## DOMINION OF CANADA

## SIXTY-SECOND

## ANNUAL REPORT

OF THE

# FISHERIES BRANCH 

Department of Marine and Fisheries

FOR THE YEAR
1928-29


OTTAWA
F. A. ACLAND

PIRINTER TO THE KING'S MOST EXCELLENT MAJESTY

To His Excellency the Right Honourable Viscount Willingdon, G.C.S.I., G.C.M.G., G.C.I.E., G.B.E., Governor Gencral and Commander in Chief of the Dominion of Canada.

May It Please Your Excellency:
I have the honour to submit herewith, for the information of Your Excellency and the Parliament of Canada, the Sixty-second Annual Report of the Fisheries Branch of the Department of Marine and Fisheries.

I have the honour to be,
Your Excellency's most obedient servant, P. J. ARTHUR CARDIN, Minister of Marine and Fisheries.

Department of Marine and Fisheries, Oftama, July, 1929.

## CONTENTS

PAGE
Députy Minister's Report, covering-
Review of the Fisheries of the calendar year 1928 ..... 5
Operation of the Fish Inspection Act ..... 16
Inspection of Canneries and Canned Fish ..... 17
Marine Biological Board ..... 17
Fisheries Intelligence Service ..... 19
Fishing Bounty ..... 19
Fish Collection Services ..... 21
Fish Culture ..... 21
Oyster Development, Prince Edward Island ..... 24
Scallop and Oyster Investigations ..... 25
Royal Commission on Atlantic Fisheries ..... 26
North American Committee on Fishery Investigations ..... 30
International Halibut Commission ..... 32
Fraser River Sockeye Salmon Treaty ..... 33
Gloucester County Fishermen's Association ..... 38
APPENDICES

1. Report of Supervisors of Fisheries ..... 40
2. Report on Work of Marine Biological Board ..... 121
3. Report of the Director of Fish Culture ..... 140
4. Report on Scallop Investigations ..... 210
5. Report on Oyster Development, Prince Edward Island ..... 212
6. Report of.Fisheries Engineer ..... 214
7. Statement of Revenue and Expenditure, 1928-29 ..... 220
8. Statement of Revenue and Expenditure, 1867-1928 ..... 234
9. Entries of United States Fishing Vessels (Pacific) ..... 246
10. Entries of United States Fishing Vessels (Atlantic) ..... 251
11. Summary of Licenses Issued ..... 253
12. Return of Prosecutions ..... 256

## DEPUTY MINISTER'S REPORT

To the Iion. P. J. A. Cardin, Minister of Marine and Fisheries.

Sir,-I have the honour to submit the Sixty-second Annual Report of the Fisheries Branch of the department, which is for the fiscal year ended March 31, 1929, and is my first report as Deputy Minister of Fisheries.

The following subjects are dealt with in the report:-
Review of the Fisheries of the calendar year 1928.
Operation of the Fish Inspection Act.
Inspection of Canneries and Canned Fish.
Marine Biological Board.
Fisheries Intelligence Service.
Fishing Bounty.
Fish Collection Services.
Fish Culture.
Oyster Development, Prince Edward Island.
Scallop and Oyster Investigations.
Royal Commission on Atlantic Fisheries.
North American Committee on Fishery Investigations.
Iriternational Halibut Commission.
Fraser River Sockeye Salmon Treaty.
Gloucester County Fishermen's Association.
Appendiees to the report include:-
Reports of the Supervisors of Fisheries.
Report on the Work of the Biological Board.
Keport of the Director of the Fish Culture Division.
Report on Scallop Investigations.
Report of the Fisheries Engineer.
Report on Oyster Development in Prince Edward Island.
Statement of Fisheries Expenditure and Revenue, 1928, and statement of Fisheries Expenditure and Revenue by provinces, 1867-1928.
Summary of Licenses Issued.
Keturn showing Prosecutions for Offences against the Fisheries Act.
Entries of United States Fishing Vessels on the Pacific Coast and on the Atlantic Coast.

## REVIEW OF THE FISHERIES OF 1928

Canada's fisheries production in the calendar year 1928 reached a total of $\$ 55,050,973$ in marketed value, or $\$ 5,927,364$ above the total for 1927 . Only once before, save in 1918 and 1919 when the inflated prices of the war era prevailed, have the Dominion's fisheries yielded a larger sum than in 1928. That exception was in 1926 when ususually favourable weather conditions greatly aided the fishermen and the marketed value of the production amounted in all to $\$ 56,360,633$, or $\$ 1,309,660$ more than in 1928.

During 1928 there were increased catches both on the Atlantic coast-that is, in the sea fisheries of the Maritime Provinces and Quebec-and on the Pacific coast. The catches in the inland waters showed a slight net decrease, attributable
to smaller landings in Ontario and Manitoba. The marketed value of the sea fisheries production was $\$ 46,669,222$, as compared with $\$ 41,547,697$ in the previous calendar year. In the case of the inland fisheries the marketed value of the production amounted to $\$ 8,381,751$, an increase of $\$ 805,839$ over the figures for 1927.

On the whole, prices were somewhat better in the fisheries trade in 1928 than they had been in the previous year and this condition, together with the increase in catch, made the year a more prosperous one for the fishermen than its predecessor had been. Export business showed substantial growth. Canadian fish and fish products were sold in some 100 foreign markets and the total exportation had a value of $\$ 38,096,245$, as against $\$ 34,814,448$ in 1927. The 1928 balance of trade in Canada's favour on fisheries account was $\$ 34,028,171$.

The number of men employed in the catching and landing of fish-the primary operations of the fisheries-was 62,785 , as compared with 63,415 in the preceding year, and in the fish canning and curing establishments 15,434 persons were employed, as against 16,697 the year previously-a total personnel of 78,219 directly engaged in the fishing industry, or 1,893 fewer than in 1927.

Capital investment showed some increase. It amounted to $\$ 58,072,371$, which was $\$ 1,765,910$ greater than in 1927. Capital represented by the fish canning and curing establishments was $\$ 26,941,283$, or an increase of $\$ 2,486,801$, despite a net decrease in the number of plants operated. There was a decrease in the number of lobster and salmon canneries, but their combinsd output was larger than in the year before. More clam canneries and fish curing plants were in operation than in 1927. The number of fish reduction plants was also larger. In the primary operations the value of the vessels, boats, and gear in use was $\$ 31,131,088$, as compared with approximately $\$ 720,000$ more than that in the preceding year.

The interesting point will be noted that though there was a decrease in the number of persons engaged in the industry in 1928 as compared with 1927 the catch and marketed value for the Dominion as a whole were both larger in 1928 than they had been in the previous year. Increasing use of powered craft and mechanical equipment in the fisheries is enlarging the productive capacity of the individual worker in the industry. The widening application of power in the fisheries is a factor which must be taken into the reckoning in any analysis of the changes from year to year in the size of personnel engaged in the industry.

It is also to be noted that while there was some increase in the capital investment in the industry in 1928, the indications are that there will be a further increase in the ensuing year. On the Atlantic coast, for instance, greater investment is being made in the facilities for primary operations. During the winter no less than 155 new fishing boats have been under construction at Maritime Province points, the greater number of them in Nova Scotia. There has been more activity in this regard in the Maritime Provinces during the past winter than for some years-a conclition partly attributable to the greater success met with by the fishermen during 1928 and partly, it is indicated, to the establishment by the department of fish collection servicesreferred to elsewhere in this review, which, by widening the marketing opportunities of the fishermen, are encouraging them to increase their facilities for fishing.

Reckoning in terms of marketed value, forty-eight per cent of the Dominion's fisheries production for 1928 is to be credited to British Columbia. The Maritime Provinces accounted for thirty-two per-cent, Ontario for seven per cent, the Prairie Provinces and the Yukon Territory, together, for seven per cent, and Quebec for six per cent. Only in the case of one of the provinces, Prince Edward Island, was there a decrease ( $\$ 171,126$ ) in marketed value as compared with 1927.

From the standpoint of marketed return, the salmon fishery was first in importance during the year and the total production from this fishery, increasing by some $\$ 3,000,000$ as compared with the year before, had a value of $\$ 17,867,053$. The cod fishery ranked next with a production valued on the markets at $\$ 6,285,777$. The lobster fishery was third in marketed value$\$ 5,183,988$. In the case of both halibut and herring the year's production amounted to more than $\$ 3,000,000$. Pilchard production was above the $\$ 2,000,-$ 000 mark and the marketed value of the catch of whitefish, most important among the inland fish from the standpoint of marketed return, was also more than $\$ 2,000,000$. The haddock, pickerel, sardine, smelt, and trout fisheries, respectively, yielded marketed values of over $\$ 1,000,000$.

Table I below shows the marketed value of the year's production by provincial totals as compared with the three preceding years, and table II the marketed value of sea and inland production by provinces for 1928.

TABLE I


TABLE II

|  | Sea | Inland | Total |
| :---: | :---: | :---: | :---: |
| Nova Scotia. | $\begin{gathered} \$ \\ 11,681,995 \end{gathered}$ | § | 11,681,995 |
| New Brunswick | 4,973, 562 | 28,079 | 5,001,641 |
| Prince Edward Isl | 1,196,681 | 28,0 | 1,196,681 |
| Quebec. | 2,254,257 | 742,357 | 2,996,614 |
| Ontario. |  | 4,030,753 | $4,030,753$ |
| Manitoba..... |  | 2,240,314 | 2,240,314 |
| Saskatchewan Alberta...... |  | 563,533 | 563,533 |
| British Columbia. | $26,502,727$ | 725,050 | 725,050 $26,562,727$ |
| Yukon Territory.. | 26,502,727 | 51,665 | -51,665 |
|  | 46,669,222 | 8,381,751 | 55,050,973 |

NOVA SCOTIA
In Nova Scotia the year's production of $\$ 11,681,995$ was nearly $\$ 900,000$ above the total for 1927 and was only $\$ 823,927$ under the figure for 1926 , which, as has been noted, was a year of unusually favourable natural conditions. In the cod fishery there was an increase of almost $14,000,000$ pounds in catch and of slightly more than $\$ 950,000$ in marketed value. There were. also increases in the catch and marketed value of haddock, pollock, hake and cusk, and swordfish among the other principal sea fish and an increase in the marketed value of mackerel, but decreases, on the other hand, in the case of halibut, herring, lobsters, and salmon. The scallop catch fell off sharply as compared
with 1927, but was substantially larger than it had been in any other previous year. There was some gain in the landings and marketed value of clams and quahaugs. Favourable prices in the dried fish markets were an important factor in increasing the total value of the provincial production for the year. The total catch of the Lunenburg fleet, which operates chiefly for the dried fish trade, was 717,225 hundredweight of green fish as compard with 682,770 hundredweight in 1927, though the number of vessels operating, seventy-five, was eight less than in the previous year.

## NEW BRUNSWICK

The year was a very successful one for the New Brunswick fishing industry and the total marketed value of the provincial catch, $\$ 5,001,641$, was nearly $\$ 600,000$ greater than the 1927 return. The sardine fishery, which is of steadily growing importance and in which there was a catch during the year of $55,869,800$ pounds with a marketed value of $\$ 1,284,771$, accounted for more than $\$ 238,000$ of the 1928 gain in the value of the provincial fisheries as a whole. Similarly, smelt production was more valuable by over $\$ 225,000$ than it had been in the previous year when a catch of $4,618,400$ pounds had a marketed value of $\$ 686,163$ as compared with a marketed value of $\$ 912,055$ for a catch of $5,986,600$ pounds in the year under review. There was a very large increase relatively in the catch of pollock and the, marketed value of $\$ 55,297$ was $\$ 41,000$ above the 1927 total. Mackerel catch was double that of the previous year while there was substantial increase in catch and value in the cod fishery as well as in the lobster fishery. On the other hand, production fell off in the alewives, herring, and salmon fisheries.

## PRINCD EDWARD ISLAND

In the case of Prince Edward Island the mackerel fishery was more successful in 1928 than it had been in the preceding year, both in point of size of catch and its value when put upon the market, and while the herring catch was smaller by some 400,000 pounds than in 1927 it brought in a slightly larger amount in marketed value. The oyster landings increased by nearly 700 barrels but marketed value was not quite as large as in the year before. There was a decrease of $\$ 103,794$ in the value of the lobster marketings although the catch of $6,561,300$ pounds was 281,300 pounds above the 1927 total. Smelt and cod landings fell off somewhat and in the case of each fishery there was a substantial decline in marketed value.

## QUEBEC

Of the total gain of $\$ 260,164$ in the marketed value of the Quebec production, $\$ 132,001$ is to be credited to the sea fisheries and $\$ 128,163$ to the ${ }_{i}$ inland fisheries. On the sea fisheries side the catch of haddock more than doubled while the lobster catch increased by some 184,000 pounds. The cod catch was also heavier than in 1927, and there were increases in one or two other instances. Catches of herring and smelt both showed a falling off and the landings of mackerel were only a third as heavy as in 1927. In the inland fisheries there were increases both in catch and marketed value in the case of all save one or two of the commercial fisheries. The largest single increase was in the production of eels and the marketed value of this catch rose from $\$ 110,778$ in 1927 to $\$ 189,905$.

## ONTARIO

The increases of $\$ 360,524$ in the marketed value of the Ontario production was chiefly due to larger returns from the pickerel and perch fisheries. The
catch of pickerel was less than in 1927 and the marketed value of the fish was $\$ 420,252$ as compared with $\$ 300,529$, while perch value was over three times the 1927 figure- $\$ 704,025$ as against $\$ 211,352$. Herring, trout, and whitefish fisheries were less successful than in the preceding year.

## MANITOBA

In Manitoba there was a decrease in total catch but better market conditions resulted in an increase of $\$ 200,576$ in the value of the production. In the case of whitefish there was a slight increase in catch and a proportionately greater increase in marketed value. Tullibee catch dropped off over a million pounds but the marketed value of the catch was $\$ 65,000$ above the 1927 figure. Pickerel fishermen did better than in the preceding year both as regards catch and marketed value. A smaller quantity of pike was landed than in 1927 but yielded a larger sum on the market. Goldeye catch fell away slightly and the marketed value was only $\$ 66$ less than in 1927. Trout catch and value declined somewhat.

## SASKATCHEWAN

Totai catch in Saskatchewan was 413,100 pounds more than in 1927 and on the mariket value side there was an increase of approximately $\$ 60,000$. The whitefish production in the province, $4,366,700$ pounds, was 234,400 pounds above the 1927 catch and was marketed for almost $\$ 50,000$ more. The pike and mullet catches increased, while there were decreases in the case of trout, pickerel, and tullibee. The catch of goldeyes was practically the same as in 1927.

## ALBERTA

The greater production of trout in 1928 was chiefly responsible for the increase in the market value of the total provincial catch of fish. Trout landings of nearly $2,000,000$ pounds were not far short of being twice as large as the 1927 catch and their market value was $\$ 222,312$, as compared with $\$ 126,955$ in the previous year. There were gains of various size in the catches of perch, jickerel, and tullibee, respectively, but decreases in the case of mullets, pike, and whitefish. The whitefish catch was 533,500 pounds under the 1927 total.

## BRITISH COLUMBIA

A very large increase in the salmon catch and large increases in the catch of halibut and the catcl of pilchards were features of the year in the British Columbia fisheries, and contributed the major part toward the rise of nearly $\$ 3,700,000$ in the marketed value of the provincial production. Only in the war year 1918 and in 1926 did the British Columbia fisheries have greater value than in 1928. The salmon catch for the year was 225,745,500 pounds, or about $76,700,000$ pounds more than the 1927 catch, and it had a marketed value of $\$ 17,945,670$, as compared with $\$ 14,253,803$ in the previous year. The Ianding of halibut at British Columbia ports during the year exceeded the 1927 landings by about $3,146,600$ pounds, but the marketed value in 1928 showed a drop of about $\$ 97,000$. The pilchard catch increased by $24,167,000$ pounds. The herring catch was somewhat below the 1927 catch but the marketed value slightly greater.

## YUKON TERRTTORY

A remarkable increase took place in the value of the fisheries of the territory during the year, the marketed value of the catch reaching $\$ 51,665$, which was $\$ 39,575$ greater than in 1927 . Increase in the salmon value to $\$ 17,320$, as compared with $\$ 8,050$ in the year before, was recorded, a $\$ 13,000$ increase in trout value, and an increase of almost $\$ 12,000$ in the case of whitefish.

## ATLANTIC COAST FISHERIES

In the Atlantic coast fisheries $521,971,600$ pounds of sea fish were landed during 1928, the catch by provinces being as follows:-

| Nova Scotia. | 269,589,500 pounds |
| :---: | :---: |
| New Brunswick | 149,559,400 |
| Prince Edward Island. | 20,476,300 |
| Quebec | 82,346,400 |

The total marketed value of the sea fisheries production of the four provinces were $\$ 20,106,495$.

Cod, Haddock, Hake and Cusk, and Pollock.-Taken together, the catches of these five varieties of fish on the Atlantic coast made up a quantity very considerably above the 1927 total and their combined marketed value showed an increase of $\$ 1,834,136$. In 1928 the catch of these fish reached $294,822,100$ pounds, with a marketed value of $\$ 8,493,938$, and in the year before the catch had been $261,274,300$ pounds and its marketed value was $\$ 6,659,802$.

The production of smoked fish and smoked fillets from the 1928 catch of these fish was $11,132,700$ pounds, or very slightly less than the production in the preceding year. The case was otherwise, however, as regards the production of fresh fish and fresh fillets and of dried and boneless fish from the catch in this group. The marketings of fresh fish and fresh fillets totalled $37,904,800$ pounds, as against $33,417,500$ pounds in 1927, and the production of dried fish and boneless fish was $57,468,200$ pounds, as compared with $52,379,400$ pounds in the earlier year.

The improved showing in regard to the catch and marketed value in the case of this group of fish was due to large gains in Nova Scotia and New Brunswick and a substantial gain in Quebec. In Prince Edward Island the 1927 catch of $6,191,300$ pounds dropped to $4,977,300$ pounds and marketed value from $\$ 149,397$ to $\$ 125,444$. So far as catch alone is concerned, Prince Edward Island showed a slight gain in the case of hake and cusk, a small decline in -haddock landings, and a larger decrease in cod catch. Pollock are not taken by Prince Edward Island or Quebec fishermen.

Quebec's catch of cod was $46,992,400$ pounds, or 815,200 pounds above the 1927 total. The provincial haddock catch of 588,400 pounds represented a gain of better than a hundred per cent. The hake and cusk. catch increased nearly four-fold from 83,000 pounds in 1927 to 380,400 pounds in the year under review.

In New Brunswick there was a smaller haddock catch than in the year previous- $2,887,800$ pounds in 1928 as against $3,383,400$ pounds-but there was distinct improvement in the cod fishery and the hake and cusk fishery. The cod landings for the year were $17,287,400$ pounds, compared with $13,677,300$ pounds in 1927, and landings of hake and cusk mounted to $7,872,600$ pounds, an increase of over $3,200,000$ pounds. The increase in pollock catch was relatively very large, $3,411,800$ pounds being landed as compared with only 769,300 pounds in the year before.

Nova Scotia fishermen made larger catches of all these fish than in 1927. The cod catch was $147,017,200$ pounds, as compared with $133,187,300$ pounds, the haddock catch $44,595,000$ pounds, as compared with $38,420,700$ pounds, the catch of hake and cusk $15,874,400$ pounds, as compared with $11,943,100$ pounds, and the catch of pollock $3,057,300$ pounds, as against $2,735,700$ pounds.

Mackerel, Herring and Sardines.-Combined landings of herring, mackerel, and sardines were larger by $5,183,800$ pounds than in 1927 , but this was due to an increase of over $22,200,000$ pounds in sardine catch for there was a $13,572,300$ pounds decrease in herring lanclings, and mackerel catch was $3,502,900$ pounds under the figures for the earlier year.

The smaller total for mackerel landings- $12,376,800$ pounds, as compared with $15,879,700$ pounds-was due to the poorer success of the Quebec men engaged in this fishery. The Nova Scotia mackerel catch of $7,144,000$ pounds was very little under the 1927 catch while the New Brunswick catch of $1,861,100$ pounds more than doubled the landings for the previous year, and in Prince Edward Island the catch was $1,019,700$ pounds, as compared with only 645,500 pounds in 1927. In Quebec the mackerel fishermen landed only $2,352,000$ pounds, while in 1927 their catch had amounted to $7,076,500$ pounds.

Herring catches were considerably below the 1927 figures in all four provinces. In New Brunswick the decrease was $7,700,000$ pounds, in Nova Scotia $4,816,200$ pounds, in Quebec 617,800 pounds, and in Prince Edward Island 438,300 pounds.

The year was a very successful one for the sardine fishery of New Brunswick and the catch was $55,869,800$ pounds, as against $34,928,000$ pounds in the year preceding. The increase in marketed value of the catch was $\$ 238,521$. The pack of sardines in the province was 257,881 cases. In 1927 the pack was 240,091 cases.

Other Sea Fish.-In 1928 the catch of halibut, which had been greater by 367,000 pounds on the Atlantic coast in 1927 than in the year previously, dropped 140,700 pounds below the 1927 total. The 1928 landings in Nova Scritia, New Brunswick and Quebec (the New Brunswick catch is small) totalled $2,710,300$ pounds. Quebec's catch was 126,900 pounds, as compared with only 84,800 pounds in 1927, but the Nova Scotia catch decreased by some 178,300 pounds and there was also a decrease in the case of the New Brunswick catch. Swordfish, taken by Nova Scotia fishermen only, made up a catch of over 808,000 pounds, as compared with 729,900 pounds in the previous year. The catch of tomcods, which are taken chiefly in New Brunswick, fell to $1,960,100$ pounds, or some 314,000 pounds less than in 1927. There was a large decrease also in the landings of flounders in Nova Scotia and New Brunswick, the total catch standing at 347,400 pounds, as against 938,300 pounds in the year before. The Nova Scotia founder catch, which had been 819,500 pounds in 1927 , was only 248,800 pounds in the year under review.

Lobsters.-In the four Atlantic provinces, together, the lobster catch increased by more than 500,000 pounds, reaching a total of $32,243,700$ pounds. Prices, however, were not so good as in 1927 and the marketed value of the catch, $\$ 5,053,699$, was some $\$ 372,000$ under the figure for the previous year. The following tables show the catch, by provinces, for 1928 and 1927, the forms in which the catch was marketed in each year, and the marketed values; it may be noted that in 1928 the percentage of the catch shipped in shell was slightly greater than in 1927:-

CATCH

| - | 1928 |  | 1927 |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Marketed value | Cut. | $\begin{gathered} \text { Marketed } \\ \text { value } \\ \S \end{gathered}$ |
| Nova Scotia.... | 172,409 | 3,048,255 | 179,673 | 3,255,627 |
| Prince Edward Island. | 65,613 | 1,037,193 | 49,752 <br> 62,800 | -955,053 |
| Quebec..... | 26,445 | 216,126 | 24,606 | 359,579 |
| Totals. | 322,437 | 5,053,699 | 316,831 | 5,426,176 |

QUANTITY SHIPPED IN SHELL

| Nova Scotia. | 66,239 | 1,525,674 | 67,651 | 1,492,350 |
| :---: | :---: | :---: | :---: | :---: |
| New Brunsick | 24,384 | 583,833 | 16,162 | 431,870 |
| Prince Edward Island | 6,791 | 99, 137 | 1,847 | 40,817 |
| Quebec.. | 492 | 6,708 | 1,147 | 14,022 |
| Totals. | 97,906 | 2,215,352 | 86,907 | 1,979,059 |

QUANTITY CANNED

|  | Cases | Marketed value | Cases | Marketed value |
| :---: | :---: | :---: | :---: | :---: |
| Nova Scotia. | 55,277 | $\$$ $1,465,239$ | 55,771 | $\stackrel{\text { 1,727,105 }}{\text { ¢ }}$ |
| New Brunswick | 19,468 | - 451,165 | 18,806 | ,522,162 |
| Prince Edward Island | 25, 077 | 635,427 | 27, 896 | 801, 542 |
| Quebec. | 12, 164 | 332,091 | 11,404 | 342, 289 |
| Totals. | 111,986 | 2,883,922 | 113,937 | 3,393,098 |

TOMALLEY

| Nova Scotia. | 3,226 | 38,322 | 2,536 | 31,838 |
| :---: | :---: | :---: | :---: | :---: |
| New Brunswick | 197 | 2,497 | 103 | 1,021 |
| Prince Edward Island | 799 | 10,759 | 630 | 9,558 |
| Quebec.. | 645 | 7,616 | 280 | 3,028 |
| Totals. | 4,867 | 58,894 | 3,549 | 45,445 |

Other Shellfish.-The production of clams and quahaugs increased in all four of the provinces, save New Brunswick, and totalled 46,486 barrels, or a gain of 3,193 barrels. The greatest production is in New Brunswick, which accounted for 30,058 barrels. Scallop production, 12,331 barrels less than in 1927, was 26,304 barrels. The oyster catch showed a slight decrease in Nova Scotia, New Brunswick, and Prince Edward Island, taken together, for while the Nova Scotia catch and the Prince Edward Island catch, at 1,944 barrels and 4,756 barrels, respectively, were larger than the 1927 figures, the New Brunswick catch of 12,383 barrels was 1,191 barrels less than the year before.

River Spawning Fish.-There was a large decrease, taking the catch in the four provinces as a whole, in the landings of river spawning fish-alewives, salmon and smelt-although the smelt figures were larger than for the preceding year. The catch of alewives in Nova Scotia dropped from 1,468,000 pounds to $1,195,400$ pounds, and in New Brunswick from 3,943,400 pounds to $2,361,000$ pounds. In Prince Edward Island, where no alewives were reported as landed in 1927, there was a small catch of 15,000 pounds in 1928. Market conditions in the alewives trade, chiefly a trade in the salted fish, continued unsatisfactory, as in the previous year. The total decrease in the salmon catch was $2,239,800$ pounds, the combined landings in the four provinces amounting to only $2,671,500$ pounds, as against $4,911,300$ pounds in 1927. There was a decrease in the catch in each of the four provinces. In the smelt fishery, New Brunswick, the chief producer, showed an increase of $1,368,200$ pounds, the total landings in the province being $5,986,600$ pounds, but the other three provinces all showed decreases.

## INLAND FISHERIES GENERALLY

The inland fisheries are prosecuted in New Brunswick, where they are relatively unimportant as compared with the sea fisheries, and in Quebec, Ontario, the Prairie Provinces, and the Yukon Territory. Compared with 1927, the
year under review brought a gain in inland production value of slightly more than $\$ 800,000$, the figures covering marketed value for the two years standing at $\$ 7,575,912$ (1927) and $\$ 8,381,751$ (1928). The catches of the principal varieties of fish taken in inland waters in 1928 and 1927 were as follows:-

|  | 1928 | 1927 |
| :---: | :---: | :---: |
|  | lbs. | lbs. |
| Whitefish | 18,069,500 | 18,566,400 |
| Pickerel or dore | 14,261,000 | 14,001,900 |
| Tullibee. | 10,414,500 | 12,176,400 |
| Trout. | -9,007,500 | 8,990,400 |
| Pike. | 6,270,100 | 7,047,300 |
| Herring. | 5,999,300 | $6,320,100$ |
| Perch | 5,175,100 | 3,318,900 |
| Eels. | 2,324,000 | 1,455,200 |
| Pickerel, blue. | 2,149,600 | 3,117,300 |
| Mullets... | 1,606,500 | 1,590,600 |
| Carp | 1,349,700 | 1,275,800 |
| Goldeyes. | 1,071,300 | 1,148,500 |

There were increases in the respective catches of bass, catfish, salmon, saugers, shad, sturgeon, and mixed fish. Alewives catch, maskinonge catch, and the catch of smelt were under the 1927 figures.

The largest catch of whitefish was in Ontario, $5,823,500$ pounds, but this total was smaller by some 342,000 pounds than the 1927 catch. The catches in Manitoba and Saskatchewan, respectively, were somewhat larger than in 1927, but Alberta landings fell off. Quebec showed some gain.

Manitoba, the principal pickerel producer, had a larger catch than in 1927 and $10,187,000$ pounds were landed, as against $9,981,300$ pounds in the previous year. Ontario's catch of $2,001,200$ pounds was not quite as large as the 1927 total. Saskatchewan's catch, 305,400 pounds, was slightly less than the catch for the year before, but Alberta, with 849,900 pounds to its credit, did better by over 175,000 pounds than in the previous year.

All the blue pickerel landed were taken in Ontario. The catch in 1928, as will be noted from the foregoing table, showed a decrease, but marketed value an increase.

Manitoba continued the chief producer of pike but its catch was about 380,000 pounds less than in 1927 when 4,016,600 pounds were brought ashore. There were larger catches in Quebec and Saskatchewan than in 1927 but smaller catches in Ontario and Alberta.

## THE PRAIRIE PROVINCE FISHERY

On the whole, conditions in the fishing industry in the Prairie Provinces were better in 1928 than they had been in 1927, notwithstanding that unfavourable weather interfered with the winter fishing. In Manitoba, for instance, while commercial production showed a decrease, there was an increase in the marketed value of the catch. In Saskatchewan there was an increase of over 400,000 pounds in the commercial production. The winter fishery in Alberta showed a considerable drop in catch but the summer fishery a much greater increase so that there was a net gain of more than 450,000 pounds, and prices, taken as a whole, were satisfactory; summer fishery prices ran from fair to average and winter prices were good. There was an increase in the number of men engaged in the industry in the three provinces, and it is noteworthy that the trend was distinctly toward expansion, as indicated by increased equipment. In Saskatchewan the equipment in use was valued at $\$ 26,660$ more than in 1927, the number of gill-nets, for instance, increasing by 2,926 . In Alberta the value of equipment advanced to $\$ 416,185$. Manitoba fishermen, unfortunately, met with heavy loss in equipment during the year as a result of adverse weather conditions; in several cases gangs lost their entire outfits and it is estimated that the total loss in nets reached $\$ 42,600$.

Increased angling featured the year in all three provinces. In Alberta the number of angling permits reached a new high level. The amount of fish taken by anglers in Alberta in 1928 was almost twice as great as in the preceding year. Anglers in Saskatchewan numbered more than in 1927 but their total catch was smaller. In Manitoba, where the number of anglers reached 6,113 and the total catch was estimated at 293,500 pounds, an outstanding feature was that the number of non-residents taking out licenses was more than double the 1927 total, reaching 1,113 .

Improvement in angling in the Prairie Provinces was the result, in large part, of the action of the department in stocking various waters with trout and other fish in recent years. Good catches were reported in streams which had previously been stocked with trout. Thousands of perch were taken from Mayatan lake, Alberta, where, in 1922, the department placed only forty-two adult fish. Great numbers of young perch were to be seen in other Alberta lakes which were stocked with adult perch as recently as 1925, while perch fingerlings which were placed in Whitewood lake in that year had grown by 1928 to more than half a pound in weight. Similar results were seen in 1928 from the placing of pickerel in other waters. In Saskatchewan a number of waters which had been stocked some years ago afforded good angling, and, generally, in all three provinces the results of this policy of stocking waters from the Government hatcheries have been satisfactory, leading to better angling year by year.

Further development of the fishery in lake Athabaska, in the extreme north of the Prairie Provinces, was a noteworthy advance of 1928 , indicative of the possibilities of the future in the Dominion's northern areas. The fish taken from lake Athabaska are being marketed in increasing quantities as the fishery is developed by energetic and progressive methods. During 1928 improved equipment was put in operation in the Athabaska fishery with resultant improvement in the attractiveness of the product sent to market. Trout carefully sliced by machinery, frozen, and packed in attractively-branded wax paper were sent to distant urban markets with satisfactory result. Addition of two new steam tugs and two refrigerator barges to the fishing equipment evidenced the expansion of the fishery on the lake.

Establishment of a co-operative "Fish Pool" in Manitoba was an important step in the Prairie Province fishery during 1928. Establishment of the pool, which is known officially as the Manitoba Co-operative Fisheries and is incorporated under the Manitoba Co-operative Societies Act, was the culmination of discussion which had been going on for several years among Manitoba fishermen and independent dealers. Organization was completed in the mid-summer of 1928 and up to January 28, 1929, the pool had handled $3,326,255$ pounds of fresh and frozen fish from the winter production. At the end of last January the pool membership was 515 which was estimated to represent from 1,000 to 1,200 men out of a total of some 4,100 men engaged in the Manitoba fishery.

An interesting development in connection with the fishing industry in these provinces is the effect of mining progress and railway extension in making for the expansion of the fishery in some of the more remote waters already under operation and in opening up new waters. For example, the completion of the railway to the Flin-Flon mine in northern Manitoba has made it possible for fishermen operating in the area of the Churchill waters between Pelican narrows and Island falls, the centre of the main sturgeon fishery of the Churchill, to put their catch at rail-head in one day, with the shipments reaching The Pas on the following day, whereas, formerly, a twenty-day round trip with teams was necessary. Similarly, an extension of that railway northward from Cranberry portage to the location of the Sherritt-Gordon mining properties at Cold lake, which is now under way, will bring virtually all the waters along the western part of these northern areas of Manitoba within comparatively easy reach of
railway transportation. In Saskatchewan a railway survey line projecting from Nipiwan has already established a trail for fishermen to Big Bear, Ballantyne, and Deschambault lakes. This new railway will open up a number of important fishing lakes and with other proposed railways will bring valuable fisheries within a reasonable distance of rail transportation.

## PACIFIC COAST FISHERIES

The major feature of the British Columbia fishery is export business in canned salmon, which, in 1928, was done with more than twenty-five different countries. The largest trade was with France, which took about 333,670 cases out of the total pack of $2,035,637$ cases. Australasian purchases reached some 269,000 cases and the United Kingdom was third among the customers in point of quantity purchased, taking approximately 258,000 cases. Shipments to continental Europe, apart from those to France, amounted to almost 150,000 cases, with Belgian buying accounting for more than one-third of the quantity. Consignments to the Atlantic coast of the United States totalled slightly more than 14,500 cases. Exports to South Africa and West Africa made up a total of more than 63,000 cases, while other countries to which shipments were made included Central and South American states, Ceylon, China, the Dutch East Indies, Egypt, Fiji, India, Japan, the Philippines, the Straits Settlements, and the West Indies.

The drop in the sockeye production in 1928 to 203,541 case $s-m o r e ~ t h a n ~$ 100,000 cases below the average pack for the five-year period, 1924-25-prevented the record salmon pack of 1926 from being exceeded. As it was, however, the total pack was less than 30,000 cases under the 1926 figures. Both in pinks and chums the former records (1926) were broken in 1928. The pack of pinks was 792,362 cases, or 19,369 cases above the former record, and the pack of chums mounted to 161,294 cases above the old record and reached 863,256 cases. The 1928 pack of cohoes was 150,684 cases and the pack of springs 18,856 cases, but an increasing quantity both of springs and cohoes is being used each year in the fresh and frozen fish trade.

The runs of pinks and chums were exceptionally large, taking the province as a whole, and, at the same time fishery officers reported that in the course of the season they saw both these varieties of salmon in streams in which the fish had not been known to be seen before. The decline in the sockeye pack was chiefly due to the falling off in production of the Fraser and Skeena rivers. In both the two preceding years very late runs of sockeye helped to swell the total pack on the Fraser, but in 1928 there was no such late run. In the Skeena area the small pack was partly attributable to the establishment, during the sockeye season on these waters, of a weekly closed period of sixty hours-a step taken with a view to greater conservation, and taken, the evidence indicates, with excellent results. Operations in the Barclay sound area during the year indicated that the fish cultural program and restriction of fishing in this area in recent years have had beneficial effect, as evidenced by an excellent run of sockeye.

Improved standard of pack was noted during the year, and a continuance of this improvement should result in an increasing and more satisfactory market. The improvement in standard is regarded as traceable, in large part, to twe causes. First, there was the reduction in the number of purse seines in use, a reduction flowing from the action of the department in influencing those concerned to bring about an agreement to this effect. Following on this agreement, purse seine fishing was confined, for the most part, to waters within reasonable distance of the canneries supplied by the seines and the salmon thus were brought to the canning plants fresher and in better condition than would otherwise have been the case. The second factor making for the improvement
in the standard of the pack was the enactment of regulations requiring that fish that were to be transported over open water areas, where delays in navigation were liable to occur, must be gutted and packed in ice immediately after being. caught.

Two other developments of interest and importance in the Pacific coast fishery during 1928 were the increase in the production of dry-salted herring and the increase in the production of fish meal and oil. Practically all of the yearly production of dry-salted herring is exported to China, and in 1928 the output reached a new high level-107,218,800 pounds-though disturbed Chinese conditions brought some difficulties to the marketing problem. The production last year was $2,399,800$ pounds greater than the output in 1927.

In 1928 the fish oil manufactured in British Columbia totalled 5,047,338 gallons, as compared with $3,657,627$ gallons in 1927. The production of fish meal and fertilizer (including also some whalebone) was 20,119 tons, as against 17,655 tons in the year previous. The great increase was in the production from pilchards, oil manufacture rising from $2,673,876$ gallons to $3,995,806$ gallons and the production of meal and fertilizer increasing to 14,500 tons, as compared with 12,169 tons in 1927. Canning of pilchards also reached high figures during 1928, when 65,097 cases were produced, the largest total for any year since 1920 .

Some increase in the proportion of Canadian landings at Prince Rupert was apparent in the halibut fishery in 1928, although the quantity of fish landed at that port by American vessels was still much greater than the catch brought ashore there by Canadian schooners. The total quantity of halibut landed at British Columbia ports during the year was $30,282,000$ pounds. This was more than $3,146,000$ pounds greater than the total of the 1927 landings but was below the average for the 1923-26 period.

A large increase in the number of fur seals taken off the British Columbia coast by Indians was shown in 1928, and there was also an increase in the catch of whales. The Indians, who have the right under the Pelagic Sealing Treaty to take seals, landed 2,090 skins, as compared with only 1,476 in 1927. The catch of whales made by six steamers operating from the two stations maintained during the year was 305, as against 258 in 1927 and 269 in 1926.

Continuing the departmental program of endeavouring to improve the sport fishery of the province, 201 plantings of eggs and fry were made in the course of 1928 and careful inspection of lakes and streams was carried on by the fishery officers. Useful results are believed to be flowing from these activities.

## INSPECTION OF FISH

Under authority of the Fish Inspection Act, inspection of certain kinds of fish and the packages in which they are marketed was carried on during the season of 1928-29. The provisions of the Act apply to salted herring; mackerel, alewives, salmon, and smoked round herring.

Under the authority of the Act and regulations, standards of size and quality have been established for dried and boneless cod and such like fish, and provision has been made for the inspection of such fish, in the event of a seller and buyer deciding to make a contract on the basis of the established standards.

The chief purposes of the Act are to require that all fish which come under its provisions shall be well cured and in accordance with the standards laid down in the regulations; that such fish shall be packed in barrels or other packages of a standard size and type; that the barrels and other packages shall contain the proper weight of fish, and that the fish contained therein shall be_as the marks on the package represent them to be.

A few years ago it was a rather difficult matter to persuade fishermen and packers generally that submitting their fish to the provisions of the Fish Inspection Act would result in benefit to them. A judicious and tactful administration of the Act, however, has secured the goodwill and co-operation of the trade to such a degree that most buyers of both barrels and fish insist on an official inspection being part of the contract.

On the Atlantic coast during the year under review 28,281 barrels of various kinds containing cured fish were inspected; 77,055 boxes of smoked herring were also inspected before being shipped. Furthermore 39,902 empty barrels were inspected before being taken over by dealers and packers for the packing and marketing of pickled fish.

On the Pacific coast 269,070 boxes of dry salted herring, each containing four hundred pounds, were inspected before shipment to the Orient.

## INSPECTION OF CANNERIES AND CANNED FOOD

The inspection of fish canneries of all kinds throughout Canada, the raw material to be used therein, the whole process of canning, the canned products and the labelling and marking of the cans, was carried on during the year under the provisions of the Meat and Canned Foods Act. This inspection is conducted by the department's staff of fishery overseers as part of their regular duties. It has for its object
(1) the extension of trade by improving the quality of the product, and
(2) the protection of the public by preventing the packing of unsound fish and insisting on the correct labelling of cans of fish.
On the Atlantic coast there are operated 378 lobster canneries, 28 clam oanneries and 36 other fish canneries in which there are canned sardines, salmon, haddock, cod, mackerel and crabs.

On the Pacific coast there are operated-86 salmon canneries, in some of which clams and pilchards are also canned.

A number of the canneries on the Atlantic coast are small and operated by individuals who have very little capital at their disposal, and the task of bringing such canneries into line with all the requirements of the Act and the regulations has not been a very easy one. A very marked improvement has been secured, however, in recent years, not only in the conditions under which operations are carried on from a sanitary point of view, but in the quality of the canned product. Defects in buildings and equipment are being continually noted and corrected at the instigation of the inspecting officers.

## MARINE BIOLOGICAL BOARD

The Marine Biological Board, which operates under the control of the minister, was created in 1912 by an Act of Parliament. For ten years the membership of the board consisted entirely of scientists, two of which were nominated by the minister, and the others by universities in which biological research was being carried on. In 1923 the Act was amended with a view to bringing the board into closer contact with the department and the practical problems of the fishing industry. Under the amended Act the board now consists partly of scientific men, partly of departmental officers, and partly of men from the industry.

With this new organization, there is in operation on both coasts a station at which purely scientific researches are carried on, and another at which the results of previous and current scientific researches are applied to the everyday economic problems of those engaged in the industry, which latter are known as Fisheries Experimental Stations. These are designed to do all for the Fisheries that Experimental Farms can do for agriculture.

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The Atlantic stations are located at St. Andrews, New Brunswick, and Halifax, Nova Scotia, and the Pacific ones at Nanaimo, B.C., and Prince Rupert, B.C., respectively.

In addition to conducting the ordinary work of the stations, the board undertook to continue giving the six weeks' course of instruction to fishermen at the Halifax Station. Arrangements also were made to give a six weeks' course of instruction to fishery officers in order to determine which of them would be capable of undertaking advanced work, and to equip them to undertake the duties connected with the inspection of fish and instruction to fishermen.

Furthermore, it has built and equipped a marine laboratory at the mouth of Halifax harbour for the training of students at Dalhousie or any other university, who desire to take a course in fisheries science with a view tor securing a B.Sc. "Fisheries" degree.

The board has further provided itself with a fully qualified staff at the Fisheries Experimental Station at Halifax to co-operate in the university courses.

The composition of the board and its various committees during the year was as follows:-

Prof. J. P. McMurrich, University of Toronto, chairman.
J. J. Cowie, Esq., Department of Marine and Fisheries, secretarytreasurer.
Prof. A. T. Cameron, University of Manitoba.
Prof. C. J. Connolly, St. Francis Xavier University.
Prof. P. Cox, University of New Brunswick.
John Dybhavn, Esq., Prince Rupert.
Prof. J. N. Gowanloch, Dalhousie University.
Very Rev. Canon V. A. Huard, Laval University.
Prof. A. T. Hutchinson, University of British Columbia.
Prof. W. T. MacClement, Queen's University.
Prof. Marie-Victorin, University of Montreal.
Prof. E. E. Prince, Ottawa.
J. A. Rodd, Esq., Department of Marine and Fisheries.

Prof. W. P. Thompson, University of Saskatchewan.
A. H. Whitman, Esq., Halifax.

Prof. A. Willey, McGill University.
The members of the board receive no pay, but are allowed travelling expenses in connection with the board's work and its meetings.

The Central Executive Committee consisted of:-
Prof. J. P. McMurrich
Prof. W. T. MacClement
J. J. Cowie

Prof. E. E. Prince
Prof: A. Willey
Prof. Marie-Victorin
The Atlantic Sub-Executive Committee consisted of:-
A. Handfield Whitman, chairman

Prof. J. N. Gowanloch
Prof. C. J. Connolly
The Pacific Sub-Executive Committee consisted of:-
John Dybhavn, chairman
Prof. A. T. Hutchinson
Prof. A. T. Cameron

The Research Committee on Fish Culture consisted of:-
Dr. A. G. Huntsman, chairman
Dr. W. A. Clemens
Dr. A. H. Leim
Prof. A. T. Cameron
Mr. J. A. Rodd
Dr. R. E. Foerster, secretary.
A detailed report on the work of the board's staff during the year will be found as Appendix No. 2 of this publication.

## FISHERIES INTELLIGENCE SERVICE

Radio distribution of weather, bait, and ice reports was an important additional step in the Fisheries Intelligence Service in 1928. Throughout the year weather reports were broadcast twice daily from Halifax, Louisburg, and Saint John, and, from April 24 to November 30 broadcasts of reports as to bait and ice supplies from upwards of twenty points, ice conditions along the coast, and prevailing local prices for dried and slack-salted fish were sent out twice a day from Halifax and Louisburg. Included in these latter broadcasts from time to time were items of current news and important messages for fishermen at sea. The various broadcasts cover the Grand Banks and other fishing grounds and as most of the vessels engaged in the fishing industry are now equipped with wireless receiving sets the service was of very considerable value.

