west to a point about ten miles direct west and thence north to Mossy Point, including Playgreen lake, Little Playgreen lake and the various channels of the Nelson river, and the east and west branches of the same.

(5) East of a line drawn from Big Stone Point to George island and along the east shore of the said island to its northernmost point, thence north to and terminating at Bird's Nest Point.

The whole respectfully submitted,

J. B. HUGG,
Commissioner.

D. F. REID,
Commissioner.

EDWARD E. PRINCE,
Commissioner and Chairman.

February 28, 1911.