Collection of monthly statistics covering the sea fisheries, and their distribution in summarized form through the press and by other means, and the publication of a quarterly bulletin giving the statistics in detail, were continued during 1928. Practically all of the statistics are collected by the fishery officers as part of their regular duty, and compilation and distribution are looked after at Ottawa. The daily collection of information as to supplies of bait along certain sections of the coast was also carried on during the spring and summer months. The facts necessary to the operation of this part of the intelligence service are obtained by fisheries officers and are sent by telegram, daily, to a number of ports where they are posted up for the information of masters of fishing vessels and others who may be seeking bait.

In accordance with a recommendation made by the Royal Commission on the Fisheries of the Maritime Provinces and the Magdalen Islands steps were taken during the year toward the establishment of a. Fisheries Intelligence and Publicity Division within the department. Shortly before the end of the fiscal year the appointment of a Director of Fisheries Intelligence and Publicity was made by the Civil Service Commission. Plans for expanding and improving the collection and distribution of statistical, market, and other information in connection with the fisheries are now being proceeded with by the new division.

## FISHING BOUNTY

Under the authority of "An Act to Encourage the Development of the Sea Fisheries and the Building of Fishing Vessels", the sum of $\$ 160,000$ is appropriated annually by the Governor in Council. It is distributed under the name of Fishing Bounty by the Department of Marine and Fisheries amongst fishermen and fishing vessel and boat owners on the Atlantic coast, under regulations made from time to time by the Governor in Council.

For the year 1928, payment was made on the following basis:-
To owners of vessels entitled to receive bounty, $\$ 1$ per registered ton, payment to the owner of any one vessel not to exceed $\$ 80$.

To vessel fishermen entitled to receive bounty, $\$ 7.50$ each.
To owners of boats measuring not less than 12 feet keel, $\$ 1$ per boat.
To boat fishermen entitled to receive bounty, $\$ 6.50$ each.
There were 9,390 bounty claims paid. In the preceding year there were 9,609 bounty claims paid.

The total amount paid was $\$ 151,411.20$, allocated as follows:-


BOUNTY EXPENDITURE FOR 1928-29


## FISH COLLECTION SERVICES

Expansion of fish collection service was carried out on the Atlantic coast during 1928 with satisfactory results. In some cases, it has been testified by fishermen, the operation of fish collection boats "turned what had every appearance of a failure in the fisheries to a successful year for our fishermen." Under the collection plan, boats chartered by the department ply along specified routes, where buyers undertake to purchase the catches of the fishermen, collect the fish purchased at the various places and deliver them at such central points as may be agreed upon. A charge of ten cents a hundredweight is made for collecting and delivering the fish.

The first collection service was established in 1927 on the coast between Port Bickerton and Canso, Nova Scotia. The usefulness of such services as factors in promoting fisheries expansion is indicated by the fact that the quantity of cod and haddock carried by the Port Bickerton-Canso collection boats during 1928, a total of $3,213,056$ pounds, was greater by slightly more than $1,000,000$ pounds than the quantity carried in 1927. All told, four collection services were operated during 1928, though the new services could not be put regularly in operation until after the fishing season had been in progress for some time. The four services carried on during the year were as follows: Eastern Cape BretonCanso; Port Bickerton-Canso; Sonora-Halifax; and a service on the Shelburne county shore. Together they served over thirty fishing ports and the total quantity of fish of all kinds which was carried for the fishermen was $5,311,481$ pounds, these figures including some collections made during the first ten days of 1929. The services have proved of much benefit in enabling the fishermen to sell their catches promptly and for cash and in making it possible for them to devote to the actual work of fishing the time which, previously, they were often compelled to employ in preparing their fish for the dried and cured fish markets.

## FISH CULTURE

The fish cultural operations of the Fisheries Branch during the calendar year 1928 were devoted almost entirely to the propagation of the more important fresh water and anadromous food and game fishes, such as Atlantic salmon and speckled trout in the Maritime Provinces, whitefish, pickerel and game trout in the Prairie Provinces, and Pacific salmon and game trout in British Columbia, but in response to an annually increasing public demand, greater attention was paid to the propagation of game trout. Increased facilities for retaining and feeding fry so as to afford a longer season for distribution were provided at several establishments where such development was feasible. The total distribution for 1928 was over 59 per cent larger than it was during the preceding year, being increased from $295,283,782$ to $470,302,380$, an increase of $175,018,598$.

In addition to the distributions that were made from the hatcheries, twentysix lakes and streams received allotments of fry or older fish from other bodies of water. This work was largely confined to the Prairie Provinces where there are many districts which are not readily accessible to existing hatcheries. It involved the capture and transfer, in many instances for considerable distances, of 44,932 fish, comprising seven different species.

The seeding of remote and isolated waters (to which it is not feasible to tranfer fry from existing hatcheries) with eyed eggs was continued in British Columbia, and $13,013,000$ sockeye salmon eggs collected in the Pemberton district below Hell's Gate on the Fraser were planted in the one time spawning beds of such important areas as Stuart, Francois and Quesnel lakes in the Upper Fraser above Hell's Gate.

Examinations and inspections were continued in the different provinces with a view to locating waters where fish eggs might be obtained in sufficient quantities for hatchery purposes and with a view to locating sites where the fish cultural service might be advantageously extended by the construction of new establishments in districts that are not readily accessible from existing hatcheries.

As opportunity offered the general inspection of waters throughout the country was continued by officers and employees of the fish cultural and fishery services.

The Canadian National Railway, Canadian Pacific Railway, Dominion Atlantic Railway, Pacific Great Eastern Railway, Esquimalt and Nanaimo Railway, Kettle Valley Railway, and the Cumberland Railway and Coal Company continued their generous assistance and co-operation by furnishing free transportation for shipments of game fish and game fish eggs with their attendants.

The extent of this co-operation is indicated in the following statement:-

| Railway | Total mileage on trip passes | Number of passages | Mileage <br> Baggage car permit |  |  | Number cases or cans |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Full | Empty | Total | Full | Empty | Total |  |
| C.N.R. | 19,222 | 180 | 10,555 | 13,127 | 23,682 | 876 | 869 | 1,745 | 181 |
| C.P.R. | 17,524 | 118 | 9,516 | 10,363 | 19,879 | 559 | 564 | 1,123 | 136 |
| D.A.R. | 2,366 | 31 | 1,407 | 1,407 | 2,814 | 123 | 123 | 246 | 37 |
| E. \& N, R | 672 | 12 | 343 | 343 | 686 | 41 | 41 | 82 | 12 |
| K.V.R. | 296 | 1 | 296 |  | 296 | 3 |  | 3 | 1 |
| P.G.E.R. | 178 |  | 89 | 89 | 178 | 6 | 6 | 12 | 4 |
|  | 40, 288 | 346 | 22,206 | 25,329 | 47,535 | 1,608 | 1,603 | 3,211 | 371 |

Note. Number of passages refers to transportation one waj. A return trip counts as two passages. Number of permits refers to one way passage for cases or cans, either by permit, special authority or free transportation without a permit form.

The branch participated with assortments of hatchery products in several exhibits for portraying natural resources. These exhibits were of considerable educational value and aroused great interest.

Gratifying reports regarding the results that are apparent from the distribution of hatchery products continue to accumulate from all districts where fish cultural operations are carried on.

Considerable expansion was made in the provinces in which the fisheries are administered by the Dominion Government. Large salmon and trout hatcheries were constructed in Antigonish and Yarmouth counties, Nova Scotia. The pond facilities for fry and brood fish were improved and slightly extended at several hatcheries in the Maritime Provinces. A pickerel hatchery was constructed on Swan creek, lake Manitoba. A large whitefish and pickerel hatchery was constructed on Lesser Slave lake and a trout hatchery in Waterton Lakes park, Alberta. A detailed description of the new construction and the more important repairs appears in the report of the Fisheries Engineer.

At the close of 1928 the Fisheries Branch had the following fully equipped establishments, all of which, with the exception of the newly constructed pickerel hatchery on lake Manitoba, had been in operation that year, viz: thirty main hatcheries, ten subsidiary hatcheries, four salmon retaining ponds, and several egg collecting stations. The output from these establishments for the calendar year 1928 was $470,302,380$ as shown by species in the following statement:-

STATEMENT, BY SPECIES, OF THE FISH AND FISH EGGS DISTRIBUTED FROM THE HATCHERIES DURING THE YEAR ENDED DECEMBER 31, 1938

| Species | Green eggs | Eyed eggs | Fry | Advanced fry | Fingerlings | Yearlings and older fish | Total distribution |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Salmo soler-Atlantic salmon | 300 | 104,070 | 3,832,725 | 4,473,300 | 11,346,337 |  | 19,756,732 |
| Salmo salar sebago-Landlocked salmon. |  |  |  | $98,230$ |  | 78 | $98,308$ |
| Salmo irideus-Rainbow trout. . |  | 175,500 | 321,127 |  | 399.346 | 3,954 | 899,927 |
| Salmo clarkii-Cuthroat trout. |  |  | 1,731,591 |  | 2,212 | 9 | 1,733,812 |
| Salmo rivularis-Steelhead salmon. |  | 12,083 | 164,760 |  |  |  | 176,843 |
| Salmo rivulariskamloops-Kamloops trout. |  | 1,117,975 | 1,036, 661 |  | 3,656 |  | 2, 158,292 |
| Salmo trutta levenensis-Loch leven trout. |  |  |  | 46,096 | 483,398 | 9,419 | 538,913 |
| Salmo fario-Brown trout....... |  |  |  |  | 472,143 | 4,760 | 476,903 |
| Oncorhynchusnerka-Sockeye sal- |  | 33,041,965 | 50,359,788 | 550,000 | 4,687,237 | 1,992 | 88,640,982 |
| Oncorhynchus tschauytscha-Spring salmon. |  | 544,000 | 313,500 | 550,000 | 218,077 |  | 1,075,577 |
| O ncorhynchus kennerlyi-Kenner ly's salmon. |  |  | 205,000 |  |  |  | 205,000 |
| Oncorhynchus kisutch-Coho salmon. |  | 499,380 |  |  |  |  | 499,380 |
| Salvelinus fontinalis-Speckled trout |  | 276,400 | 654,268 | 546,000 | 3,079,834 | 5,171 | 4,561,673 |
| Coregonus clupeiformis-Whitefish | 3,225,000 | 100,000 | 125,858,026 |  |  |  | 129,183,026 |
| Cristitomer namaycush-Salmon trout |  |  |  |  | 12 |  |  |
| Stizoatedion vitreum-Pickerel .. | 187,680,000 |  | 32,617, 000 |  |  |  | 220,297,000 |
|  | 190,905,300 | 35, 871,373 | 217,094,446 | 5,713,626 | 20,692,252 | 25,383 | 470,302,380 |

The following statement shows the numbers of fry of the different kinds distributed in the several provinces in which fish cultural operations are conducted by the Dominion Government:-

## HATCHERY OUTPUT, BY PROVINCES, OF EGGS, FRY AND OLDER FISH DURING 1928

| Nova Scotia- |  |  |
| :---: | :---: | :---: |
| Atlantic salmon. | 6,292,421 |  |
| Speckled trout. | 1,382,345 |  |
| New Brunswick- |  |  |
| Atlantic salmon | 11,955,588 |  |
| Brown trout. | 308,889 |  |
| Landlocked salmon. | 98,308 |  |
| Loch leven trout | 64,213 |  |
| Rainbow trout. | 4,874 |  |
| Speckled trout. | 2,073,296 |  |
| Prince Edward Island- |  |  |
| Atlantic salmon. | 618,653 |  |
| Rainbow trout. | 11,409 |  |
| Speckled trout. | 413,355 |  |
| Manitoba- |  |  |
|  |  |  |
| Whitefish. | 109,204,026 |  |
| Saskatchewan- |  |  |
| Brown trout. | 38,000 |  |
| Pickerel.... | 19,570,000 |  |
| Whitefish. | 15,199,000 |  |
| Alberta- . ${ }^{\text {a }}$ - 0 , |  |  |
| Brown trout. |  |  |
| Cutthroat trout. | 1,512,483 |  |
| Loch leven trout | 1,574,700 |  |
| Rainbow trout. | 565,502 |  |
| Salmon trout. | -12 |  |
| Speckled trout. | 190,774 |  |

## hatchery output, by provinces, of mggs, fry and older fish DURING 1928-Concluded

| British Columbia- | 890,070 |  |
| :---: | :---: | :---: |
| Attantic salmon | 890,070 |  |
| Cutthroat trout. | 221,329 |  |
| Kamloops trout. | 2,158,292 |  |
| Kemerily's salmon | 205,000 |  |
| Rainbow trout. | 318,142 |  |
| Sockeye salmon | ,640,982 |  |
| Speckled trout. | 501,903 |  |
| Spring salmon. | 1,075,577 |  |
| Whitefish... | 4,780,000 |  |
| Tota |  | 470,302,380 |

Full particulars regarding the extent and scope of this service appear in the Annual Report on Fish Culture for 1928, which appears as Appendix No. 3 herewith. Copies of the report on Fish Culture may be obtained on application to the Fisheries Branch.

## OYSTER DEVELOPMENT, PRINCE EDWARD ISLAND

On April 3 last an agreement entered into with the Premier of Prince Edward Island to enable the Fisheries Branch to encourage the development of oyster and other mollusk production was approved by the Lieutenant-Governor in Council. Under this agreement the divided jurisdiction in connection with the oyster industry that had existed since the Privy Council decision of 1898 was ended by placing in the hands of this branch complete control. The branch, on the other hand, undertakes to carry out investigations with a view to ascertaining the best methods of developing the industry and to take such measures towards that end as it may deem proper and advisable.

The possibilities of the oyster industry in Prince Edward Island, and in New Brunswick and Nova Scotia as well, are vastly greater than is generally realized. The Fisheries Branch is satisfied that by the application of proper methods the oyster industry of Prince Edward Island can be made more valuable than are the whole fisheries of that province at the present time. No great oyster industry, however, can be built up and maintained by relying on public beds alone. Experience in all countries that have important oyster fisheries bears this out. It is also a fact that extensive oyster farming tends to improve the fishing on adjacent public beds by the increased amount of spat that is likely to find its way to them. Relying on public beds alone is obviously wrong in principle as it involves attempting to save a fishery by restriction rather than by wise use and expansion, which are the result of intelligent oyster farming.

Richmond bay, which was at one time by far the greatest oyster producing area in Prince Edward Island, is now barren owing to an epidemic that broke out amongst the oysters there and ended only with their final destruction. Hence this area is now lying fallow and is entirely suitable for a large oyster farming industry. The branch, however, realizes that while oyster farming is entirely practicable and desirable there is much to learn regarding it in our areas, as conditions may be largely different from those prevailing in other countries where oyster farming is such an important industry. Consequently before active measures are taken to encourage private enterprise to go into the industry the branch decided that the best thing to do was for it to have a study made of the situation in connection with which demonstration oyster farms would be built up. To that end the services of an experienced and competent oyster farmer from Rhode Island were secured. He was given the necessary facilities to make a thorough examination of the local conditions in Richmond
bay and tributary waters and was instructed that when this was done he should select one or two areas which should be developed as oyster farms. Two areas were selected by him-one of approximately fifty acres near Curtain island in the bay itself, and the other of about ten acres off Gillis point in Grand river. Preparatory work was done on both areas, and in addition to procuring oysters of different sizes from other areas and laying them down for the winter on the Gillis point area to be transferred next spring to the Curtain island area, a successful effort in spat collection was made in Bideford river, where a small quantity of parent oysters still exist. The report of this officer, Mr. David R. Dodge, forms Appendix No. 5 to this report.

Arrangements have also been made with the Biological Board to secure the services of a properly trained man who will devote himself to a scientific study of the oyster. He will work in co-operation with the officer in charge of building up the demonstration farms. It is anticipated that in a very few years the department will have the necessary information to enable it to take such measures as may be necessary to encourage the building up of a large industry in oyster farming.

The yield of oysters on cultivated beds of course varies greatly according to the local conditions. In the state of Connecticut good areas have yielded over 2,000 bushels per acre in a year. This is exceedingly high, but yields of from 200 to 500 bushels per acre should reasonably be expected. What this means will be realized if the Malpeque bay situation alone is considered. That bay contains about 30,000 acres. Probably about 3,000 acres have in the past produced oysters. The late Dr. Julius Nelson, who was a distinguished oyster investigator, and who examined conditions there a number of years ago, stated that there was good possibility that a quarter of the bay could be made productive. He added: "We wish to emphasize the necessity of pushing the practice of raising oysters from the seed, by artificial culture, insistently, persistently, consistently, and intelligently and scientifically, as the only way to restore the bay to its original productiveness, or even to keep its beds from ultimate destruction. But if the practice of scientific oyster culture be encouraged and developed, there is no reason for doubting that the maximum production formerly exhibited by this bay, under nature, and by fishing methods, can be increased very much."

What is possible in Richmond bay is in more or less measure possible and probable in Bedeque bay and various other areas about the province. It is proposed to push forward investigations and the development of the demonstration oyster farms during the coming year to as great an extent as can feasibly be done.

## SCALLOP AND OYSTER INVESTIGATIONS

In addition to the work in connection with the oyster resources of Prince Edward Island, further examination of the oyster beds at Wallace, N.S., and scallop resources at Mahone bay, N.S., Country and Isaac's harbours, N.S., and off Prince county, P.E.I., respectively, was carried on by the Fisheries Branch during the year. These investigations were made by Mr. Andrew Halkett, naturalist of the branch.

Mr. Halkett found that there are no scallop resources of importance at Country harbour or Isaac's harbour. At Mahone bay he found that there is steady improvement in the condition of the scallop. His investigations in the gulf of St. Lawrence, off Prince county, P.E.I., which augmented an exploration made in 1927, showed the best scallop beds to be in the waters between Alberton and cape Kildare, with scallops obtainable in fair quantity in other beds off Tignish, A summary of Mr. Halkett's reports appears as Appendix No. 4 of this report.

## ROYAL COMMISSION ON ATLANTIC FISHERIES

Completion of the inquiry and report of the Royal Commission investigating the fisheries of the Maritime Provinces and the Magdalen Islands was an event of outstanding importance of the early part of 1928. The commission, which was appointed by the Dominion Government in October, 1927, held 49 hearings, many of them extending over several days, heard 823 witnesses in fishing and distributing centres, and received a number of written statements touching the questions which came before it. Hon. A. K. Maclean, President of the Exchequer Court, Ottawa, was the chairman of the commission, and the other commissioners were H. R. L. Bill, Esq., of Lockeport, N.S., Hon. J. G. Mombourquette, of L'Ardoise, N.S., Dr. Cyrus MacMillan, of Montreal, P.Q., and J. G. Robichaud, Esq., of Shippigan, N.B. By the Order in Council covering their appointment the commissioners were directed to inquire into and report upon the general condition of the fishing industry in the Maritime Provinces and the Magdalens, how existing conditions of the fisheries and fishermen might be improved, and how the industry might be further developed with expedition and efficiency. More particularly, they were directed to inquire into:

What should be done to increase the demand for fish both in the home and foreign markets; whether the spread in the price of fish between the producer and the consumer is excessive, and if so, what should be done to remedy the condition; what should be done to develop the inshore fisheries to their capacity; whether there should be any further restriction on steam trawlers operating from Canadian Atlantic ports, and, if so, what they should be; whether, keeping in view that no exceptional privileges are available to Canadian fishing vessels visiting United States ports, the so-called modus vivendi privileges, or any of them, should be renewed; whether or not the amount now annually distributed as fishing bounty should be continued on the present basis; whether there should be an inspection of fresh fish of all kinds as landed, as placed in storage, and as shipped from the coastal points; whether there should be an inspection and grading of dried fish; and whether there should be any modifications in the lobster fishery laws and regulations.

The report was issued in printed form, obtainable from the King's Printer, Ottawa, and it is, therefore, not necessary to make detailed reference here to all the commission's many findings and recommendations. Generally, the importance of the Atlantic coast fisheries was emphasized by the commissioners and continued and energetic state effort to further the operations of the fishermen and the fishing industry was justified and advocated. Throughout the report stress was laid upon the importance of continued attention to the task of setting and maintaining high standards of product quality. Strict enforcement of regulations and thorough inspection were urged as essential in the interests of the fishermen and all others connected with the industry. Outside the field of Dominion regulation, the commissioners recorded their "emphatic view that, in the interests of retailer and consumer alike, all retail fish shops should be subject to municipal regulation."

Dealing with the administration of the fisheries and departmental organization, the commission recommended the establishment of a separate Department of Fisheries, under a Minister of Fisheries, and reported a widespread feeling in the Maritime Provinces in approval of the action of Parliament in 1927 in authorizing the appointment of a Deputy Minister of Fisheries. Appointment of the Deputy Minister of Fisheries was made by the Government, effective from July 1, 1928, and announcement has been made by the Prime Minister that a separate Department of Fisheries, under a Minister of Fisheries, will be created. Other recommendations made by the commission in this regard included one for the establishment of a Fisheries Intelligence Division and increasing attention to gathering, compiling, and distributing accurate and complete statis-
tical information concerning the fisheries. As has been noted above, a Fisheries Intelligence and Publicity Division has now been established in the Fisheries Branch and has in hand both the work of expanding and improving the statistical and intelligence services previously undertaken and plans for the development of an adequate service covering conditions, supply and demand, and prices in the domestic and foreign markets. Suggestions made by the commission as to steps to widen and increase the usefulness of fishery officers are being followed up. In this connection there has been an expansion of the Fisheries Branch plan of giving special educational courses to fishery inspectors and overseers at the Halifax Experimental Station of the Biological Board. Two six-weeks courses were arranged with a view, particularly, to qualifying overseers as competent inspectors of fish treated by the various methods in preparation for market and qualifying them to impart effectively to fishermen instruction in the newest and best methods of handling and preparing for market by the different processes that must be employed. In this way the efficiency of the overseer and inspection service will be increased, surer guarantee will be given of the quality of the fish marketed, and greater assistance will be available to the fishermen in the efficient preparation of their catch and, therefore, in obtaining larger returns from their time and labour. One of these courses began in March, 1929, the other in April.

So far as the bounty system is concerned, the commissioners found that the present basis and method of distribution are, on the whole, satisfactory.

No grounds were seen, the commission reported, for recommending any modifications of the present Canadian policy as regards the modus vivendi privileges, which have not been granted United States vessels since 1924.

As to the Halifax Award, the commission recommended that the interest on the Award for 1879,1880 , and 1881 should be appropriated and applied for useful purposes in connection with the Atlantic fisheries or fishermen, such as assistance in the construction of rapid freezing plants, fish meal plants, bait and cold storage plants for organized groups of fishermen.

In regard to cold storage requirements and facilities, the commissioners reported that " for the present it would seem that the Cold Storage Act fairly well meets public requirements." Touching the question of departmental assistance toward the establishment of bait freezers, the recommendation of the commission was that aid be given-where necessity exists to departmental satis-faction-when and where the fishermen have organized for co-operative effort. The Experimental Station at Halifax, it was advised, should design a suitable brine freezer for bait and give necessary advice and instruction to any fisherman or group of fishermen desiring to make use of such a freezer. Plans for such a freezer have now been designed by the Experimental Station. Plans have also been prepared for a salt-and-ice freezer suitable for use by a fisherman or a group of fishermen.

In various sections of their report the commissioners laid emphasis upon rigorous enforcement of regulations for the conservation of the fisheries and for the maintenance of satisfactory standards of production, and upon the importance of continued effort by fishermen and curers and canners to ensure high quality in products sent to market. For instance, in referring to the lobster industry the commissioners urged "rigorous and impartial enforcement" of regulations, more careful manufacture, and strict inspection of plants and product. Standardization and branding of oyster shipments were recommended. New and definite grading of smelts, fixed by regulation, was advised, grading and inspection of dried fish for export, rigid inspection of pickled herring, extension of inspection to canned, frozen, and smoked fish, and the training of fishery overseers to inspect all kinds of fish. Expansion of the departmental policy of making instruction available to fishermen through travelling instructors was also recommended. Action in a number of these cases has been taken by the

Fisheries Branch, as, for example, the training of overseers to inspect fish of all kinds. Similarly; the further study of various problems and possibilities of the fishing industry, which was recommended by the commission, is being undertaken by the Fisheries Branch, through the Biological Board and otherwise.

In the case of the lobster industry the commission found that the number of canneries in the Maritime Provinces is "far in excess of the requirements of the industry" but that consumption in Canada can be increased by careful manufacture and by co-operative action by the canners in ensuring quality production and in marketing. Specific recommendation was made that all regulations bearing on closed seasons for lobster fishing be fixed by statute, and legislation touching this point-and likewise the establishment of statutory smelt fishing seasons-was submitted to Parliament at this year's session.

Exploratory surveys of Maritime Province waters with a view to determining the extent of the scallop resources, and further study of the scallop, were advised. A survey was also recommended to ascertain, if possible, the cause of oyster depletion in certain Maritime Province areas, to devise means of re-establishing these areas and to create new areas, to determine upon the best methods of cultivation, and to formulate plans for the instruction of fishermen or dealers in these methods. Exploratory surveys and study in regard to the scallop were begun by the Fisheries Branch prior to 1928 and the work has been continued from year to year with results that have already been useful. Oyster surveys have also been carried on by the Fisheries Branch from time to time; work of the kind, for example, was in progress during 1928; but difficulty in dealing with the oyster industry has existed because of conflict on the question of proprietorship of the oyster beds by the provincial Governments or the Dominion Government, and that conflict still exists in the case of beds in Nova Scotia and beds in New Brunswick. Further reference to the work of the Fisheries Branch, in connection with the conservation and cultivation of oyster resources will be found on page 212 of this volume.

Extended analysis of the facts entering into the price-spread between the fishermen and the consumers in Central Canada was made by the commission. Between the producer and the consumer, the report pointed out, there intervene a number of persons or organizations such as fish buyers or shippers, carriers, wholesalers, jobbers, and retailers, all of whom, of course, must be paid for their services. It is also to be kept in mind. when comparing retail market prices with the prices paid to the fishermen, the commissioners noted, that there is a loss in weight when the heads of fish are removed or when the fish is filleted; when the head of a cod is removed 27 per cent of the weight of the fish in the round is lost and when a fish is filleted from 55 to 67 per cent, and "it is evident, therefore, that the prices of headless or filleted fish must reflect these losses." The cost of services rendered in delivering the fish from the shipper at the coast to the wholesaler in Montreal or Toronto, the commission found, is not excessive. The largest part of the price-spread apparently occurs between the retailer and the consumer. "It is said that a charge of $3 \frac{1}{2}$ cents per pound represents the average cost to the retailer for delivery to a household and that his general overhead expenses average 25 to 35 per cent on his annual turnover."

Emphasis was put by the commission upon the probable great gain to the fishing industry from development of the rapid-freezing process for marketing fresh fish. Treated by this process, which has been the subject of experimentation and testing by the Biological Board at the Halifax Experimental Station, the commission reported, fish are to all intents. and purposes indistinguishable from unfrozen, freshly-caught fish, even after storage for six months under ordinary cold storage conditions. Consumers do not yet distinguish between air-frozen fish and rapidly frozen fish, the report went on, and departmental assistance may properly be given to advertising designed to convince the public of the improved quality of the rapidly-frozen product. "With judicious adver-
tising and demonstrations, we believe that this new form of package fish will soon win the favour of the Canadian consumer and will bring about a great and advantageous change in the fresh fish industry, with benefit alike to consumer and producer."

Divided opinion was reached by the members of the commission in regard to restriction or prohibition of steam trawling. Messrs. Bill, MacMillan, Mombourquette and Robichaud presented a report recommending that trawlers be prohibited from landing their fish and obtaining supplies at Canadian ports. Chairman Maclean disagreed with this finding. In the majority report as to the trawler it was recommended that the Government take action looking to the formulation of international agreements for regulating all vessels fishing on the North Atlantic banks, "particularly for the protection of fishermen's gear and for the more complete conservation of the fisheries in those areas." Hon. Mr. Maclean recommended that the Government seek to bring about a conference of the nations whose vessels fish the North Atlantic with a view to the enactment of international regulations governing the operations of trawlers in these waters; and to bring about also the creation of an international body to study the life history and migration of cod and haddock, how trawlers may be regulated, whether any fishing grounds should be closed to trawlers, and whether certain grounds cannot withstand unregulated trawler fishing. Legislation touching trawlers was submitted to Parliament at its 1929 session.

Formulation of an adequate plan of fishery education and a plan for departmental assistance in the establishment of co-operative fishermen's organizations was recommended by the commission. The educational plan, it was advised, should be formulated by the Biological Board in consultation with the department, the Director of the Halifax Experimental Station, the Provincial Education Departments, and representatives of the Dalhousie University School of Fisheries. A skeleton form of organization for the suggested co-operative undertaking was outlined by the commission, with the appointment of an organizer by the department and a survey of the fishing communities as the initial steps proposed.

At the present time there are already a number of fishermen's unions in the Maritime Provinces; in Nova Scotia the several local units of the union or federation have a total membership of upwards of 2,000 . In some cases these local unions have undertaken co-operative action in the purchase of supplies, but co-operative marketing has not been tried except in one or two instances. Certain advantages, it is recognized, would follow from the application of cooperative sales methods as suggested by the commission, but the organization and operation of a large-scale co-operative sales movement among the fishermen of the Atlantic coast would be a complex undertaking, with a careful and thorough study of the subject a vital prerequisite. Organization of the co-operating units would probably not in itself be difficult, after an intelligently-conducted campaign of education; nor would there be exceptional difficulty in working out a plan for the co-operative purchase of goods by the local unions. It seems likely, however, that the devising and successful operation of a system for the co-operative marketing of fish would be an intricate and very difficult task. Such a system would involve the creation of market connections which the fishermen themselves do not now have; the establishment of extensive facilities for handling and storing fish; the ability of the co-operatives to guarantee steady supply at all times to the markets which entered into relations with them; and important and, often, complicated questions of finance, not only questions in connection with the establishment and maintenance of facilities and marketing agencies but questions created by the fluctuations which are inevitable in market conditions when the field of sale and competition is virtually the world and the product is perishable. It is such considerations as these
which make it imperative that any survey such as is recommended by the commission should be made with the utmost care and that any plans devised should be subjected to the most searching analysis before they are put to the trial of actual operation. This care and analysis are imperative in the interests of all concerned, and, above all, from the standpoint of the welfare of the fishermen who would be most affected by the faulty operation of any plan too hastily evolved and put into effect.

It is apparent, however, that thorough organization of the fishermen to enable them in a collective way to consider their problems, make their purchases, improve their methods of production by co-operative effort, etc., as well as to enable the department to have a ready means of contact with them as a body, is eminently desirable. Measures to this end are under consideration. Marketing of their products in a co-operative way could probably best be developed through such organization.

## NORTH AMERICAN COMMITTEE ON FISHERY INVESTIGATIONS

This committee, which forms a medium for the correlation of investigations by Canada, the United States, Newfoundland and France in connection with the fisheries of North American waters, has been in existence since 1921 and has in the indirect fashion in which it operates (it expends no funds whatever) been extremely effective in forwarding the solution of important problems in Canada's fisheries. During the year 1928 two meetings were held, one at Boston, Mass., on June 2, and the other at Toronto, Ont., on October 22. The Canadian representatives on this committee are Prof. J. P. McMurrich, chairman of the Biological Board, Prof. A. G. Huntsman, Senior Director under the board, and the undersigned.

The committee issues no publications, the results of investigations, with which it deals, being made public through other agencies. It is, however, sponsoring a series of publications on the fisheries, the second of which has been released during the year, entitled "Statistics of the Haddock Fishery in North American Waters," by A: W. H. Needler, and is being published by the several countries concerned. A study of the available statistics collected by the Governments of the United States and of Canada reveals a steady and rapid increase in the haddock catch since 1921. So rapid has been the recent increase that the total catch is now far ahead of that of former years, and is approximating twice the amount of the catch in the early years of the century. This change has been caused by the increases in the numbers and in the total landings of the New England otter trawlers, of which landings haddock form eighty per cent. On the other hand the Canadian catch shows no increase. The catch rose during the war to the greatest figure on record, that of seventyeight million pounds in 1917, but there was a severe post bellum depression, culminating in 1921 in the lowest figure on record, that of twenty-seven million pounds. There has not yet been sufficient recovery from this condition for the catch to equal what it was even before the war. In the Canadian fishing area the inshore catches are greatest near Digby, Canso, and Ingonish, N.S., while the offshore catches are chiefly on Brown's and Sable island banks. The offshore catches showed a greater post bellum depression than did those inshore, but they recovered more quickly, so that the net result has been a relative gain for the offshore catches attributable largely to the otter trawl fishery.

There is very definitely an increasing demand on this continent for haddock, and the committee views with very considerable concern the increasing intensity of the haddock fishing, and sees as the only possible result that the haddock will be increasingly more difficult to obtain, and that the average size will drop, and it has requested the Governments concerned to at once make every effort to investigate the situation thoroughly.

The cod fisheries of the western North Atlantic; in which, next to Newfoundland, Canada has the greatest interest, are being carefully followed so that any unfavourable trend may be quickly discerned. Very considerable co-operative tagging has been accomplished by the United States and Canada, which has shown that there is a very complex arrangement of more or less local races with quite diverse habits of migration. None of the diverse schools that summer in the vicinity of cape Cod have as yet been found to reach the Canadian coast or offshore banks, but those in the western part of the gulf of Maine and on the Maine coast not infrequently cross to Nova Scotian waters, as do those from Brown's bank in contrast with those from Georges.

On the other hand the fish, that in the summer are in the vicinity of cape Sable, N.S., move on the whole eastward, during the latter part of the year, some as far as Halifax, but a few migrate westward past cape Cod and as far as Long island. Cape Breton fish do not move coastwise to any great extent, but retreat during winter to the offshore banks such as Banquereau and Sable island. Occasional ones may cross over to St. Pierre bank off the Newfoundland coast, or in summer penetrate the gulf of St. Lawrence as far as the coast of Gaspe.

Tagging of the mackerel has also been carried on and it has been found that the school striking the eastern end of Nova Scotia in the spring and that in part migrates into the gulf as far as Prince Edward Island during the summer, retreats to the Atlantic during the winter, but some may go no farther than Sable island bank by January. Growth in this fish is, at first, extremely rapid, as a length of about ten inches is attained by the end of the first year, but at the end of the third year the length is only about fourteen inches and there is very little growth thereafter.

The committee is furthering plans for a better knowledge of water conditions in the Atlantic. There is now established a series of stations along the coasts of the United States and of Canada for regular observation of the temperature of the water throughout the year, with the object of determining the influence of temperature on the various fisheries. The study of the movement or circulation of the waters of the ocean by means of drift bottles has recently been confined to the north from the estuary of the St. Lawrence to Hudson strait. In the gulf of St. Lawrence a pronounced movement from the Gaspe coast to the west side of Newfoundland has been demonstrated, and the water issuing from Hudson strait and passing southward along the coast- in the Labrador current has been found to cross the Atlantic to the British Isles and Iceland at the particularly rapid rate of from ten to twelve miles per day, .which is half again as fast as has been shown for the water off the Nova Scotian banks.

The committee has had under consideration the matter of the proposed damming of Passamaquoddy and Cobscook bays on the international border beiween the province of New Brunswick and the state of Maine by the Dexter P. Cooper Company for power purposes. This district furnishes the greatest and most valuable shore fishery of the whole coast, and it seemed probable that that fishery might be irreparably damaged by the installation of the dams. From a detailed study of the matter, for which the chief basis consisted in the results of many investigations made by various scientists at the Atlantic Biological Station, St. Andrews, N.B., Dr. Huntsman, the Director of the Station, had made and published predictions of the various effects that would foilow the installation of the dams. The chief of these was the prediction that the most important fishery of the district, namely that for the large and small herring, the latter being canned as sardines, would be virtually wiped out as the result of the interference with a tremendous mixing mechanism at the mouths. of the bays concerned, by which widespread effects on the temperatures of the
water and air, on the fertility of the water, and on the growth of plants and animals in the water, are produced. A sub-committee was appointed to proceed to the district to examine into conditions there, to consider the plans of the power company, and to study all available information bearing upon the predictable effects of the project on the fisheries of the region. The sub-committee procured the services of several Canadian and United States engineers with tidal and hydraulic experience for expert opinion on certain phases of the problem. The sub-committee finally reported to the two Governments concerned, namely those of Canada and of the United States,-
(1) That in its opinion, if the proposed construction is carried out, the weir fisheries for herring inside the dams will be almost wholly eliminated.
(2) That it recognizes that the effects on the fisheries outside the dams predicted in the report on the subject presented by Dr. Huntsman may follow, but the committee as a whole is not prepared to forecast whether these results will or will not follow, believing that a fuller investigation is needed.

## INTERNATIONAL HALIBUT COMMISSION

During the year further material necessary to a continuous record of the past and present of the Pacific halibut fishery was collected by the staff of the International Commission created under the Pacific Halibut Convention between Canada and the United States and laid what is believed to be a secure statistical foundation for carrying on adequate future observation. Under the convention the commission is charged with the duty of making thorough investigation into the life-history of the Pacific halibut and of making recommendations to the two Governments for such regulation of the fishery as may seem desirable for its preservation and development.

Collection and analysis of records of the fishery have been extended as far back as material is available. In the matter compiled there has been included analysis of the total landings, of the vessels and the returns per standardized unit of gear in each case. So far as possible, this analysis has been made according to the several divisions of the banks which are to be regulated. From this foundation the future history of the fleet, of the landings, and of the abundance can be safely carried on.

In the main, the biological work done under the commission during the year has been the preparation for publication of material previously collected. Certain facts as to the migration and the segregation of halibut were confirmed. and elaborated. It has been shown that the stock on the banks, particularly in British Columbia waters, is relatively stable, but this stock in British Columbia waters is largely immature and it has been found that the more mature halibut population in the gulf of Alaska is more migratory. At the same time, even the mature fish show a degree of segregation according to area, and the further investigation of facts in this connection has made it evident that regardless of what action may be taken in segregating areas for purposes of differential regulations, the degree of inter-dependence of the fish populations will qualify the application and effectiveness of any regulations.

In comnection with this phase of the work it would seem that the migration of those fish which are of a size suitable for the commercial fishery is of primary importance. It is by the depletion of those sizes that the ill-effects on the fishery have been produced. It follows that action to conserve the different stocks in these areas, so that each such stock will yield its quota of eggs, should serve the immediate purpose of conservation.

Field work at sea was continued during the year, since it was realized that the work upon the mature halibut was still deficient, and the study of stocks farther westward incomplete, and because the history of the eggs and larvæ is very important from the standpoint of the inter-dependence of the stocks of fish. With a view to determining the relative amount of spawn, and to make sure that spawners were actually absent from British Columbia waters where it had been impossible to find any considerable stock of spawning fish, a series of hauls with silk plankton nets were made in these waters where the persistance of the fishery has seemingly been due to extensive drift of eggs and larvae. Other net hauls were made in January and February in order to capture later stages of larvæ than had been taken in hauls the previous year and to determine their location. Search for post-larval stages was made in British Columbia and Alaska waters by means of otter trawls. In investigating the duration of larval life hydrographic clata collected in 1927-28 was worked up during the past year and a new series of sections was made in the gulf of Alaska to check and perfect previous work of the kind. It is believed by the Director of Investigations that the net hauls and hydrographic work that have been carried on should lead to conclusions upon the drift and rapidity of development of the very early stages.

## FRASER RIVER SOCIKEYE SALMON TREATY

Negotiations which continued throughout the year for the consummation of a treaty between Canada and the United States looking to the restoration and future protection of the sockeye salmon fishery of the Fraser river system under the joint auspices of the two countries came to a successful close on March 27 when the treaty was signed at Washington, subject to approval by the Canadian Parliament and the United States Senate. Under this treaty, which is to be effective for at least sixteen years, a commission of six members, equally representative of the two countries, is to be set up and will make thorough investigation of the sockeye fishery, supervise fish cultural operations for restocking the Fraser river, and, acting within certain defined limits, will regulate sockeye fishing and fishing seasons.

It is interesting to note, in passing, that as the first treaty to be signed by a Canadian minister alone in behalf of His Majesty was one having to do with the fisheries, the Pacific halibut convention of 1923 , so the sockeye salmon treaty of 1929 was the first treaty to be signed by Canada's Minister to the United States. The signing of this latter treaty is also one more recognition of the fact that several of the Canadian fisheries must be regarded from a North American standpoint if they are to be properly utilized and conserved.

The Fraser river system, which includes the gulf of Georgia and Juan de Fuca strait as well as the Fraser river, is potentially the greatest sockeye-producing area in the world. In 1913 it yielded a pack of $2,357,695$ cases, or $113,169,360$ pounds, which, at to-day's prices, would be worth approximately $\$ 42,500,000$. Since that time a combination of causes has enormously lessened the catch so that in 1928 the pack was only 86,611 cases, or $4,157,328$ pounds, with a marketed value of approximately only $\$ 1,500,000$. It is believed that the restoration of the diminished fishery can be accomplished by means of intelligent fish cultural operations and strict enforcement of carefully considered protective regulations, but action in this case, to be effective, must obviously be taken jointly by Canada and the United States since some of the waters in the Fraser system are Canadian and others are United Sitates waters. Equally obviously, the restoration of the fishery is an undertaking of vast economic importance, and the provisions of the treaty and a general statement as to the facts of the Fraser situation may very well be included in this report.

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The Fraser river sockeye is predominantly a four-year fish; that is, it reaches maturity, spawns, and dies when it is four years old. The run in any year, therefore, depends on the extent of reproduction four years previously. The sockeye reproduces, moreover, not only in the same river system in which it was hatched but in the very tributary of the system. If for any reason spawning sockeye are prevented from reaching the particular area in which they were hatched, the fishery will be depleted by that much; even though other spawning grounds in the same river system were accessible to the fish. Years ago there existed in the Fraser river a peculiar phenomenon in that there was an enormous run of sockeye every fourth year, with much smaller runs in the intervening years; it was this condition that led to the use of the terms "big years" and "off years" in connection with this sockeye fishery. The explanation of the phenomenon is only conjectural but the theory commonly held is that at some time there was a rock slide which, for three successive seasons, prevented the fish from ascending the river to spawning grounds above Hell's Gate, the narrow gorge which is the mouth through which the turbulent waters of the Fraser find their outlet from the Great canyon formed by the Cascade and Coast mountains. By the fourth season, according to this commonly held theory, the action of the water had sufficiently cleared away the obstruction to permit the salmon to make their way through and the phenomenon of one "big year" in every four resulted.

Nineteen hundred and thirteen was a " big year" but, disastrously, before the time for the sockeye run quantities of rock that tumbled into the river as a result of the construction of the Canadian Northern railroad along the left wall of the canyon made the ascent of salmon through certain parts of the canyon impossible. This condition was not foreseen by anyone before the sockeye run began as there was no apparent reason for supposing that the rock thrown into the river by the blasting had so obstructed the waters that salmon would not be able to pass. It developed, however, that sockeye making for spawning grounds which lay above Hell's Gate could not reach them and reproduction was practically confined to the lower areas which made up only abont twenty-five per cent of the spawning grounds of the river. Early in the following year a rock slide from the mountain side still further obstructed the canyon. Action toward the removal of both obstructions was initiated promptly by the Fisheries Branch and was carried through as quickly as possible, but the work could not be accomplished in time to meet the needs of the 1913 run of fish. As already noted, 1913 was a " big year " but since that season, with its obstruction of Hell's Gate canyon, there has been no "big year" which has been at all comparable in catch to those which had gone before, and, moreover, the catch has continued to decline. In the three seasons since 1913 which, chronologically, were "big years"-that is, 1917, 1921, and 1925-the packs of sockeye in the Fraser system were 535,152 cases, 138,867 cases, and 137,587 cases, respectively. Practically, the "big years" have ceased to occur. To-day, it may be noted, conditions in the river are as favourable, so far as freedom of ascent for the salmon is concerned, as they were prior to 1913 and restocking of the depleted areas under a fish cultural program would be followed in due course, it is believed, by a restoration of the fishery to its former productivity.

The sockeye salmon fishery, in a commercial way, began on the Canadian side in 1876 and in the United States waters of the Fraser system in 1877. Under intensive fishing the catch in the "off years" declined, but the "big year" runs continued enormous, without sign of depletion, until after 1913. Coming in from the ocean the sockeye, for the mast part, pass through the waters on the United States side of Juan de Fuca strait and the gulf of Georgia, presumably because the waters of the Fraser flow outward on that side. One result of this condition has been that the fishermen of the state of Washington
have had first opportunity in the fishing when the sockeye runs set in and with their traps and seines they have been taking the major part of the catch. Last year, for example, the pack of sockeye on Puget sound was 60,081 cases and on the Fraser river it was only 26,530 cases; in other words, while the sockeye reproduction takes place in Canadian river the greater part of the sockeye catch has been taken by United States fishermen in United States waters, and this point is made still clearer by a statement covering the period from 1902 to 1928, inclusive, which appears on page 116 of this report. That this condition is lacking in fairness was recognized in the negotiations leading up to the drafting of the new treaty and an article was incorporated-Article VII-under which the commission is required so to regulate fishing that, as nearly as may be possible, half the catch will be taken by the Canadian fishermen and half by United States fishermen.

The 1929 treaty is an expression of the third effort to meet the situation by international action and restore and protect the sockeye fishery. The treaty of 1908 for the regulation and protection of the fisheries in all waters adjacent to the international boundary line partly covered the sockeye fishery but though the necessary action in this connection was taken by Canada the regulations drawn up under the treaty were not approved by the United States Senate. For several years Canada continued to urge that the regulations be approved by the United States but in 1914, when it was evident that this approval was not to be given, the Dominion resumed liberty of action from the treaty. The Fraser river question was also among the subjects referred to the International Fisheries Commission of 1918 which recommended, unanimously, that a treaty be entered into looking to the re-establishment and protection of the sockeye fishery. A treaty as suggested by the commission was drafted and was signed in 1920, but it was not approved by the United States Senate.

The text of the treaty of 1929 is as follows:-
His Majesty the King of Great Britain, Ireland and the British Dominions beyond the Seas, Emperor of India, and the President of the United States of America, recognizing that the protection, preservation and extension of the sockeye salmon fisheries in the Fraser river system are of common concern to the Dominion of Canada and the United States of America; that the supply of this fish in recent years has been gravely depleted and that it is of the utmost importance in the mutual interest of both countries that this source of wealth should be restored and maintained, have resolved to conclude a convention and to that end have named as their respective plenipotentiaries:

His Majesty, for the Dominion of Canada;
The Honourable Charles Vincent Massey, P.C., His Envoy Extraordinary and Minister Plenipotentiary for Canada at Washington; and

The President of the United States of America;
Mr. Frank D. Kellogg, Secretary of State of the United States of America;
Who, after having communicated to each other their full powers, found in good and due form, have agreed upon the following articles:

## ARTICLE I

The provisions of this convention and the regulations issued pursuant thereto shall apply to the Fraser river and the streams and lakes tributary thereto and to all waters frequented by sockeye salmon included within the following boundaries:-

Beginning at Carmanah lighthouse on the southwest coast of Vancouver island, thence in a straight line to a point three marine miles due West astronomic from Tatoosh lighthouse, Washington, thence to said Tatoosh lighthouse, thence to the nearest point of cape Flattery, thence following the southerly shore of Juan de Fuca strait to point Wilson, on $90655-31$

Quimper peninsula, thence in a straight line to point Partridge on Whidbey island, thence following the western shore of the said Whidbey island to the entrance to Deception pass, thence across said entrance to the southern side of Reservation bay, on Fidalgo island, thence following the western and northern shore line of the said Fidalgo island to Swinomish slough, crossing the said Swinomish slough, in line with the track of the Great Northern railway, thence northerly following the shore line of the mainland to Atkinson point at the northerly entrance to Burrard inlet, British Columbia, thence in a straight line to the southern end of Bowen island, thence westerly following the southern shore of Bowen island to cape Roger Curtis, thence in a straight line to Gower point, thence westerly following the shore line to Welcome point on Seechelt peninsula, thence in a straight line to point Young on Lasqueti island, thence in a straight line to Dorcas point on Vancouver island, thence following the eastern and southern shores of the said Vancouver island to the starting point at Carmanah lighthouse as shown on the United States Coast and Geodetic Survey Chart number 6300, as corrected to October 20, 1924, and on the British Admiralty Chart number 579.
The high contracting parties engage to have prepared as soon as practicable charts of the waters described in this article, with the above described boundaries and the international boundary line indicated thereon. They further agree to establish within the territory of the Dominion of Canada and the territory of the United States such buoys and marks for the purposes of this convention as may be recommended by the commission hereinafter authorized to be established, and to refer such of these recommendations as relate to points on the boundary to the International Boundary Commission, United StatesAlaska and Canada, for action pursuant to the provisions of the treaty respecting the boundary between Canada and the United States signed February 24, 1925.

## ARTICLE II

The high contracting parties agree to establish and maintain a commission to be known as the International Pacific Salmon Fisheries Commission, hereinafter called the commission, consisting of six members, three on the part of the Dominion of Canada, and three on the part of the United States of America.

The commissioners on the part of the Dominion of Canada shall be appointed by His Majesty on the recommendation of the Governor General in Council. The commissioners on the part of the United States shall be appointed by the President of the United States, and the Commissioner of Fisheries of the United States shall be one of them.

The commission shall continue in existence so long as this convention shall continue in force, and each high contracting party shall have power to fill and shall fill from time to time vacancies which may occur in its representation on the commission in the same manner as the original appointments are made. Each high contracting party shall pay the salaries and expenses of its own commissioners, and the joint expenses incurred by the commission shall be paid by the two high contracting parties in equal moieties.

## ARTICLE III

The commission shall make a thorough investigation into the natural history of the Fraser river sockeye salmon, into hatchery methods, spawning ground conditions and other related matters. It shall conduct the sockeye salmon fish cultural operations in the area described in Article I, and to that end it shall have power to improve spawning grounds, acquire, construct, and maintain hatcheries, rearing ponds and other such facilities as it may determine to be necessary for the propagation of sockeye salmon in the waters covered by this
convention, and to stock the waters with sockeye salmon by such methods as it may determine to be most advisable. The commission shall also have authority to recommend to the two Governments the removal of obstructions to the ascent of sockeye salmon in the waters covered by this convention, that may now exist or may from time to time occur, and to improve conditions for the ascent of sockeye salmon, where investigation may show such to be desirable. The commission shall report annually to the two Governments what it has accomplished and the results of its investigations.

The cost of all such work shall be borne equally by the two Governments, and the said Governments agree to appropriate annually such money as each may deem desirable for such work in the light of the reports of the commission.

## ARTICLE IV

The International Salmon Fisheries Commission established pursuant to Article II of this convention is hereby empowered, between the first day of June and the twentieth day of August in any year, for the whole or any part of the aforesaid period, to limit or prohibit the taking of sockeye salmon in respect of all the waters described in Article I of this convention, or in respect of Canadian waters and waters of the United States separately, provided, that when any order is adopted by the commission limiting or prohibiting the taking of sockeye salmon in regard to Canadian waters or waters of the United States separately, it shall extend to all of the Canadian waters or waters of the United States to which this convention applies, and provided further, that no order limiting or prohibiting the taking of sockeye salmon adopted by the International Salmon Fisheries Commission shall be construed to suspend or otherwise affect the requirements of the laws of the Dominion of Canada or of the state of Washington as to the procuring of a license to fish in the waters on their respective sides of the boundary line. Any order adopted by the comminsion limiting or prohibiting the taking of sockeye salmon in said waters during said period, or any part thereof, shall remain in full force and effect unless and until the same be modified or set aside by the commission. The taking of sockeye salmon in said waters during said period in violation of the orders of the commission adopted from time to time is hereby prohibited.

## ARTICLE V

In order to secure a proper escapement of sockeye salmon during the spring or chinook salmon fishing season, the International Salmon Fisheries Commission may prescribe the size of the meshes in all fishing gear and appliances operated in the waters described in Article I of this convention which are frequented by sockeye salmon.

Whenever the taking of sockeye salmon in said waters during said period between the first of June and the twentieth of August in any year is permitted under the orders adopted by the commission in respect of Canadian waters any fishing appliances authorized by the laws of the Dominion of Canada may be used in such waters by any person thereunto legally authorized, and whenever the taking of sockeye salmon in said waters during said period is permitted under the orders adopted by the commission in respect of waters of the United States, any fishing appliance legally authorized by the state of Washington may be used in such waters by any person thereunto authorized by that state.

## ARTICLE VI

No action taken by the commission under the authority of Articles IV and $V$ of this convention shall be effective unless it is affirmatively voted for by at least two of the commissioners from each country.

## ARTICLE VII

Inasmuch as the purpose of this convention is to establish for the high contracting parties, by their joint effort and expense, a fishery that is now largely non-existent, each of the high contracting parties should share equally in the fishery. The commission shall, consequently, in regulating the fishery do so with the object of enabling, as nearly as they can, an equal portion of the fish that is allowed to be caught each year to be taken by the fishermen of each high contracting party.

## ARTICLE VIII

Each high contracting party shall be responsible for the enforcement of the regulations provided by the commission in the portion of their respective waters covered by the convention, and to this end they agree to enact and enforce such legislation as may be necessary to make effective the provisions of this convention, with appropriate penalties for violations thereof.

## ARTICLEIX

The present convention shall be ratified by His Majesty in accordance with constitutional practice, and by the President of the United States of America, by and with the advice and consent of the Senate thereof, and it shall become effective upon the date of the exchange of ratifications which shall take place at Washington as soon as possible and shall continue in force for a period of sixteen years, and thereafter until one year from the day on which either of the high contracting parties shall give notice to the other of its desire to terminate it.

## GLOUCESTER FISHERMEN'S ASSOCIATION

An interesting step among New Brunswick fishermen during the fiscal year was the organization of the Gloucester Fishermen's Association, incorporated by an Act of the New Brunswick Legislature, for the purpose of "the fostering of team work among the fishermen of the county of Gloucester for the betterment of their general economic status." The program of the association includes in the effort to better the economic status of its members, "improving the actual quality and standard of same (fish) product already prepared for the market, finding new markets, mainly improving actual market conditions, sales organizations, and methods." When the first general meeting of the association was held on March 27, following a series of organization meetings in different sections of the county, 690 members had been enrolled. Mr. L. Bérubé, who was employed by the Fisheries Branch, and Mr. J. G. Robichaud, of Shippigan, N.B., who was a member of the Royal Commission which made investigation into the fisheries of the Maritime Provinces and the Magdalen islands in 1927 and 1928, assisted in the organization meetings, but the point stressed on all occasions was that responsibility for the work of the association and for its success or failure would rest upon the members themselves. Under its act of incorporation the association is empowered to own real estate not exceeding $\$ 50,000$ in value; to build, own, operate, lend, let or sell fishing boats; to organize, manage and, if necessary, finance any system to give credit facilities or advances of money to its members for building fishing boats or buying fishing rigging or supplies; and to organize, under the federal laws, and manage and finance mutual life and accident insurance among its members and mutual insurance on boats and fishing rigging or buildings owned by its members. If so desired, the association may carry such insurance for its members with any insurance company registered in Canada. An important section of the charter authorizes
the association to organize a business department to take charge of buying rigging or supplies, marketing fisheries products, and carrying on a general fish trade on behalf of such members as wish to take advantage of this service. Under the charter the association, when it deems such action desirable, may convert the business department into " definite commercial co-operative organizations . . . but, for the present, the operations of such department are for the service and at the risk of such members only of the association as.desire to avail themselves of it."

Your obedient servant,
WILLIAM A. FOUND,
Deputy Minister of Fisheries.

## APPENDIX No. 1

# REPORTS OF SUPERVISORS OF FISHERIES 

REPORT OF ACTING CHIEF SUPERVISOR SHREVE,

## PROVINCE OF NOVA SCOTIA, FOR 1928

Only once since 1921 has the product of the fisheries of Nova Scotia had a larger value than that of the year 1928. While it is true that during recent years the value for the year 1926 exceeded the value for the year under review, it must be considered that 1926 was an exceptional one. The values recorded during the war years of 1917 and 1918, as well as the post-war years of 1919 and 1920, were in excess of the values obtained this year, but, of course, inflated prices prevailed during those years and therefore a comparison from a monetary standpoint is scarcely fair.

Omitting the war years of 1917 and 1918 and the post-war years of 1919 and 1920, the year 1928 ranks second in the history of the province, only having been exceeded by the year 1926. Therefore the operations for the 1928 season may be considered as successful.

The marketed value for 1928 was $\$ 11,681,995$.
The value of the fisheries to the province of Nova Scotia for the past six years has been as follows:-


The cod fishery as usual maintained first position, followed by the lobster fishery, the haddock fishery ranking third in importance.

The fresh fish trade continued to expand and the future outlook is promising. Improved brine freezing methods will undoubtedly be further developed, and open up more avenues of trade. There was a considerable increase in the output of fresh fillets, both haddock and cod, as well as hake and cusk. Smoked fillets were also in good demand, and the production was increased considerably. Dried cod is the most important feature of the cod fishery, and this phase of the industry also showed considerable expansion. Boneless fish were also put up in larger quantities.

The catch of the chief commercial varieties such as cod, haddock, hake, cusk, pollock and swordfish also showed increased landings. The lobster fishery, which is one of the most important of all, records a decrease, as did the halibut, herring, mackerel, salmon, smelt and scallop fisheries, as compared with the year of 1927 .

> COD

The catch for 1928 shows an increase of 138,299 cwt. over the previous year. The catch was $1,470,172$ cwt., having a landed value of $\$ 2,822,472$ and a marketed value of $\$ 4,398,019$, as compared with a catch of $1,331,873$ cwt., with a landed value of $\$ 2,433,699$ and a marketed value of $\$ 3,455,772$ for the year 1927. The marketed value was increased by $\$ 942,247$. While there was
a slight shrinkage in the amount of cod used fresh, the quantity converted into fresh fillets, green salted, canned, smoked, smoked fillets, dried, and boneless, shows a substantial increase in each case. The output of fresh fillets almost doubled that of 1927. There was also a considerable increase in the amount of boneless cod prepared.

## LOBSTERS

The lobster catch fell off from the preceding year by $7,264 \mathrm{cwt}$., and there was consequently a shrinkage in both the landed and marketed values. The total catch for 1928 was $172,409 \mathrm{cwt}$., having a marketed value of $\$ 3,048,255$, as compared with $179,673 \mathrm{cwt}$., with a marketed value of $\$ 3,255,627$, for 1927.

At the opening of the season on the west coast of the Island of Cape Breton the weather was very favourable for fishing and no drift ice appeared. It is claimed that this was the first season in thirty-seven years that this coast was free of drift ice at the opening of the season. Lobsters were plentiful at the start, but a severe gale took place on May 24 and 25, completely upsetting the industry for a week or ten days, and after the gale subsided lobsters were not so numerous.

The catch in the eastern mainland section of the province was above that of last year. This section, until a few years ago, was devoted entirely to the canned lobster trade, but of late the fresh lobster trade has opened up and is developing more and more each year. Fresh shipments are increasing from year to year. This is particularly true of Pictou and Antigonish counties. For the first time a lobster pound was operated at Pictou, to take care of shipments brought in from the late season in the Magdalen Islands.

The catch in the western section suffered a considerable drop.
The pack likewise shows a drop, as 494 cases less were packed this year than last.

The total pack for 1928 was 55,277 cases, as compared with 55,771 cases during 1927. The value of the pack naturally suffered. For 1928 the value of the pack amounted to $\$ 1,465,239$, as compared with $\$ 1,727,105$ for the previous year.

While indications are that the world consumption of canned lobsters was greater this year than in 1927, prices received were comparatively low. The re-entry of the Newfoundland pack on the market, after a closed season of four years, made available a considerable increased quantity of canned lobsters, and caused a decided drop in prices, and the general selling levels were reduced.

Both English and American buyers early in the season were hesitant in placing orders, but eventually canned lobsters were sold to about the same extent as formerly. The continental market was very dull. Japanese crab meat, offered at very attractive prices, especially to the continental market, caused serious interference with the operators in the canned lobster trade.

## HADDOCK

The haddock fishery registers an increase of $61,743 \mathrm{cwt}$. The landings this year were $445,950 \mathrm{cwt}$., as compared with $384,207 \mathrm{cwt}$. during the previous year. The landed value for the year was $\$ 917,404$, and the marketed value $\$ 1,654,977$, as compared with a landed value of $\$ 660,669$ and a marketed value of $\$ 1,402,135$ for 1927 . Large landings were made at Halifax, Ingonish, Petit de Grat, Port Hawkesbury and various ports in western Nova Scotia.

## HAKE AND CUSK

The landings of hake and cusk amounted to 158,744 cwt., having a marketed value of $\$ 268,577$, as compared with a catch of $119,431 \mathrm{cwt}$. and a value of $\$ 153,840$ for the year 1927 . Increased landings were made along all portions of the coast. The increased catches in the western part of the province were particularly noteworthy. The increase of the catch for the province was 39,313 cwt., while the marketed value was $\$ 114,737$.

## MACKEREL

The only portion of the coast of the province to show an increase in the catch of mackerel was the western section. The total catch for the province was lower than last year. During 1927 the catch was $72,306 \mathrm{cwt}$., as against 71,440 for 1928. The landed value for 1927 was $\$ 236,796$ and the marketed value $\$ 338,851$, as compared with a landed value of $\$ 244,916$, and a marketed value of $\$ 369,752$ for the year under review. Better prices prevailed this year, and in spite of the lower catch, the market value registers an increase of $\$ 30,901$ over the previous year.

## HERRING

The herring catch fell off to a great extent. While larger landings were made in the Island of Cape Breton, greatly decreased catches were secured in Western Nova Scotia. The catch was 166,398 cwt., with a landed value of $\$ 167,831$, and a marketed value of $\$ 368,221$, as compared with $214,560 \mathrm{cwt}$., having a landed value of $\$ 225,175$, and a marketed value of $\$ 482,378$ during 1927.

Spring herring were unusually plentiful in the waters of Cape Breton Island. The July run, however, was a failure. There was a general scarcity of spring and summer herring along the eastern coast of the mainland, although in October a heavy run entered the waters of Western Halifax county.

## HALIBUT

There was a decrease in the halibut catch, as compared to the previous year, of $1,783 \mathrm{cwt}$. The landings during 1928 were $25,768 \mathrm{cwt}$., having a landed value of $\$ 297,703$, and a marketed value of $\$ 434,110$, as compared with a catch of 27,551 cwt. with a landed value of $\$ 342,391$, and a marketed value of $\$ 468,679$ for 1927 . The decrease in the marketed value amounted to $\$ 34,569$. All sections of the coast show decreased landings, as compared with the previous year.

## SALMON

The salmon fishery was disappointing and shows a decrease of $5,760 \mathrm{cwt}$., as compared with the landings in 1927. All sections of the coast showed decrease. The catch of Cape Breton island was roughly about half of that of last year. The eastern section of the mainland catch dropped over $2,000 \mathrm{cwt}$., while Western Nova Scotia shows a loss of over $1,100 \mathrm{cwt}$. The landings in the western portion of the province were less than half of the landings of last year.

The total quantity of salmon taken in the province was $7,059 \mathrm{cwt}$., as compared with $12,819 \mathrm{cwt}$. during 1927. The comparative landed values were $\$ 112,340$ and $\$ 181,583$, respectively. The marketed value for this year was $\$ 138,681$, while in 1927 it was $\$ 233,189$.

## SCALLOPS

The scallop fishery suffered quite a severe decline, as compared with the previous year. However, it must be taken into consideration that 1927 was a record year, when 37,607 barrels were produced. During 1928 the production was 24,533 barrels, which is much in advance of the catch for any previous year, with the exception of 1927. The catch for the past six years has been as follows:-


It will therefore be seen that the apparent decline in 1928 is not nearly as serious as would appear at first glance.

The marketed value was also in excess of that for any of the years above referred to as will be seen from the following:-


The catch in Lunenburg county was about half of that of last year, while decreases took place in the large scallop producing areas of Dighy and Annapolis counties. However, the fishery, compared on the average with previous years, was quite successful.

## SMELTS

The total catch for the year was $6,089 \mathrm{cwt}$., having a marketed value of $\$ 103,535$, compared with a catch of 7,110 ewt., valued at $\$ 124,653$ during 1927. At the opening of the season mild weather prevailed and the fishery was not prosecuted as vigorously as usual, as the fishermen were afraid they could not get their catches to market in good condition.

## oysters

The oyster catch for the province shows a slight increase over that of the previous year. The catch was 1,944 barrels, having a marketed value of $\$ 15,935$, as compared with 1,817 barrels, with a marketed value of $\$ 16,109$ for 1927. The largest landings, made in Cape Breton Island, were as follows:-


The greatest increase in the catch took place at Nyanza bay, where 200 barrels were landed, compared with 102 barrels in 1927. The oyster fishery along the shores of the mainland bordering on Northumberland straits is becoming depleted, and some work must be done on the beds if the fishery is to be saved.

## SWORDFISH

Swordfish were more plentiful along the coast, and larger catches were made than during the previous year. The landings for 1928 were 8,088 cwt., having a marketed value of $\$ 132,345$, as compared with a eatch of $7,299 \mathrm{cwt}$. having a marketed value of $\$ 120,692$ last year. Good landings were made at Louisburg, Glace Bay, North Sydney and Petit de Grat. Heavier catches were also made in Guysboro county waters.

The following reports by districts will be of interest, showing the local conditions with respect to catches and values:-

## District No. 1, Cape Breton-Inspector McLeod

The outstanding features of the year, compared with 1927, are decreases in the quantities landed and values of lobsters, mackerel, halibut, salmon, pollock, and alewives; and increases in the quantities landed and values of cod, haddock, swordfish, herring, smelts and hake.

Lobsters.-The total catch was $40,403 \mathrm{cwt} .$, marketed value, $\$ 499,523$, as compared with $42,524 \mathrm{cwt}$. with a marketed value of $\$ 565,442$ for 1927 .

The largest catches were landed at Mainadieu, 3,006 cwt.; Port Hood Island, 2,070 cwt.; Petit de Grat, 1,827 cwt.; Port Morien, 2,344 cwt.; and Cheticamp, 1,682 cwt.

Cod.-The total catch was 153,780 cwt., marketed value $\$ 343,755$, as compared with 139,096 cwt. with a marketed value of $\$ 292,061$ for 1927. Increases compared with the preceding year are 14,684 cwt. in the catch and $\$ 51,694$ in landed value. On account of the low prices that prevailed for this fish during the previous year, the fishermen had no ambition to prosecute this branch of the industry at the opening of the season, as the price offered by fresh fish buyers was considered entirely too low. It was not until late in the season, when prices advanced, that the fishermen operated with any degree of vigour. However, cod were quite abundant during the whole season and the weather very favourable, except during October and November.

The largest catches were landed at North and South Ingonish, 23,832 cwt.; North Sydney, $33,685 \mathrm{cwt}$.; New Haven and Neil's Harbour, 14, 873 cwt.; Petit de Grat, 12,658 cwt.; Cheticamp, 12,624 cwt.; Port Hood Island, 8,938 cwt.

Swordfish.-The total catch was 5,856 cwt., marketed value $\$ 80,958$, as compared with 5,376 cwt. with a marketed value of $\$ 66,601$ for 1927.

An increase of 480 cwt . in the catch, and 14,357 in the value is shown, as compared with the preceding year. The increase is due to the fish being more plentiful and weather conditions quite favourable. Increases were recorded at the ports of Fourchu, L'Ardoise, Gabarus, Petit de Grat, Louisburg, North Sydney and Ingonish.

Largest landings were as follows: Louisburg, 2,923 cwt.; Glace Bay, 1,120 cwt.; North Sydney, 768 ewt., and Petit de Grat, 520.

Haddock.-The total catch was $57,500 \mathrm{cwt}$., marketed value $\$ 138,913$, as compared with 68,344 cwt. with a marketed value of $\$ 132,485$ for 1927 .

A decrease of 555 cwt . at L'Ardoise was due to the fact that none were caught in fish traps, as these fish kept farther off shore than usual, while at Petit de Grat an increase of $5,238 \mathrm{cwt}$. is noted, where most of the fish was caught in trap-nets. Louisburg shows an increase in the catch of 450 cwt . due to the fishermen of this port operating later in the fall than usual as a result of the better prices offered for the catch and improved transportation facilities, the Fisheries Branch having operated a Fish Collection Service on this section of the coast during the fall months.

An increase of $1,814 \mathrm{cwt}$. is shown at Ingonish, due to these fish being fairly plentiful in the spring when large catches were taken in the trap-nets at Middle Head. The fall run was not nearly as large as usual.

Mackerel.-The total catch was 27,810 ewt., marketed value $\$ 103,613$, as compared with 29,832 cwt. with a marketed value of $\$ 122,425$ for the 1927 season.

It is remarkable that the fall mackerel can be caught only. with a jig in the district from Pleasant bay to Broad cove, on the northern coast of Inverness county, while on other sections of the Cape Breton island coast they are caught, principally, in gill-nets. Though fall mackerel in past years used to frequent the waters of Port Hood island, for some unaccountable reason they have not put in an appearance in any quantities for the past five or six years.

Halibut.-The.total catch was 4,748 ewt., marketed value $\$ 64,113$, as compared with $4,772 \mathrm{cwt}$. with a marketed value of $\$ 92,194$ for the 1927 season.

The port of North Sydney shows an increase of $1,333 \mathrm{cwt}$., which is attributable to a larger number of bankers calling at this port for bait and disposing of their catch; also, more of the North Sydney fleet engaged in this branch of the industry during the spring months, owing to the good prices prevailing. On other sections of the coast, however, these fish were scarce, which accounts for the net decrease in the eatch.

The largest landings were at North Sydney, 3,173 cwt., Hawkesbury, 247 cwt.; Scatarie, 201 cwt.; and Port Morien, 199 cwt.

Salmon.-The total catch was 2,498 cwt., marketed value $\$ 39,922$, as compared with 4,897 cwt. with a marketed value of $\$ 78,436$ for the 1927 season.

The decrease is due altogether to scarcity, as fine weather prevailed during the fishing season. From Pleasant bay to Broad cove, on the northern coast of Inverness county, a decrease of 953 cwts. is noted; from Inverness to Hawkesbury, a decrease of 193 cwt ; from Lingan to Point Aconi, a decrease of 25 cwt .; from Big Bras d'Or to Smoky, a decrease of 83 cwt.; from Ingonish to bay St. Lawrence, a decrease of 60 cwt . As a matter of fact this was the poorest season the salmon net fishermen have experienced for a great many years. In July fairly good catches were made by a few of the nets at Margaree and Broad cove, but at the same time the fishermen at Pleasant bay and Cheticamp ceased operating because of the small catches being taken. From Broad cove to Hawkesbury the fishermen scarcely paid expenses, but it is remarkable that a fisherman operating one net at Inverness made over $\$ 900$.

The largest catches were at Margaree, 394 cwt.; Little Loraine, 203 cwt.; Aspy bay, 159 cwt ; and Pleasant bay, 158 cwt .

Herring.-The total catch was 37,999 cwt., marketed value $\$ 67,515$, as compared with 26,604 cwt. with a marketed value of $\$ 43,221$, showing increases of $11,395 \mathrm{cwt}$. in the catch and 24,294 in value.

Largest landings were as follows: North Sydney, 11,540 cwt.; Hawkesbury, 3,790 cwt.; Petit de Grat, 2,251 cwt.; Cheticamp, 2,100 cwt. ; Port Hood island, 1,686 cwt.; and St. Ann's, 1,620 cwt.

Smelts.-The total catch was 1,636 ewt., marketed value $\$ 23,288$, as compared with 1,727 cwt. with a marketed value of $\$ 26,427$ for 1927 , showing decreases of 91 cwt. in the catch and $\$ 3,139$ in the marketed value.

Largest catches were as follows: Mabou Harbour, 296 cwt.; West Arichat, 150 cwt.; Louisdale, 144 cwt.; and Port Royal, 140 ewt.

Oysters.-The total catch was $1,265 \mathrm{bbl}$., marketed value $\$ 9,230$, as compared with $1,224 \mathrm{bbl}$. with a marketed value of $\$ 10,347$ for 1927 , showing an increase of 41 barrels in the catch and a decrease of $\$ 1,117$ in the marketed value.

Hake and Cusk.-The total catch was 7,658 cwt., marketed value \$9,710, as compared with 3,663 cwit. with a marketed value of $\$ 4,376$ for 1927 , showing an increase of $3,995 \mathrm{cwt}$. and $\$ 5,334$ in marketed value.

The increase in the catch is attributable to larger catches taken by the fishermen of Port Hood island and larger quantities landed by steam trawlers at Port Hawkesbury.

Largest landings were as follows: Port Hood island, 7,010 cwt.; Hawkesbury, 218 cwt.; Margaree harbour, 60 cwt.; and Cheticamp, 38 cwt.

Squid.-The total catch was 1,085 barrels, marketed value $\$ 2,215$, as compared with 684 barrels with a marketed value of $\$ 2,977$ for 1927 , showing an increase of 80 cwt . in the catch and a decrease of $\$ 762$ in the marketed value.

Largest landings were as follows: Cheticamp, 700 barrels; Margaree harbour, 105 barrels; Grand Etang, 150 barrels; and Pont Hood island, 25 barrels.

Flounders.-The total catch was 664 cwt., marketed value $\$ 3,627$, as compared with $1,846 \mathrm{cwt}$. with a marketed value of $\$ 9,227$, showing a decrease of 1,182 cwt. in the catch and $\$ 5,600$ in the marketed value. The entire catch was landed by trawlers at Port Hawkesbury.

Eels.-The total catch was 178 cwt., marketed value $\$ 926$, as compared with a nil catch and value for 1927. Nearly all these fish were landed at Louisdale.

## District No. 2-Comprising the Counties of Halifax, Guysboro, Pictou, Colchester, Cumberland and Hants-Inspector Sutherland

The total quantity of all varieties landed was 729,789 cwt., marketed value $\$ 4,199,173$, as compared with 692,072 cwt. in 1927 valued at $\$ 4,010,258$. This is an increase of about $10,000,000$ pounds in the catch, with a corresponding increase in value of $\$ 188,915$. Heavier landings in Halifax county west are responsible for about 90 per cent of the increase and Guysboro county shows a slight increase. Somewhat larger eatches were made in Cumberland county northwest and the Bay of Fundy section.

Of the varieties taken, cod and haddock have increased over $11,000,000$ pounds, while the lobster catch is greater by about half a million. The most serious decreases are those of herring, 500,000 pounds, and salmon, about 200,000 pounds. The increased values are in part due to higher prices paid for ground fish than in the previous year. The prices offered for lobsters were considerably lower.

Cod.-The total catch was 276,013 cwt., with a marketed value of $\$ 1,126,-$ 858 , as compared with a catch of $212,876 \mathrm{cwt}$. with a marketed value of $\$ 930,038$ for 1927, showing an increase of 63,137 cwit. in the catch and $\$ 196.820$ in the marketed value. However, as $35,800 \mathrm{cwt}$. of cod were brought into this district from outside points, the actual marketed value of the catch would be about $\$ 71,600$ less than the amount shown above, or about $\$ 1,055,258$.

The increased catch is due to Halifax county west, where 44,490 cwt. more were landed than in 1927, and Guysboro county, where the increase was about $20,000 \mathrm{cwt}$.

Of the total catch 112,379 cwt. were taken offshore, compared with 100,865 cwt. in 1927.

Prices were considerably better than during the previous year, and the fishermen between Halifax and Sonora had, by the collecting service, an opportunity to dispose of their catches in the fresh state. However, the prices for dried fish were so attractive that most of the fishermen in Halifax county east followed their usual custom and salited the catch.

Haddock.--The total catch was 241,502 cwt. with a marketed value of $\$ 1,023,977$, as compared with 191,934 cwt. with a marketed value of $\$ 884,238$ for 1927 , showing an increase of $49,568 \mathrm{cwt}$. in the catch and $\$ 139,739$ in the marketed value. As in cod, considerable quantities of haddock were brought into this district, $12,168 \mathrm{cwt}$. in all, which would make the actual marketed value about $\$ 24,336$ less than that shown above, or about $\$ 999,641$.

The increase is due to heavier landings in Halifax county west, where the catch increased 48,103 cwt., while in Guysboro county east, due to fewer steam trawlers, the decrease was $3,986 \mathrm{cwt}$. Slight increases were also made in $\cdot$ Halifax east and Guysboro west.

Of the total catch, $214,686 \mathrm{cwt}$. were taken offshore, as compared with 173,363 cwt. in 1927.

Hake and Cusk.-The total catch was 7,658 cwt. with a marketed value of $\$ 23,143$, as compared with $5,391 \mathrm{cwt}$. with a marketed value of $\$ 12,955$ for 1927 . The increase is due to the Halifax county catch, which was 2,227 cwt. greater than in 1927, as $1,991 \mathrm{cwt}$. were taken offshore, as compared with 342 cwt . the previous year. Prices were as follows: Landed, $\$ 0.75-\$ 1$. Marketed-dried, $\$ 5$; green salted, $\$ 3$; smoked fillets, $\$ 10-\$ 11$; fresh fillets, $\$ 10$.

Pollock.-The total catch was $6,232 \mathrm{cwt}$. with a marketed value of $\$ 12,709$, as compared with $8,180 \mathrm{cwt}$. with a marketed value of $\$ 12,694$ for 1927 , showing a decrease of $1,948 \mathrm{cwt}$. in the catch and an increase of $\$ 15$ in the markcted value. Of the catch, $4,507 \mathrm{cwt}$. were taken offshore, compared with $5,399 \mathrm{cwt}$. in 1927. Prices to the fishermen were $\$ 1$ and marketed price about the same as for hake.

Halibut.-The total catch was 7,051 cwt. with a marketed value of $\$ 162,095$, as compared with $7,240 \mathrm{cwt}$. with a marketed value of $\$ 146,871$ for 1927.

While the catch is about the same as for 1927, there is an increased marketed value of $\$ 15,224$. This is due in part to better prices, but mostly on account of $1,187 \mathrm{cwt}$. brought into this district. The offshore catch was 4,403 cwt., compared with 5,754 cwt. in 1927.

Large catches were made in Halifax county west and smaller catches in Guysboro east.

Herring.-The total catch was 50,241 with a marketed value of $\$ 117,205$, as compared with $54,609 \mathrm{cwt}$. with a marketed value of $\$ 163,140$ for 1927.

The catch is the smallest for the past five years. There was a general scarcity of spring and summer herring on the Atlantic coast of this district, but in October a heavy run entered Halifax bay and the western coast waters of Halifax county, where substantial catches were made by the fishermen. Bait was scarce throughout the season, which was a great hardship to the fishermen.

Mackerel.-The total catch was 29,582 cwt. with a marketed value of $\$ 170,201$, as compared with 34,003 cwt. with a marketed value of $\$ 160,908$ for 1927, showing a decrease of $4,421 \mathrm{cwt}$. in the catch and an increase of $\$ 9,293$ in the marketed value. This is the smallest catch for the past seven years, and the decrease most pronounced in Guysboro county, where 13,216 cwt. less were taken than in 1927; while in Halifax county west these fish were more plentiful, $17,962 \mathrm{cwt}$. being taken, as compared with $8,125 \mathrm{cwt}$. in 1927.

Prices to the fishermen were more satisfactory than in other years. Market prices were: $\$ 8$, fresh; $\$ 8.50-\$ 9$, salt (spring) ; $\$ 18-\$ 20$, salt, (fall).

Salmon.-The total catch was 3,676 cwt. with a marketed value of $\$ 77,374$, as compared with $5,886 \mathrm{cwt}$. with a marketed value of $\$ 113,971$ for the 1927 season.

The decrease was general, excepting in the bay of Fundy, where there was a considerable increase. Antigonish and Pictou county east, where there is a valuable trap-net fishery, suffered the most, the catch falling off 50 per cent or $1,655 \mathrm{cwt}$. and $\$ 14,207$ in value. As the fish were scarce, the fishermen enjoyed the highest prices for some years past.

Albacore.-The total catch was 875 cwt . with a marketed value of $\$ 8,750$, as compared with 1,575 cwt. with a marketed value of $\$ 15,750$ for 1927.

This fishery is confined to St. Margaret's bay where albacore are taken by trap-nets and harpooning. The catch for 1928 is about an average, although it shows a considerable decrease from 1927, which was the largest catch since 1923.

Swordfish-The total catch was 2,100 cwt. with a marketed value of $\$ 49,429$, as compared with $1,715 \mathrm{cwt}$. with a marketed value of $\$ 30,795$ for 1927 , showing an increase in the catch of 385 cwt . and $\$ 18,634$ in the marketed value. This is due in part to shipments of 797 cwt. brought into this district. Heavier catches were made in Guysboro county.

Flounders, Skate and Soles.-Flounders decreased $5,135 \mathrm{cwt}$., while soles increased $1,743 \mathrm{cwt}$., the catches being 1,187 and $14,180 \mathrm{cwt}$., respectively. All of the latter were taken offshore, and 727 cwt . of flounders. The catch of skate was 2,163 cwt., as compared with 7,011 cwt. in 1927 . However, this does not include large quantities of skate landed by steam trawlers at Halifax for reduction purposes.

District No. 3-Comprising the counties of Lunenburg, Queens, Shelburne, Yarmouth, Digby, Annapolis and Kings-Inspector Marshall.
The total amount of all kinds of fish for the year was $1,538,476$ cwt. and 40,720 barrels of shellfish, with a total marketed value of $\$ 5,970,206$, as compared with $1,481,730$ cwt. valued at $\$ 5,300,749$, which shows an increase of 56,746 cwt., and an increase in value of $\$ 669,457$.

Cod.-The catch of cod was $1,040,379 \mathrm{cwt}$. valued at $\$ 2,927,406$, as compared with $979,901 \mathrm{cwt}$. valued at $\$ 2,233,673$ for 1927 . This shows an increase of $60,478 \mathrm{cwt}$. with an increase in value of $\$ 693,733$ for the year 1928 .

Haddock.-This fishery shows an increase of $23,019 \mathrm{cwt}$., and an increase in value of $\$ 106,675$ over the preceding season.

Hake and Cusk.-A decided increase is shown of $33,051 \mathrm{cwt}$., and value of $\$ 99,215$.

Halibut.-The season was not as successful as last season, as a decrease is shown in catch and value of $1,570 \mathrm{cwt}$. and $\$ 22,239$.

Herring.-The catch of herring was 78,158 cwt. with a marketed value of $\$ 183,501$, as compared with 133,347 cwt. valued at $\$ 276,047$ for 1927. This shows a decrease of 55,189 cwt., and a decrease in value of $\$ 92,547$.

Mackerel.-This fishery shows an increase of $5,577 \mathrm{cwt}$. and an increase in marketed value of $\$ 40,420$.

Salmon.-The catch of salmon for 1928 was 885 cwt . with a value of $\$ 21,385$, as compared with $2,036 \mathrm{cwt}$. valued at $\$ 40,782$ for the season of 1927 , showing a decided decrease of $1,151 \mathrm{cwt}$. and a decrease in value of $\$ 19,397$.

Scallops.-This fishery shows a decrease of 13,046 barrels, and a decrease in value of $\$ 56,510$.

Lobster.-This fishery shows a decrease in the catch of 9,921 cwt., and a decrease in the value of $\$ 106,790$.

## BAIT REPORTING SERVICE

Most of the vessels engaged in the fishing industry of the province are now equipped with radio sets. A new wireless broadcasting service was inaugurated last April for the purpose of furnishing the fishermen and others interested in the industry with information in connection with the following items:-

1. Weather reports.
2. Bait reports daily from the Magdalen Islands, Canso, Port Hawkesbury, North Sydney, Halifax, Lunenburg, Liverpool, Lockeport, Shelburne, Yarmouth, Queensport, Port Hood, and other points, showing the quantity of frozen bait in storage and the quantity of fresh unfrozen bait available as well as the ice supplies on hand.
3. Ice conditions prevailing along the coast.
4. Prevailing local prices of dried fish.
5. Prevailing local prices for slack salted fish, including, where possible, Boston and Gloucester quotations.
6. New items covering catches of vessels arriving from the banks, and any outstanding fishery incidents such as loss of life, or damage or loss of vessels, or other unusual events that would be of interest to the fishermen, including urgent information as to the families of the fishermen.

The information involved was collected and compiled by the Halifax office, and was broadcast twice daily from the Louisburg Marconi Station and the Halifax lightship. Many favourable comments have been received on the ser-
vice, and it is considered a distinct step in the right direction. The general opinion is that it has been of great advantage to the fishermen and the fishing industry as a whole. The service will undoubtedly become more popular and beneficial as time goes on and better and more receiving sets are installed on the vessels.

The first broadcast message was sent forward on April 23, and the service was discontinued for the season on November 30.

## THE STEAM TRAWLER

During 1928 eleven trawlers operated from this province, while in 1927 fourteen were employed. The trawlers operating in 1928 are as shown below:-

| Name of Vessel | Port Operated from | Time engaged |
| :---: | :---: | :---: |
| Venosta. | Halifax | January-December |
| Lemberg... | " |  |
| Viernoe... | " | " ${ }^{\text {c }}$ |
| Cape Agulhas | " | \{January-April |
| St. Cuthbert. | Halia and Port | November-December |
| Loubyrne. | Halifax and Port Hawkesbury | January-December |
| Rayon d'Or. | Canso.......... | January-December |
| ${ }_{\text {Bonthor }}$ | " | January-May 1st |
| Offa... | " | January-March |

In addition, the baby trawler Geraldine was built at Lunenburg, and operated from that port from June 30 for the Lunenburg Sea Products and Cold Storage Company, Limited. Her dimensions are: length, 108 feet; beam, 28 feet; draught, 10 feet, and she is equipped with crude oil engines having a motive power of 200 horse-power.

## INTRODUCTION OF THE DANISH SEINER

An interesting experiment was made when the Nova Fisheries Limited, of Halifax, equipped a vessel, the Nova I, for Danish seining. She was constructed at Mahone Bay, N.S., and her dimensions are: length, 61 feet; beam, $17 \cdot 6$ feet; draft, 9 feet; hold, $8 \frac{1}{2}$ feet. She was powered with a 50 -horsepower Diesel engine and equipped with a Danish seine hauler.

This was an introduction of an entirely new method of fishing in these waters. The Geraldine left on her first trip on November 1, but was handicapped in her operations by extremely bad weather. Her operations, in more moderate weather, will be watched with interest.

## THE IUNENBURG FLEET

The year 1928 brought success to the Lunenburg fieet and in many instances records were eclipsed. The value of the deep-sea catch registered an increase of half a million dollars over the catch of the previous year.

From a financial standpoint the year may be considered as a distinct success. While last year eighty-three vessels were operated, this year the number was seventy-five. The decrease in the number of vessels in commission was eight although the monetary gain was outstanding over the year 1927.

Better prices prevailed than last year. The fish from the frozen bait trip were cured and sold at $\$ 7.50$ per quintal, a considerable advance over the price received from that trip last year.

Sixty-nine vessels participated in the second trip and their catch sold for $\$ 8$ per quintal. The vessels on these two trips were handicapped by extremely rough weather, resulting in decreased fares.

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Fine weather prevailed for the most part during the summer trip, and good catches were made. The catch was sold two months earlier than in the previous year and brought $\$ 9$ per quintal.

Two vessels, the J. H. Sinclair and the J. W. Margeson were lost at the beginning of the summer trip. On the fall trip the Andrava was sunk in collision at Sydney Harbour. The crews fortunately, in all three cases, were saved. During the earlier trips quite a few vessels suffered damage due to prevailing rough weather, but the losses were comparatively slight, compared to former years.

Encouraged by good prices, and ready markets, eightcen vessels sailed on the fall trip. The fall trip is not a general one, but the results were encouraging, as the catch was good and the prevailing prices much in advance of previous years.

Each year shows an increased number of Newfoundland fishermen manning the Lunenburg fleet, and the year under review was no exception. A number of vessels during the past few years have been manned almost entirely by men from the ancient colony.

Practically the whole fleet is equipped with radio, and the broadcast service in connection with the bait and ice reports was very favourably commented upon by various captains interviewed.

The captains and fishermen, as a whole, were loud in their praise of the valuable service rendered by the C.G.S. Arras as a hospital ship on the banks.

## DESTRUCTION OF HAIR SEALS

In view of the harmful activities of hair seals, especially to the salmon and smelt fisheries, the Fisheries Branch decided last year to pay a bounty of $\$ 3.50$ for each seal destroyed, on production of proper evidence of destruction. The bounty was repeated this year, but was discontinued in July, as the number of bounty claims received was so great that the amount provided by Parliament. for bounty became exhausted. The amount expended in Nova Scotia until the end of July was $\$ 10,570$. This represents a destruction of 3,020 seals.

If funds had been available for the continuation of the bounty, naturally a great many more seals would have been destroyed. The best months for killing are June, July and August. It should be understood that a great many seals are destroyed on which no bounty is paid. It is impossible to estimate the number, but probably ten per cent of the seals killed are lost before the bodies can be recovered to secure the snouts which must be presented as evidence of destruction by the persons claiming the bounty.

More claims were paid in western Nova Scotia than in any other section of the province. The western counties of the mainland accounted for 1,345 claims, eastern counties for 1,190 claims, and the Island of Cape Breton for 485.

A great many hair seals are procurable in this province, and it is in the interest of the fishermen that they be descroyed, owing to their destructive tendencies towards the valuable salmon and smelt fisheries. If a good market for the skins can be secured, at an attractive price, the destruction will naturally be larger. Up to the present, it appears that a great many of the fishermen destroying seals have not saved the skins. This procedure will undoubtedly be corrected if the fishermen and others killing seals can be assured of a ready paying market for the skins.

## FISH COLLECTION SERVICE

A Fish Collection Service was inaugurated and was put in operation along the southern shore of Cape Breton Island, between Main-a-dieu and Fourchu. The ss. Mary Patricia began operating on August 27, the Pearl Cann on August

28, the Pollyanna on October 11, and the Comfort 2nd on October 19. The Mary Patricia ceased operating on January 1, the Pearl Cann on December 3, the Comfort 2nd on January 6, and the Pollyanna on December 18.

The Pollyana collected fish at Main-a-dieu, Big and Little Lorraine, and the Comfort and collected fish at Fourchu and Gabarus, both boats conveying their cargoes to Louisburg where they were transferred to the Mary Patricia and Pearl Cann. The Mary Patricia and Pearl Cann plied direct between Louisburg and Canso, conveying the cargoes transferred from the Pollyanna and Comfort 2nd as well as the catch taken by the fishermen at Louisburg.

The following is a statement of the weight of fish taken at the several ports:-

| Main-a-dieu | Louisburg | Gabarus | Fourchu | Bir Lorraine | Little Lorraine |
| :---: | :---: | :---: | :---: | :---: | :---: |
| lbs. | lbs. | lbs. | lbs. | lbs. | lbs. |
| $67,664$. | 434,238 | 20,922 | 72,272 | 36,147 | 84,660 |

The fishermen along this section of the coast greatly appreciated the efforts put forth by the Fisheries Branch to give them better transportation facilities, Had it not been for this service the catch would have been less than half as large, for in the past fishermen ceased operating early in the fall on account of the poor prices prevailing and no boats to convey their catches to market. The weather was very stormy during the months of October and November, which greatly interfered with fishing operations. Had the weather been fine the catch would have been doubled.

The collection service which was inaugurated on the eastern part of the mainland in 1927, between Port Bickerton and Canso, was continued successfully in 1928. A new service was started between Sonora and Halifax.

The two collection services in eastern Nova Scotia carried a tetal of 4,262,053 pounds.

In western Nova Scotia a collection service was inaugurated, operating between Port LaTour, Shelburne and Lockeport.

## RIVER AND INLAND FISHERIES

Nova Scotia is famous for its sport fishing rivers and lakes, and more and more tourists are being attracted to the province every year on account of the splendid angling opportunities which prevail. Of course, the sport is also extensively engaged in by citizens of the province. It is absolutely essential that our salmon and trout be afforded all protection possible, and every effort is being made in this direction. The salmon and trout fisheries are a distinct asset to the province, from an economic standpoint, and attract many visitors.

A number of fish and game protective associations have been organized in various sections amongst the local sportsmen for the purpose of affording all protection possible to our game fish. Our own officers have been zealous in their efforts to prevent illegal fishing.

The Margaree river was visited by a larger number of tourists than ever before. The largest salmon caught on the rod weighed thirty- two pounds, and the largest number taken by a visiting angler was twenty-seven. The largest salmon landed by an angler in the Margaree river last year weighed $52 \frac{1}{2}$ pounds.

On the Cheticamp river twenty-eight salmon were landed by a visiting angler, and curiously enough the largest fish weighed twenty-eight pounds.

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The salmon angling yield in these two rivers for the last four years has been as follows:-

|  | Year | Margaree River | Cheticamp River |
| :---: | :---: | :---: | :---: |
| 1925. |  | 363 | 69 |
| 1926. |  | 489 | 100 |
| 1927. |  | 868 | 138 |
| 1928. |  | 309 | 121 |

On the Maccan river, Cumberland county, an unusual feature occurred in a heavy run of small salmon which took place in late July. This river usually supports a good run of spawn fish in September and later, but this year the salmon referred to were in the river in good condition until the latter part of August. The water was not high at the time, and it was only by the best efforts of the officers that large numbers were not destroyed by poachers. A number were taken by sport fishing with dry flies. The fact that salmon were plentiful in the headwaters of the bay of Fundy may explain this unusual run.

No salmon fly fishing is done in Colchester, Pictou, and Antigonish counties. In Guysboro county and Halifax county, due to the failure of the salmon ou the coast, comparatively few entered the rivers and the sport catch was not up to normal.

During the early part of the season trout were fairly plentiful in the Margaree river. The largest trout of which there is departmental record was captured on May 19 at Long Marsh pool, Margaree river. It weighed, when landed, $6 \frac{3}{4}$ pounds. It was $26 \frac{1}{2}$ inches long, with a girth of $14 \frac{1}{2}$ inches.

Very satisfactory catches were taken in lake Ainslie, Indian river, and river Denys, Inverness county, and Baddeck and Washabuck rivers, North Aspy river, Middle river, Clyburn's brook, and Ingonish river, Victoria county, durinc the early part of the season, but in July, August, and September very few were caught on account of the waters being very low and warm. In Bentinck pool, Baddeck river, fifteen trout were taken, weighing from two to four and a half pounds, in one day.

Angling in western Nova Scotia for both salmon and trout was good. An increased number of non-resident anglers visited the district. The Mersey river, Medway river, Tusket river, Annapolis river, etc., provided good sport for the anglers. The salmon fishery on the Mersey river is reported to be increasing fast, and if the new development being carried on by the Nova Scotia Power Commission on this river does not interfere too much with the ascent of salmon the fishery should continue to increase.

## ERECTION OF HALIFAX COLD STORAGE PLANT

For many years past there has been a general demand for the establishment of adequate cold storage facilities at the port of Halifax. This year saw the commencement of the erection of a modern cold storage plant to meet that demand. In April, 1929, a plant costing two and a quarter million clollars will be completed at Halifax.

While the plant will handle all kinds of perishable foods, one large unit is to be devoted exclusively to the handling of fish. The facilities will be available to the public, and in the cold storage chambers there is ample storage room for holding frozen fish. The equipment includes the rapid brine freezing process -Bird's Eye method. The establishment of this plant should be of great benefit to those engaged in the fishing industry. It will undoubtedly be helpful to the shore fishermen.

The plant is known as the Nova Scotia Public Cold Storage Terminals, Limited, and is located advantageously at the south end terminals. With the facilities provided, it is to be expected that fishery production will increase.

## FISHERMEN'S CO-OPERATIVE ASSOCIATIONS

During the year twenty-nine Fishermen's Co-operative Associations were operated throughout the province. They were confined to the eastern mainland and the island of Cape Breton. The number will likely be considerably increased from year to year and stations organized in the western part of the province.

The co-operative associations, or stations, of the Fishermen's Federation of Nova Scotia operated during the year under review were located at the following points:-

1. Canso, Guysboro county.
2. Petit de Grat, Richmond county.
3. Arichat, Richmond county.
4. Porierville, Richmond county.
5. West L'Ardoise, Richmond county.
6. Lower L'Ardoise, Richmond county.
7. Rockdale, Richmond county.
8. L'Ardoise, Richmond county.
9. L'Ardoise, Richmond county.
10. Lismore, Pictou county.
11. Fourchu, Richmond county.
12. Gabarus, Richmond county.
13. Louisburg, Cape Breton county.
14. Main-a-dieu, Cape Breton county.
15. Havre Boucher, Antigonish county.
16. Ingonish Beach, Victoria county.
17. Big Island, Pictou county.
18. Arisaig, Antigonish county.
19. Monk's Head, Antigonish county.
20. River John, Pictou county.
21. Grand Etang, Inverness county.
22. Dover, Guysboro county.
23. Margaree, Inverness county.
24. Belle Cote, Inverness county.
25. Whitehead, Guysboro county.
26. Port Felix, Guysboro county.
27. Cole Harbour, Guysboro county.
28. Little Lorraine, Cape Breton county.
29. Port Hood Island, Inverness county.

Each station elected officers such as president, vice-president and secretsrytreasurer, and an executive committee. The number of members belonging to each station ranged from fifteen to one hundred and thirty-six, and the number of meetings held by each organization from one to twenty-five.

The various associations referred to were organized primarily for the following objects:-
(a) To procure information respecting the latest improvements in boats and fishing gear of a 41 kinds, methods of curing and preparing fish for markets, and the transportation and marketing of fish and fish products.
(b) To co-operate aim the matter of purchases of fish, fishing supplies and accessories and in the camning, curing, storage, preservation, selling, marketing and export of fish.
(c) Mutual communication between the stations of such information.
(d) To take action upon matters arising in respect to the fisheries and to make representations and furnish information to the proper authorities.
(e) Generally to improve and elevate the material, intellectual and social welfare and standing of the members.

## UTILIZATION OF FISH WASTE AND MANUFACTURE OF BY-PRODUCTS

There was one less licensed reduction plant operated in the eastern part of the province during the year under review than last year.

During the year three licensed reduction plants operated in the eastern portion of the mainland, as shown below:-

1. Fasterfat Limited, Halifax.
2. Kendall Reduction Works and Fish Meal Plant, Halifax.
3. Robinson Glue Company, Canso.

The following licensed reduction plants were operated in western Nova Scotia:-

1. H. R. L. Bill, Lockeport.
2. A. W. Dodd, Freeport.
3. A. W. Dodd, Westport.
4. Roy Casey, Victoria Beach.
5. Parkhurst Cod Liver Oil Corporation, Tiverton.
6. M. A. Nickerson, Clark's Harbour.
7. W. H. Goudy, Lockeport.
8. H. Wall, Yarmouth.
9. Yarmouth Meal and Oil Company, Limited, Yarmouth.
10. Lewis Canning Company, Annapolis.

The Lewis Canning Company was operated from a by-product standpoint for the purpose of grinding scallop and clam shells into chicken feed. The other concerns mentioned in western Nova Scotia were engaged in the production of oil.

## FISHERIES PATROL SERVICE

The patrol boat Mildred McColl made her first patrol this year on April 7, after the usual overhauling, and patrolled the lobster districts in Halifax, Guysboro, and along Northumberland straits until the seasons opened. This boat did very effective work in regulating the opening of the season in the straits district by enforcing the opening hour and thus giving all fishermen an equal chance for the best grounds. This has always been a bone of contention with the lobster fishermen there, and led to many disputes in former years, when weather conditions permitted the running of lines on the opening day. Fishermen and packers, generally, appreciated the enforcement this year.

Until July 21 the Mildred $M c$ Coll was engaged in regular patrol work in Halifax and Guysboro counties, when she was taken for scallop investigation work to Prince Edward Island and other points. She was engaged in this work until August 21, and then returned to regular patrol work, and remained in commission until January 31.

The work performed by this boat was most valuable for the proper regulation and protection of the fisheries. Captain Williams, and his crew, were most efficient and conscientious. During the absence of the Mildred McColl from regular patrol work, illegal fishing broke out in some sections.

The contract boat Lulu T., was again engaged for the protection of the lobster boundary line at Port Philip and the closed area east of the boundary.

Captain Brownell was employed as master, and the inspector for the district reports the protection of the lobster grounds in the close season this year was most satisfactory.

The F.P.I. carried on satisfactory and continuous patrol throughout the season from Pubnico, Yarmouth county, to the head of the bay of Fundy.

## FISHERIES CRUISER SERVICE

Both C.G.S. Arras and C.G.S. Arleux were busily occupied throughout the year. The commanding officers; Captain Barkhouse, of the Arras, and Captain Cousins, of the Arleux, deserve praise for the splendid work carried out by the vessels under their command.

The Arras in addition to carrying on regular patrol work along the coast during the spring, fall and winter, again proceeded to the Grand Banks as a hospital ship, with the fishing fleet, and remained on that duty during the summer. The services rendered in this connection were much appreciated by the fleet, but a boat with larger and better accommodation for hospital cases is desirable and it is hoped that such may be secured in the near future. The Arras, however, gave every assistance possible to the fleet, and many expressions of appreciation have been received with regard to her work.

Dr. D. R. Webster, who was employed on the vessel, reports with regard to the work on the banks as a hospital ship, as follows:-
"The season was no doubt the most successful from every viewpoint. The medical service was the largest yet experienced due in a measure to a more or less severe epidemic of influenza among the crews of the vessels. There were no deaths from illness among the fleet. The following is a summary of the work:-

Total number of minor operations...................................... 65
Patients conveyed to St. John's-or other port for home or hospital.. 12 "
The Arleux was actively engaged in patrol work throughout the year, and was instrumental in clearing many harbours of ice during the winter months. Her services were most valuable, and were much appreciated by the fishing industry. As in recent years, she acted as a nother ship to the fishing fleets of Canso, Arichat, Petit de Grat and vicinity, rendering them any assistance necessary.

## LOSS OF LIFE

With deep regret there is reported the death of Mr. Thomas Burke of Bateston, Cape Breton county, who was drowned in Mira bay, Cape Breton, on May 10, while in the act of setting a herring net, and also that three fishermen were lost in eastern Nova Scotia, two in Guysboro east and one in Antigonish county.

LICENSES ISSUED

| Lobster fishing | 8,58.6 |
| :---: | :---: |
| Lobster packing | 112 |
| Lobster packing extension. | 134 |
| Lobster pound. | 17 |
| Salmon gill-net or drift-net | 750 |
| Salmon trap-net, pound-net | 399 |
| Salmon net permits. | 40 |
| Smelt gill-net. | 534 |
| Smelt bag-net. | 252 |
| Herring weir. | 79 |
| Drag seine. | 132 |
| Oyster. | 281 |
| Scallop. | 196 |
| Reduction works | 13 |
| Trap-net. | 264 |
| Cannery. | 21 |
| Shad gill-net or drift-net. | 9 |
| Quahaug. | 2 |
| Angling permits. | 950 |
| Certificates F. 12. | 313 |

## PROSECUTIONS

There were seventy-nine prosecutions for violations of the Fishery Regulations. Thirteen took place in Nova Scotia, District No. 1, forty-two in Nova Scotia, District No. 2, and twenty-four in Nova Scotia, District No. 3. Statements showing details in connection with the prosecutions referred to appear as part of Appendix No.

## REPORT OF SUPERVISOR S. T. GALLANT, PROVINCE OF PRINCE EDWARD ISLAND AND MAGDALEN ISLANDS, FOR 1928-29

The total marketed value of the fisheries of Prince Edward Island for the year 1928 was $\$ 1,196,681$. The following table gives the comparison between the catch and value for the year 1928 and that of 1927:-

| Kinds of fish |  | 1927 |  | 1928 |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Quantity caught | Value marketed | Quantity caught | Value marketed |
|  |  |  | 128,830 |  | $\stackrel{5}{98,028}$ |
| Haddock. |  | 49,419 1,168 | 128,830 3,787 | 36,852 | 98,028 |
| Hake and cusk |  | 11,326 | 16,780 | 11,925 | 23,162 |
| Herring. |  | 51,834 | 88,368 | 47,451 | 94,539 |
| Mackerel. |  | 6,455 | 28,255 | 10,197 | 42,068 |
| Alewives.. |  |  |  | 150 | 1450 |
| Salmon. |  | 124 | 3,031 | 55 | 1,375 |
| Smelts. |  | 14,936 | 179,232 | 13,122 | 112,319 |
| Trout. |  | 61 | 646 | ${ }^{92}$ | 1,104 |
| Caplin. | bbl. | 183 | 850 | 178 | 682 |
| Eels.... |  | 131 | 1,358 | 345 | 2,390 |
| Tom cod. | " | 2,823 | 4,195 | 1,936 | 5,870 |
| Clams and quahaugs. | bbl. | 1,174 | 5,760 | 2,549 | 6,167 |
| Crabs................. | ewt. | 135 | -360 | 523 | 1,248 |
| Lobsters and products. |  | 62,800 | 855,917 | 65, 613 | *752,123 |
| Scallops. | bbl. | ${ }^{96}$ | . 240 | $\stackrel{320}{ }$ | 1,395 |
| Oysters. |  | 4,071 | 48,838 | 4,756 | 47,619 |
| Tongues and sounds. | cwt. | 68 | 1,360 |  |  |
| Seals..... |  |  |  | 415 | 1,488 |

*Some lobsters shipped to New Brunswick and Nova Scotia and marketed value included in returns for those provinces.

COD
There was a decrease of 12,567 cwt. in the catch of cod. The catch by counties follows:-


HADPOCK
The catch by counties follows:-


## HERRING

There was a decrease of $4,383 \mathrm{cwt}$. in the catch of herring. As the fish caught in the spring season was of very poor quality it was in demand only for lobster bait and fox food. The catch by counties follows:-


## LOBSTERS

Lobster fishing became general the first week of May and was fairly good during the entire month, but there was a decided falling off in June. The price per case was lower than last year. In the late season area, however, there was quite an increase in the catch, so that the season, on the whole, shows an increase of $2,813 \mathrm{cwt}$. The catch by counties follows:-


At the first of the season in the late season district $\$ 18$ per cwt. was paid for live lobsters of nine inches and over, but during a period of warm weather, extending from August 16 to September 1, the price declined to $\$ 12$ per cwt.

## OYSTERS

Again this year the bulk of the catch was taken from Vernon, Orwell, Seal, East and West rivers and tributaries. Weather conditions during the summer were especially favourable and the oysters grew rapidly. So large a catch was taken in the month of October that the market became glutted early in November and fishermen were obliged to cease operations. Otherwise, there would have been a large increase in the catch. The catch by counties follows:-


During the season a beginning was made to clean some of the oyster areas in Richmond bay, and seventy barrels of parent oysters were taken from East river and placed there. This should have a tendency to increase the number of spat and help propagation all over the bay. Last year some nine barrels were taken in Bideford river, a tributary to Richmond bay; this year thirty barrels were taken.

There was a tremendous set of spat in Percival river in the years 1927 and 1928, and in the near future it is hoped that this river will be as productive as in former years. A large quantity of these immature oysters were removed from shallow to deeper water in the bay and this should afford them ample opportunity to develop.

## SMELTS

There was a decrease of 1,814 cwt. in the smelt catch. The season for gillnet fishing opened on October 15, and for bag-net fishing on December 1. Fish were scarce throughout the entire season; they were in good demand, however, on the Boston and New York markets and good prices were obtained. The catch by counties follows:-


## CLAMS AND QUAHAUGS

In clams and quahaugs there was an increase in the catch of $1,375 \mathrm{cwt}$. over that of last year. During the season a firm in Charlottetown canned a quantity of quahaugs which found a ready market at remunerative prices.

## FISHERIES PROTECTION SERVICE

During the season of 1928 there were six patrol boats in the Protective Service, and with their aid and that of the overseers and guardians a great many attempts at illegal fishing were successfully suppressed; in fact, illegal lobster fishing was kept down to a minimum for the first time in a number of years.

The total number of confiscations for violations of the Fisheries Regulations during season 1928, covering 92 seizures, was 44.

The total number of prosecutions was 20.

## REMARKS

The fishways at Laird's, Campbell's, Dixon's and Vernon river mill-dams were in good condition for the fall run of trout which ascend the head of the streams to deposit their eggs on the natural spawning grounds. There are eighty-eight mill-ponds throughout the province and all are teeming with brook trout.

## CAPITAL AND EMPLOYMENT

The total capital invested was $\$ 940,944$, which covers sail and row boats, gasolene boats, carrying smacks, gill-nets, trap and smelt nets, tubs of trawls, hand-lines, lobster traps, fishing piers and wharves, ice-houses, small fish and smoke houses, and lobster canneries.

The number of females employed was 640 ; the number of males 2,967 .

## MAGDALEN ISLANDS

The total marketed value of the fisheries of the Magdalen Islands for the year 1928 was $\$ 644,350$, as compared with $\$ 722,105$ for 1927 a decrease of $\$ 77,755$, due principally to a failure in the mackerel and seal catch. Some fish was shipped to New Brunswick and its marketed value is included with the total for that province.

The following table gives a comparison of the catch and value for 1927 and 1928:-

| Kinds of Fish |  | 1927 |  | 1928 |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Quantity caught | Value marketed | Quantity caught | Value* marketed |
| Cod. | ewt. | 38,894 | 83,238 | 66,000 | 154,016 |
| Herring. |  | 110,217 | 69,535 | 109,572 | 99,087 |
| Mackerel. |  | 61,885 | 177,046 | 20,820 | 69,348 |
| Smelts.. |  | 80 | 240 | 163 | 968 |
| Eels.... |  | 50 | 350 | 70 | 490 |
| Clams and quahaugs. | bbls. | 1,615 | 9,690 | 2,775 | 16,650 |
| Lobsters... | cw't. | 20,463 | 300,087 | 22,227 | 292,207 |
| Tongues and sounds. |  | 35 | 245 |  |  |
| Hair seals.. |  | 50,357. | 56,462 | 1,654 | 3,413 |
| Seal oil... | gal. | 63,030 | 21,314 | 4,984 | 1,815 |
| Cod oil... |  | 6,340 | 2,653 | 7,365 | 3,681 |
| Fish skins... | cwt. | 284 | 639 | 100 | 275 |
| Fish fertilizer. | tons | 24 | 606 | 50 | 1,000 |
| Halibut... | cwt. |  |  | 250 | 1,400 |
| Seal skins. | no. | .... |  | 1,654 | 3,413 |

*Some fish was shipped to New Brunswick and Nova Scotia and the marketed value is included in returns for those provinces.

## COD

This fish was in good demand, and there was an increase in the catch of 27,106 cwt., with an increase in value of $\$ 71,806$.

## HERRING

There was a small decrease in the catch of herring with an increase in value, due, no doubt, to the large quantity of smoked fish. The smoking of herring is continuously expanding in the Magdalen Islands, four additional large smokers having been built at Grindstone and Etang du Nord. The Magdalen firms appear to have a ready sale for these fish, and this industry is progressing favourably.

## LOBSTERS

There was an increase in the lobster catch of 1,764 cwt., with a decrease in value of $\$ 7,880$. Some lobsters were shipped to Nova Scotia and their marketed value was included with the figures for that province. There is very little variation in the catch of lobsters from year to year, but, if anything, it is on the increase. The people of these islands are law-abiding and no illegalities of any kind occur. The lobster canneries are equipped with the most modern facilities and turn out a first-class product.

In the Magdalen Islands there is a lobster sanctuary known as "The Lagoons", which is some twenty-eight miles in length and ranges in width from one-quarter of a mile to two miles. No lobster fishing is allowed in these lagoons. This might account for the steady catch of lobsters from year to year on these islands.
mackerel
The run of mackerel was small in comparison with 1927, and there was a decrease of $41,065 \mathrm{cwt}$. This gave the fishermen a better opportunity of taking care of the catch and as a result a superior quality of fish was put up.

## SEALS

There was a decrease in the catch of 48,703 seals.

## REMARKS

Navigation opened on April 16, which was much earlier than usual. SS. Lovatt continues to give entire satisfaction so far as passengers and freight are concerned; the captain and crew are very obliging and attentive to their duties which makes the boat especially pleasant for the passenger service.

## REPORT OF SUPERVISOR J. F. CALDER, DISTRICT NO. 1, NEW BRUNSWICK, FOR 1928-29

District No. 1, New Brunswick, is made up of the counties of Charlotte, St. John, and Albert, and the Bay of Fundy watershed of Westmorland county.

The following statement shows the catches and marketed values for the past year:-

|  |  | Catch | Marketed value |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
| Cod. | cwt. | 22,158 | 63,917 |
| Haddock |  | 28,164 | 63,110 |
| Hake. |  | 68,160 | 53,929 |
| Pollock |  | 34,118 | 55,297 |
| Halibut. | " |  |  |
|  |  | marketed elsewhere |  |
| Flounders. |  | 976 | 2,862 |
| Skate. |  | 142 | 190 |
| Herring. |  | 160,312 | 223,283 |
| Sardines. | bbl. | 279, 349 | 1,284,771 |
| Alewives. |  | 21,505 | 35,280 |
| Salmon. |  | 2,500 | 56,051 |
| Shad. |  | 2,388 | 27,861 |
| Smelts. |  | 365 | 5,467 |
| Clams. | bbl. | 23,121 | 96,383 |
| Cockles.. | cwit. | - 59 | 183 |
| Lobsters. |  | 7,177 | 149,537 |
| Scallops.. | bbl. | 50 | 250 |
| Winkles. | cwt. | 308 | 3 891 |
| Dulse, dried |  | 2,450 | 3,629 |
| Hair seals. | по. | 250 | 875 |
| Tongues and sounds | cwt. | 21288 | 1,166 |
| Fish oil, n.e.s....... | gral. | 21,005 | 11,780 |
| Fish fertilizer | ton | 98 | 1,180 |
| Fish skins and bones | cwt. | 138 | 296 |
| Other products.. |  |  | 672 |

The marketed value of the catch for 1928 was $\$ 2,138,860$, as against $\$ 1,858$,364 for last year, an increase of $\$ 280,496$, but, at the same time, slightly lessthan the value of the yield in 1926 and 1925 , and considerably less than the total for 1924.

## COD

The catch of cod was 22,158 cwts. as against 19,331 cwts. for the previous year. The value of the catch marketed was $\$ 63,917$. Most of the cod are taken in the late spring and summer months, when they are in prime condition.

## HADDOCK

A very slight decline is to be noted in the haddock catch, as compared with the previous year- 28,164 cwts. were taken during the present year, as against. 29,735 cwts. in 1927 . The average price paid for these fish was $\$ 1.88$ per cwt., which is practically the same as the average value for the previous year. However, an unfortunate feature in connection with the disposal of the catches by the fisherman is the fact that during the early summer months, when these fish were fairly plentiful and when the weather was very favourable for fishing operations, the price was down to $\$ 1.25$ per cwt. In the fall of the year, when the weather was very unfavourable for operations, the prices ranged from $\$ 2.50$ to $\$ 4$ per ewt.

HAEF
A large increase is to be noted in the catch of hake for the present year68,160 cwts., as against 36,796 cwts. for 1927 . There was a slight increase in the prices obtained.

## POLLOCK

The catch of pollock was $34,118 \mathrm{cwt}$., as against $7,693 \mathrm{cwt}$. for the previous year. This increase was very gratifying as the fishermen had been afraid in recent years that the pollock fishery would become an absolute failure. The majority of the fishermen salt and dry their own catches, which were sold at very good prices. The fall run of pollock around the islands of Charlotte county are wonderfully fat fish, with very large livers. There was a ready market for fish livers at a price of about 50 cents per bucket. The liver of the individual pollock brought about five cents.

## FLOUNDERS

About the usual small quantity of flounders- 976 cwt.-were taken. These fish are either captured by spearing or by the use of hoop-nets. The small catch really represents the limited demand for these fish in the domestic market. There is, however, a heavy demand for flounders, at good paying prices, in the United States markets during the winter months. Some six or seven sail of American flounder draggers operated off the city of Eastport, Maine, during the latter part of 1928 and the first of 1929, and did exceptionally well. At the present time our Fishery Regulations prohibit the use of the kind of gear used by the American flounder draggers.

## HERRING

The herring catch was again light in 1928, although there was a slight increase over the previous year, the catch for 1927 being $151,352 \mathrm{cwt}$., as against $160,312 \mathrm{cwt}$. during 1928. The decline in the herring fishery during the past two years is due to the very light run of large herring around Grand Manan island. While the catch was light again this year, good prices were obtained for smoked herring, and those who were lucky enough to make fairly good catches did very well.

## SARDINES

A very large increase is to be noted in the sardine catch as compared with the previous year. This year 279,349 barrels were taken, as against 174,640 barrels in 1927. The marketed value of the catch for the present year was $\$ 1,284,771$, as against $\$ 1,046,250$ for 1927 . There is very little to be noted in connection with any fluctuation of the prices being paid for these fish-the average price for 1927 being $\$ 1.21$ per barrel, against $\$ 1.25$ per barrel during 1928. The catch of sardines on the whole eastern portion of the State of Maine coast was light in 1928, with the result that the canners of that section were, in a very large measure, dependent on the weirs on the Canadian side for their supply. While this condition of affairs assured our fishermen a steady market for their catches, it did not have the effect of producing competition among the buyers in the purchase of their supplies, with resultant high price.

## SALMON

There was a considerable falling off in the catch of salmon for the present year, as compared with the previous year and only $2,500 \mathrm{cwt}$. were taken, while the catch for 1927 amounted to 3,462 cwt. While the catch made by the fishermen was quite light, at the same time, the run of salmon which entered the rivers for the purpose of spawning was very heavy. The small catch made by the fishermen can, in large measure, be attributed to the fact that the streams were fairly high during the summer months, with the result that the salmon readily entered them and, thereby, got beyond the reach of the commercial net fishermen, whereas, during summers when the rivers are low, salmon stay out in the bay until a much later period. The run of salmon in the Pocologan and New rivers in Charlotte county was very heavy, while the run in the tributaries of the Petitcodiac river was phenomenally heavy. These fish were protected better than ever before, and if natural conditions are favourable for propagation, the fishery ought to benefit immensely from the vastly increased number of fish which spawned in the rivers during the past fall.

The alewives catch was slightly less than during the previous year; 21,505 cwt. were taken during 1928 and 23,000 cwt. in 1927. A large portion of the 1928 catch was salted, as the demand for the fresh article was limited. The salt alewives are exported, principally to Haiti. Market conditions were poor and the low prices of the previous year continued.

## SHAD

There was a considerable increase in the shad eatch and 2,888 cwt. were taken, as against $1,689 \mathrm{cwt}$. in 1927. A very heavy run of shad again ascended the Petitcodiac river for the purpose of spawning. In order to protect these fish while on the spawning grounds, it was necessary to put on a force of guardians. They did their work in a thorough manner and the fish were permitted to spawn and return to the sea again. There is no question that the fishery will greatly benefit from the large number which spawned in this area.

## LOBSTERS

A slight increase is to be noted in the lobster catch as compared with the previous year; 7,177 cwt. were taken, as against 6,735 cwt. in 1927 . The price paid, however, was not nearly so good as during the previous year, with the result that, while the marketed value of the 1927 catch was $\$ 194,425$, the catch of 1928 had a marketed value of $\$ 149,537$ only. The fishery is practically holding its own under present conditions.

## FISH WASTE

A large quantity of refuse from ground fish is each year thrown away: It is believed this material could.be converted into fish meal and fertilizer at a profit. However, up to the present, all of it has been thrown away. During 1928 about $9,000 \mathrm{cwt}$. of this waste was produced in the vicinity of Wilson's beach, Campobello; 7,000 cwt. at Beaver harbour ; 14,000 cwt. at North head, Grand Manan; and 2,500 cwt. at Chance harbour, St. John county.

## REMARKS

On the whole, the position of the average fisherman has improved somewhat during the year; and while comparatively low prices have been paid for practically all kinds of fish, there has been a strengthening of market conditions, with a better demand for the fisherman's products and slightly increased prices, in many instances. At the present time, conditions are such as to warrant a more hopeful attitude on the part of all those who are engaged in the fishing industry. The great drawback of this section is the lack of mild-curing fish establishments. Generally speaking the fish are either shipped out in a fresh condition, which, of course, means the employment of very little, if any, labour, or they are salted and sun-dried, either by the fishermen or by small fish concerns, which also means the employment of a very limited amount of labour. On the other hand, if there were a number of concerns in this section putting up fillets of all kinds, during the summer months, as well as smoked haddies, bloaters, boneless herring, etc., with the necessary cold-storage facilities, the industry would be on a very much more satisfactory basis. The sardine manufacturing plant of Connors Bros., Limited, at Black's harbour, gives employment to a large number of hands and is of great benefit, not only to that particular section but to the whole county of Charlotte as well, but, unfortunately, it is the only concern which empioys labour to any considerable extent.

The following tables cover licenses, certificates and prosecutions during the year:-


## REPORT OF SUPERVISOR A. L. BARRY, DISTRICT No. 2, NEW BRUNSWICK, FOR 1928-29

District No. 2, New Brunswick, comprises the counties of Westmorland (Northumberland strait side only), Kent, Northumberland (except the Northwest and Southwest Miramichi), Gloucester and Restigouche.

The total marketed value of the fishery of the district for the year 1928 was $\$ 2,825,076$, as against a value of $\$ 2,524,726$ for 1927 , an increase of $\$ 300,350$.

The following table shows the catch and marketed value of the different fisheries for the respective years 1928 and 1927:


## LOBSTERS

It is pleasing to note an increase in the catch of lobsters of over $7,000 \mathrm{cwt}$. There was a great decrease in the number of canneries in operation, there being 22 fewer packing licenses issued than in the previous year when 125 canneries were in operation.

During May there occurred a heavy storm which destroyed in some cases 50 per cent of the traps. Had it not been for this, there is reason to belicve there would have been even a much larger catch of lobsters in the northern district. There was very little illegal fishing in the northern district after the close of the season, due to the strict patrol that was maintained and to the fapt that the fishermen seem to have learned that it is more profitable to catch their lobsters during the seasons provided by law.

## SMELTS

There was an increased catch of over 13,000 cwt. in the smelt fishery with a corresponding increase in value. This fishery seems to be holding its own. The market is always good and the price to the fishermen in 1928, particularly during the December fishing, was above the average, varying from ten to fifteen cents per pound. In the Miramichi system the quality of the smelts was the best for many years, many shipments running over 50 per cent extras. It is regretted there was considerable loss to the fishermen through nets being carried away by floating ice. The loss throughout. the district is estimated at about $\$ 20,000$.

Some attempts were made at illegal fishing about a week before the season opened, due to the fact that there were full moon tides on November 27 and the rivers were consequently teeming with smelts. The work of the overseers and guardians during this period should be commended. At no time did they let the situation get out of hand, and practically all attempts at illegal fishing were thwarted. A number of seizures of fish and fishing gear were made.

Splendid protection to the spawn run of smelts in March and April of last year was also given with the result that there were very few shipments of illegally caught fish after the close of the season.

Last year showed the poorest catch of salmon in recent years. It was but 50 per cent of the catch of the previous year and for this reason the price paid was higher. The decreased catch was not confined to any particular part of the district but was general throughout, and as well among the trap-net as the driftnet fishermen. This is not taken to indicate any great decline in the salmon fishery, but fishermen and dealers alike look on 1928 as an off year and it is expected that this year the salmon will come back in the usual numbers.

Very little illegal fishing took place after the close of the season, and it is reported that those who did try reaped but little fruit for their efforts. Any fish which may have been caught were disposed of locally as, owing to the strict check kept on the shipping points of the railway, it is not believed that any illegal shipments were made.

COD
There was an increase of about 33,000 cwt. over the previous year in the catch of cod, with a corresponding increase in value. The weather generally was pretty good. A stimulus was given to this fishery by the presence in Gloucester county of an instructor and demonstrator in cod splitting, packing and drying. This instructor was procured and sent as a result of one of the recommendations of the Royal Commission on Fisheries, and your inspector is able to report that a great improvement in the preparation of cod has already been shown as a result of the instruction given to the fishermen.

The price of cod averaged $\$ 2.25$ per cwt. more than last year, owing to better quality, due to hetter climatic conditions for drying. There was only 8 per cent No. 2 quality in Caraquet this year compared to 60 per cent during the year 1927.

## OYSTERS

There was a decrease of about 1,100 barrels in the catch of oysters compared to 1927, but there was an increase in value, nevertheless, of nearly $\$ 7,000$. This increase in value must be attributed to the better quality of oysters raked which must also in a great measure account for the decreased catch. For the past two years, great pains have been taken by your officers to raise the standard of the quality of oysters shipped from this district. Good notice of this intent was given to the fishermen and dealers in 1926. In 1927 the enforcement of a better catch was urged but not too severely and last year, when it was felt that all the fishermen and dealers were thoroughly acquainted with what was required, a strict check up of all catches and stocks was frequently made and a number of prosecutions were instituted against both fishermen and dealers for handling undersized oysters.

More prosecutions were instituted in connection with the oyster fishery than any other but, in spite of this, both fishermen and dealers were cheerful over having the law strictly enforced and the work of your officers was commended. Where a few years ago the average price of oysters varied from $\$ 4$ to $\$ 8$ per barrel, during the 1928 season the price ranged from $\$ 6$ to $\$ 13$ with buyers always ready to pay the top-notch price for good quality stock. The decrease in the oyster catch may partly be attributed to the fact that during the latter part of October and November very strong winds prevailed with the result that fishermen were only able to fish on an average of about three days per week.

On the Miramichi bay two or three persons have staked out areas with a view to oyster cultivation, and it is expected that within the next year or two considerable of the bed of the bay will be developed along this line. Probably no district in Canada presents such a great area for oyster cultivation as the eastern coast of the province of New Brunswick with its numerous bays and
flats and the number of streams of fresh water flowing over them. With due conservation and development of suitable areas where no beds now exist, oyster fishing can be turned into a most profitable fishery, as the cost of fishing is very slight and the market insatiable.

## TOMCODS

In the tomcod fishery there was a decrease of about 3,000 barrels in the catch and about $\$ 28,000$ in marketed value. The decrease is accounted for mainly by the poor market in January and February, 1928, when the price dropped to as low as 50 cents per barrel, and many fishermen gave up fishing as a result. There seems to be no falling off in this fishery.

## HERRING

There was a decrease of about 82,000 cwts. in herring catch over the previous year, and a decrease in marketed value of about $\$ 38,000$.

## CLAMS AND QUAHAUGS

The clam and quahaug fishery shows a decrease of about 1,700 barrels, but an increase in value of $\$ 1,000$. There are now seven canneries in operation in this district for the purpose of canning these shell-fish, as compared with two about four years ago.

## MACKEREL

The catch of mackerel in 1928 was about double that of the previous year, with an increase in marketed value of $\$ 7,500$. During the spring months there was an excellent run of the very best quality of fish.

## ALEWIVES

In recent years no fishery has shown such sudden decrease in catch as did the alewive fishery this year. Whereas in $192716,434 \mathrm{cwt}$. were taken, this year but 665 cwt. were caught. The market seemed to be off entirely for salted alewives and there is very little demand for them in the fresh state.

## HAKE AND CUSK

There was an increase of over $1,000 \mathrm{cwt}$. in catch of hake and cusk, with an increase of about $\$ 3,000$ in value. Conditions for fishing were good.

## HADDOCK

There was a slight decline in the haddock catch, with a corresponding decrease in the value of the fishery.
SHAD

About four times the quantity of shad were taken in 1928 than was caught in the previous year. After having been quiet for a number of years this, fishery seems to be coming back, particularly to the Miramichi waters.

## EELS

Although no great quantity of eels are taken in this district, the catch last year was 321 cwt., as against 32 cwt. in the year previous.

BASS
A decrease of 276 cmt . of bass were taken.

## ANGLING

On account of the scarcity of salmon, salmon angling was not very good in 1928. However, considerable grilse were taken. Trout fishing was excellent throughout the district in all fresh water streams.

## PROTECTION

There seems to have been better observance of the fishery laws throughout the district this year than ever before. Although the number of confiscations and prosecutions ran pretty high it was due to the vigilance of the overseers and guardians who were on the job all the time and interfered with practically all attempts at illegal fishing.

The number of confiscations would seem to show that considerable illegal activity was being carried on, but it is well known that the fishermen reaped very little benefit from such activity. Never during the past five years have the part time guardians attended to their duties as they did this year. The presence of two fast patrol boats was a great preventive of illegal fishing. In Kent county, north of the Chockpish, where during the close season of 1927 about 5,000 lobster traps were taken as a result of illegal fishing, in 1928 only 588 traps were seized. Continued co-operation in the enforcement of the lobster regulations has been forthcoming from both fishermen and dealers. In the past it has been known that in that part of District No. 8 in New Brunswick there was a considerable destruction of berried lobsters by fishermen. As the ratio of the berried lobster to the male was about 50 per cent, there was a great temptation on the part of the fishermen to brush off the berries and sell the thus brushed lobsters to the canneries and lobster pounds. Last year a drive was made against this traffic, with the result that eleven prosecutions were instituted and convictions secured. Heavy penalties were imposed which had the desired result. It is intended that there shall be no let up in the strict enforcement of this part of the lobster regulations.

## SEALS

There has been less complaint than previously, from the salmon fishermen about the destruction of salmon and nets by hair seals. The bounty of $\$ 3.50$ seems to be sufficient incentive to the fishermen to engage in the destruction of these marauders. In 1928 there was $\$ 1,988$ expended in bounties in this district, and probably as much more could have been paid were the funds available. The bounty system for the destruction of seals seems to be the most effective way of getting rid of them. In addition to the amount received from bounties, some fishermen received from $\$ 2$ to $\$ 3$ for the skins of baby seals. A couple of men from the province of Quebec spent considerable time in the district engaging in the destruction themselves and buying skins from the fishermen. No move seems to have been made to market the oil.

## PROSECUTIONS

Throughout 1928 there were 54 prosecutions all told, as against 63 in the year previous. There were 109 confiscations as against 130 for 1927. Prosecutions were for offences as follows:-

| Offence | Prosecutions |
| :---: | :---: |
| Breaches of the Lobster Regulations. | 18 |
| " Oyster ${ }^{\text {" }}$ S ${ }^{\text {Salmon }}$ | 19 |
| $" \quad$ Samon " | 11 |
| Interference with an officer...... | 3 |
|  | 1 |
|  | 54 |

LICENSES
The following licenses were issued during the year:-

| Class of license | No. issued |
| :---: | :---: |
| Smelt bag-net licenses. | 6,460 |
| Lobster fishing licenses. | 1,981 |
| Oyster fishing licenses. | 850 |
| Salmon trap-net, pound-net or weir licenses. | 395 |
| Smelt gill-net licenses. | 225 |
| Salmon gill-net or drift net licenses. | 111 |
| Lobster packing licenses. | $103 \text { (1 can- }$ |
| Quahaug fishing licenses. | 85 |
| Bass fishing licenses.. | 54 |
| Gaspereau pound-net or trap-net licenses. | 45 |
| Lobster packing extension licenses.. | 41 |
| Cannery licenses...... | 7 |
| Lobster pound licenses. | 3 |
| Total. | 10,360 |

The amount of fines collected for the year was $\$ \mathbf{1 , 1 0 1}$, and the amount received from the sale of confiscated property was $\$ 435.84$.

## REPORT OF SUPERVISOR H. E. HARRISON, DISTRICT No. 3, NEW BRUNSWICK, FOR 1928-29

In District No. 3, New Brunswick, are included the counties of Kings, Queens, Sunbury, York, Carleton, Victoria, Madawaska and the tidal waters of the Northwest and Southwest Miramichi rivers in Northumberland county.

Ninety miles of the Saint John river were clear of ice on April 15, but there was much ice in the river above that, and a very heavy jam just above Fredericton, most of it remaining until wasted by the sun some weeks later. Much damage was done by the up-river ice, as most of the barns and large trees on the islands were swept away. Fresh alewives were on sale in Fredericton on April 13, having been taken thirty miles below on the 10 th of that month, and the freshet reached eighteen feet over low-level on April 14. On April 21 three bright salmon were caught ninety-five miles in from the bay of Fundy and sold in the Fredericton market. The Southwest Miramichi river was pretty well clear of ice on April 15. The first shad that I have record of was taken May 17 fifty miles in from the bay of Fundy, and the first taken at Grand Falls, more than 200 miles in from the bay, were on June 5 . Shad were in the Southwest and Northwest Miramichi rivers in large numbers on the first of June, but very few salmon had reached those rivers at that date. The weather, mostly, was stormy or unsettled well into June and all waters were high; therefore, alewives, shad, and salmon had good opportunity to reach all upper waters before nets could bother them much. In some respects the season's operations were exceedingly satisfactory, while in other respects the commercial fisheries were quite unsatisfactory.

The total weight and value to the fishermen of the catches of commercial fish for the years 1927 and 1928 are as follows:-

| Year | Cwt. | Value |
| :---: | :---: | :---: |
| 27. | 11,723 | \$ 39,624 |
| 1928 | 6,235 | 37,835 |

There was thus a decrease in weight of $5,488 \mathrm{cwt}$., nearly 50 per cent, in 1928, but a decrease in value of only $\$ 1,789$, a little over 4 per cent. Had there been any reasonable demand for alewives and shad in the Miramichi district the statistics would have made a very favourable showing for 1928.

ALEWIVES

| Year |  | Cwt. | Value |
| :---: | :---: | :---: | :---: |
| 1927. |  | 9,144 | \$ 13,432 |
| 1928. |  | 1,988 | 3,589 |

It would appear that the fishermen of the Miramichi area must adjust themselves, as the alewife fishermen of the Saint John river area had to do some years ago, to greatly changed conditions. While the 1927 season was considered bad, in that price was low and sales were slow, the fishermen eventually got rid of most of their pack at some price, but it is understood that the dealers had difficulty later. A decrease in 1928 of $7,156 \mathrm{cwt}$. and $\$ 9,843$, practically the whole of which was in the Miramichi district as the Saint John river area is not a heavy producer now, means considerable to the fishermen. The reason for the lack of demand in the Miramichi district is not altogether clear. It is said that other fish are taking the place of alewives in their former market, while, on the other hand, it is said that the fishermen do not pack their fish properly and exporters do not care to handle them. Whatever the cause, the effect is a serious matter for the fishermen, and to the whole community, as it was, and is yet, in the Saint John river district. It would be of great benefit if the alewife fishery could be placed on a paying basis again.

## BASS

The bass fishery of the Miramichi district is nil at present, and is practically so on the Saint John river area as well.

EELS


The catch of eels in 1928 was gratifying and the increase over that of 1927 substantial. In the Saint John river they are taken in pots, or traps, and sold for only $\$ 4$ per cwt., while in the Northwest Miramichi river they are taken by spearing through the ice in the daytime and sold for $\$ 7$ per cwt. The Indians in Nelson reserve follow this fishery.

## MULLETS

A proportionately large increase in mullet catch is recorded for 1928, 365 cwt. against 255 cwt. in 1927. Mullets are quite a favourite dish with the Jewish population.

PICKEREL

| Year |  | Cwt. |  | Value |
| :---: | :---: | :---: | :---: | :---: |
| 1927. |  | 480 |  | 5,560 |
| 1928. |  | 450 |  | 5,850 |

While this fishery shows a decrease of 30 cwt. in 1928 , it also shows a slightly increased value, indicating a very satisfactory price on the market. This fishery is not too greatly exploited.

SALMON

| Year | Cwt. | Value |
| :---: | :---: | :---: |
| 1927. | 633 | \$ 13,075 |
| 1928.. | 585 | 14,262 |

It is unfortunate to be compelled again to report a decrease in the catch of salmon in 1928, amounting to 48 cwt., with an increase in value, but the figures compared with those for the previous year do not indicate a serious condition, but when they are compared with those for some previous years the case is worthy of more comment. The Miramichi district appears to have produced about the same as it did in 1927, which is not a creditable showing
when compared with former catches, but the Saint John river is clisappointing; however, it appears to have been a lean season in all parts of New Brunswick. A considerable proportion of the licensed salmon fishermen, both in the Miramichi and Saint John river districts, made no attempt to operate their stands during the past season. There is always more or less of this condition, but the number that did not operate in 1928 was much greater than usual. There are two reasons for this, one being that a number of persons always take out licenses, or permits, to operate, but seldom operate, intending only to make secure their stands for the future. Another class are those who will not go to the expense of purchasing nets, or, if they already have nets, of operating, until they hear of a neighbour making some good catches that would make it worth while setting up a stand. Conditions in 1928 did not warrant many in going to any expense. In confirmation of this statement may be cited an instance.

On the 6th of August, Overseer McNally left Meductic in a canoe at twelve o'clock (noon) and landed at Springhill at twelve o'clock (midnight), a distance of 47 miles, 43 of which is non-tidal water of the Saint John river. In this area of forty-three miles fifty-eight persons had permits to operate salmon nets and there was evidence of only twenty-three having been operated during the season. The officer stated that this was about the proportion of stands that had been in the river during the season; therefore the number of licenses and permits issued is not very good evidence, to those who do not know conditions, of the number of stands being operated. A visit to Overseer Parks' district, earlier in the season, showed a like, or greater, proportion of stands not being operated in both tidal and non-tidal waters of the two Miramichi rivers. These instances would appear to indicate that salmon were not running into the rivers in very great numbers. During the early part of the season, particularly in York and Carleton counties, indications were that there would be a large run of fish, but the run slackened off in July and in August it was very small. In Kings county conditions were somewhat reversed; whereas the catch was very light in the early part of the season, it was much better in August. The number of nets operated in the Saint John river-the river being large and the nets very small-should not jeopardise the salmon fishery of that river. While the Northwest and Southwest Miramichi rivers are large to the head of tide, the nets also are very large affairs; in the non-tidal area of the Southwest the nets are exceedingly small affairs.

SHAD


An increase of about 1,000 cwt., or nearly 100 per cent over the catch of shad in 1927, ought to be quite satisfactory, at least to the consumers and to the department. Going inte details, there are some peculiar features in connection with the shad fishery in 1928, particularly the Saint John river system part of it. After shad come from the bay of Fundy they are in the Saint John river in Kinge county, but only a comparatively small proportion is taken there, and only in the uppermost portion of Kennebecasis bay and the lowermost end of that river are they taken in quantities. In 1926 the reported catch in this area (Kings county) was 320 cwt. In 1927 it was 248 cwt., less by 72 cwt. ; in 1928 it was reported as 156 cwt., less again by 92 cwt. Coming into the next district above (Queens county) the Saint John river district, the catch reported in 1926 was 128 cwt., 1927, 32 cwt. and for 1928,37 cwt., while in the Washademoak district conditions are reversed. In 1926 the reported catch was 235 cwt., in 1927 it was 348 cwt ., and 1928 it is 732 cwt ., an increase of more than 100 per cent in 1928 over 1927 . Why shad swarmed in the Washademoak lake district in 1928 is a matter for speculation. In Sunbury county
the catch was half what it was in 1927, in York county it was double and in Victoria county it was a little better than in 1927, but the catch in the Washademoak lake region was three times what it was in all of the rest of the Saint John river system, and the total in the Saint John river system is 300 cwt. better than it was in 1927. Shad remained in the upper part of the river, at Grand Falls, very late. Officer Robertson reported that there were plenty of shad breaking water on the night of July 7 last year. That is unusual.

Some time was spent by the officers and Supervisor with Mr. Giffin, representing the Biological Board, in collecting data on the shad in the Saint John river and tributaries.

Coming to the Southwest and Northwest Miramichi rivers the 1928 return is even more striking than is that for the Washademoak lake section. For the former area Overseer Parks gave the 1927 catch as 343 cwt., and that of 1928 as $1,040 \mathrm{cwt}$., an increase of more than 200 per cent, and he said that shad were so plentiful that they were offered for sale at 5 cents per fish and when they did not move at that low price some fishermen offered them free to any person who would take them from the nets. The fishermen could not come out of this very well financially, but consumers were supplied with an excellent, cheap food.

## STURGEON

Although the sturgeon fishery of the Saint John river is not of very large proportions, it is pleasing to note that the catch went up from 24 cwt in 1927 to 67 cwt. in 1928 , and the value from $\$ 22$ to $\$ 35$ per cwt. in 1928 . No caviar was secured in 1927 while 300 pounds were obtained in 1928, worth $\$ 1$ per pound. A fairly good number of very large fish were taken in 1928, while they were small the previous year.

## DOMESTIC FISHERIES

All fish taken by rod and line in this inspectoral district are classed as domestic. The totals, both weight and value, show an increase in 1928, as follows:-

| Year | Cwt. | Value |
| :---: | :---: | :---: |
| 1927. | 598 | S 11,115 |
| 1938. | 710 | 12,830 |

On the whole, rod and line fishing was fairly satisfactory in 1928. Botlo salmon and trout make a better showing than in 1927, but the increase does not appear to have been evenly distributed; for instance, while the upper water ${ }^{\text {a }}$ of the Southwest Miramichi river (Carleton county) shows a slightly better catch than in 1927, the central part (York county) shows a considerable decrease and the lower part (Northumberland county) a very large increase. The latter condition is explained by Officer Parks as the result of a largely increased number of early-spring anglers on Cains river, and to some extent on the Southwest Miramichi river. Cains river is leased by the provincial Government to Mr. W. H. Allen, who reports that he had 146 anglers, practically all United States citizens, on the two rivers during the 1928 fishing season. These men, and some women, stay from one to two weeks and while they retain only what fish they require for camp food, and a very few to take home with them, the total of their catch is considerable. There is no evidence that any of the fish are wasted and apparently no evidence that the fish that have been hooked and voluntarily liberated are hurt, and a large majority are liberated. These are fish that have ascended the Miramichi and Cains rivers the previous season, and remained in fresh water during the winter, and are ready to eat almost anything on their way back to salt water. The down-run fish are mostly salmon of medium to fairly large, while the up-run, or fresh-run, fish in the Southwest Miramichi are mostly grilse, two to four
pounds. More mature salmon are taken in the Northwest than in the Southwest Miramichi river, and, proportionately, the rod fishing yielded as well, or better, than the net fishing.

Sea trout fishing on these waters was excellent; said to be the best it has been for many years, and one trout of seven pounds weight was taken from the Northwest river area.

Salmon angling on the Saint John river was not good. More or less are taken between Fredericton and the mouth of the Tobique river, but the water needs to be fairly low for good salmon angling on this river, and it was too high nearly all of the 1928 season. The Tobique river catch also fell off in 1928, 47 cwt. being taken as against 86 cwt. in 1927, 65 cwt. in 1926 and 48 cwt. in 1925, and smaller quantities previous to that. It was reported on the Tobique last season that a prolific run ascended the river during the spring freshet and passed up to the head waters without stopping in the pools as they usually do. It would appear that this might have been the case as bright, or fresh-run, salmon were taken in nets in the Saint John river earlier than usual.

Landlocked salmon and trout fishing on the Saint Croix river and adjoining waters, in this district, was very satisfactory in 1928.

In connection with the operations of the Tobique Salmon club on the Tobique river, it may be pointed out that from the time of the organization of the club, nearly forty years ago, Thomas F. Allen was the superintendent of the club and gave very faithful service. When Mr. Allen first took charge of that portion of the river which the New Brunswick Government had the right to lease, consisting of water flowing through Crown lands, conditions were very bad, as the natives had been, and were, taking every possible fish by every possible means that could be taken. The first year's operations by the club netted it seven salmon. Between that time and the year 1927, with the splendid service Mr . Allen and his assistants gave, together with modern regulations applied to the Saint John river, in net fishing in the non-tidal area and a much more satisfactory protective service in the latter area, as well as on the whole river during recent years, angling grew from seven salmon taken about 1889 to 86 cwt. in 1927, representing, probably, from twelve to fifteen hundred salmon and grilse.

## PROSECUTIONS

Twenty-five persons were prosecuted, before magistrates, for violations of the act and regulations during 1928. All were convicted and penalties were struck. Sixteen were required to pay fines amounting to $\$ 355$ and costs. In eight cases fines amounting to $\$ 500$ were imposed and suspended, but the defendants paid costs in each case. In one case the defendant was fined $\$ 50$ with costs against him, but he left the district immediately and has not returned yet.

## seizures and confiscations

During the year seventy-two confiscations were made, some of which consisted of two or more twine or woven-wire nets under one seizure and confiscation. A few salmon were taken with the nets and if alive they were liberated, or if dead they were sold. The seized materials would cost the operators $\$ 500$, at a low valuation. Most of it was destroyed, either because it was illegal material at any time or that it was difficult for the officer and guardians to handle while on patrol. Some legal nets are stored at this office for future sale. Materials to the value of $\$ 95.80$ were sold. Most of this was material seized in the previous year. As usual, a great amount of illegal salmon fishing was attempted on the Southwest Miramichi river, mostly after the legal salmon netting season was past, but the number of seizures would indicate that all were not successful in the attempts. Overseer Parks and most of his guardians did
very effective work. With a firm hand, it will not be long befere such people of the Southwest Miramichi river district as are inclined to practice illegal fishing for salmon will see the error of it.

## FISHERY LICENSES

The following licenses and permits were issued during the year:-

| Kind of license | 1927 | 1928 |
| :---: | :---: | :---: |
| Salmon gill-net or drift-net. | 120 | 122 |
| Salmon net permit.......... | 172 | 159 |
| Salmon pound-net, trap-net or weir. | 109 | 102 |
| Shad gill-net or drift-net.......... | 282 | 270 |
| Gaspereau pound-net or trap-net | 27 | $\varepsilon$ |
| Bass fishery.... | 28 | 40 |
| Sturgeon fishery. | 13 | 10 |
| Smelt gill-net..... | ${ }_{13}^{1}$ | 14 |
| Whitefish fishery | 13 | 14 |

## REVENTE

Revenue from all sources during the year was as follows:-

| Licenses and permits: | § 49285 |
| :---: | :---: |
| Prosecutions (fines). | 35500 |
| Sale of seized materia | 9580 |
|  | \$943 65 |

## REPORT OF SUPERVISOR J. B. SKAPTASON, PROVINCE OF MANITOBA, FOR 1928-29

The total commercial production of all fish for the calendar year-307,321 cwt.-shows a decrease from the previous year of $15,646 \mathrm{cwt}$., though seventyseven more men were employed. The reason may be largely ascribed to very unseasonable fall weather delaying commencement of winter fishing ten to twenty days, owing to late freeze-up. Immediately following the freeze-up, further trouble was experienced by continued breaking up of the ice on all the larger lakes, which resulted in losses of thousands of nets; there are several instances where gangs lost their entire outfits. This further disorganized the operations, as in some instances men never lifted a net and quit, while others carried on with much impaired outfits.

The estimated loss in nets may be reasonably summed up as follows:-

|  | No. | Value |
| :---: | :---: | :---: |
| Lake Wimmipeg. | 2,000 | \$ 15,000 |
| Lake Manitoba. | 2,800 | 19,600 |
| Lake Winnipegosis | 1,000 | 8,000 |
|  | 5,800 | \$42,600 |

Individual misfortune has thus hit hard in places, but the industry as a whole has enjoyed a much better year than in 1927. With a decrease in production of over two million pounds, the price paid to fishermen was $\$ 198,296$ greater, and the value, as marketed, $\$ 200,576$ higher than 1927.

The following figures will show the fluctuations in catch and prices as marketed of the principal varieties for the two years:-


The following figures give the production and value by years for the past five years:-

| Year | Quantity | Landerl value to fishermen | ```Value as marketed``` | Number men employed |
| :---: | :---: | :---: | :---: | :---: |
| 1994 | cwt. | \$88.410 | ${ }_{1}{ }^{\text {S }}$ S 563 |  |
| 1925 | 190,240 | 1,061,331 | 1,466,939 | - 3,890 |
| 1926. | 304,307 | 1,744,642 | 2,328,803 | 3,809 |
| 1927. | 322,967 | 1,422,680 | 2,039,738 | 4,095 |
| 1928. | 307,321 | 1,620,976 | 2,240,314 | 4,172 |

The following are comparative prices, as marketed, of the more important species for the five years from 1924 to 1928 inclusive:-

| - | 1924 | 1925 | 1926 | 1927 | 1928 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Catfish. | 11-1 | 10.6 | 11.3 | $12 \cdot 3$ | $9 \cdot 9$ |
| Goldeyes. | $4 \cdot 4$ | $4 \cdot 2$ | $4 \cdot 0$ | $4 \cdot 7$ | $6 \cdot 4$ |
| Perch. | $10 \cdot 6$ | 11.2 | 13.4 | 10.9 | 12.7 |
| Pickerel. | $8 \cdot 5$ | 11.5 | $10 \cdot 3$ | $8 \cdot 0$ | $9 \cdot 0$ |
| Pike. | $3 \cdot 5$ | 4.0 | 4.0 | $3 \cdot 7$ | $4 \cdot 0$ |
| Sturgeon. | 50.0 | 40.9 | 51.6 | 53.9 | 57.5 |
| Trout.. | 10.0 | $9 \cdot 0$ | 11.0 | 10.9 | $10 \cdot 8$ |
| Tullibee | 3-6 | $4 \cdot 1$ | $5 \cdot 9$ | $4 \cdot 0$ | 5.4 |
| Whitefish. | $9 \cdot 5$ | 9.5 | $9 \cdot 0$ | $8 \cdot 5$ | $10 \cdot 5$ |
| For total catch. | 6.9 | $7 \cdot 4$ | 7.6 | $6 \cdot 1$ | 7.2 |

The very small yield of sturgeon as shown by the report is owing to the change made in regulations putting an absolute closure on lake Winnipeg and permitting of sturgeon fishing in the northern areas of the province in winter only. Then in the case of the Churchill river, and other waters situated immediately west of the border of Manitoba and administered from here, in the past, the production of these waters had been included in the Manitoba returns but will now for the first time be included in that of Saskatchewan, both as to sturgeon and other fish.

## THE SUB-DISTRICT OF THE PAS

This sub-district comprises all waters north of and including the Big Saskatchewan river, but not lake Winnipeg.

This district is now undergoing great clanges, all of which more or less directly affect the fishing industry. A railway now completed to the Flin-Flon
mining property, with an extension from Cranberry portage to the SherrittGordon properties, will bring within easy distance of railways many lakes and rivers that have in the past been too far from The Pas to permit of profitable fishing owing to the high cost of freighting by teams. Now where rail transport ends, tractors with trailers take over the transportation of freight. As as instance of this change and benefits, the following may be cited:-

The areas of the Churchill waters situated between Pelican narrows and Island falls (power development is now going on at the latter place for the Flin-Flon mines) is the centre of the main sturgeon fishery of the Churchill. It was a twenty-day round trip with teams to bring the fish to The Pas; now the fish is loaded on tractors and landed the same day at railhead at the Flin-Flon, and the following day taken by train to The Pas. With the extension of the railway under way from Cranberry portage north to Cold or Kississing lake, the location of the Sherritt-Gordon properties, it may be said that all the waters along the western part of these northern areas of Manitoba will be brought within easy reach of railway transportation; even such lakes as Reindeer and South Indian will be brought within one hundred miles, which in the older part of the province is not thought a great distance to haul fish.

Beginning with this year a change is made in reporting the production of The Pas district. Heretofore the entire production has been shown in one report. A division has now been made, dividing the water areas into groups. The system followed in the grouping is that of placing all lakes that are in the same drainage or water course in one unit. Thus five groups are created. Group 1 consists of Cold lake; Group 2, Athapapuskow and Egg lakes; Group 3, Cedar, Moose, Cormorant and Clearwater lakes; Group 4, Pikwitonia, Partridge Crop, Matawanan, Wintering and Kiska; Group 5, Long and Landing lakes, and the Nelson river and tributaries above Split lake.

During the past year summer fishing was carried on in Moose lake in a limited way. One license was also given on each of the following lakes: Clearwater, Cold or Kississing, Partridge Crop, and Athapapuskow. Summer fishing on the last four lakes was permitted solely for the purpose of supplying the local demand in connection with the mining operations and railway construction work, and none whatever was exported. It was therefore all included in the one statistical report for summer fishing.

The following are figures for production by lakes and group, both summer and winter, for The Pas sub-districts:-

| Lakes | Whites | Pickerel | Trout | Mixed | Men ${ }^{\text {a }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Grour 1 | cwt. | cwt. | cwt. | cwt. |  |
| Cold.................. ${ }^{\text {Group } 2}$ | 200 | 12 | 70 | 50 | 3 |
| Athapapuskow.......... | 508 | 301 | 130 | 35 | 8 |
| Clearwater.. | 596 |  | 125 | 27 | 17 |
| Cormorant. | 1, 024 | 266 | 125 | 95 | 21 |
| Moose. | 3,285 | 871 | 375 | 280 |  |
| Group 4 |  |  | 25 |  | 6 |
| Pikwitonia... | 12 |  |  |  |  |
| Wintering...... | - 120 |  |  | 48 | 1 |
| Partridge crop. Matawanan... | 460 |  |  | 60 | 4 |
| Kiska...... | 65 310 |  |  |  | 1 |
| Herb. | 820 |  |  | 180 | 3 |
| Little herb. | 210 | 103 |  | 210 | 13 |
| Reed..................... | 1,250 | 460 | 178 | 274 | 14 |
| Long.................... | 25 |  |  |  |  |
| Landing. ..... | 200 |  |  | 80 |  |
| Nelson River. |  | Sturgeon 5 cwt . |  |  | 4 |

Attention should be drawn to the fact that in these northern areas fishing, in most cases so far, is carried on as a side issue to trapping and prospecting. In many instances the men operating have only a few nets, or only a small part of what is allowed under the license.

Lake Winnipegosis shows a general decrease in production. This is particularly noticeable in the unlimited winter operations. With eleven more men operating, the total decrease was 4,439 cwt.; however, the better prices obtained more than made up to the fishermen this shortage as the price realized by them was $\$ 61,169$ greater than in the previous year. The shortage in the catch is nowhere outstanding but is spread over all varieties, excepting whitefish, which shows a slight increase.

In summer this lake is fished under a limit of one million pounds for whitefish and pickerel, with a time limit of seven weeks ending on the first Saturday in October. During this operation pickerel showed up wonderfully well; in fact some of the greatest catches in the history of the lake were recorded. The limit was taken in one day under four weeks, or in nineteen lifts.

The following are comparative figures for 1927 and 1928 for Lake Winni-pegosis:-

| - | 1927 |  |  |  | 1928 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Whites | Pickerel | Mixed fish | $\underset{\text { men }}{\text { Number }}$ | Whites | Pickerel | Mixed fish | $\underset{\substack{\text { Number } \\ \text { men }}}{ }$ |
|  | cwt. | cwt. | cwt. |  | cwt. | cwt. | cret. |  |
| Summer. | 2,073 | 8,748 | 1,419 | 182 | 1,323 | 8,668 | 1,571 | 211 |
| Winter.. | 5,114 | 16,644 | 27,596 | 396 | 5,422 | 16, 204 | 23,289 | 407 |

Lake Dauphin shows another big increase in production. For several years prior to 1927 this lake had shown a gradual decrease in production, which culminated in a low mark for the winter of 1925-26. Many fishermen had decided not to operate there the following winter. However, the winter of 1926-27 showed a reversal of conditions to such an extent that, with four less men fishing than in the previous winter, the production was more than doubled; again last year the production nearly doubled. The following shows the catch for the last three years:-

|  | Total catch | Number of men |
| :---: | :---: | :---: |
|  | crut. |  |
| 1926. | 876 | 25 |
| 1927. | 2,313 | 21 |
| 1928. | 3,844 | 47 |

Lake Waterhen shows a very considerable decrease in production in almost every variety of fisl. This is particularly noticeable in the case of whitefish.

Lake Manitoba.-This lake records a very sharp decline for the year. The following are figures for five years past:-

|  | 1924 | 1925 | 1926 | 1927 | 1928 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Number of fishermen. | 779 | 905 | 1,128 | 1,126 | 1,082 |
| Total production.. Catch per man... | cwt. $48,658$ $62$ | civt. $\begin{array}{r} 51,587 \\ 57 \end{array}$ | cwt. 85,256 76 | cwt. <br> 77,858 69 | cut. $\begin{array}{r} 57,463 \\ 53 \end{array}$ |

The decrease is in every variety excepting mullets, and is particularly noticeable in the tullibee catch, which is little more than half that of the previous year. This general decrease can be fairly assumed to be caused by, the late freeze-up which delayed the general setting of nets pretty well until the end of November when the main tullibee run was over. An added factor was the constant breaking up of the ice well into December, with a loss of nearly 3,000 nets and a general disorganization of operations.

There is very general satisfaction amongst all concerned in the industry over the building of the pickerel hatchery at the mouth of Swan creek.

Lake St. Martin shows some increase as against 1927. With a normal freeze-up this increase no doubt would have been considerably greater. The lake is shallow and usually very little fishing is done there; after the first of the year, it is thought, the fish return, with the setting in of cold weather and thick ice, to the deeper waters of lake Manitoba and lake Winnipeg.

Lake Winnipeg.-This lake has, on the whole, had a fairly good year, comparable even to the record year of 1927. With 78 more men operating, the production increased 7,172 cwts. While sturgeon, our high price fish, is eliminated owing to change in regulation, there is an increase both in price to fishermen and as marketed to correspond fully with the increase in production.

The following are comparative figures for 1927 and 1928:-

| - | 1927 |  |  |  |  | 1928 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Whites cwt. | $\begin{gathered} \text { Picker- } \\ \text { el } \\ \text { cwt. } \end{gathered}$ | Tullibee cwt. | Other fish cwt. | Men | Whites cwt. | Pickerel cwt. | Tullibee cwt | Other fish cwt. | Men |
| Summer. | 25,679 | 30,724 | 19,475 | 9,822 | 1,418 | 26,538 | 32,407 | 30,739 | 8,251 | 1,483 |
| Winter. | 2,581 | 12,887 | 52,160 | 8,269 | 678 | 4,355 | 16,772 | 41,368 | 11, 166 | 691 |
| Total. | 28,260 | 43,611 | 71,575 | 18,091 | 2,096 | 30,893 | 49,179 | 72,107 | 16,520 | 2,174 |

It will be noted there is no great difference in any of the varieties in the two years. The chief increase is in pickerel, $5,568 \mathrm{cwt}$., and whitefish, $2,633 \mathrm{cwt}$.

There is a very decided increase in open water tullibee production amounting to more than a million pounds. The reason for this was the mild weather and long open fall, which permitted uninterrupted fishing by boats right to the end of the season, the 10th of November. A falling off in the winter production, however, brings the total for the year to only slightly more than 1927.

The increase in pickerel, which is shown in both summer and winter production, is most encouraging, and there is a general tone of optimism amongst dealers and fishermen.

The summer whitefish season of that area of the lake, to the north of Berens island is from June 1 to August 15, and for a limit of $3,000,000$ pounds of whitefish and pickerel combined. While about 170,000 pounds less than this limit was taken, it was not so much shortage of fish as because of other causes, the chief of which seems to have been that the whitefish had gone to fishing grounds towards the west shores of the lake, where it has not been found in any large quantities for many years, and where the operators were not in a position to go owing to absence of ice and other convenience. A few sets made in the vicinity of Reindeer and Horse islands produced big catches.

## DEVELOPMENTS

The most important development in the industry during the year is the formation of a "Fish Pool". This is known as the Manitoba Co-operative Fisheries, incorporated under the Manitoba Co-operative Societies Act. The president and organizer is Paul Reykdal, and the manager G. F. Jonasson. The head office has been opened at 325 Main street, Winnipeg. The pool commenced operations with the opening of the present winter season.

This co-operative effort has been discussed for a number of years by fishermen and independent dealers, but no definite action was taken until about two years ago when the matter was laid before the Manitoba Co-operative Marketing Board. After some inquiries they decided to make a thorough investigation of the industry so as to enable them to make a recommendation. Things developed so rapidly, however, that those most interested, particularly in fresh fish production, felt they could not wait. In the winter of 1927-28 a powerful New York syndicate of commission men and dealers undertook to set a price for fresh fish. These prices were regarded by the fishermen as entirely out of reason for profitable operation. It was also reported that the intention was to further to decree that all fresh fish going to New York must come through one source, generally thought to be controlled by the same New York syndicate. This, whether true or not, seemed to the fishermen to necessitate immediate action. The result was an organization fully formed by mid-summer.

The present membership of the pool is 515 , which represents from 1,000 to 1,200 fishermen, as some work with one or more hired men who do not take out membership. The biggest and most representative membership is from lake Manitoba. Lake Winnipeg has the smallest representative membership, compared with number of men and quantity of production, but that is a natural condition until such time as the pool is in a position to enter upon the summer field of operation. It is understood they are now endeavouring to face that situation for the coming summer. The lake carrier question is the big problem, next to that the cold storage.

Fishermen pool members seem to be convinced that they have derived very material benefits by their connection with the pool. There seems also a general feeling that prices, particularly on fresh fish, have been maintained at a steadier and higher level because of the operation of the pool, even in its present partially organized state.

The following figures show quantities of fish handled by the pool up to January 28, 1929, winter production only:-


It seems likely that between five and six million pounds will be handled by the pool during the winter, which should represent from 25 per cent to 35 per cent of the total catch.

A new fishing concern is in process of formation for the purpose of operating on lake Winnipeg. The only remaining waterfront served by the Selkirk dock has been purchased, and, according to published reports, a $\$ 20,000$ building program is to commence immediately. It is not known whether the intention is to establish stations on the lake or to buy from fishermen and dealers with independent plants.

There appears to be quite a tendency to break away from the old established order of things in the matter of summer fishing for whitefish on lake Winnipeg. There is a feeling that prices which have stood unvaried, regardless of market conditions, at 5 cents for whitefish for eleven or twelve years and $3 \frac{1}{2}$ cents and $2 \frac{1}{2}$ cents, respectively, for pickerel and tullibee, do not allow of a reasonable remuneration to the fishermen in a year of average production.

The whitefish is not getting more plentiful in the lake; it is true that in the last three years the limit has been taken, or nearly so, every year, but the number of fishermen has been constantly increasing; and with increasing number of motor-boats making it possible to follow the fish to remote areas, this result has been obtained. This, of course, is a much more expensive method of fishing and it is shown that yearly fewer and fewer of the fishermen come out on the right side of the ledger. Partly from necessity, and partly with the hope of an outlet through the pool, many are establishing small stations, particularly in the southern areas of the lake.

There is a great deal of speculation and interest evinced in the fishing possibilities of waters in the northern areas of the province, as well as Hudson Bay, now made accessible by the extension of various railways northward.

## ANGLING

The non-resident angling licenses issued have more than doubled in the year. The one day licenses predominate. The number of licenses issued and the revenue received were:-


These licenses are mostly issued to residents of North Dakota, who come across to spend a day or two fishing in lakes along the southern part of the province. The principal waters fished in 1928 were Oak lake, lake Killarney and Rock lake, and small lakes in the Turtle mountains. The fish available are pike, pickerel, perch, catfish or bullheads. A party of eight or ten in a special car came from Saskatoon, Saskatchewan, to try for speckled trout near Kettle rapids on the Nelson; some fine specimens were taken.

The following table shows the estimated quantity of fish taken by anglers during the 1928 season:-

|  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
|  |  |

Number of anglers and value of equipment-

| Resident | Value of Equipment | Non-resident | Value of Equipment |
| :---: | :---: | :---: | :---: |
| 5,000 | $\$ 8,000$ | 1,113 | $\$ 2,783$ |

[^0]
## PROSECUTIONS AND CONFISCATIONS

During the year there were 42 prosecutions in the province as follows:-
Fishing illegal nets............................................................................... ${ }_{2}^{3}$
Obstructing passage of fish
Illegal possession
Fishing without license.
Spearing fish..
Using fire arms.
Fishing in close season
Illegal sturgeon fishing
Tishing within prohibited area of fishway

There were 254 confiscations in the province during 1928 with the following results:-


The following table gives the estimated quantity and value of fish taken by Settlers in the Province for home use during 1928:-


Number of settlers permits issued, 1,160.

## REPORT OF SUPERVISOR G. C. MAcDONALD, PROVINCE OF SASKATCHEWAN, FOR 1928-29

During the calendar year 1928 the commercial production for the province of Saskatchewan was 61,931 cwt. of fish. This is an increase over the previous year of $4,131 \mathrm{cwt}$. The increases and decreases of the different species are:-

|  | Species | Increase | Decrease |
| :---: | :---: | :---: | :---: |
| Whitefish. |  | 2,344 |  |
| Pike. |  | 1,144 |  |
| Mullets. |  | 882 |  |
| Mixed.. |  | 1,023 |  |
| Sturgeon. |  | 342 |  |
| Herring. |  | 3 |  |
| Goldeyes. |  |  | 292 |
| Pickerel. |  |  | 699 |
| Tullibee. |  |  | 612 |
|  |  | 4,738 | 1,607 |

The increase in the total production during the year is partly due to an increase of 114 men fishing and also to the production on lakes located on the northeastern portion of the province being included this year which previously were included with the Manitoba production.

The total market value of the commercial production during the year is shown as $\$ 563,533$. This is an increase of $\$ 59,924$ over the previous year. There is an increase in value for the summer production of $\$ 1,786$ and of the winter production $\$ 58,138$. The increase in value is not only due to a larger production but also to an increase of $4,405 \mathrm{cwt}$ of green fish marketed during the winter season, which was largely whitefish and pike.

On some lakes the season was reduced to a short period, owing to the limits being reached on some during January, and also to the late freeze-up during December. Limits were reached on Waterhen lake on December 28, 1927, with the result that the production for 1928 from that lake was all taken during December of the year. Keeley and Liston lakes closed on January 4; Deep river, Makwa and Ministikwan lakes on the 10th; La Plonge and Dore on the 14th; Peter Pond and Churchill on the 17th; Murray on the 24th, and Shagwenan on the 31st.

The winter operations opened from five to twelve days after the first of December and during the early part of the fishing season fishing was confined to the shallow water, as some lakes did not freeze over until December 20. This, in conjunction with the extended mild weather during January, made it a difficult year for the winter fishermen, with the result that the increase in the production, with an increase in fishermen, is lower than it would have been if normal weather conditions had prevailed.

There is an increase shown in the total production of whitefish of $2,344 \mathrm{cwt}$. This is an increase on Des Isles lake of 205 cwt ., Isle a la Crosse lake 789 cwt ., La Ronge lake 312 cwt., Turtle lake 138 cwt., Long lake 197 cwt ., Churchill lake $4,283 \mathrm{cwt}$., and Murray lake 89 cwt . The 1927-28 winter limit was not reached on any of these lakes except Churchill and Murray, therefore allowing a longer fishing season. On Churchill the increase is due to a large increase in the number of fishermen operating during December, as is the case with Murray lake, where the number of men was doubled.

There is a decrease in the production of whitefish shown on Pierce lake of 30 cwt., on Makwa lake 135 cwt., Jackfish lake 51 cwt., Deep river 383 cwt., Candle lake 30 cwt., La Plonge 334 cwt., Peter Pond 727 cwt., Dore lake of 2,879 cwt., and Waterhen lake of 603 cwt . The 1927-28 limit was reached on all of these lakes before January 17, making a short fishing period during the winter season of 1927-28, except on Pierce, Jackfish and Candle lakes, where the decrease is only a small amount.

An increase is shown of $1,114 \mathrm{cwt}$. of pike, 882 cwt . mullets, and $1,023 \mathrm{cwt}$. of mixed fish, which is due largely to the shallow-water fishing during the early part of December on account of the deeper portion of the lakes being unfrozen. Isle a la Crosse lake alone increased 1,257 cwt., Churchill 214 cwt., La Ronge 52 cwt., Turtle 34 cwt., Des Isles 31 cwt., and Dore lake 52 cwt., with minor increases on other waters. Peter Pond shows a decrease of 302 cwt., and there were small decreases on other waters.

Sturgeon increased by 342 cwt ., due to the production from the Churchill river being transferred from Manitoba to this province this year.

There is a decrease shown of 292 cwt . of trout from the previous year, accounted for as follows: Lac La Ronge decreased 20 cwt., Pierce lake 26 cwt , La Plonge lake 83 cwt., and Little Trout and Green, which are now within the National Park and on which no fishing is now allowed, 40 cwt .; and an increase of 238 cwt . shown produced on lakes located on the northeastern portion of the province credited to Manitoba previously.

Pickerel showed a decrease of 699 cwt., largely on Churchill lake.
Tullibee decreased in production on a number of lakes throughout the province to a total decline of 612 cwt .

## SUMMER PRODUCTION

The summer production was 2,457 cwt., a decrease of 274 cwt. from the previous year. There is an increase shown in the marketed value of $\$ 1,786$. The decrease in production is due to no fishing on Jackfish lake and a decrease on Makwa. Owing to the limit being reduced, the prices obtained were higher than in the previous season. The high prices obtained for green winter-caught fish is having a great tendency to reduce summer production.

## GREEN FISH

There were $2,934 \mathrm{cwt}$. of fish marketed during the winter season in an unfrozen condition. Of this amount $2,872 \mathrm{cwt}$. of whitefish, 20 cwt . of trout, 26 cwt . of pickerel, and 6 cwt . of tullibee were produced. This is an increase over the previous year of 863 cwt . All of this production was shipped from the district northwest from North Battleford and principally from Jack fish, Murray, Turtle, and Makwa lakes.

## EQUIPMENT

The value of equipment used during the year was $\$ 118,627$, an increase of $\$ 26,660$ over the previous year. There has been an increase of 2,926 gill-nets, valued at $\$ 37,865$; four hoop nets valued at. $\$ 40$; eighty lines valued at $\$ 90$. This increase is all due to more yardage of nets allowed, and also to an increase in the number of fishermen operating. There is a decrease of 25 piers, 30 icehouses, 38 row-boats and 18 gas-boats, and 6 smoke-houses. This decrease is practically all due to the closing of Long lake and lakes in the North Battleford district against summer fishing.

## CONDITIONS OF FISHERIFS

The general conditions of the fisheries throughout the province are probably more favourable, due partly to the limit on most lakes. The result of stocking with whitefish fry during the past years is now becoming evident, especially on Jackfish and Okemasis lakes, where numbers of the fry planted during 1924 were taken, being easily distinguishable owing to the much brighter colour. Fox lake, Knee lake, and Frobisher lake, which are located north and west of Isle a la Crosse lake, have been opened up during the year and trails cut into them by the fish companies. This will result in other lakes being fished during the near future in that district. The only waters south of the North Saskatchewan river from which whitefish are taken are the small lakes in the Qu'Appelle valley, where restrictions may be necessary at an early date, due to the increased interest taken by anglers. Long lake is now closed for a period of three years, principally for the same reason.

Important information was obtained regarding Big Bear, Ballantyne and Deschambault lakes as a result of a trip made to that district by an officer. It was found that a trail has been established in the direction of these lakes by the railway survey line projecting from Nipiwan. This railway will open up a number of important fishing lakes and, with other proposed railways extending from Melfort and Prince Albert, will result in bringing important fisheries within a reasonable distance from the rail.

December was such an unusually mild month all through that it was feared the quality of the production might be lowered, but all fish were in a marketable condition; some were slightly discolored, due to a shortage of boxes and
the lack of snow to protect them from the weather, but there has been no wastage reported from, any district. The mild fall did result in more unspawned fish being taken during the fall season. Operations were delayed some during December by weather conditions but, on the whole, the season was considered as favourable to all concerned.

The extra yardage of nets allowed during the year was appreciated by the fishermen. Requests were received to close some lakes located within reasonable distance from the railroads against summer fishing, that the total production might be taken during the winter season, in order to obtain the higher price offered for green winter caught fish. This not only allows a larger return to the fishermen for whitefish but it prevents a wastage of the coarser species that it is difficult to dispose of during the summer season, but can be frozen and marketed.

## OBSERVANCE OF REGULATIONS

During the year there were 128 prosecutions and a conviction was obtained in all cases except four, resulting in penalties amounting to $\$ 585$ being imposed, and with additional court costs against the defendants of $\$ 281.70$ as follows:-

| Fishing during closed seaso | 45 |
| :---: | :---: |
| Fishing with illegal apparatus. | 42 |
| Fishing without a license. | 24 |
| Fish in possession during closed | 9 |
| Obstructing of Fishways. | 2 |
| Destruction of fry. | 1 |
| Fishing in prohibited area. | 1 |
|  | 124 |

There were also 111 confiscations made during the year, as follows:-


There were 29 sales of confiscated articles made during the year, amounting to $\$ 197.76$.

## FISHWAYS AND DAMS

Repairs were made on the Cowan river dam by the Department of Public Works. The fishway is now in good condition.

The Canadian National railways have repaired the fishway in the dam on the Vermilion river near Vermilion, and also in the dam on the Carrot river near Melfort. The McLure dam on Round Lake creek was also repaired. The matter of repairing all fishways in dams on the Moose Jaw creek is receiving attention.

The Canadian National railways have removed the dam on the Carrot river at Ridgedale and also the dam on the Turtle river near Mervin, and the same company constructed a dam on Bear creek near Fort Pitt and installed a fishway.

## DOMESTIC NET FISHING

There was a total production of fish taken under domestic net licenses of 15,449 cwt. during the year. This is an increase of $1,100 \mathrm{cwt}$. over the previous year and is largely due to including the production from the Peter Pond area, which was credited to Alberta during previous years. There was an increase of 123 domestic licenses issued. The matter of preventing commercial fishing from interfering with the local requirements of the residents is continually kept in view throughout the district.

## ANGLING

The estimated catch as reported by the various fishery officers during the year was 22,292 cwt. of all species of fish. This is a decrease from the previous year of 847 cwt ., though there was an estimated increase in the number of anglers of 299 . The average catch per angler was 52 pounds of fish as compared with 54 pounds the previous year. A number of the smaller waters which were stocked years ago now afford fairly good angling. Considerable interest is being taken by the angling associations throughout the province in the protection of fish, which must be appreciated, and close co-operation between these various bodies and the fishery officers is being encouraged.

## EXAMINATION OF WATERS

Twenty-one waters were examined in the district during the year by the officers to determine their suitability for fish. Of this number eighteen were reported to be suitable. Eight lakes were stocked by a transfer from other waters. Considerable assistance was given to the Fort Qu'Appelle hatchery officials in the moving of fry from the hatchery to the lakes, as well as in the transferring of fish from one lake to another during the year.

## REPORT OF SUPERVISOR R. T. RODD, PROVINCE OF ALBERTA, FOR 1928-29

During the calendar year 1928 there was an increase of $4,528 \mathrm{cwt}$. in catch over 1927. This was the greatest production yet caught in this province, but there was a small decrease in the value to fishermen. Increase is shown in the value as marketed due to the greater production of trout. This increase is chiefly attributable to lake Athabasca. Following are the details of this increase:-

|  | - | Quantity | Value to fishermen | Value as marketed |
| :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & 1927 . \\ & 1928 . \end{aligned}$ |  | $\begin{aligned} & \text { cwt. } \\ & 67,267 \\ & 71,795 \end{aligned}$ | $\begin{gathered} \$ \\ 434,903 \\ 422,306 \end{gathered}$ | $\begin{gathered} s \\ 712,469 \\ 725,050 \end{gathered}$ |
|  | Increase. | 4,478 | Decrease.. $\$ 12,597$ | Increase... ${ }^{\text {S12,581 }}$ |

In detail the increase shows 10 cwt gain in goldeyes, $2,442 \mathrm{cwt}$. in mixed fish, 144 cwt . in perch, $1,753 \mathrm{cwt}$. in pickerel, $8,489 \mathrm{cwt}$. in trout, $1,652 \mathrm{cwt}$. in tullibee, and decreases of 751 cwt . of mullets, $3,816 \mathrm{cwt}$. of pike, and 5,335 cwt. of whitefish.

The number of employees for the year 1927 was 1,161 and for 1928 it was 1,401 .

An increase will be noticed in the summer season (commercial) chiefly due to the successful operations on lake Athabasca.

Fishing was generally good in the summer in the larger lakes, lac la Biche fishing particularly well with a large proportion running to jumbo whitefish, for which good prices were obtainable.

Storms were again prevalent towards the late fall in Lesser Slave lake which affected fishing, and some of the fishermen complain of loss of equipment running to 100 per cent. Conditions at this lake, however, are fairly stationary and thus satisfactory.

Fishing as regards operations shows somewhat of a decrease, weather conditions being most unsatisfactory and unusual. Warm weather prevailed until
late December, and many lakes including Cold lake were unfishable owing to open water. Trails were in bad condition, owing to lack of snow, and operations were necessarily curtailed in all lakes some distance away from the rail.

To date (January 25, 1929) the issue of licenses, etc., is as follows:-

| Angling permits. | 5,830 |
| :---: | :---: |
| Commercial and fisherman licenses. | 1,064 |
| Domestic licenses. | 252 |
| Indian and half-breed. | 976 |
| Total. | 8,122 |

## INCREASES

Summer fishing shows a total increase of $1,145,000$ pounds over that of 1927, attributable in a large measure to lake Athabasca and lac la Biche. The greatest increase in any one species was in the case of trout. It is very gratifying to note the splendid product now obtainable at lake Athabasca; substantial increase by way of new equipment and better and quicker facilities for marketing have assisted materially in the marketing of the fish from the lake and has contributed in no small measure to this increase. Lac la Biche fished particularly well, many of the fishermen using large sized mesh nets and the product from the lake was marketed at good prices because of the large size of the jumbo whitefish variety. Lake Wabamun also showed up well, both as regards winter and summer production, and owing to its proximity to the large towns had no difficulty in marketing every pound of fish at prevailing good prices. Much satisfaction is evident in this district with the good results of the limitation. During the winter season Primrose, lac la Biche, Pigeon and Wabamun, as well as lac la Biche, were steady in production with slight increases evident over 1927.

## DECREASES

The winter fishing season was seriously curtailed through unseasonable weather, an amount of 689,200 pounds less than was reported for 1927 being shown. The principal lakes reporting a decrease were Lesser Slave lake; Cold lake, where boats had to be used and also because of new regulations confining fishing to within one mile of shore where skim ice had formed; Winnifred lake, a great decrease due to depletion and the heavy fishing of 1926 and 1927. It is considered on every side that the limits now placed on the lakes in this province are a necessary protective measure and that all the limits are fairly safe, and that, given good climatic conditions, all the lakes can safely produce the figures respectively set for them, without fear of depletion.

## LAKE ATHABASCA

Operations at this lake area give cause for satisfaction. The fish are becoming a marketable product in increasing quantities, and progressive advertising being conducive of good results. A slicing machine was purchased by one of the companies, the trout being carefully sliced and frozen, then packed in wax paper, attractively branded and shipped. This has produced good results. The equipment on this lake has improved a great deal, two new steam tugs having been purchased, as well as two refrigerator barges. With the new equipment, together with new camps and refrigerators, there is no doubt that the Athabasca product is favourably considered in eastern markets. A projected fish reducing plant for coarse fish, mainly suckers, is one of the predicted developments on lake Athabasca for 1929. The canning factory at this lake is still not in use, but the equipment and the buildings have been repaired and are in use.

## MARKETS

Spring prices were fair to average, except for lac la Biche fish, which marketed well. Local markets, on the other hand, were good, the dealers reporting good sales right through the year. The number of dealers is about the same, but peddling throughout the province has greatly increased, especially during the winter months when lack of other employments is evident. The catch from lake Athabasca was sold for fair prices.

The price for fall fish from Lesser Slave lake was good; the product from this lake is always well received in eastern markets and is well established.

The winter prices, owing to scarcity of fresh and frozen fish at the start, was very good, especially for the green fish, and owing to climatic conditions the frozen did not appear on the market in any great quantity until late in December. Whitefish naturally commanded the better price, averaging around 10 to 12 cents per pound, trout and then pickerel following closely. Stabilizing of prices naturally follows the limitation of the product and as no new lakes have been discovered or opened up there is evident a competitive buying of the fish available, hence the fairly good prices obtainable.

## TRANSPORTATION

The transportation companies have always assisted earnestly in the marketing of the fish in good condition, and there has been no difficulty in obtaining refrigerator cars at all times. New refrigerator barges, new tugs, and refreezing plants are assisting and the Ottesen process of freezing is now in use at Edmonton. Trails were bad at the start of the winter season and, with the exception of lakes close to steel, the fish from far distances were not in as good condition as usual. Many of the lakes and trails were unfrozen until almost late December which naturally affected transportation. In lakes in settled districts trucks are being used more and more in bringing fish to the local towns and villages, and have been used during the past winter season in increasing numbers.

It will be noticed that the value of equipment now exceeds a half a million dollars in value. The equipment throughout the province is on a very high plane and of a high standard. Care is being taken to see that Alberta fish is carefully packed and selected before shipping to the more distant markets.

## OBSERVATION OF THE REGULATIONS

As previously stated, the total number of licenses, permits, etc., issued from this office amounts to 8,122 to date, an increase over 1927 of 330 , chiefly due to the better angling conditions, fair weather and closer checking of infractions. The large number of newly formed fish and game protective associations contributed naturally, and their valuable assistance is always evident. The number of prosecutions for the year amount to 72 and the number of confiscations 47. Details of prosecutions follow:-

14 Pollution of streams.
13 Fishing with illegal mesh nets.
10 Angling without permit and fishing without license.
9 Fishing with illegal apparatus (spears, etc.).
. 7 Fishing in close seasons.
4 Killing fish under the legal size.
4 Using dynamite.
3 Possession of fish in close season.
Angling in closed waters.
Not having license number on buoys and nets.
Fishing outside restricted areas (L. Slave L.).
Hanging fish contrary para. 2.
Obstructing a fishery officer.

Six persons were also prosecuted by the forestry officers for fishing in closed waters within the forest reserves, and five of these on a second charge of fishing in close season contrary to sections $79 a$ and 85 of the forest regulations. Much assistance was given by both the Royal Canadian Mounted Police and the Alberta Provincial Police and also by the honorary guardians throughout the province, as well as by the undermentioned associations, many of which have only been formed during the year:-

Red Deer Fish and Game Association.
Medicine Hat Fish and Game Association.
Craigmyle Fish and Game Association.
Olds Fish and Game Association.
Didsbury Fish and Game Association.
Calgary Fish and Game Association.
Nanton Fish and Game Association.
Sheep Creek Fish and Game Association.
Midnapore Fish and Game Association.
Claresholm Fish and Game Association.
Delia Fish and Game Association.
Drumheller Fish and Game Association.
Hanna Fish and Game Association.
Banff Fish and Game Association.
Carstairs Fish and Game Association.
Macleod Fish and Game Association.
Carbon Fish and Game Association.
Hillcrest Fish and Game Association.
Pincher Creek Fish and Game Association.
Strathmore Fish and Game Association.
High River Fish and Game Association.
Camrose Fish and Game Association.
Cadogan Fish and Game Association.
Jasper Fish and Game Association.
Edmonton Fish and Game Association.
Vulcan Fish and Game Association.
Stavely Fish and Game Association.
Bassano Fish and Game Association.
Brooks Fish and Game Association.
Coleman Fish and Game Association.
Lethbridge Rod and Gun Club.
Cardston Rod and Gun Club.
Killam Rod and Gun Club.
The Alberta Fish and Game Association was also organized during the year, the officers of the association being appointed from the executive of the smaller associations.

## IRRIGATION STSTEMS

Owing to the very heavy rainfall during the early part of the season, and sufficient showers to well on into August, no water was required for irrigation purposes for the growing crops; consequently, the smaller systems were not opened during the summer. The larger systems only drew sufficient water during the summer from the rivers to fill their storage basins and reservoirs, but, as the weather during the latter part of the season was extremely dry, considerable water was used to saturate the soil so as to have sufficient moisture to start next season's crop. However, no complaints have been received regarding destruction of fish.

A new dam was constructed by the town of Claresholm, in Willow creek; to replace the one carried away by high water last season. No fishway is required in this dam; a fishway, it is considered, would be more detrimental than beneficial to the trout fishing, as it would only permit pike and suckers to ascend to the trout waters.

A new fishway was installed in the dam in Bear creek at Grand Prairie.
All other dams and fishways were regularly inspected during the summer and were found in good repair at all times. The Calgary Power Company has a large dam now under construction in the Bow river, west of Calgary. This dam will form a lake several miles long, which will eventually develop additional fishing as well as create excellent boating and bathing for the people of Calgary. The same species of fish will be found both above and below the dam.

## ANGLING

Angling throughout the province was on the whole much better than for the previous season, both as to sale of permits and the amount of fish taken, although at Cold lake there was a big decrease in the amount of trout taken and the number of permits sold. Only 630 permits were sold at this point as compared with 926 for the season 1927 , and the amount of trout taken was 32,025 pounds as against 54,735 pounds taken by anglers in 1927. This decrease was not due to scarcity of trout in the lake, but to the bad condition of the roads for a great part of the season. It appeared for the first month or two, or even to the end of July, that there would be very little angling in any part of the province, owing to the continued wet-weather which kept the roads in an extremely bad condition and the trout streams high and muddy. The roads in the Cold lake district were almost impassable from the end of May to the end of July, and the angling season at that lake ends on September 14. The anglers in the southern part of the province and in the Edmonton area and the district west were more fortunate. The angling season in the streams west of Edmonton, and in the Bow river and tributaries and all streams south to the United States boundary line, does not open until June 15 and ends on October 15 in the latter streams and October 31 in the former. Climatic conditions changed about the end of July and after that date there was very little rain in any part of the province. The roads became in excellent condition and remained so to the end of December. Anglers were enabled to travel into districts never before reached with motor cars, and while the angling season was shortened by rains in the early part of the season all anglers appeared to be well satisfied. The final result was an increase of over 600 in the total of angling permits sold over the season of 1927, and of some 160 over the season of 1926 , when the largest previous record was made. The total amount of fish taken was almost double that of last season.

Angling for pike, pickerel, and perch was everywhere exceptionally good during the latter part of the season and until the lakes and streams froze up, which was very late owing to the exceptionally fine weather throughout the entire fall. Angling for goldeyes in the Sturgeon river and Red Deer was better during July and part of August than it has been for a great many years. Many very large fish were taken. As usual, good pike fishing was obtained in the lakes formed by the large irrigation systems, namely, Christena, Newall, Chin, McGregor, and Keho lakes. McGregor and Keho were the last formed and were only beginning to produce, but good catches were taken even in these.

Fair angling for rainbow trout and grayling was had in the streams tributary to the Athabaska and McLeod rivers, in the Edson district, west of Edmonton. Good catches of Loch Leven trout were taken from the Raven river, and
from the streams tributary to the Red Deer river that have been stocked with this species in recent years. Many reports have been received of great improvement in the trout fishing in the Bow, Elbow, and Highwood rivers; exceptionally fine catches of rainbow and cutthroat trout were taken from the Bow river east and west of Calgary, and the fishing in the Elbow was reported to be better than it has been for the last twenty-five years, about 65 per cent of the catch being rainbow trout. The fishing in the Highwood river still appears to be improving, in spite of the heavy fishing that is carried on all through the season. The fishing in the Old Man river and tributaries was also better than it had been for several years.

This improvement in the fishing is due to the continual stocking of the streams, stricter enforcement of the regulations, and better observance of the laws by the anglers. The many recently formed protective associations should be given considerable credit for the last condition as they are doing a great work in showing the public the necessity of the observance of the regulations.

## EXAMINATION AND RESTOCEING OF LAEES

Ten lakes and streams were examined during the season with a view to stocking. Six lakes were stocked with perch and pickerel with good success. Four lakes were stocked with large-mouthed bass by associations and clubs at their own expense after permission to do so was obtained.

Good results are apparent from the stocking of several lakes in the Edmonton district with perch and pickerel in recent years.

Thousands of perch are now being taken from Mayatan lake, which was stocked with perch (forty-two adult fish in 1922). Great numbers of young perch can now be seen in Hastings lake, which was stocked with adult fish in 1925. Young perch can now be seen in Cottage lake and Sandy lake, which were stocked with perch three years ago, with a small number of adult fish. The pickerel placed in lake Nakamun have also done exceptionally well. The perch fingerlings placed in Whitewood lake in 1925 have now grown to over half a pound in weight. The results of the stocking of streams from the Banff hatchery have been most gratifying, resulting in improved angling each year.

## REPORT OF CHIEF SUPERVISOR MAJOR J. A. MOTHERWELL WESTERN FISHERIES DIVISION (BRITISH COLUMBIA) FOR 1928

It is gratifying to be able to report that the salmon pack for 1928 was only 29,561 cases below the largest pack on record, being $2,035,637$ cases, compared with the record total of 1926 of $2,065,198$ cases. Unfortunately the sockeye total was considerably below the average of recent years, due primarily to the small packs on the Skeena and Fraser rivers. The whole province produced only 203,541 cases of this variety, compared with an average of the past fifteen years' totals, in five year periods, as follows:-


The Naas river has been gradually falling off in recent years. This undoubtedly is due to the intensity of the fishing operations along channels through which Naas river fish pass when proceeding to the spawning grounds; this applies particularly to the great quantity of fishing gear in Alaskan waters.

In the Skeena river area, owing to the fishing becoming more intensive than was felt to be in the interests of conservation, there was a weekly close season of sixty hours enforced during the entire sockeye fishing period. Judging from the excellent condition of the spawning grounds from a standpoint of parent fish,
this closed period accomplished the object desired, permitting the salmon to pass upstream, and was undoubtedly a large factor in the small catch. The poorer pack cannot be accepted as evidence that the run is becoming depleted, but, on the contrary, the small total, together with the conditions on the spawning beds, testifies to the efficacy of the system at present in force for the purposes of conservation.

In the Fraser river district in the years 1926 and 1927 a very late run of sockeye appeared and accounted for a considerable percentage of the total pack in that area. In 1928 this late run did not materialize.

At Rivers inlet the catch was disappointing, although the conditions on the spawning grounds could not be said to be at all alarming. There was an abundance of five-year-old fish, but a considerably smaller proportion of the four year variety, due, undoubtedly, to the unusually severe freshets of 1924 which scoured out large portions of the spawning areas and destroyed the eggs. Another factor which contributed to the small pack was a week of cold and dark wet weather during the time the salmon were running. Such a condition results in salmon seeking the lower depths and so escaping the nets.

At Smiths inlet the conditions were most gratifying. The pack was $33 ; 289$ cases and immense quantities of spawning sockeye were able to pass up safely to the spawning grounds. With the enforcement of the present regulations there is not a doubt that the run to this area can be maintained indefinitely.

The pack at Nimpkish river was somewhat below the average, but there was a splendid supply on the spawning beds. The regulations at this point are taking care of the situation.

Again there was an excellent run of sockeye in the Barclay sound area and there is every reason to believe that the efforts in recent years, by means of fish cultural operations and prohibition of fishing, have restored to a considerable extent the runs, particularly to the Stamp and Sproat river areas. The recently constructed fishway at Stamp falls has been an entire success and no fish has any difficulty in ascending.

In the case of spring salmon the statement of quantity packed is no indication of the run, since an increased proportion is utilized each year for the fresh and frozen fish business.

The remarks with regard to the spring variety also apply to a certain extent to cohoes. A considerable percentage of the catch is used for cold storage or fresh fish purposes. The pack of 150,684 cases for 1928 is very satisactory, in view of the large quantity used as indicated above.

Comparison of this year's total of cohoes with that of the past fifteen seasons in five-year periods, is as follows:-


The pink total of 792,362 cases is the largest on record, exceeding that of 1926, the previous record year, by 19,369 cases. This total no doubt would have been materially increased had it not been for the restrictions placed on fishing at such points as Masset inlet, where Justkatla inlet was closed all season with the exception of one and a half days. It is in this inlet that in past years a very large percentage of the eatch has been taken. The supply of pinks running to the Naas and Skeena river areas was surprisingly large, and, in fact, the same condition obtained through the greatest portion of the province, apart from such areas as the Fraser, where no run was expected, due to 1928 being the "off" year.

In the central area, the run was splendid, as was the case in Bella Coola and Fisher channel. At Oyster river and Courtenay river, on the east coast
of Vancouver island, the quantities observed were unusually large. The quality in practically all cases was above the average and resulted in a high grade of the canned product.

Pinks mature in two years and the following is a comparison of the average catch for the past twelve seasons in two-year periods:-


In the case of the chums, the year's pack was also a record, exceeding that of 1926, the previous record, by the large total of 161,294 cases, notwithstanding the large quantity frozen and used fresh.

The comparison of this year's pack with that of the previous fifteen years, in five-year periods, is as follows:-


In the light of these large catches of chums and pinks, the impression might prevail that far too great a proportion of the runs had been taken, but this was not the case, and, as a matter of fact, the fishery officers report that they had, during the season, observed pinks and chums in numerous streams in which they had never, in their experience, been observed before. Nineteen hundred and twenty-eight was a banner year for pinks and chums, and notwithstanding the large packs the spawning areas have been well seeded.

Comparison of this year's total pack of all varieties with that of the past fifteen seasons, in five-year periods is as follows:-


The very large percentage of the pack of pinks and chums is taken by means of purse-seines, which increased from 92 in 1912 to 555 in 1925, but numbered only 397 in 1928. The reduction in the year under review was due to the action of the department in taking very drastic measures in 1927, the year of the most intensive fishing, to the end that, even though the catch might be curtailed to the point where profit to the industry was impossible, the salmon runs would be conserved. The year 1927 was the peak one from the standpoint of the quantity of fishing gear in the water, and the industry realized, the following season, that unless the fishing intensity was very greatly relieved the restrictions placed on fishing operations would be further increased.

One result of the action of the department was the getting together of the canning industry, and the arranging, by means of what has been known as the "Canners' Agreement of 1928," to reduce the number of purse-seines fished. This agreement actually was the cause of a reduction of the number of purseseine licenses issued from 555 in 1927 to 397 in 1928, or a decrease of 158. In addition, the agreement, together with the amalgamation of two of the largest canning companies, permitted the closing of fourteen salmon canneries with the resultant saving of that much overhead expense in canning operations.

Due to the aforementioned canners' agreement, fishing by means of purseseines was largely confined to areas within reasonable distance of the canneries for which the seines were operating. This, in turn, resulted in shorter hauls and the salmon being in decidedly fresher condition when ready for canning. The higher standard of pack, as a consequence, has been the subject of considerable comment by brokers and others, through whom the product passes to the consumer, and if maintained it should be the means of bettering market conditions very materially for British Columbia canned salmon.

It is interesting to note that the British Columbia salmon pack of 1928 was distributed in the markets of more than twenty-five foreign countries, the larger portions being consigned to France, Australia, and the United Kingdom, in the order mentioned as shown by the following statement:-


## Halibut

As was anticipated, due largely to the heavy stocks of frozen halibut in cold storage, the fishing of the season 1928 opened with prices which were not particularly attractive to the fishermen. The catch of $30,282,000$ pounds landed at British Columbia ports was not behind the average of recent years, and without some restriction other than the present closed season there would appear to be reason to expect that if conservation demands a lower catch each season, the situation cannot be successfully met by present conservation measures.

The market for the cold storage product during 1928 improved somewhat, and it is anticipated that conditions at the commencement of the season of 1929 will result in better prices to the fishermen.

## HERRING-DRYSALTED

The pack since 1918 of this product is shown by statement No. 8. The quantity drysalted in 1928 was the largest of which there is any record. This was due largely to the excellent run to the east coast of Vancouver Island. It has been claimed that the intensive fishing of herring was resulting in the serious depletion of the runs and the east coast of Vancouver island in past years has been used in an endeavour to illustrate this contention. The experience of recent years, however, would seem to show that there is no ground for any alarm from the standpoint of depletion. The quantity taken each year can be only infinitesimal compared with the large quantities off the shores of British Columbia. Herring are more or less uncertain in their runs, although not to the same extent as pilchards, and a small run in one locality in one season is no criterion that the supply is becoming less. The statistical year covered by this report ends on the 31st December, but the runs of herring commence in the fall and continue through until late spring. The result is that the annual report covers the last period of one run and the first of the next.

Drysalt herring is practically all used in China. The market of recent years has been somewhat uncertain owing to the disturbed condition of that country, resulting in a boycott of any product suspected of being of Japanese origin, or with which the Japanese are suspected of having anything to do. As a portion of the drysalt herring pack is put up by Japanese operators, and a larger portion still is marketed through Japanese brokers, the situation recently has been a somewhat difficult one.

## PILCHARDS

Statement No. 9 gives the quantities of pilchards canned since the year of commencement, 1917. During the years 1918, 1919 and 1920 a reasonably profitable market was found, particularly in Australia and the United States, but in later years the fall grades of salmon, particularly the chums, have replaced the pilchards to a large extent. The market, however, is improving, and it is confidently expected that this canned product will always find a ready market for a reasonable quantity.

## WHALING

The catch during the year will be found in statement No. 11.
Operations were conducted from two stations only, that at Rose Harbour at the south end of the Queen Charlotte island group and the station at Naden harbour on the north coast of Graham island, in the Queen Charlottes. Four steamers were used in connection with the Rose Harbour operations and two at Naden harbour, the hunting areas extending in a radius of from eighty to one hundred miles about each station. In addition, one tender vessel was employed for carrying oil and supplies.

## FUR SEALS

Statement No. 12 shows the number of fur seals taken off the west coast of British Columbia by Canadian Indians under the terms of the Pelagic Sealing Treaty, whereby native Indians are permitted to hunt from canoes propelled entirely by oars, paddles, or sails, and manned by not more than five persons each. Firearms are prohibited. The average price for skins during the year was $\$ 6$ as landed.

## DESTRUCTION OF SEA LIONS

Operations under this head were extended during 1928 to include Solander rock, which is situated on the west coast of Vancouver island in the vicinity of Cape Cook, as well as the Virgin and Pearl rocks, off the north end of Vancouver island. The C.G.S. Givenchy, equipped as usual, and with Mr. W. E. Maiden, secretary of the British Columbia Fishermen's Protective Association, again in charge of machine gun operations, left Esquimalt on May 28.

The hazardous conditions found in previous seasons' operations were again experienced, and even to a greater extent at Solander rock. It is only under very exceptional conditions at this point that it is possible to put a landing party ashore. The difficulties are such as to raise a doubt as to whether it would be wise to continue operations there. It is the intention to try one more season and if operations are found too difficult the Solander locality will be eliminated from the following year's itinerary.

At this point no pups were observed, although there was found to be a fair number of adults, 103 of the latter being destroyed. It is possible this total might have been increased, except for the fact that the Givenchy was obliged to hurry away on an urgent call to search for the survivors of the gas boat Petrel, which was wrecked on the rocks in the vicinity.

Both adults and pups were found on the Virgin and Peari rocks. The absence of yearlings was again very noticeable, and, in fact, the condition of the whole rookery was altered very materially since operations were commenced in 1922. There is no doubt that the hunting is having the desired effect of reducing materially a great menace to the sockeye fishing off Rivers and Smiths inlets.

Demonstration of approval of these operations was made by several of those persons interested at Rivers inlet. One resident fisherman of Cape Scott, at the north end of Vancouver island, suggested that the work done by the Givenchy crew means to him personally $\$ 100$ to $\$ 150$ per year.

Statement No . 13 shows the number of sea lions, adults and pups, killed each year since the commencement of operations.

## PRODUCTION OF FISH OIL AND MEAL

The year under review has been a record one', as will be observed by statement No. 10. Due to the department's policy of permitting the pilchard to be utilized for the manufacture of oils and meal, twenty-three plants have been built in the last four years, providing employment for a very considerable number of citizens and producing a product valued at $\$ 2,241,561$ during the calendar year 1928.

The pilchards this year were found to be unusually fat and produced a large percentage of oil. It is possible that this was due to the fact that fishing operations have been conducted more extensively each year in outsidc waters, where the fish are usually found to be in better condition. It is interesting to note that a small percentage of Spanish mackerel was also obtained in the pilchard seining operations. These were not separated but were passed through the reduction plants with the pilchards.

Herring was again permitted to be used in the manufacture of fish oil and meal on that portion of the west coast of Vancouver island north of Barclay sound. Neither the supply nor the condition of these herring, generally speaking, was found to make operations profitable.

## PATROL SERVICE

Each season the necessity for a greater number of permanent overseers with smaller districts becomes more and more apparent. It is confidently expected, however, that this situation will be met in the near future.

The total number of boats utilized during the year for the protection of the fisheries was 133. Twenty-five were departmentally owned and 108 were chartered for periods of from one to six months. The Malaspina and Givenchy, the two steam trawlers, were kept constantly employed as usual in connection with the halibut fisheries, the protection of fur seals, protection of Canadian harbours, and other related work. The Givenchy was again stationed at Banfield for thirteen days in connection with life-saving duties. In this connection it is pointed out that this life-saving duty comes at a most inconvenient time, as it is impossible to arrange for the annual overhaul until this special work is finished. The result is that the annual repairs must be performed during the halibut fishing season, when both boats are urgently required for patrol. Particularly in view of the fact that foreign boats are utilizing Canadian harbours on this coast more and more each year in connection with fishing operations, it is absolutely impossible for two boats to take care of the situation at all times. The great increase in the number of foreign salmon-trolling boats operating in Hecate strait and off the west coast of the Queen Charlotte and Vancouver islands demands better facilities for the protection of Canadian
waters and harbours. It will be observed that both trawlers have been very busy during the year, the Malaspina logging 19,962 miles and the Givenchy 18,955.

During the year three new 52-foot patrol boats powered with Thorneycroft 60 -horsepower reduction-geared gas engines were built. These have proved to be an extremely valuable addition to the patrol fleet. The plans and specifications were prepared by Mr. J. W. Allen, of the British Columbia staff, who is responsible for the care of patrol boats other than those propelled by steam. The performance of these new craft has been most satisfactory. The use of reduction-gear is the means of more economical operation, less vibration and reduced noise.

## SEAPLANE PATROL

A two-year contract was entered into by the department with the Western Canada Airways, Limited, calling for 400 flying hours each year for the purpose of fisheries patrol, which has been found so effective in the past. Owing to unfortunate accidents only $261 \frac{1}{2}$ hours were used during 1928. Most of the flying was done by means of the Boeing BID flying boat, equipped with Wright Whirlwind engines of the latest type. These were found to be very efficient and comfortable.

In connection with the seaplane service are reported, with regret, two accidents. The first occurred on July 13 about four miles southeast of Butedale, when a Boeing crashed, injuring the pilot and killing the mechanic. Again, on August 15 the Vickers-Vedett G-CASW crashed in the fog on the mountain at the north end of Porcher island on the way to the Queen Charlotte islands. The pilot suffered severe concussion and the other two occupants received slight cuts and bruises.

## REGULATIONS

Owing to the runs of salmon, generally speaking, being more satisfactory and the amount of fishing gear in the water having shown a reduction during the year, it was not found necessary to curtail fishing operations in such a drastic manner as in the previous season. By statement No. 1 the following percentages of reduction will be observed in salmon fishing licenses covering the whole province:-


In the Skeena river salmon fishing, owing to the number of licenses exceeding that set by the department for a weekly close season of forty-eight hours, an extra period of twelve hours was enforced from the 1st July, making a total of sixty hours each week during which no fishing was permitted.

In view of the considerable increase during recent years in the number of salmon purse-seines operating in the province, it was considered imperative that the regulations be amended in such a manner as to fully protect a number of areas in which conservation measures have been difficult in the past. The resultant amendments to the regulations reserved a very considerable number of areas entirely from purse-seining operations and no doubt this action will in future years be found to be fully justified.

Boundaries also were moved out farther from the mouths of spawning streams. In some cases this was done by regulation and in others by the moving of the boundary signs by the local fishery officers. As a result of these precautions fishing operations each year are confined to areas farther removed from the mouths of spawning streams and, in addition to the fish receiving better protection, those which are caught are in much better condition for food purposes.

Salmon trolling operations have become such a large factor in the catch of springs and cohoes that the time would seem to have arrived when some action should be taken looking to increased restrictive measures being enforced. No action in this connection has been taken up to the present time, owing to the fact that it was felt that weather conditions were such as to make weekly close periods unnecessary. Another reason has been that Canadian and foreign trollers operate together in considerable numbers in extra-territorial waters, and it would seem unreasonable to curtail the fishing operations of Canadians while others are permitted to fish. It is expected that in the near future some arrangement will be made whereby the operation of both Canadian and foreign boats will be controlled.

Owing to the uncertainty as to the federal department's jurisdiction over the plants processing fish after they have been caught and killed, four salmon canneries and four reduction works plants operated without obtaining licenses from the federal department.

## YIOLATIONS OF THE FISHERIES REGULATIONS

A total of 176 prosecutions during the year for violations of the fishery regulations is covered in the British Columbia section of appendix No. 12. The revenue collected as a result of these prosecutions amounted to $\$ 7,308.88$.

## SPORT FISH

The efforts being made to conserve and improve the sport fishing in the waters of the province have been extended each year. Close attention is given by local officers in the way of inspection of the several streams and lakes in their districts and the better enforcement of the regulations. With a view to providing greater attraction in the streams and lakes, which have, through several reasons, become partially depleted of sporting fish, 201 plantings of eggs and fry were made during 1928. Residents of the province are very appreciative of the efforts being made by the department, and as a rule are eager to give any assistance in their power. In this connection the British Columbia Fish and Game Protective Association of Vancouver, representing thirty-seven angling associations throughout the province, has been of immense assistance. By means of this central organization it is now possible to deal with only one association instead, as in the past, with numerous ones scattered throughout the province. Under present conditions suggested amendments to the regulations or suggestions for the improvement of conditions in other ways pass through the hands of the central organization and reach the fisheries departnent only after having been thoroughly investigated and finally endorsed by the central body.

## TAGGING OF SALMON

It is regretted that it has not been possible to greatly extend these most important operations. Each year the necessity becomes more and more apparent and until there is available the information which can be obtained only as a result of tagging, it will never be possible to regulate the salmon fisheries sátisfactorily.

## CLEARING OBSTRUCTIONS IN STREAMS

Under this heading appears on another page the report of the Engineering Department with regard to the work accomplished during 1928, under the direct supervision of Engineers McHugh and Hunt. Attention is particularly directed to the reports of the Board of Engineers on conditions at Hells Gate and at Bridge river, two difficult points on the Fraser river.

During the year evidence was again very abundant showing the unfortunate results of logging operations along the banks of salmon streams. Before the timber was cleared off, these streams contained an ample supply of water all the year round, but under present conditions it is found that, particularly during the warm summer months, when the first runs of early salmon arrive, in many cases there is not sufficient water in the streams for the salmon to pass up to their spawning grounds. This condition has necessitated very drastic regulations with a view to controlling the fishing in the vicinity of these streams. There would appear to be little, if any, reason to expect that conditions in this respect will improve in the future. As logging operations are extended more streams are affected, and the situation in some districts, particularly on the east coast of Vancouver island, has become very difficult.

POWER BOATS IN DISTRICT NO. 2 SALMON GILL-NET FISHING
The number of power boats being used in the salmon gill-net fishing of the northern district has been increasing steadily since they were first permitted in the year 1924. Statement No. 16 shows the increase each year. It was the custom, prior to 1924 , for the salmon canneries to provide in District No. 2 the boats for salmon gill-netters. These were of the skiff type, which contained no cabins and were propelled by means of oars or sails. They were supplied to the fishermen on a rental basis. The labour in operating these skiffs in comparison with that in connection with the modern power boat is very arduous and there is no shelter provided for the fishermen apart from a tent formed by hanging the sail over the boom which was fastened along the centre of the boat from stem or stern. The cost of the power boats is infinitely greater than that of the skiffs but they are considered by the fishermen to be more efficient and are undoubtedly much more comfortable. By means of these power boats several drifts can be made in the time required to make one by means of the boats propelled by oars or sails. The permission to use the power boats has assisted particularly those fishermen who own their own, and as a rule the fact that a fisherman does own his own power boat is evidence that he is a good fisherman and as a result he is in demand.

## MEETING OF FISHERY OFFICERS

The usual annual meeting of the permanent fishery officers of the province was held at the office of the Chief Inspector in Vancouver.

STAFE
The following statement gives particulars of the staff employed during the year in the administration of the fisheries of the province:-

| Inspection and clerical staff. | 27 |
| :---: | :---: |
| Overseers. | 17 |
| Guardians. | 39 |
| Patrolmen and boat crews. | 229 |
| Fish culture. | 86 |

INSPECTION OF SPAWNING GROUNDS

## Queen Charlotte Island

The season of 1928 was the big year for pink salmon in the Naden harbour and Masset inlet districts. Reports of the inspecting officers show that there was again an excellent run of this variety. Virago sound and Naden harbour streams, particularly, received large quantities of spawning fish. These areas show an improvement over 1926, the brood year.

The Masset spawning grounds were also found to be well seeded. This is particularly so in the case of the Yakoun river where large quantities of pink salmon were found all the way up to the Yakoun lake. Also in the Mammon river which is the chief spawning stream of Justkatla inlet, large quantities of pinks ascended. The run to the Ian river was not so good during the fishing season, although, as in the case of the Yakoun and Justkatla inlet streams, splendid runs came in after the fishing was closed and proceeded to the spawning grounds without molestation. While the Masset area was satisfactorily seeded, it is estimated that the quantity was not quite as large this year as in the brood year of 1926.

As a conservation measure Justkatla inlet was closed all season, with the exception of one and one half days. It is here that in the past very large quantities of fish have fallen an easy prey to the numerous purse-seines. It is felt, however, that with the closing of the area all or most of the season, together with the present fishing boundary being enforced at the mouth of the Yakoun river, there need be no fear as to the future supplies. It is worth mentioning here that the quality of the pinks which run to the Yakoun river is not surpassed anywhere on the coast.

In the pink streams along the east coast of the Queen Charlotte islands, the quantity of pinks found on the spawning grounds was satisfactory. In the case of the chums, apprehension felt at certain times during the fishing season that there would be an insufficient quantity, and that the water in the streams would be too low to permit of their ascending to the spawning grounds, was found to be ungrounded. The rains came in time and very considerable quantities of chums arrived towards the end of the fishing season and after the fishing operations were closed.

On the west coast of the Queen Charlottes, owing to the waters being unsurveyed and exposed to the whole sweep of the Pacific ocean, conditions are such as to prevent intensive fishing apart from that portion from Skidegate inlet north to Dixon entrance. All along this coast weather conditions are a considerable factor in the protection of the runs, and it is felt that with, possibly, the closer supervision of the northern part of the west coast, the runs will be well protected.

## Naas River

Conditions on the spawning grounds of the upper reaches of the Naas river area, namely Meziaden lake district, were found this year to be the most discouraging on record, and coincided with those found by the fishermen during the run of sockeye. Sometimes, owing to weather or other conditions at the time inspections are made, the information obtained is not complete. In judging runs during the fishing season it is not always safe to use the catch as unassailable evidence, owing to the difference in weather and tidal conditions and also variation in close periods for fishing. Neither of these factors, however, would appear to enter into the present case and there is no doubt whatever but that the sockeye run on the Naas river this year has been practically a failure.

The supply of spring and cohoe salmon also was found to be very disappointing.

The pink run was a very good one, generally speaking. Heavy runs entered Salt lake stream, the main stream at the head of Wark channel, the stream at the head of Quattoo, Dogfish bay, Quinamas and Trout stream, Kincolith.

Chums were only fairly plentiful.
The upper fishing boundary is being moved some six miles nearer salt water and this measure should assist materially in conservation.

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## Skeena River

The main sockeye spawning grounds on the Skeena water-shed are those of the streams tributary to Babine lake. Judging from the disappointing pack on the Skeena river, some doubt was felt as to there being a satisfactory quantity of parent fish on the spawning beds. A close inspection, however, has shown a very satisfactory condition in this respect. The inspecting officer gives assurance that all spawning areas were abundantly supplied with sockeye, and will be well seeded. Encouraging reports also have been received from the Bulkley river district, particularly the earlier runs. The poorest indications found were those at Lakelse lake, but even at that point conditions improved as the season advanced, although it was not up to expectations. Owing to a freshet in William creek a considerable number of sockeye were able to escape above the fence and were lost to fish cultural operations, although they spawned naturally. This resulted in it being impossible to fill the hatchery to capacity. There is no doubt, however, but that this season's supply of sockeye at Lakelse lake has not been up to average.

One outstanding feature of the Babine lake sockeye this year has been the large percentage of runts. Mention has been made of these in previous reports, but indications would seem to show that their proportion is increasing. It is to be hoped that the amendment to the regulations which will eliminate for the future the minimum size of mesh for sockeye gill-netting will result in considerably reducing this high percentage.

The Ocstahl river inspection showed an average quantity of sockeye, but only a fair supply of springs. On the other hand, there was a good run of cohoes. The chum seeding was an average one.

There is no doubt but that the sixty-hour weekly close season, enforced owing to the increased number of gill-nets fishing the Skeena area, was largely responsible for the salmon getting through the danger area and arriving safely on the spawning grounds. This method of conservation is undoubtedly a very efficacious one.

Undoubtedly, spring salmon were scarce in the Skeena and it cannot be attributed to the operations of the gill-nets, there being so few fishing for this variety of salmon. It would seem reasonable to lay the blame to the operations of the salmon trollers who fish practically the whole year round in territorial and extra-territorial waters. The fleet of both American and Canadian boats has been increasing quite rapidly of recent years and their catch has been a very considerable factor in the quantity marketed.

Generally speaking, the run of pinks to the Skeena district was a heavy one and the spawning grounds are well seeded.

Chums were not particularly plentiful.

## Central Division

The central division is primarily a fall salmon area, although a considerable catch of creek sockeye is made each year. On the whole, weather conditions were generally favourable during the fishing season, the streams being full, which permitted the salmon to reach the spawning grounds. It is in this area, particularly, where so much difficulty has been experienced in some seasons in protecting the pinks and creek sockeye until the rains come. In a normal season, however, there is no difficulty. During the year just closed, pinks and chums spawned in many small streams where salmon have never been observed previously by the local officer.

The runs of pink and chum salmon were exceptionally heavy, and there is no doubt that the spawning beds have been well taken care of. The quantities found on the spawning grounds this year exceeded those of the season of 1926, the brood year for pinks, for instance, and that year was an exceptionally good one for both pinks and chums.

No doubt, other factors in bringing about this favourable condition have been the closing of certain areas from time to time, and the moving of the fishing boundaries farther out from the mouths of creeks. The sockeye streams were not found to be quite as heavily seeded as in the preceding season, but are considered as fairly well stocked.

## Bella Coola

On the whole, the seeding of the spawning grounds in the Bella Coola area may be considered to be very good, the only exception being the Kimsquit river sockeye and the pinks in the lower Dean channel area. Sockeye to the Bella Coola and Atnarko rivers arrived early and a considerable quantity passed up the streams before fishing commenced. The seeding of the streams with this variety was well up to the average. The spring run was only fair but the cohoe run, on the other hand, was a good one. The local officer states that the run of pinks was the heaviest on record, exceeding by far anything he had experienced. The chum supply was very fair.

At the Kwatna river there was a medium supply of chums and cohoe and a. satisfactory supply of pink salmon on the spawning grounds. In the Nootum river were found good supplies of pink and cohoe salmon; in fact, the former were considerably more numerous than for some years past.

At the Kimsquit river the supply of sockeye was not particularly encouraging, although estimated to be not greatly below the average. The run of springs is not usually an important one and the supply of cohoes was found to be light. The pinks, on the other hand, were more numerous than usual. These remarks also apply to the chums.

The run of fall salmon to the streams along Dean channel was not particularly good, but this year all the inlets along both sides have been eliminated from the seining areas, which should go a long way towards maintaining the runs. It is felt that this measure also had some bearing on the quantities of salmon reaching the head waters at both Dean and Burke channels, the seines being obliged to fish in the open channels and not in the bays or inlets, favourite schooling places for salmon.

The most important stream in Fitzhugh sound is the Koeye river. The spawning grounds were found to be splendidly seeded with pinks; in fact, it is one of the best pink rivers in the province and the quality is unusually good. A run of sockeye also ascends but is not of so much importance. Conditions on this river during the season were found to be average.

Outstanding features of the fall's inspection were satisfactory, supplies of pink salmon in the Bella Coola and Koeye rivers and chums showing better all through the district than for several years, generally speaking.

## Rivers Inlet

Two inspections were made by Overseer Boyd of the Owekano district, one, commencing September 22, covering the streans at the head of the lake, the other, commencing October 24, being confined to the streams lower down.

The streams covered by the first inspection are the Wak-wash, Cheo and Indian rivers but stops were made also at Genessi and Asklum rivers.

On the Wak-wash, examination of the spawning beds showed large numbers of sockeye both dead and spawning, and indications also showed a satisfactory run of springs. The sockeye were estimated to be 60 per cent large and 40 . per cent small fish.

On the Cheo, which is close to the Wak-wash, many sockeye were also found on the spawning beds, although the area is quite small. The salmon were mostly of the larger variety.

On the spawning grounds of the Indian river large numbers of sockeye were found and a satisfactory quantity of spring salmon.

[^1]At Genessi and Asklum rivers the overseer reports having seen numerous sockeye showing at the mouths of the streams, but that they had at that date not entered. On the second inspection, on October 26, the run was found to be about over. The former is the stream from which the hatchery obtains a portion of its eggs. More were taken in 1928 than in 1927.

The second inspection of the Asklum on October 30, showed a medium run of sockeye.

Apparently the sockeye salmon do not spawn in the Markwell river, which is of glacial origin; also, owing to the muddy state of the water, it is impossible to make any intelligent observations. Similar conditions prevented any reliable information being obtained with regard to the run to the Shumahault river.

At the Quap river quite a satisfactory run of sockeye was found, although perhaps not as good as in the previous season.

The overseer feels that compared with other years the run of five year fish was probably up to average, but that the run of the four year variety was approximately 30 per cent short. There is every reason to believe that the cause of this shortage has been the unusually heavy freshets of the season of 1924, which undoubtedly destroyed large quantities of sockeye eggs. This matter at the time was reported by the superintendent of the hatchery.

In the opinion of the superintendent of the hatchery, the run of sockeye to the spawning grounds of the Rivers inlet area this year has been below the average, but there has been no alarming scarcity of this variety.

It will be remembered that the pack on the inlet was much smaller than anticipated, but, owing to some bad weather in the middle of the best fishing and the depth of the water in the inlet, a very satisfactory percentage of the run succeeded in passing the nets.

## Smiths Inlet

Indications on the spawning grounds of this area during recent years leave no doubt as to the efficacy of measures taken looking to conservation. The inspection this year showed that there was a splendid supply of parent sockeye on the spawning grounds, and with the present regulations properly enforced there would appear to be every justification for optimism when considering Smiths inlet conditions.

One notable feature is the large number of big fish which were undoubtedly five years old. The supply of these was greater than the smaller, four year old fish, but returns from both varieties should be quite satisfactory.

Spring salmon were also found to be very plentiful, although the variety is not a particularly desirable one, the fish being very large and coarse.

## Alert Bay

The local overseer reports that all the streams in the Alert bay district have had a good supply of salmon. He comments on the good results of moving the fishing boundary signs farther out from the mouths of creeks.

The Nimpkish river is the main sockeye stream and the run in 1928 was a good average one, although a smaller proportion was caught. The spawning grounds were well seeded.

This being the off year for pinks in the district, there were few to the Nimpkish. There was a good run of cohoes, however, and also of chums. Springs arrived in average quantities.

Glendale river produced an average run of sockeye and a very heavy run of pinks. The chums also arrived in very large quantities.

On the whole, the supply of chums was found to be quite good and, in certain portions of the district, excellent. In practically all portions of the district the supply of chums was splendid and the quality good.

## Quathiaski District

In the Quathiaski district the principal varieties of salmon are those which run in the fall, although there was quite a good supply of sockeye to Heyden bay. These are a very small variety, however. The run to Phillips arm was not up to the average, but it is never a very heavy one. On the whole, the run of cohoes was an average one and in some points considerably better. As far as pinks are concerned, 1928 was an off year in the greater part of the district, and no big run was expected.

In the case of chums, the run on an average was a good one and the spawning areas were mostly well seeded.

At the Campbell river, where the famous tyee salmon fishing is found, the supply showed some improvement over the previous year and sport fishermen coming from a good many parts of the world made some good catches.

## Pender Harbour

Pender harbour is not a sockeye area apart from the Sauchenauch system, where, owing undoubtedly to the unusual measures taken during recent years in the way of conservation, the run was the best in the last four or six seasons.

A good run of pinks was not expected owing to the even numbered years being the off ones as far as this variety is concerned in this district. The supply this year, however, was better than the brood year, 1926.

In the case of chums the run was very heavy, and every stream, no matter how small, received its share.

The cohoes were found in fairly satisfactory quantities on the spawning grounds, although the run did not appear to be as large as usual. The overseer feels that the moving of the fishing boundaries out farther from the mouths of streams has resulted in a larger percentage of fish being able to ascend to the spawning grounds.

## Comox

In the case of those pink streams in the Comox district which have beemr in the past frequented to any appreciable extent by this variety, they were found to be well seeded and, in fact, the Oyster and Puntledger received excellentsupplies of pinks. The quantity of cohoes on the spawning beds through. practically the whole area was found to be good, with some exceptions as usual.

The chum streams received a very good supply of spawning fish and at Big Qualicum, Little Qualicum and Englishman's rivers, for instance, the run was very heavy.

The closing of a large part of Baynes sound to all net fishing and the moving of the boundary two miles out from Oyster, Black, French and Englishman's rivers, undoubtedly resulted in a considerably larger quantity of salmon escaping upstream. This conservation measure has been well justified.

## Nanaimo

The Nanaimo district is a fall salmon area, principally cohoe and chum. The supply of the former was below average, but the quantity of the latter found on the spawning grounds is reported to have been the best for the past ten seasons. This applies particularly to the Chemainus river where efforts have been made to have the fishing area closed for the benefit of sport fishermen.

## Cowichan-Victoria

The local overseer for the Cowichan-Victoria district feels that the spawning conditions found in his area are average or even better this year.

The Cowichan is the most important river and is largely frequented by sport fish, although there is also annually an excellent run of chum salmon.

The supplies of springs to the river is reported as one of the heaviest on record for some years past, these being the variety which passes up in the fall, mainly during September.

The cohoe variety arrived in very satisfactory numbers and in this connection the unusually large size of the fish is worthy of note.

This year was no exception in the case of chums, the run being good and the variety excellent.

The showing of steelhead trout is reported as being one of the heaviest in years and the spawning beds are well seeded.

The supplies of both cutthroat and rainbow trout have been very plentiful in the river during the past season. As a matter of fact, generally speaking, the river is in a very satisfactory condition.

## Sooke-Alberni

The run of cohoes and chums to the Sooke district was only fair.
The satisfactory conditions which have obtained in the Alberni district during recent years continued during 1928. The rains came in ample time to permit the several varieties of salmon to pass safely up to the spawning grounds without having to experience long delays waiting for the rivers to rise.

Undoubtedly the conservation measures taken this year in the way of prohibiting the greater part of Alberni canal to purse-seining has had the effect of permitting larger quantities of sockeye particularly to escape to the Anderson, Sproat and Stamp rivers. The number of seines operating in the Barclay sound area was this year fifty-eight as against eighty-eight during the previous season. Obviously this reduction has had its effect on conservation.

Sockeye in the Barclay sound area run only to the Anderson, Sproat and Stamp rivers. Due to conservation measures enforced for the past six years, this run has been restored and now forms a very material portion of the pack of the district. The fishway built at Stamp falls would appear to be as perfect as it is possible to make such a structure. The overseer reports that there was hardly a time between June 1 and November 1 when fish were not passing up, and as a result the spawning beds in the Great Central and Ash lake districts are well seeded. The quantity of sockeye reaching Anderson lake again this year has been most satisfactory.

The supply of cohoes in the Barclay sound area was only fair, generally speaking, although at the Stamp and Sproat rivers there was a heavy run, and these are the most important streams.

Pinks were observed for the first time at Sarita river two years ago. They have returned again this year, but the run is not large. It will be interesting to observe, however, whether it will be possible to build up a good run of this variety at this good stream. which heretofore has been frequented principally by chums.

The chum variety was again a very remarkable run and, notwithstanding the very large catch, a most satisfactory proportion was able to reach the spawning grounds. In this connection it will be remembered that at Nitinat there was at one time a tremendous run of this variety, but due to overfishing during the war years, when unusual efforts were being made to obtain food, this run became considerably depleted. As a result of conservation measures by the department in recent years, the supply is evidently increasing rapidly.

## Clayoquot Sound

The sockeye run to the Kennedy lakes, Clayoquot district, was most disappointing, particularly so in view of the fact that extra precautions were taken during the fishing season to see that an adequate proportion of the run was left for the spawning grounds. When fishing operations were stopped, a very considerable body of sockeye was reported inside the limits, but only a
small portion of this supply was found on the spawning grounds, and the collection of eggs at the hatchery was short. At the Megin river the sockeye supply was found to be the heaviest in six years.

Apart from the above two waters there are no sockeye in the Clayoquot area and few pinks. Cohoes were found to be short on some of the spawning areas, but on the whole there was a fair supply.

The chum run was the largest since 1922, and all the spawning areas are abundantly supplied.

The overseer observes that the placing of the boundary signs farther out from the mouths of the streams has been an important factor in saving salmon for the spawning grounds in his district.

## Nootka Sound

Springs, cohoes and chums are the only runs of any size to the Nootka district, although there are a few creek sockeve and a very few pinks in certain sections of the district. The supply of cohoes was found to be only fair on the spawning grounds. All spring salmon coming into the sound were permitted to pass up to the spawning grounds as they were not sought by the fishermen, apart from the trollers on the outside.

All rivers were heavily stocked with chums.

## Kyuquot Sound

The principal varieties to the Kyuquot area are cohoes and chums. The supply of the former was quite fair but the chums arrived in very considerable quantities, the spawning grounds of this variety being well taken care of,

## Quatsino

The sockeye to the Quatsino area are of the creek variety, but the quantity is very small.

The cohoes were not observed in such quantities as might be desired, but the streams were all in good condition and the fish had no difficulty in passing up to the spawning grounds.

The principal spawning area for the spring salmon is the Marble creek and its watershed. This year a very satisfactory supply passed up the river Special conservation measures taken at the mouth of the river assisted materially.

The run of pinks has in past years been fished quite heavily and efforts are being made to restore the runs which, while never particularly heavy, were still of considerable importance in previous years.

The chums on their arrival had no difficulty in passing up to the spawning grounds without any delay whatever and arrived there in very satisfactory quantities. It is felt that this whole area is in need of better protection and during the season under review considerable areas were prohibited to fishing and it is possible that this system of protection may be further extended in the near future.

## Fraser River Watershed

In the Fraser river watershed conditions found on the spawning grounds in the Stuart lake, Francois lake, Bowron lake and tributary streams show very few sockeye salmon. Of course, this condition is not a new one and probably is not worse than for a considerable number of years.

At Quesnel lake and its tributaries, such as Horsefly river and Mitchell river, indications have also been disappointing. In 1927 the local overseer
reported several thousand sockeye salmon arriving at the end of October. He stated that that was the first time such a late run had been experienced. There was no similar run in 1928.

In the Chilco area the number of sockeye observed was reported by the local officer as being the best for the last fourteen years although this is not particularly significant when one remembers the large runs which proceeded to this area previous to 1913.

This year at Raft river, which is a tributary of the North Thompson, a very encouraging quantity of spawning sockeye was observed. Unfortunately, the information obtained in previous years has not been sufficient to permit of an intelligent comparison. The local guardian estimates having seen from nine to ten thousand and while this is encouraging it would be more informative if figures from previous seasons were available.

The Shuswap area, in view of conditions during the last four years, was somewhat disappointing in 1928. The quantity of spawning sockeye observed at Adams river was almost negligible compared with the last four seasons, but conditions in the river in the way of high and discoloured water prevented the obtaining of as accurate information as was desirable. The local officer estimates having seen eight or ten thousand sockeye in Little river, but even this quantity is extremely disappointing.

Neither in Scott's creek nor in Eagle river were any encouraging indications found.

One regrettable feature is the fact that the Indians have been taking such a large percentage of spawning sockeye. When the run is large, the requirements of the Indians can be taken care of very readily, but when the run is small then each salmon is of much greater value from a reproduction standpoint and some arrangement is imperative under which the Indians will not take such large quantities of this valuable species in poor years. This also applies in the case of the Raft river run.

The Indians feel that quite apart from their normal rights to the salmon for food purposes they should not be prevented from taking what they require when such a large percentage of the runs to the Fraser river are taken by the operators in Puget sound, and that any curtailment of the Indian food requirements would only be assisting foreign fishermen.

At Cultus lake 14,889 sockeye were counted at the hatchery fence. These composed the total run, as no salmon were permitted to pass the barricade. Stripping operations produced $28,114,000$ eggs.

The inspection of Harrison lake district has shown that Norris creek, which in the past has been the principal sockeye producer, was only fairly well seeded. While the local officer reports having seen approximately 2,000 sockeye spawning in the creek, this quantity, of course, is very small compared to the runs which at one time frequented the locality. At the same time, during each of the recent seasons there appears to have been an encouraging supply of spawning fish and it is probable that the runs can be increased. The quantity of sockeye in Trout creek and Hatchery creek was very satisfactory, but these streams are small. Sockeye were also observed in considerable quantities at Silver creek, one of the best tributaries to the lake.

The run of sockeye to the Pemberton district, while a good average one, was considerably less than that of 1924. Thirty-five million eggs were taken for the hatchery at Pemberton.

The run to Pitt lake and river was well maintained. The hatchery was easily filled to capacity and large quantities spawned naturally. At this point fish cultural operations, without a doubt, have been a means of materially increasing the annual run.

The streams flowing into Burrard inlet and Howe sound are not frequented by sockeye. The chum salmon arrived in unusually large quantities. The variety was particularly good and fishing operations were profitable.

Speaking generally of the Fraser river system the following conclusions would appear to be justified:-
(1): The quantities of sockeye salmon observed above Hell's Gate were not encouraging.
(2) The runs to those areas below Hell's Gate are being well maintained.
(3) The supply of cohoes and springs was not up to the average; undoubtedly this condition results in part from the operations of the trolling fleet which has been increasing in numbers during the past few seasons.
(4) The year 1928 was an off one for pinks and no run was expected.
(5) The chum run was unusually good and the quality above the average.

| Year | Number of canneries operated | Number of salmon licenses issued |  |  |  |  | Sockeye | Red Spring | Pink Spring | White Spring | Bluebacks | Steelheads | Cohoes | Pinks | Chums | Totals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | G.N. | Troll | P.S. | D.S. | T.N. |  |  |  |  |  |  |  |  |  |  |
| 1876. | 3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 9,847 |
| 1877. | 4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 67,387 |
| 1878. | 10 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 113,601 |
| 1879. | 0 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 61,093 |
| 1880. | 9 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 61,849 |
| 1881. | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 177,276 |
| 1882. | 18 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 255,061 |
| 1883. | 24 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 196,292 |
| 1884. | 17 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 141,239 |
| 1885. | 9 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 108,517 |
| 1886. | 17 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 161,264 |
| 1887. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 204,083 |
| 1888. | 21 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 184,040 |
| 1889. | 28 |  |  |  |  | ..... | ........." | ........ |  | . ..... |  |  |  |  |  | 414,294 |
| $1890 .$ | 32 26 |  |  | ...... |  |  | . ....... |  |  |  |  | ...... |  |  |  | 408,978 |
| $\begin{aligned} & 1891 . \\ & 1892 . \end{aligned}$ | 26 27 |  | …... |  |  |  |  |  |  |  |  |  |  |  |  | 314,893 |
| 1892. | 27 |  |  |  |  |  |  |  |  |  |  |  |  |  | . ...... | 228,470 |
| 1893. | 37 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1894. | 32 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 494,371 |
| 1895. | 36 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $566,395$ |
| 1896. | 47 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 601,570 |
| 1897. | 54 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1,015,477 |
| 1898. | 51 |  |  |  |  |  | $\cdots$ |  |  |  |  |  |  |  |  | 484, 161 |
| 1899. | 59 |  |  |  |  |  |  |  |  |  |  |  | . |  |  | $732,437$ |
| 1900. | 64 |  |  |  |  |  |  |  |  |  |  |  | . |  |  | 585,413 |
| 1901. | 73 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 1,236,156 |
| 1902. | 66 |  |  |  |  |  | -531,436 | Spring | nd Fail: |  |  | 94,546 |  |  |  | -625,982 |
| 1903.. | 59 |  |  |  |  |  | $\cdots$ | .-... | …... |  |  |  |  |  |  | 473, 674 |
| 1904. | 51 |  |  |  |  |  | 323, 326 | 35, 42 i | Red \& | Spring |  |  | Faill | 107,24 |  | 465,894 |
| 1905. | 67 |  |  |  |  |  | 1,080,673 | 28,359 | Red \& | Springs |  |  | 44,458 |  |  | 1,167,460 |
| 1900. | 64 |  |  |  |  |  | +459, 679 | 31,261 |  | 1,08 |  |  | 69,132 | 68,305 ( | ks.\& Ch.) | 629,460 |


| 1907 | 58 |  |  |  |  |  | 314,0741 | 23,159 |  | 2,939 |  | 683 | 87,900 | 118,704 ( | \& Ch.) | 547,459 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1908. | 52 |  |  |  |  |  | 355, 023 | 25,433 |  | 2,731 |  | 1,137 | 81,917 | 76,448 ( P | \& Ch. 1 | 542,689 |
| 1909 | . 72 |  |  |  |  |  | 840, 441 | 18,218 |  | 799 |  |  | 61,918 | 46.544 ( P | \& Ch. 1 | 967,920 |
| 1910. | '58 |  |  | . |  |  | 505, 915 | 10,313 |  | 9,476 |  | 140 | 74,382 | 34,6131 | 58,362 | 762,201 |
| 1911 | 59 |  |  |  |  |  | - 383,509 | 38,751 |  | 9,705 |  |  | 119,802 | 305, 247 | 91,951 | 948,965 |
| 1912 | 57 | 3,640 |  | 92 | 139 | 12 | 444,762 | 62,345 |  | 18,092 |  |  | 165,309 | 247,743 | 58,325 | 996,576 |
| 1913 | 78 | 4,782 |  | 74 | 124 | 17 | 972,178 | 37,433 |  | 3,616 |  |  | 69,822 | 192,887 | 77,965 | 1,353,901 |
| 1914 | 63 | 4,857 |  | 61 | 107 | 12 | 536,696 | 32,908 |  | 16,420 |  |  | 120,201 | 220,340 | 184,474 | 1,111,039 |
| 1915. | 63 | 4,951 |  | 61 | 109 | 12 | 476, 042 | 51,734 |  | 6,370 |  | 2,927 | 146,956 | 367,352 | 82,000 | $1,133,381$ |
| 1916. | 72 | 4,600 |  | 80 | 115 | 10 | 214,789 | 51,231 |  | 15,495 | 3,096 | - 5,986 | 183,623 | 280,644 | 240,201 | 995, 065 |
| 1917. | 94 | 5,286 | 1,370 | 99 | 130 | 16 | 339,848 | 48,630 |  | 27,646 | 11,740 | B.B.\&SH. | 157,589 | 496,759 | 475,273 | 1,557,485 |
| 1918. | 88 | 5,073 | 1,786 | 122 | 127 | 24 | 276,459 | 65, 535 | 41,819 | Ple, \& Wh. | 15, 916 | B.B.\&SH. | 191,068 | 527,745 | 497, 615 | 1,616,157 |
| 1919. | 82 | 4,598 | 2,200 | 139 | 104 | 21 | 369,445 | 73,179 | 9,077 | 18, 295 | 24, 323 | 4,493 | 175, 670 | 346, 839 | 372,035 | 1,393,156 |
| 1920. | 65 | 4,761 | 1,855 | 155 | 45 | 19 | 351, 405 | 95,983 | 8,441 | 13,877 | 8,081 | 2,395 | 101,972 | 520, 356 | 6 | 010 |
| 1921 | 56 | 4,777 | 1,452 | 59 | 35 | 8 | 163, 014 | 36,725 | 6,061 | 6,966 | 7,060 | 1,220 | 117,288 | 192,906 | 71,408 | 603,548 |
| 1922 | 64 | 4,491 | 1,513 | 143 | 36 | 4 | 299, 614 | 21,163 | 11,913 | 6,520 | 6,431 | 1,657 | 102,845 | 581,979 440,932 | 258,204 | 1,290,326 |
| 1923. | 61 | 3,957 | 1,446 | 223 | 31 | 6 | 334,647 | 17,539 | 4, 8588 | 4, 745 | 7,097 4,267 | 1,760 | 112,044 115,944 | 440,032 657,501 | 418,055 570,497 | 1,341,677 |
| 1024. | 62 | 3,606 | 1,553 | 242 | 32 | 6 | 360,601 | 18,741 | 2,591 | 6,460 | 4,267 | 1,843 | 115,944 | 657,501 | 570,497 | 1,747,505 |
| 1025. | 65 | 4,225 | 1,821 | 329 | 37 | 10 | 392,643 | 39, 142 | 4,419 | 29,938 | 10,675 | 1,906 | 188,505 | 445,400 | 607,904 | 1,720,622 |
| 1026. | 70 | 4,750 | 2,416 | 445 | 41 | 6 | 336,995 | 41,276 | 4,177 | 23,736 | 10, 445 | 2,165 | 162,449 | 772,903 | 701,962 | 2,065,198 |
| 1927. | 76 | 5,637 | 3,093 | 555 | 46 | 7 | 308, 032 | 34, 029 | 8,819 | 16,129 | 20,820 | 1,746 | 161,148 | 247,617 | 562, 109 | 1,360,449 |
| 1928. | 62 | 5,170 | 2,987 | 399 | 22 | 7 | 203,541 | 11,002 | 2,328 | 5,526 | 6,073 | 805 | 150,684 | 792,362 | 863,256 | 2,035,637 |

Note.-Licenses issued 1023, 1924, 1025, 1926, 1927 and 1028 include transfers from one district to another.

* For the years 1876 to 1901 and $1003-$ particulars of varieties not available-practically all sockeye.



[^2]| Year | Number of canneries operated |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Number of salmon licenses <br> issued      <br> G.N. Troll P.S. D.S. T.N. Sockeye Red <br> SpringPink <br> Spring |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1876. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1877. | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 3,000 |
| 1878. | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 8,500 |
| 1879. | 2 |  |  |  |  |  |  |  |  |  | . |  |  |  | . . . . . . . . ${ }^{\text {a }}$ | 10,603 |
| 1880. | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  | . . . . . . . . | 19,694 |
| 1881. | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 21,560 |
| 1882. | 2 |  |  |  |  |  |  | . . . . |  | ............. |  |  |  |  |  | 24,522 |
| 1883. | 5 |  | . . . . | ..... | . . . . | . . . . . |  | . . . . . . . |  | . . . . . . . . |  |  |  | . . . . | - . . . . | 31,157 |
| 1884. | 5 | $\cdots \cdot \cdot \cdot$ |  |  |  |  |  |  |  | . . . . . . . . |  |  |  | . . . . . |  | 53,986 |
| 1885. | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 12,900 |
| 1886.. | 6 |  |  |  |  |  | . . . . . . . . |  |  |  |  |  |  |  |  | 37,587 |
| 1887.. | 6 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 58,592 |
| 1888.. | 5 |  |  |  |  |  |  |  |  |  |  |  |  | . . . . |  | 70,106 |
| 1889. | 6 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 58,165 |
| 1890. | 7 |  |  |  |  | . . . . . . | ........... |  |  | . | . |  |  |  | . . . . . . . . | 90,509 |
| 1891.. | 7 |  |  | . . . . . |  |  |  |  |  |  |  |  |  |  |  | 78,135 |
| 1892.. | 8 |  |  |  |  |  | - | . . . . . . . | ...... | ....... |  |  | . . . . . . . . |  |  | 90,280 |
| 1893. | 7 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 59.675 |
| 1894. | 7 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $61,151$ |
| 1895. | 7 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $67,797$ |
| 1896... | 8 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 100,140 |
| 1897.. |  |  | . | . . . . ${ }^{\text {, }}$ | $\cdots$ |  | . . . . . . . . |  |  |  |  |  |  |  |  | 65,905 |
| 1898.. | 6 |  |  |  | . . ., . |  |  |  |  |  |  |  |  |  | . | $81,234$ |
| 1899. | 7 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $108,026$ |
| 1900. | 10 |  |  |  |  |  | . . . . . . . . . |  |  |  |  |  |  |  |  | 128,529 |
| 1901. | 11 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 126,092 |
| 1902. | 10 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $154,875$ |
| 1903. | 10 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 98, 069 |
| 1904.... | 11 |  |  |  |  |  | 93,404 | 20,621 | (Red \& | h. Springs) |  |  | 10,315 |  | 29 | 154,860 |
| 1905. | 12 |  |  |  |  |  | 84, 717 | $14,598$ $20,138$ | (Red \& | h. Springs) |  |  | $\begin{array}{r} 7,247 \\ 16,867 \end{array}$ | $38,991$ | k. $\&$ Ch.) | $\begin{aligned} & 114,085 \\ & 162,420 \end{aligned}$ |


*Approximately.
$\dagger$ Pack of fish caught at Skeena River regardless where canned. $\ddagger$ Pack at Skeena River regardless where caught.
Note-Licenses issued $1923,1924,1925,1026,1027$ and 1028 include transfers from other districts.
For the years 1877 to 1903 . Particulars of varieties not available--practically all sockeye.

| Year | Number of canneries operated | Number of salmon licenses issued |  |  |  |  | Sockeye | Red Spring | Pink Spring | White Spring | Bluebacks | Steelheads | Cohoes | Pinks | Chums | Varieties other than sockeye packed at Smiths Inlet | Totals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | G.N. | Troll | P.S. | D.S. | T.N. |  |  |  |  |  |  |  |  |  |  |  |
| $\begin{aligned} & 1881 . \\ & 1882 . \end{aligned}$$1883$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 5,635 |
|  | 1 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 10,780 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 20,383 |
| 1885. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1886.. |  |  |  | -. ${ }^{\text {a }}$ | ..... |  |  |  |  |  |  |  |  |  |  |  | 15,000 |
| $\begin{aligned} & 1887 \ldots \\ & 1888 . . . \end{aligned}$ | 2 2 | ....... |  | . | ... |  |  |  |  |  |  |  |  |  |  |  | 11,203 |
| 1888... |  | ...... |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 20,000 |
| 1889.. | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 25,704 |
| 1890. | 2 | $\cdots$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 32,961 |
| 1891. | ${ }_{2}^{2}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 34,924 |
| 1892. | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 15, 126 |
| 1893. | 2 | .... |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1894. | 2 3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 39,351 |
| $\begin{aligned} & 1895 . \\ & 1896 . \end{aligned}$ | 3 4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1896... | 4 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 107,468 |
| 1897. | 6 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1898. | 6 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 104,711 |
| 1899. | 6 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 71,079. |
| 1900... | 6 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 75,413 |
| 1901. | 6 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 66,840 |
| 1902.. | 6 | . $\cdot$. $\cdot$ |  |  |  |  | 74,019 | Other v | arieties | 1,479) |  |  |  |  |  |  | 75, 498 |
| 1903.... | 5 |  |  |  |  |  |  |  | $\cdots$ |  |  |  |  |  |  |  | 75,530 |
| 1904... | 5. |  |  |  |  |  | 101,542 | (11 Red | \& Wh. S |  |  |  | 358 | 61 |  |  | 101,972 |
| 1905. | 6 |  |  |  |  |  | 90,713 | (351 Red | \& Wh. |  |  |  |  |  |  |  | 91,064 |
| 1906. | 8 |  |  |  |  |  | 132,631 |  |  |  |  |  |  |  |  |  | 132,878 |
| 1907.. | 8 |  |  |  |  |  | 97,874 | 750 |  |  |  |  | 6,240 | 700 (Pk | \& Ch.) |  | 105, 564 |
| 1908.. | 8 | . |  |  | . |  | 74,452 | 1,254 |  |  |  |  | 9,505 | 4,679 (Pk | \& Ch.) |  | 89,890 |
| 1909. | 8 | ... |  |  |  |  | 102,527 | 1,087. |  |  |  |  | 1,400 | 300 (Pk | \& Ch.) |  | 105, 314 |
| 1910. | 8 |  |  |  |  |  | 141, 021 | , 383 |  |  |  |  | 2,075 | 19 |  |  | 144,398 |
| 1911. | 8 |  |  |  |  |  | 105,763 | 1,317 |  |  |  |  | 8,287 | 6,411 | 5,288 |  | 127, 066 |
| 1912.. | 8 |  |  |  |  |  | 129,217 | 1,452 | . . . . | 468 |  |  | 11,095 | 11,723 | 4,843 |  | 158,798 |



Nore. - Figures shown in black are packs from fish caught at Rivers Inlet or Smiths Inlet. Figures in black for years previous to 1919 are actual packs. Figures shown in italics, 1918 to 1928 are actual packs irrespective of where fish taken and not ineluding fish shipped out for canning in other districts.
*1914 figures include Rivers Inlet pack only, no figuras being available for Smiths Inlet for that year.
Note,-Re column "Varieties other than sockeye packel at Smiths Inlet." For the years this column is utilized, figures of the different varieties other than soekeye packed at Smiths Inlet were not available, and had to be shown as a total. Sockeye for these years are shown under their proper heading.

Nore--Licenses issued 1923, 1024, 1925, 1926, 1927 and 1928 include transfers from other districts.
*For the years 1882 to 1884 and 1886 to 1901 and 1903-particulars of variotios not available-practically all sockeye.

PACK OF CANNED SALMON IN THE FRASER RIVER DISTRICT-1876 TO 1928

| Year | $\begin{array}{\|c} \text { Num- } \\ \text { ber of } \\ \text { can- } \\ \text { neries } \\ \text { oper-- } \\ \text { ated } \end{array}$ | Number of salmon licenses issued |  |  |  |  | Sockeye | Red Spring | Pink Spring | White Spring | Bluebacks | Steelheads | Cohoes | Pinks | Chums | Totals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | G.N. | $\text { Troll } \mid$ | P.S. | D.S. | T.N. |  |  |  |  |  |  |  |  |  |  |
| 1876. | 3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 9,847 |
| 1877. | 5 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 64,387 |
| 1878. | 8 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 105,101 |
| 1879. | 7 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 50,490 |
| 1880. | 7 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 42,155 |
| 1881. | 8 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 142,516 |
| 1882. | 11 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 199, 104 |
| 1883. | 13 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 109,701 |
| 1884. | 6 |  |  |  |  |  |  |  |  |  |  |  |  |  | ...... | 38,437 |
| 1885. | 6 |  |  |  |  |  | ........... |  |  |  |  |  |  |  |  | 89,617 |
| 1886. | 11. |  |  |  |  |  | . . . . . . . . |  |  |  |  |  |  |  |  | 99,177 130 |
| 1887. | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 130,088 |
| $1888 .$ | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 76,616 |
| 1889. | 16 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 303,875 |
| 1890. | 16 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 241,889 |
| 1891. | 11 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 178,954 |
| 1802. | 11 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 79,715 |
| 1893. | 21 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 457,797 |
| 1894. | 20 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 363,967 |
| 1885. | 21 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 400,368 |
| 1896.. | 29 |  |  |  |  |  |  |  |  |  |  |  |  |  | , | 356, 984 |
| $1897 .$ | 35 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 860,459 |
| $1898 .$ | $35$ |  |  |  |  |  |  |  |  | - |  |  |  |  |  | 256, 101 |
| $1899 .$ | $\begin{aligned} & 41 \\ & 40 \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\begin{aligned} & 51,383 \\ & 311.592 \end{aligned}$ |
| 1900. | 48 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $316,522$ |
| $1901 .$ | $49$ | $3,832$ |  |  |  |  |  |  |  |  |  |  |  |  |  | $990,313$ |
| $1002 .$ | $\begin{aligned} & 42 \\ & 42 \end{aligned}$ | $\begin{aligned} & 5,002 \\ & 2,685 \end{aligned}$ |  |  |  |  | $293,477$ | Oth | Varietios |  |  |  |  |  |  | $327,005$ |
| $1003 .$ | 35 | 3,101 |  |  |  |  | $204,809$ | 2,084: ( | and Wh | 0 Spring) |  |  | 25,728 |  |  | $237,125$ |
| 1904. | 23 | 2,224 |  |  |  |  | 72, 668 | 0,482: | and Wh | Spring) |  |  | 45, 667 |  |  | 128,903 |
| 1905. | $38$ | $2,770$ |  |  |  |  | $837,489$ | $5,507 \text { : }$ | and Wh | e Spring) |  |  | 30,836 34,413 | 15,543 | Pk. ${ }_{\text {c }}$ | $\begin{aligned} & 877.136 \\ & 240.486 \end{aligned}$ |
| 1906....... | 24 | 1,746 |  |  |  |  | 183,007 | $6,50$ | ........ | $1,020$ |  |  | 34,413 | 15,543 | Pk. \& Ch | $240,486$ |



Note.-Licenses issued $1923,1924,1925,1926,1927$ and 1028 include transfers from other districts.
*For the years 1876 to 1901 , particulars of varieties not available-practically all sockeye.

Statement No. 6
PACK OF CANNED SALMON OF PUGET SOUND FROM 1887 TO 1927

| Year | Number of canneries operated | Spring | Sockeye | Cohoe | Chum | Pink | Steelhead | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1887. |  | Partic | ulars of vari | aties not a | vailable. |  |  | 22,000 |
| 1888 | 4 |  |  |  |  |  |  | 21,975 |
| 1889. | 2 | 240 |  | 7,480 | 1,145 | 2,890 |  | 11,674 |
| 1890. | 1 | 1,000 |  | 3,000 | 4,000 |  |  | 8,000 |
| 1891. | 2 | 382 | 5,538 | 5,869 | 3,093 | 5,647 |  | 20,529 |
| 1892. | 2 | 86 | 2,954 | 7,206 | 16,180 |  |  | 26,426 |
| 1893. | 3 | 1,200 | 47,852 | - 11,812 | 11,380 | 17,530 |  | 89,331 |
| 1894. | 3 |  | 41,781 | 22,418 | 22,152 | 9,049 |  | 95,400 |
| 1895. | - 7 | 1,542 | 65,143 | 50,865 | 38,785 | 23,633 |  | 179,968 |
| 1896. | 11 | 13,495 | 72,979 | 82,640 | 26,550 |  |  | 195,664 |
| 1897 | 12 | 9,500 | 312,048 | 91,900 | 23,310 | 57,268 |  | 494, 026 |
| 1898. | 18 | 11,200 | 252,000 | 98,600 | 38,400 |  |  | 400, 200 |
| 1899. | 19 | 24,364 | 499, 646 | 101,387 | 31,481 | 252,733 |  | 919,611 |
| 1900. | 19 | 22,350 | 229,800 | 128,200 | 89,100 |  |  | 469,450 |
| 1901. |  | Partic: | ulars of vari | eties not a | vailable. |  |  | 1,380,590 |
| 1902. | 21 | 30,049 | 372,301 | 85,817 | 93,492 |  |  | 581,659 |
| 1903. | 22 | 14,500 | 167,211 | 103,450 | 12,001 | 181,236 |  | 478,488 |
| 1904. | 13 | 14,441 | 109,264 | 118,127 | 49,656 |  |  | 291,488 |
| 1905. | 24 | 1,804 | 825,453 | 79.335 | 41,057 | 70,992 |  | 1,018,641 |
| 1906. | 16 | 8,139 | 178,748 | 94,497 | 149,218 |  |  | 430,602 |
| 1907. | 14 | 1,814 | 93,122 | 119,372 | 50,249 | 433, 423 |  | 698,080 |
| 1908. | 22 | 95,210 | 170,951 | 128,922 | 47,607 | 6,075 |  | 448,765 |
| 1909. | 11 | 13,019 | 1,097,904 | 143,133 | 53,688 | 370,993 |  | 1,632,949 |
| 1910. | 24 | 10,064 | 248,014 | 162,755 | 146, 942 | 108 |  | 567,883 |
| 1911. | 15 | 21,823 | 127,761 | 256,124 | 104,321 | 1,046,992 |  | 1,557,029 |
| 1912. | 20 | 20,252 | 184,680 | 149,727 | 60,760 | 700 |  | 416,125 |
| 1913. | 22 | 1,234 | 1,673,099 | 61,019 | 56,225 | 791,886 |  | 2,583,463 |
| 1914. | 31 | 26,044 | 335,230 | 151,893 | 278,801 | 892 |  | 792,860 |
| 1915. | 41 | 28,466 | 64,548 | 180,783 | 411,724 | 583,649 |  | 1,269,206 |
| 1916. | 32 | 37,030 | 84,637 | 155,832 | 427,878 | 1,887 |  | 707,278 |
| 1917. | 45 | 57,543 | 411,538 | 114,276 | 216, 285 | 1,124,884 |  | 1,921,554 |
| 1918. | 32 | 63,366 | 50,723 | 235,860 | 267, 538 | 6,605 | 106 | 624,198 |
| 1919. | 35 | 68,542 | 64,346 | 210,883 | 525,541 | 421,215 | 5,076 | 1,295,626 |
| 1920. | 11 | 25,846 | 62,654 | 24, 502 | 48,849 | 4,669 |  | 166,520 |
| 1921. | 23 | 25,567 | 102,967 | 89,412 | 30,831 | 404,713 |  | 653,490 |
| 1922. | 16 | 20,615 | 48,566 | 111,711 | 65,552 | 2,225 |  | 248,729 |
| 1923. | 18 | 15,777 | 47,402 | 122,000 | 97,081 | 475,849 | 29 | 758,138 |
| 1924. | 12 | 19,968 | 69,369 | 87,879 | 134,360 | 5,945 | 128 | 317,649 |
| 1925. | 23 | 28,268 | 106,064 | 171,587 | .41,635 | 555,848 | 141 | 903,543 |
| 1926. | 14 | 27,763 | 44,569 | 120,846 | 112,411 | 2,125 | 63 | 307,778 |
| 1927. | 21 | 43,443 | 96,343 | 133, 528 | 37,414 | 585,506 | 216 | 896,450 |
| 1928. | - 12 | 24,628 | 61,044 | 92,770 | 145,735 | 5,816 | 265 | 330,258 |

Statement No. 7
STATEMENT OF HALIBUT LANDINGS-BRITISH COLUMBIA 1913 TO 1928

|  | cwt. |  | cwt. |
| :---: | :---: | :---: | :---: |
| 1913. | 223,465 | 1921. | 325,868 |
| 1914. | 214, 444 | 1922 | 293,184 |
| 1915. | 194,896 | 1923. | 334,667 |
| 1916. | 123,062 | 1924. | 331,382 |
| 1917. | 113,529 | 1925. | 318,240 |
| 1918. | 186,229 | 1926. | 315,095 |
| 1919. | 210,777 | 1927 | 271,354 |
| 1920. | 238,770 | 1928. | 302,820 |

Statement No. 8
STATEMENT OF DRY SALT HERRING PACKS, 1918-1928-BRITISH COLUMBIA

| Year | $\begin{aligned} & \text { District } \\ & \text { No. } 1 \end{aligned}$ | $\underset{\text { No. } 2}{\text { District }}$ | District No. 3 |  | Total ${ }^{-}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | East Coast | West Coast |  |
|  | cwt. | cwt. | cwt. | cwt. | cwt. |
| 1918. | 20,000 |  | 109,900 | 42,710 | 172,610 |
| 1919. | 4,000 |  | 43,000 | 208,058 | 255,058 |
| 1920. | 807 | 1 | 176,640 | 334,720 | 512,168 |
| 1921. | 249 |  | 231, 240 | 248,482 | 479, 971 |
| 1922. |  |  | 297,871 | 224,897 | 522,768 |
| 1923. |  | 8,935 | 250,420 | 484,681 | 744,036 |
| 1924. |  |  | 305,266 | 548,277 | 853,543 $1,083,174$ |
| 1925. |  | 4,120 | 591,162 | 487,892 | 1,083,174 |
| 1926. | 11,134 24,380 | 4,192 7,600 | 596,114 542,385 | 327,207 473,825 | $1,938,647$ $1,048,190$ |
| 1928. | 46,995 |  | 748,032 | 277,161 | 1,072,188 |

Statement No. 9
CANNED PILCHARD PACK-BRITISH COLUMBIA 1917 TO 1928

|  | Cases |  | Cases |
| :---: | :---: | :---: | :---: |
| 1917. | 1,090 | 1923. | 17,195 |
| 1918. | 63,693 | 1924. | 14,898 |
| 1919. | 63, 065 | 1925. | 37,182 |
| 1920. | 91,929 | 1926. | 26,731 |
| 1921. | 16,091 | 1927. | 58,501 |
| 1922. | 19,186 | 1928. | 65,097 |

Statement No. 10
PRODUCTION FISH OIL AND MEAL—BRITISH COLUMBLA, 1920-1928

| Year | From Pilchards |  | From Herring |  | From Whales |  |  | From Other Sources |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Meal and Fertilizer | Oil :- | Meal | Oil | Whalebone and Meal | Fertilizer | Oil | $\begin{gathered} \text { Meal } \\ \text { and } \\ \text { fertilizer } \end{gathered}$ | Oil |
|  | tons | gals. | tons | gals. | tons | tons | gals. | tons | gals. |
| 1920. |  |  |  |  | 503 | 1,035 | 604, 070 | 486 | 55,669 |
| 1921. |  |  |  |  |  |  |  | 489 | 44,700 |
| 1922. |  |  |  |  | 326 | 230 | 283,314 | 911 | 75,461 |
| 1923. |  |  |  |  | 485 | 910 | 706,514 | 823 | 180,318 |
| 1924. |  |  |  |  | 292 | 926 | 645,657 | 1,709 | 241,376 |
| 1925. | 2,083 | 495,653 |  |  | 347 | 835 | 556, 939 | 2,468 | 354,853 |
| 1926. | 8,481 | 1,898,721 | 310 | 13,700 | 340 | 666 | 468, 206 | 1,752 | 217,150 |
| 1927. | 12,169 | 2, 673,876 | 1,838 | 170,450 | 345 | 651 | 437, 967 | 2,512 | 375,130 |
| 1928.... | 14,500 | 3,995,806 | 831 | 68,411 | 376 | 754 | 571,914 | 3,658 | 411,207 |

Statement No. 11
WHALE CATCH LANDINGS, BRITISH COLUMBIA, 1918 TO 1928


* All varieties $\dagger$ No whaling plants operated 1921

Statement No. 12
STATEMENT OF FUR SEAL SKINS TAKEN AND LANDED, BRITISH COLUMBIA, 1912-1928

|  | Year | $\begin{aligned} & \text { District } \\ & \text { No. } \end{aligned}$ | District <br> No. 2 | $\begin{aligned} & \text { District } \\ & \text { No. } 3 \end{aligned}$ | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1912. |  |  |  | 205 | 205 |
| 1913. |  |  | 285 | 119 | 401 |
| 1914. |  |  | 95 | 257 | 352 |
| 1915. |  |  | 39 | 400 | 439 |
| 1916. |  |  | 21 | 138 | 159 |
| 1917. |  |  | 14 | 204 | 218 |
| 1918. |  |  | 78 | 10 | 88 |
| 1919. |  |  | 53 | 17 | 70 |
| 1920 |  |  | 502 | 556 | 1,058 |
| 1921. |  |  | 270 | 2,079 | 2,349 |
| 1922. |  |  | 291 | 639 | 930 |
| 1923. |  |  | 678 | 3,746 | 4,424 |
| 1924. |  |  | 370 | 1,862 | 2,232 |
| 1925. |  |  | 810 | 3,655 | 4,465 |
| 1926. |  |  | 655 | 2,169 | 2,824 |
| 1927. |  |  | 188 | 1,288 | 1,476 |
| 1928. |  |  | 465 | 1,625 | 2,090 |

Stitmafent No. 13
DESTRUCTION OF SEA LIONS

| - | 1922 | 1923 | 1924 | 1925 | 1926 | 1927 | 1928 | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Virgin Rocks- |  |  |  |  |  |  |  |  |
| Pups.. |  | 649 | 903 | 1,067 | 565 | 635 | 375 | 4,194 |
| Adults... |  | 1,111 | 1,333 | 1,520 | 877 | 858 | 632 | 6,331 |
| Pearl Rocks- |  |  |  |  |  |  |  |  |
| Pups... |  | 5 | 312 | 102 | 1.46 | 40 | 2 | 607 |
| Adults... Solander Rock | 220 | 120 | 158 | 138 | 368 | 130 | 30 | 1,164 |
| Adults.. |  |  |  |  |  |  | 103 | 103 |
| Totals. | 220 | 1,885 | 2,706 | 2,827 | 1,956 | 1,663 | 1,142 | 12,399 |

STATEMENT OF FISHERY LICENSES ISSUED, BRITISH COLUMBIA, SEASON 1928-WHOLE PROVINCE

| Variety of License | Issued |  |  |  | Transfers |  |  |  | Operating |  |  |  | Remarlss |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Whites | Indians | Japs | Total | Whites | Indians | Japs | Total | Whites | Indians | Japs | Total |  |
| Salmon cannery. | 76 |  |  | 76 |  |  |  |  | 76 |  |  | 76 |  |
| Salmon curing. | 29 |  | 4 | 33 |  |  |  |  | 29 |  | 4 | 33 |  |
| Salmon trap-nct. | 7 |  |  | 7 |  |  |  |  | 7 |  |  | 7 |  |
| Salmon drag-seine. | 20 | 2 |  | 22 |  |  |  |  | 20 | 2 |  | 22 |  |
| Salmon purse-seine. | 307 | 46 |  | 353 | 44 |  |  | 44 | 351 | 46 |  | 397 |  |
| Salmon gill-ret.... | 2,505 | 1,020 | 938 | 4.463 | 692 | 24 | . $\cdot$. | 716 | 3,197 | 1,044 | 938 | 5. 179 | (1 eancelled) |
| Salmon trolling, | 2, 144 | 644 | 155 | 2,943 | 44 |  |  | 44 | 2,188 | 644 | 155 87 | 2,087 |  |
| Bont.. | 136 | 10 | 87 | $\begin{array}{r}233 \\ 74 \\ \hline\end{array}$ |  |  |  |  | $\begin{array}{r}136 \\ 59 \\ \hline\end{array}$ | 10 | 87 | ${ }^{233}$ | (4 cancelled) |
| Buyers. | 59 |  | 15 478 | 74 997 |  |  |  |  | $\begin{array}{r}59 \\ 229 \\ \hline\end{array}$ |  | $\begin{array}{r}15 \\ 478 \\ \hline\end{array}$ | 74 1,010 |  |
| Assistant salmon gill-net. | 218 | 301 | 478 | 997 | 11 | 2 |  | 13 | 229 | 303 168 | 478 | 1,010 |  |
| Capt. salmon seine. | 110 | 168 |  | 278 | 1 |  |  | 1 | 111 | 168 |  | + 2729 | (5 cancelled) |
| Asst. salmon seine. | 796 | 930 |  | 1,726 30 | 3 |  |  | 3 | 709 25 | 930 |  | 1,729 30 | (4 cancelled) |
| Herring curing. | 25 |  | 5 <br> 3 | 111 |  |  |  |  | ${ }^{25}$ |  |  | 3 |  |
| Herring purso-seine. Herring drag-seinc. | 108 |  | 3 | 111 | 3 |  |  | 3 | 111 |  | 3 | 114 2 |  |
| Herring drag-seinc. Herring gill-net. |  |  |  | $\begin{array}{r}2 \\ 38 \\ \hline\end{array}$ |  |  |  |  | 34 |  |  | 38 |  |
| Herring gill-net. | 34 |  | 4 | 38 |  |  |  |  | 34 71 |  | 4 | 38 |  |
| Capt. herring seine | 71 | ${ }_{121}^{21}$ | ${ }_{6}^{6}$ | ${ }_{8}^{98}$ |  |  |  |  | ${ }^{71}$ | - $\begin{array}{r}21 \\ -124\end{array}$ | ${ }^{6}$ | $\begin{array}{r}98 \\ 898 \\ \hline\end{array}$ |  |
| Asst. herring seine | 607 | 124 | 165 | 898 |  |  |  |  | 607 | - 124 | 165 | 896 |  |
| Cod gill-net. | 134 24 | 5 | 20 | 140 | 1 |  |  |  | 13 |  | 26 | 140 |  |
| Cod hook and line. | 240 | 28 | 125 | 393 |  |  |  |  | 240 | 28 | 125 | 393 |  |
| Gray fish gill-net. | 53 | 3 | 74 | 130 |  |  |  |  | 53 | 3 | 74 | 130 |  |
| Grayfish hook and Iine. | 164 | 8 | 117 | 289 | 1 |  |  | 1 | 165 | 8 | 117 | 290 |  |
| Gray fish purse-seine... | 1 |  |  | 1 |  |  |  |  |  |  | 14 |  |  |
| Smelt....... | ${ }_{1}^{60}$ |  | 14 | 75 1 |  |  |  |  | 60 1 | 1 | 14 | $\begin{array}{r}75 \\ 1 \\ \hline\end{array}$ |  |
| Abalone.............. Miscellaneous fishery | 122 | 10 | 44 | $17{ }^{1}$ | 1 |  |  | 1 | 123 | 10 | 44 | 177 |  |
| Micellaneous cannery. | 5 |  |  | 5 |  |  |  |  | 5 |  |  | 5 |  |
| Reduction works..... | 20 |  |  | 26 |  |  |  |  | 26 |  |  | 26 |  |
| Totals.. | 8,084 | 3,321 | 2, 261 | 13,666 | 801 | 26 |  | 827 | 8,885 | 3,347 | 2,261 | 14,403 | (14 cancelled) |

[^3]Statement No. 15
STATEMENT OF SALMON LICENSES ISSUED. BRITISH COLUMBIA, 1919-1928

| Kind of License | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | 1927 | 1928 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| District No. 1- |  |  |  |  |  |  |  |  |  |  |
| Salmon cannery | 14 | 11 | 13 | 10 | 11 | 9 | 10 | 10 | 10 | 10 |
| Salmon gill-net. | 1,337 | 1,288 | 1,437 | 1,296 | 964 | 969 | 969 | 1,063 | 1,249 | 1,303 |
| District No.2- |  |  |  |  |  |  |  | 1,06 | 1,240 | 1,303 |
| Salmon cannery. | 45 | 41 | 32 | 41 | 37 | 38 | 41 | 50 | 48 | 47 |
| Salmon purse-seine | 35 | 79 | 13 | 73 | 126 | 107 | 137 | 198 | 244 | 158 |
| Salmon drag-seine. | 81 | 38 | 30 | 30 | 20 | 19 | 15 | 14 | 16 | 9 |
| Salmon gill-net:- |  |  |  |  |  |  |  |  |  |  |
| Naas River.. | 300 | 342 | 338 | 304 | 244 | 210 | 210 | 316 | 302 | 263 |
| Skeena River | 1,153 | 1,153 | 1,109 | 1,091 | 900 | 941 | 1,068 | 1,129 | 1,198 | 1,208 |
| Rivers Inlet. | 910 | 871 | 1,000 | 1,012 | 987 | 770 | - 891 | 1,115 | 1,273 | 1,117 |
| Smiths Inlet. | 916 | 173 | 215 | 179 | 197 | 193 | 236 | - 368 | - 570 | 1,424 |
| Bella Coola. |  | 193 | 241 | 165 | 134 | 146 | 139 | 192 | 195 | 173 |
| Kimsquit. |  |  |  | 120 | 122 | 96 | 137 | 100 | 104 | 80 |
| Butedale.. | 421 |  | 5 |  | 63 | 32 | 60 | 37 | 108 | 58 |
| Namu. | 421 | 136 | 138 | 136 | 215 | 87 | 109 | 139 | 180 | 77 |
| Queen Charlotte Islands |  |  |  | 4 | 1 | 1 | 17 | 27 | 42 | 22 |
| Total, District No. 2 <br> District No. 3- | 2,490 | 2,943 | 3, 047 | 3,011 | 2,863 | 2,476 | 2,867 | 3,423 | 3,972 | 3,422 |
| Salmon cannery.. | 23 | 13 | 11 | 14 | 13 | 15 | 16 | 19 | 18 | 19 |
| Salmon purse-seine | 103 | 76 | 46 | 74 | 97 | 135 | 192 | 252 | 308 | 239 |
| Salmon drag-seine. | 23 | 7 | 5 | 10 | 11 | 13 | 22 | 27 | 30 | 13 |
| Salmon gill-net. | 771 | 530 | 293 | 176 | 142 | 251 | 390 | 364 | 422 | 454 |
| Whole Province- |  |  |  |  |  |  |  |  |  |  |
| Salmon cannery.. | 82 | 65 | 56 | 65 | 61 | 62 | 67 | 79 | 76 | 76 |
| Salmon purse-seine | 138 | 155 | 59 | 147 | 223 | 242 | 329 | 445 | 552 | 397 |
| Salmon drag-seine | 104 | 45 | 35 | 40 | 31 | 32 | 37 | 41 | 46 | 22 |
| Salmon gill-net.. | 4,598 | 4,761 | 4,777 | 4,483 | 3,969 | 3,696 | 4,226 | 4,850 | 5,643 | 5,179 |

Nore.-During the season 1928 F. Millerd's cannery at Vancouver, the Cassiar Cannery on the Skeena and the Massett Cannery, Massett Inlet, operated without licenses, and are not included in the number of cannery licenses shown above.

Statement No. 16
STATEMENT OF POWER BOATS OPERATED IN DISTRICT No. 2, BRITISH COLUMBLA, IN CONNECTION WITH SALMON GILLNET OPERATIONS


## APPENDIX No. 2

## REPORT ON THE WORK OF THE BIOLOGICAL BOARD FOR 1928-29

By J. J. Cowie, Hon. Secretary-Treasurer

The board is a semi-independent body whose members receive no remuneration. To it has been assigned the conduct and control of investigations of scientific, practical and economic problems connected with the fisheries. It operates four stations for research work. Two of these are on the Atlantic coast: a Biological Station at St. Andrews, N.B., and an Experimental Station at Halifax, N.S. There are two on the Pacific coast: a Biological Station at Nanaimo, B.C., and an Experimental Station at Prince Rupert, B.C. There is a field station at Cultus Lake, B.C., for the study of sockeye salmon, while a laboratory is used at the University of Manitoba for the study of fish in the Prairie Provinces. The following is an outline of the work carried on at the various stations during the year under review:-

## Biological Station, St. Andrews, N.B.

## INYESTIGATORS

The scientific staff employed during 1928 consisted of the following:-
Director: Dr. A. G. Huntsman.
Hydrographer: Mr. H. B. Hachey.
Investigator for trout: Mr. H. C. White.
Investigator for fry planting: Mr. W. S. Hall.
Investigator for lobster (summer season only): Mr. A. F. Chaisson.
Investigator for shad (summer season) : Mr. A. A. Giffin.
Assistant with reports (summer season): Dr. H. I. Battle.
Assistant with fisheries technology (summer season): Mr. E. E. Daggett.
The volunteer investigators engaged in work at the station or along the coast during the year were as follows, the periods of time spent being indi-cated:-
Mr. W. S. Allen, Dalhousie University, July 6 to August 19.
Miss Armine Alley, University of Toronto, June 15 to August 31.
Prof. P. M. Bayne, Acadia University, June 4 to August 14.
Mr. S. A. Beatty, McGill University, May 30 to September 5.
Miss Ruby Bere, University of Manitoba, June 4 to August 30.
Mr. N. J. Berrill, Leeds University, England, July 23 to September 16.
Prof. C. J. Connolly, University of St. Francis Xavier's College, June 30 to August 15.
Miss V. M. Davidson, High School of Commerce, Toronto, August 8 to 31.
Miss Dorothy Dow, University of Toronto, June 8 to September 7.
Miss Marjory Ellis, Dalhousie University, July 3 to August 31.
Miss Elizabeth Frame, Dalhousie University, July 3 to September 7.
Miss Nancy Frost, Acadia University, June 4 to July 16.
Mr. N. E. Gibbons, Queen's University, June 12 to September 13.
Prof. J. N. Gowanloch, Dalhousie University, July 5 to September 22.
Mrs. J. N. Gowanloch, Dalhousie University, July 24 to September 22.
Miss M. E. Huntsman, University of Toronto, June 4 to September 22.
Mr R. B. Kerr, University of Toronto, Jume 5 to September 5.
Prof. A. B. Klugh, Queen's University, June 4 to September 15.
Prof. F. E. Lloyd, MeGill University, August 6 to August 19.
Miss M. E. MacKay, Dalhousie University, June 4 to August 6.
Prof. Douglas McIntosh, Dalhousie University, July 20 to August 3.
Mr. A. W. H. Needler, University of Toronto, May 5 to September 20, 1928; December 1 to December 28, 1928; February 15 to April 15, 1929.

Miss E. C. Odell, Macdonald College, July 5 to September 22.
Prof. G. B. Reed, Queen's University, June 13 to June 20.
Prof. A. D. Robertson, University of Western Ontario, July 3 to August 31.
Mr. W. R. Sawyer, McGill University, July 15 to ${ }^{7}$ September 15.
Miss E. B. Shaw, University of Toronto, July 1 to September 7.
Mr. A. E. Warren, Milton Academy, Milton, Mass., July 2 to August 29.
Miss N. E. Wright, University of Western Ontario, June 19 to August 31.
INVESTIGATIONS AT THE STATION
More than thirty-five separate investigations were carried through at the station during the year, dealing with haddock, cod, herring, hake, flounder, salmon, trout, crabs, squid, scallops, mussels, and various other marine animals and plants. Some of the more outstanding of these may be summarized as follows:-

The nature of fish muscle and of the changes which it undergoes before and after death has been the subject of many studies, and is of fundamental importance for the proper utilization of fish as food. Haddock has served as the principal kind of fish for these studies. In the struggles of capture, the muscles of fish lose glycogen, and there is an increase in the sugar of the blood which may lead to death of the fish while still in the water. Haddock taken on the line trawl recover from this condition, when kept quiet in the sea, there being a marked change after six to seven days, though none in the first three days (MacKay). On death the muscle changes so rapidly that it is impossible with present methods to isolate any of the proteins before they change in character, and the nature of these changes is still unknown. The proteins of the cod, haddock and hake are strikingly similar, but those of the skate are different. Fairly conclusive proof has been given that the ammonia produced during autolytic decomposition is derived in large part, if not altogether from the amide groups of the proteins (Beatty). During rigor or death stiffening the juice of the muscle increases in protein content and this seems to have a relation to the amount of water associated with the proteins (Shaw). The heating of haddock muscle, as occurs in cooking, produces a more or less rapid increase in strength or firmness, which is followed by a slower decrease, the former being probably due to heat coagulation, and the latter to hydrolysis of collagen in the connective tissue (Dow).

Haddock muscle can sometimes be obtained in a sterile condition, that is free from bacteria, and on comparing this with muscle that contains bacteria, it is found that the decomposition is different. Muscle infected with bacteria decomposes much more rapidly and produces a considerable amount of ammonia, whereas in the sterile muscle there is only a very slight increase in the very small amount of ammonia present at the beginning (Gibbons).

Mussels are eaten by starfishes, sea urchins, certain whelks and flounders. In Passamaquoddy bay these enemies seem to prevent the development of mussel beds at or below low tide mark, but if placed below low tide level in cages to afford protection from the numerous enemies that surround them there, they grow more rapidly than when living in the beds between tide marks, where they occur in great abundance (Warren).

The shore flounder of Passamaquoddy bay (Pseudopleuronectes) grows at a rate, which decreases only gradually up to an age of eight years at least, when a length of approximately fourteen inches is attained. This fish spawns in the spring and the fry transform and seek the bottom about the end of June. They go inshore on the mud flats, and with spring tides many are left exposed in tidal pools to the heating effect of the sun, and so may have to endure temperatures as high as $87^{\circ} \mathrm{F}$. or somewhat more. The common shrimp (Crago) and certain sculpins were found dying under these conditions, but the young flounders were apparently able to survive. Laboratory experiments show that under comparable conditions, namely, a rise in temperature of about $2^{\circ} \mathrm{F}$. every five
minutes, the very young were found to withstand a temperature even as high as $88^{\circ} \mathrm{F}$. before collapsing, which the older fish cannot do (Huntsman),

At the head of the bay of Fundy with large areas of the bottom exposed to the weather by the great drop in the tide, the number of kinds of plants and animals is considerably less and the individuals of the various kinds smaller and fewer than in the Passamaquoddy region at the mouth of the bay of Fundy, and there seems to be a greater mortality (Bayne).

The very great vertical mixing that takes place steadily at the mouths of Passamaquoddy bay apparently makes possible the growth of diatoms and other plants in great luxuriance throughout a very long season. A study of the monthly abundance of diatoms in the region for four recent years, beginning with 1925, reveals the fact that their numbers increase and decrease, neither with rise and fall in temperature, nor with rainfall and drought, but with the amount of sunshine, so that these minute plants so important for the food of small animals and ultimately of fishes, are in greatest quantity about the end of June when the sun is highest in the heavens, and least abundant toward the end of December, when the sun is least in evidence (Davidson).

Calanus finmarchicus, a minute shrimp or water flea, which is the chief constituent of what is known to the fishermen as the "red feed" of the herring, does not breed to any extent in the bay of Fundy, but appears to enter that bay from the gulf of Maine in the young state (Wright).

Regular observations are made throughout the year of local conditions, with daily records of the temperature of water and air, and weekly or monthly collections of plankton and hydrographic material at established stations in the bay of Fundy, Passamaquoddy bay, and the St. Croix river, and in the fresh water of Channcook lake.

## FIELD INYESTIGATIONS

The Edward E. Prince carried. through extensive mackerel tagging operations at Yarmouth during the early part of the season. A survey was made during the summer of the conditions in the bay of Fundy and in the neighbouring part of the gulf of Maine to determine the distribution of the cold salt surface water and its possible relation to the most productive fisheries. During the later summer the distribution of the herring fry from the spawning grounds at the mouth of the bay of Fundy was investigated and the location of the "red feed" of the herring determined.

Mr. A. W. H. Needler continued his study of the haddock during various seasons of the year, and principally on various parts of the coast of Nova Scotia. Large numbers of haddock were tagged in the vicinity of Ingonish, C.B., during May and in this work Mr. G. C. Whitely, Jr., of Dalhousie University, assisted.

Mr. A. F. Chaisson carried through a statistical study of the size of the lobster, comparing the conditions along the coast of western Nova Scotia with those in Northumberland strait, in which between five and six thousand individuals were examined. A survey was made with the help of the Edward E. Prince of the conditions in Tusket bay and it demonstrated the presence of large areas with water well above $55^{\circ} \mathrm{F}$. in temperature and hence suitable for the breeding of lobsters.

Prof. A. D. Robertson continued his study of the growth of the oyster under a variety of natural conditions as they exist in Hillsborough river, Prince Edward Island.

Mr. B. W. Taylor of McGill University accompanied the expedition of the Department of Marine and Fisheries to Hudson strait aboard the Montcalm as biologist in connection with the fisheries. Drift bottles for a study of the currents were dropped en route, and the physical and biological conditions in Hudson strait were investigated.

FISHERIES TECHNOLOGY -
A survey was made by Mr. Daggett of the methods used in the handling of fish in Charlotte county under the following heads: canning of clams, smoking of fish, fresh and dried fish.

Equipment was installed for the preparation of Ice Fillets and certain improvements were made in the process. A considerable amount was frozen and packed for shipment to Toronto for the experimental sale there, which began in January, 1929. These were at first entirely from haddock, but later from cod, hake and flounder.

Mr. W. W. Stewart of the staff of the Fisheries Experimental Station at Halifax was accommodated for an investigation of the preparation of fish meal from the waste from sardine (herring) canneries.

## IMPROVEMENTS

A garage has been built for the accommodation of automobiles used in connection with the station. The road leading to the station has been in part widened and improved. Construction has been started on a double cottage with housekeeping facilities for housing workers with families, who have been debarred hitherto through lack of accommodation. Three new experimental ponds of brick and cement have been constructed. A cold room with insulated wall and an ice jacket has been constructed in the laboratory basement for extensive experiments at low temperature. Additional tanks for holding the fish required for the laboratory experiments have been built. A thermograph for the continuous recording of the water temperature has been installed on the Edward E. Prince.

## PUBLICATIONS

The following articles on work done in connection with the station have appeared during the year:-
Berrill, N. J.-The identification and validity of certain species of Ascidians. Jour. Mar. Biol. Ass'n. Vol. XV, No. 1.
Benson, C. C.-Hydrogen ion concentration of fish muscle. Jour. Biol. Chem. Vol. LXXVHI, No. 3, 1928.
MacKay, M. E-The digestive system of the eel-pout (Zoarces anguillaris). Biol. Bull. Vol. LVI, No. 1.
MacKay, M. E.-Note on the bile in different fishes. Biol. Bull. Vol. LVI, No. 1.
Koch, L. W.-Notes on Canadian Rotifera. Contr. Can. Biol. \& Fish. N.S.; Vol. IV, No. 5.
Wiilton, Mgit. H. and Wiltom, Helen. I.-Conditions affecting the growth of the soft-shell clam, Mya arenaria L. Contr. Can. Biol. \& Fish, N.S., Vol. IV, No. 6.
Rice, Christine E.-The decomposition of clam muscle in acid solutions. Contr. Can. Biol. \& Fish., N.S. Vol. IV, No. 7.
Rankin, G. P.-The nutritional physiology of Cladocera. Contr. Can. Biol. \& Fish., N.S., Vol. IV, No. 8.
Burwash, F. M.-The iodine content of the thyroid of two species of Elasmobranchs and one species of Teleost. Contr. Can. Biol. and Fish., N.S., Vol. IV, No. 9.
Coulthard, H. S.-Growth of the sea mussel. Contr. Can. Biol. \& Fish., N.S. Vol. IV, No. 10.
Scott, W. C. M.-A note on the effect of temperature and salinity on the hatching of the eggs of the winter flounder (Pseudopleuronectes americanus Walbaum). Contr. Can. Biol. \& Fish, Vol. IV, No. 11.
Berrill, N. J.-The validity of Lophius americanus, Val. as a species distinct from L. Piscatorius Linn., with notes on the rate of development. Contr. Can. Biol. \& Fish, N.S. Vol. IV, No. 12.

## REPORTS

The following reports on the investigations have been submitted during the year:-
Alley, Armine-
(1) Death rate of crabs' eggs at various temperatures (Cancer amoenas).
(2) Hoop trap record showing the variations of sea urchins, whelk (B. undatum) and starfish (A. forbesi A. vulgaris).
(3) Comparison of the growth of mussels (Mytilus edulis) at depths 4,8 and 12 metres.
(4) Distribution of crabs (Cancer amoenas).
(5) Crab behaviour.

Bayne, P. M.-Observations on a trip to the head of the Bay of Fundy.
Beatty, S. A.-The chemistry of fish muscle proteins.
Berrill, N. J.-Digestion in asoidians and the influence of temperature.
Bere, R.-The external fish parasites of Passamaquoddy bay.
Daggett, E. E.-
(1) Report on the canning of clams.
(2) Report on the smoked fish industry of Charlotte Co.
(3) Report on salting haddock with hake to prevent the haddock from burning.
(4) A report on the handling of fresh fish and the preparation of dried fish in and about the waters of Passamaquoddy bay and the Bay of Fundy.
Davidson, V. M.-The relationship between the abundance of diatoms and sunlight intensity in the vicinity of Pasamaquoddy bay for four consecutive years.
Dow, Dorothy.-The effect of heat on fish muscle.
Ellis, M. F.-Report on the investigations on the protozoan parasites of the fishes of the St. Andrews region.
Frame, E.-A contribution to the study of the histology of the alimentary tract of the haddock (Melanogrammus aeglifinus Limacus) and its nbsorptive function.
Gibbons, N. E.-The effect of autolysis in aseptic haddock muscle on the rate of bacterial decomposition.
Euntsman, M. E.-
(1) A study of the winter flounder. (Pseadopleuronectes americanus Walbaum).
(2) Some experiments on the eggs of the squid (Loligo pealii (Lessuour)).

Klugh, A. B.-
(1) The effect of the ultraviolet component of the sun's radiation upon some aquatic organisms.
(2) An ultraviolet photometer for field use.

Lloyd, F. E.-The occurrence and behaviour of the contractile vacuole in marine and marine entozoic protozoa.
Odell, E. C.-The correlation between light intensity, and the distribution of marine copepods.
Shaw, E. B.-Estimation of bound water in the muscle juice of fish.
Warren, A. E.-An ecological study of the sea mussel. (M. edulis Linn).
Wright, N. E.-Report on the general distribution of Calanus finmarchicus in the Bay of Fundy.

## Experimental Station at Halifax, N.S.

STAFF
Dr. A. H, Leim, Director.
Mr. E. Hess, Bacteriologist.
Dr. H. R. Chipman, Chemist.
Mr. F. Watson, Fishery Demonstrator.
Miss A. M. Wilson, Technical Assistant.
Mr. E. F. Mitchell, Mechanician.
Miss M. M. MacPhee, Secretary.
Miss E. C. Alexander, Office Assistant.
Mr. C. K. Darrach, Factor.
In addition there were a number of seasonal appointments:-
(1) Scientific Assistants-

Mr. D. LeB. Cooper.
Miss C. E. Rice.
Mr. G. O. Langstroth.
Mr. R. F. Ross.
Mr. H. R. Wyman.
(2) Assistants for Technical Processes-

Mr. W. W. Stewart.
Mr. I. W. Mahen.
(3) Technical Assistant (Chemical)-

Miss A. M. Wilson.
(4) Laboratory Assistants-

Mr. E. W. Barnstead.
Mr. E. Baker.
There was one volunteer investigator, viz., Mr. H. B. Branion, University of Toronto.

## 1. Refrigeration

## INVESTIGATIONS

The main problem being attacked by the Station was that of refrigeration and a number of lines were pursued to give data on the rate of freezing of various fishes, the proper storage temperature subsequent to freezing and the effect of low temperatures, just above freezing, on the growth and action of putrefactive bacteria.

Mr. Hess and Miss Rice carried through experiments on the latter point which indicated the value of maintaining the lowest possible temperature without causing the fish to freeze. As a practical test a holding tank was designed by means of which two per cent brine could be circulated through ice and cooled to $30.5^{\circ}$ F. Fish immersed in this brine were held as long as two weeks in good condition. They were from 4 to $8^{\circ} \mathrm{F}$. lower in temperature than is usual in fish stored in ice. A culinary and chemical test was made comparing fish held in the two ways showing the marked improvement with the lower temperature.

Mr. Langstroth determined the specific heat, latent heat of freezing and conductivity of various kinds of fish muscle. These figures enable one to check the efficiency of the equipment designed for freezing fish and to predict the time required to freeze under any given conditions.

Mr. Wyman began and carried on during the summer of 1928 an experiment on the storage of fish at different temperatures between $23^{\circ}$ and $-4^{\circ} \mathrm{F}$. This has been carried on further by the Director. Briefly the results are that in eight months the fish at $23^{\circ} \mathrm{F}$. although frozen had become badly decomposed and rusted, with moulds and bacteria growing on them, while those held at $-4^{\circ} \mathrm{F}$. were still of good flavour and appearance. It has also been shown that a constant temperature was very important in preventing evaporation and other water transfer within the muscle.

## 2. Smoking

Mr. Cooper's investigations on the chemistry of smoke consisted chiefly in a search for satisfactory methods of analysis for formaldehyde in smoke. The current analyses are influenced by the various other aldehydes present. Believing that formaldehyde is an important substance in the smoking of fish it is desirable to know how to produce a smoke with various quantities of formaldehyde present. A method was found which gave promise of being a reliable method of analysis.

Late in the year Mr. Hess began work on the applications of the knowledge already available with a view to designing a more modern plant for the smoking of fish.

## 3. Salting and Drying

The chief investigations in this field were those of Dr. Chipman on the action between salt and protein of fish muscle. The work had in mind particularly an explanation of the differences in the various cures and the ascertaining of what is responsible for the different action of commercial salts. The rate of penetration and water removal with most of the salts on the market has been determined.

Dr. Chipman prepared a draft of a Bulletin on the "Preparation of Pickled Mackerel."

Mr. Mahen, after visiting various plants, wrote up an account of the method of preparing boneless fish. This information is to be made available in Bulletin form.

Miss Wilson made analysis of samples of most of the commercial salts on the market. These are repeated from time to time to check up on the variations in each brand.

## 4. Canning

Mr. Hess carried out an experiment on the effect of storage temperature on canned lobster, using a range of from 32 to 95 degrees Fahrenheit. It was demonstrated that a low temperature was somewhat beneficial to the colour of the product.

Mr. Ross studied the influence of salt solutions and temperature on the shrinkage of lobster and fish muscle. This was undertaken to throw some light on the shrinkage which takes place in canned fish during processing.

## 5. Fish Meals

Mr. Stewart investigated methods of manufacturing fish meal. He spent the greater part of the summer of 1928 at the Atlantic Biological Station, St. Andrews, N.B., investigating difficulties encountered in the plant of Connors Bros., Ltd., of Blacks Harbour. The problem resolved itself into one of the factors controlling the expressing of the oil from the brined, cooked fish.

Dr. Chipman and Miss Wilson analysed commercial samples of fish meal which were submitted for that purpose by the trade.
6. Fish Oils

Mr. Branion prepared oil from the livers of cod, haddock, hake, ling and dogfish, testing the effect of storage for various times and temperatures. The oils were then tested for colour and taste. They were subsequently taken to Toronto for Biological assay of the vitamine content.

Mr. Stewart visited plants and reported on modern methods of extracting cod liver oil at Perce and Fox River, Que.

## development of the station

No major building operations were conducted during the year. Certain additional equipment was placed in the chemical laboratory to permit of greater numbers of workers being accommodated.

In the Demonstration building the conveyer apparatus was completed on a brine freezing tank of commercial size. A holding tank for about 600 pounds of fish was built for the use indicated above.

## ICE FILLETS

The process of rapidly freezing fish, so that its original flavour and condition may be retained months afterwards, is quite well known and is not new. The Board, however, has been experimenting with and demonstrating a method of rapidly freezing fillets of haddock in half-pound blocks, placing these in pound cartons and marketing them. The name "Ice Fillets" has been given to fish so put up. The characteristics of ice fillets are as follows:-

1. They are strictly fresh.
2. They are without waste materials, such as skin and bones.
3. They are of uniform thickness, and of size and sliape suitable for cooking, such as frying, without cutting or subdivision of any kind; of standard weight such as half-pound.
4. They are frozen rapidly in less than twenty minutes, so as to avoid damage through formation of large ice crystals.
5. They are maintained in this frozen condition to the time of cooking, and at sufficiently low temperatures to prevent deterioration.
6. They are sanitarily wrapped in waxed, parchment paper, and neatly packaged in one pound cartons.
Briefly, the process is as follows:-
The fish are first filleted and then cut into five-inch lengths. These are fed into a machine which presses them into cakes five inches long, three inches wide
and approximately one inch thick. The cake is then wrapped in waxed, parchment paper, and frozen in forms the size of a cake in thin metal envelopes in brine. The temperature of the brine is maintained at zero fahrenheit by means of ice and salt, or ammonia refrigeration. The brine is kept moving, and the fish are frozen to the centre in about fifteen minutes. The frozen cakes are placed in cartons, and stored in a room at about zero temperature. The cakes are maintained in this condition during transportation, and in the retail stores, so that the consumer receives them still frozen.

It may be noted that during January and February of this year the Board marketed several tons of these ice fillets in Toronto as a demonstration to the industry. From the start the demand for these fish was so much in excess of the supply that all advertising measures had to be dropped, and so it became early apparent that there is a big undeveloped market for such a high quality of product as strictly fresh fish in an up-to-date form convenient for handling and cooking. Families who previously have used little or no fish were induced to buy this package regularly. No fish firms have so far attempted to market quick frozen fillets, but the Board is arranging to assist and supervise the installation of quick freezing plants by firms on the Atlantic coast, and to furnish all available information to enable them to produce a saleable article.

## EDUCATIONAL WORK

Two Courses of Instruction were given during the year 1928-29.

1. Course for Fishermen: January 16 to February 25, 1929. There were sixty-six applicants to take this course of whom twenty-five were chosen. The courses included science, motor engines, navigation, natural resources, preparation of dried and boneless fish, preparaton of pickled fish. An examination was held at the termination of the course.
2. Course for Departmental Overseers: Began on March 6, 1929, and was still in progress on March 31. Attended by three inspectors, seventeen overseers and five officials from Quebec. Courses included biology, chemistry and physics, bacteriology, principles of smoking, principles of refrigeration, preparation of dried and boneless fish, preparation of pickled fish.

The station prepared an extensive exhibit in connection with an exhibition of scientific methods by the Nova Scotian Institute of Science on November 24 and 25, 1928.

Mr. Watson demonstrated methods of preparing boneless fish to a firm in Lunenburg during October, 1928.

## FIELD WORK

Dr. Huntsman was in Petit de Grat on May 4, 1928, to address a meeting of fishermen.

Dr, Chipman visited the hatchery at Middleton in June, 1928, investigating the water supply. Dr. Huntsman and Dr. Leim examined the water supply at the Windsor hatchery a number of times during the year following the quarry pollution of the water supply:

Dr, Leim visited the plant of the Lockeport Company on May 15 in connection with the installation of a brine freezing tank.

Dr. Huntsman was in Yarmouth in August, 1928, conferring with the trade there, particularly with a view to the formation of an Advisory Committee of the station in that place. Dr. Leim visited Yarmouth in January giving information to the Board of Trade and other interested parties in connection with brine freezing.

## PUBLICATIONS

The following publications dealing with the work of the Station appeared during the year:-

Chipman, H. Ritchie.-Fundamental Principles of Chemistry and Physics. Bull. Biol. Board of Canada, No. 11, 1928.
Hess, Ernest.-The bactericidal action of smoke (as used in the smoke curing of fish). Contrib. to Can. Biol. N.S. Vol. 4, 1929.

## MANUSCRIPT REPORTS RECEIVED DURING THE PERIOD

Hess, E.-Report on the Course for Lobster Cannery Foreman, 1928.
Chipman, H. Ritchie, and Langstroth, G. O.-The heat capacities and specific heats of codfish and haddock between $70^{\circ} \mathrm{C}$. and $-70^{\circ} \mathrm{C}$.
Chipman, H. R., and Mahen, K. W.-Notes on the extraction of cod liver oil.
Chipman, H. R., and Leim, A. H.-Report on the Course for Fishermen, 1928.
Chipman, H. R.-The penetration of fish muscle by salt, interim report.
Ross, R. F.-A preliminary study of the shrinkage of crustacean and fish muscle when exposed to changes in salt concentrations and temperatures.
Langstroth, G. O.-Preliminary work on the specific conductivity of fish muscle.
Langstroth, G. O.-Heat capacity of fish mulsele, latent and specific heats.
Hess, Ernest.-Experiments with nitrogen gas as a means of holding fresh fish.
Stewart, W. W.-The extraction of oil from cod livers at Perce, Quebec, oil plant operated by Robin, Jones and Whitman Co.
Hess, E.-Test of commercial 'quick drying water proof' inks for printing on tin cans.
Stewart, W. W.-Report on Robin, Jones and Whitman cod liver oil plant at Fox River, Gaspe Co., Quebec.
Wymen, H. R.-The effect of temperature of cold storage on the expressable fluids in fish muscle.
Stewart, W. W.-Preliminary report on the processing of fish meal.
Stewart, W. W.-References to literature pertaining to fish meal.

## PLANKTON AND HYDROGRAPHIC

Regular observations were taken throughout the year at two stations situated in Halifax harbour and Bedford basin. Similar observations were taken at intervals at stations near the entrance to the harbour during the fishing season.

## EASTERN PASSAGE LABORATORY

The constructional work carried on during the year at this laboratory was done by the Department and inspection of the work as it proceeded was all that came directly under the station. Plans for outfitting were made and certain equipment was ordered.

## Biological Station at Nanatmo, B.C.

## STAFF

Dr. W. A. Clemens, Director.
Dr. R. E. Foerster, Biologist for Fish Cultural Investigations.
Dr. H. C. Williamson, Biologist for Herring and Pilchard Investigations.
Mr. A. L. Pritchard, Biologist for Salmon Investigations.
Mr. G. H. Wailes, Temporary assistant Pilchard Investigation.
Mr. C. McC. Mottley, Temporary assistant Trout Investigation.
Mr. L. L. Bolton, Temporary assistant Salmon Tagging.
Mr. W. F. Baxter, Temporary assistant Salmon Tagging.
Mr. M. Marchail, Temporary assistant Sahnon Targing.
Mr. J. L. Kask, Temporary assistant Clam and Salmon Investigation.
Miss E. Keighley, Secretary.
Mr. Fred. Groth, Captain A. P. Knight.
Mr. R. G. Good, Engineer A. P. Knight.
Mr. T. Russell, Caretaker.
Mr. Edgar Black, Laboratory Assistant (summer).
Mrs. E. Riches, Cook,
Miss Winnie Riches, Maid.
Miss Edith Riches, Maid (summer).
Miss M. Ross, Maid (summer).

The workers at the station have been:-
Miss A. Berkeley, University of Toronto: The life histories of prawns and shrimps.
Mr. C. Berkeley, Nanaimo: Marine bacteria.
Mrs. C. Berkeley, Nanaimo: Polychaet worms. ${ }^{\text {" }}$
Miss M. Campbell, University of British Columbia: Quantitative study of the zooplankton in the Strait of Georgia.
Mr. I. E. Cornmall, Vietorina: Sponges.
Professor J. R. Dymond, University of Toronto: Marine fish.
Mr. C. R. Elsey, Oak Bay High School: Oyster Propagation.
Mr. C. A. E. Hensley, Winnipeg: Growth of Marine diatoms.
Professor A. Hunter, University of Toronto: Distribution of Arginase in fishes.
Dr. A. H. Hutchinson, University of British Columbia: The distribution of Plankton in the Strait of Georgia.
Mr. C. C. Lucas, University of Toronto: Physico-chemical conditions in the Strait of Georgia.
Mr. C. McC. Mottley, University of Toronto: Trout Investigation.
Mr. J. A. Munro, Okanagan Landing: The food of sea fowl in relation to the spawning of herring.
Dr. W. W. Simpson, University of Toronto: Functions of the liver in fish.
Miss G. M. Smith, University of British Columbia: The food and food supply of commercial clams.
Mr. G. H. Wailes, Vancouver: Plankton and amphipod studies.
Mr. G. V. Wilby, N.D., Agricultural College : Life-history of ling cod.

## FIELD INVESTIGATIONS

1. Propagation of Sockeye Salmon.-Dr. Foerster continued his studies at Cultus lake. In the spring of 1928 the yearlings resulting from the fry planting were enumerated as they passed out of the lake and a considerable proportion were marked. In the fall the adults coming to the lake were counted. Following the program as previously laid down, all the fish were stripped. A considerable number of fish marked in 1926 have been reported by the canners and many more were recorded at Cultus lake.
2. Herring and Pilchard Investigations.-Dr. Williamson has given special attention to the occurrence and distribution of the plankton and its possible relation to the movements of herring and pilchards. Mr. G. H. Wailes has assisted in the quantitative and qualitative examination of the plankton collections. Mr. J. A. Munro, Chief Federal Migratory Bird Officer for the Western Provinces, spent several weeks continuing his studies of the foods of sea fowl in relation to the spawning of herring.
3. Pink and Chum Salmon Investigation.-Mr. Pritchard spent ten weeks in Masset Inlet and Naden Harbour, Queen Charlotte islands, studying the spawning conditions for pink and chum salmon and the racial characteristics and life histories of these species.
4. Pacific Trout Propagation.-Mr. Mottley spent April and May studying the spawning of Kamloops trout, especially at Paul lake. About the first of June he joined Prof. J. R. Dymond and together they studied the trout and trout areas in the vicinity of Cranbrook, Nelson, Okanagan lake, Kamloops, and Cultus lake. Some of the material was worked up at the station during August and the remainder is now being studied at the University of Toronto.
5. Salmon Tagging-
(a) Coho salmon-1,609 small individuals in the Nanaimo vicinity were tagged from February 14 to July 11 and 810 in the Queen Charlotte sound area from July 20 to October 11. Messrs. Baxter and MacPhail carried out this work. Messrs. J. H. Todd and Sons tagged 99 cohoes at their traps at Sooke, giving the fish without cost.
(b) Spring salmon-267 were tagged in the Nanaimo area and 133 in the Queen Charlotte sound area.
(c) Sockeye salmon- 402 were tagged in the mouth of the Fraser river for the purpose of ascertaining if the fish bound for certain spawning areas arrived in the river within definite limited periods of time. Mr. L. L. Bolton was in charge of this experiment.
(d) Pink salmon-205 were tagged in the Johnstone strait area.
(e) Chum salmon-1,022 were tagged in the Johnstone strait area.
6. Clams.-Dr. C. McLean Fraser carried out an investigation of the razor clams beds on the north shore of the Queen Charlotte islands. He was assisted by Mr. J. L. Kask. Clam material was obtained from various beds in the vicinity of Prince Rupert and in the south at various points from Nanaimo to Sidney. Miss G. M. Smith made a special study of the foods of clams and the distribution of food materials.
7. Oyster Propagation.-Mr. C. R. Elsey continued his detailed studies of the propagation of the Japanese oyster in Ladysmith Harbour.
8. Pollution.-Dr. A. H. Hutchison and Mr. C. C. Lucas carried out a special investigation of an alleged pulp mill waste pollution on the west coast of Vancouver island.
9. Sockeye Salmon Scale Studies.-Dr. and Mrs. W. A. Clemens studied the collection of sockeye salmon scales of 1928 for the Provincial Fisheries Department. They also studied various collections made by the Fisheries Branch.
10. Oceanographical.-Dr. A. H. Hutchinson. Mr. C. C. Lucas and Miss M. Campbell continued their studies of the oceanographical conditions in the strait of Georgia. Dr. H. C. Williamson has been obtaining much data along the west coast of Vancouver island in connection with his herring and pilchard studies. The usual stations have been maintained, namely, Station Wharf, Strait of Georgia, Strait of Juan dé Fuca, Prince Rupert Harbour, Fraser River.

## EDUCATION AND PUBLICITY

Addresses were given by members of the staff and investigators in Duncan, New Westminster, Cranbrook, Nelson, Chilliwack, and Nanaimo.

Papers were read at the meetings of the American Fisheries Society in Seattle by Dr. Clemens, Dr. Foerster, and Professor Dymond.

About 800 persons visited the station museum during the year. These included a party of British school girls on an educational tour, the members of the Burrard Natural History Society, Vancouver, and the members of the Cowichan Natural History Society, Duncan. Newspaper articles have appeared in the Vancouver Sunday Province and in the Vancouver Daily Star.

## . CONFERENCE

During the first week in September a conference of the board's investigators on the Pacific coast was held at the University of British Columbia. Fourteen investigators and four visitors were in attendance. Reports of investigations being carried out were presented followed by discussions. Dean Brock gave an evening address.

## visirors

During the year a number of visitors came to the station. These included: Prof. H. H. Gran, University of Oslo, Norway; Prof. V. E. Shelford, University of Illinois; Prof. J. P. McMurrich; Prof. W. T. MacClement; Mr. John Dybhavi; Mr. A. W. Neill, M.P., Alberni; Prof. F. C. Harrison, McGill University; Prof. H. A. MacTaggart, University of Toronto; Prof. R. H. Clark, University of Britisl Columbia; Prof. T. G. Thompson, University of Wash-90655-92
ington; Prof. R. C. Miller, University of Washington; Dr. Mary McHugh, Liverpool; Dr. Ann H. Morgan, Mount Holyoke College; Dr. Elizabeth Adams, Mount Holyoke College; Mr. E. Norcross, Vancouver; Magistrate J. W. Winson, Huntington, B.C.; Mr. Napier Denison, Gonzales Observatory, Victoria; Mr. T. P. O. Menzies, Vancouver Museum.

## PROPERTY DEVELOPMENT

A residence building has been erected during the year. This includes kitchen and diningroom arrangements and accommodation for staff and investigators and for station help. A hot water heating system has been installed in the Biological building.

## Experimental Station at Prince Rupert, B.C.

STAFF<br>Mr. D. B. Finn, Director.<br>Doctor T. Ingvaldsen, Biochemist.<br>Mr. H. N. Brocklesby, Organic Chemist.<br>Mr. L. F. Smith, Associate Chemist.<br>Mr. E. W. Powell, Assistant Chemist (summer).<br>Dr. F. C. Harrison, Bacteriologist (summer).<br>Professor W. Sadler, Bacteriologist (summer).<br>Professor I. M. Fraser, Mechanical Engineer (summer).<br>Mr. B. Stevens, Laboratory Assistant.<br>Miss A. Wood (resigned), Secretary.<br>Miss R. Gillies, Secretary.<br>Mr. H. Richmond, Janitor.

## BUILDINGS

The existing building on the Government wharf contains well-equipped, chemical and biochemical laboratories and steps have been taken towards the establishment of a complete bacteriological laboratory. All of the working space in the building is now taken up and it will be necessary to secure an additional building, which will relieve crowded conditions and provide for future expansion.

## INVESTIGATIONS

The investigations undertaken by the station during the past year may be grouped into two divisions, one dealing with the preservation of fish and the other with the development of by-products.

## Preservation

The studies concerning preservation included refrigeration and the discoloration of halibut in the holds of fishing vessels.

## Refrigeration

Demonstration Plant.-Since funds were not available, the development of a quick freezing apparatus for Pacific fish was postponed. This work will be commenced during the coming year.

Storage.-The investigation concerning the changes which occur in frozen fish during cold storage has been carried on under the fcllowing heads:-
I. An Examination of the Chemical Changes which Occur in Fish during Cold Storage.
(a) A Study of the Changes which Occur in the Oils and Fats.
(b) A Study of the Effects of Low Temperatures on Fish Proteins.
II. A Study of the Chemical Changes which Occur in Fish Oils during Rusting.

These investigations are all concerned with the storage of frozen fish, a field which is urgently in need of research since very little is known about the
causes of the deterioration which frozen fish undergoes. The work has been somewhat hampered by lack of controlled cold storage rooms. This defect will be remedied during the comingyear by the installation of such rooms in the new building.

## Discoloration of Halibut

The yellow discoloration of the halibut in the holds of fishing vessels has meant a tremendous annual loss to the fishing industry of the Pacific coast.

A preliminary investigation carried out by the station in 1927 indicated the necessity for a complete bacteriological examination of the fish from the time they were caught to the time of shipping or freezing.

The services of Doctor F. C. Harrison of MeGill University and Prof. W. Sadler of the University of British Columbia were secured for the summer months of 1928.

These investigators isolated an organism pseudomonas florescens which is responsible for the discolouration. They found that though all vessels and fishing tackle was heavily infected, the organism did not occur on the fish as they came from the sea, but that it had its origin in the fresh water from which the ice used in the vessels was made. On examination, it was found that all of the ice made on the Pacific coast of Canada and Alaska is infected with the organism which is not only capable of surviving the low temperature of freezing but grows actively at à temperature of $34^{\circ} \mathrm{F}$.

It was also found that chlorination of the water to a slight extent effectively killed the organism. Thus a ready means is available for preventing the initial infection.

During the coming summer, the investigation will be extended. A technique must be found for cleaning the already heavily infected vessels and a chlorinating process applied to the water with which the vessels are washed and from which the ice is made.

## By-Products

The work on by-products has included a study of fish oils and meals and an examination of the waste press liquors from fish meal plants with a view to the recovery of nitrogenous products. The. work on fish oils has included:
I. A Study of the Physical and Chemical Characteristics of Pilchard, Salmon and Dogfish Oils.
II. The Use of Fish Oils in Paints.
(a) The Bodying of Fish Oils by Heat and Blowing.
(b) The Character of Paint Films Prepared from Pilchard Oil.

A preliminary paper on the Physical and Chemical Characteristics of Pilchard Oil is now on press and considerable data has been obtained with regard to Salmon and Dogfish oils.

The work on the use of fish oils in paints is very promising. Paints have been manufactured and are being tested at Prince Rupert and at Saskatoon through the courtesy of the University of Saskatchewan.
III. An Investigation of the Vitamin Content of Fish Oils.
(a) The Vitamin A Content of Dogfish Liver Oil.
(b) The Vitamin D. Content of Dogfish Liver Oil.
(c) The Irradiation of Dogfish Liver Oil.
(d) The Vitamin D. Content of Pilchard Oil.

Papers have been published in Canadian Chemistry and Metallurgy dealing with the Vitamin A and D Content of Dogfish Liver Oil. The work on irradiation and that of the vitamin potency of pilchard oil is nearing completion.

Fish Meals.
The production of fish meals has increased tremendously on the Pacific coast during the past few years. In 1928, the pilchards caught for this purpose alone were valued at $\$ 2,563,137$.

The station has undertaken a thorough study of fish meals from various sources with a view to extending markets and improving methods of production. The study has been made as follows:-
I. The Analysis of Fish Meals including a Determination of the Nitrogen Partition and the Content of Essential Amino Acids.
II. A Study of the Effect of Putrefaction of Raw Materials upon Fish Meals. III. A Study of the Effect of Various Methods of Drying upon the Analysis and Nutritive Value of Fish Meals.
IV. The Biological Value of Fish Meals.
V. The Influence of Fish Meals upon Growth.

Papers dealing with the first three of these heads have been published and work on the Biological Value and Influence upon Growth is proceeding.

## Press Liquors.

Press liquors are the watery factions which are pressed from the cooked fish in the production of fish meal. These liquors contain from 30 to 50 per cent of the total nitrogen of the fish. Thousands of tons of this liquor are thrown away annually. From the standpoint of sheer enormity of loss, this waste would bear investigations. The station is undertaking an investigation with a view to the production of fish glue from this material. The study includes the following:-
I. The Analysis of Waste Press Liquors from Fish Meal Plants.
II. The Preparation of Glues from Fish Heads and Offal.
III. A Study of the Influence of the Various Constituents of Press Liquors upon Fish Glues.
Various glues have been made and tested by the Forest Products Laboratory, Vancouver, through the courtesy of the Director. Present indications are that it is possible to make a good fish glue from halibut head. Production on a large scale is being made in order to examine the feasibility of the process.

## PRAIRIE LAKES INVESTIGATIONS

I. Alkaline Lakes of Saskatchewan.--A.small experimental hatchery with running water from Little Quill lake was established near the shore of this lake. Whitefish and cisco were taken from Quill lake and eggs were artificially fertilized: In January larger part of eggs were frozen in jars, but all that were not frozen were separated (several hundreds), and placed in one jar. During the earlier part of March 85-90 per cent of these eggs hatched. All the fry were vigorous and normal. The eggs were fertilized in alkaline water, and our experiments show that the sperms of whitefish and cisco can live in alkaline water for about fifteen minutes. This indicates that each of these species may complete its life cycle in the Quill lakes.
II. Whitefish Investigations.-The following is a short summary of the report on whitefish investigations:-

During the last twelve years the number of whitefish in the lakes of the Prairie Provinces has remained approximately constant and is as follows:-

In lake Winnipeg, about 6,000,000.
In lake Winnipegosis, about 2,000,000.
In lake Manitoba, about 500,000.

The daily consumption of food by whitefish is about 10 gr . per individual. The total amount of food supply in lake Winnipeg is quite sufficient for $90,000,000$ fish, in lake Winnipegosis, approximately for $20,000,000$ fish, and in lake Manitoba, for $10,000,000$, that is ten times as many as there are now.

The mortality rate of fertilized eggs and fry, under natural conditions, is very great, somewhere about 99 per cent.

The production of the prairie lakes can be increased very considerably by means of artificial fish culture, but only if the whitefish fry are cared for, for a period of at least one month. The highest mortality of fry is just after hatching. No considerable migration of whitefish takes place from one lake to another.
III. Fish Parasites.-There have been recorded several cases of large tapeworm from pickerel meat of the prairie lakes. Three hundred adult pickerel, from lake Winnipeg, and lake Manitoba, were carefully examined during the winter months. From lake Winnipeg only three infected fish have been obtained. Fifteen fish from lake Manitoba were examined early in May. Two of them were found to be infected with parasites. As infections with tapeworm occur mostly during the summer months, further investigation into the percentage of infected fishes will be made during the following season.
IV. Pickerel Investigation in Lake Manitoba.-A preliminary report on the pickerel investigation is submitted. During last summer and this spring a good deal of data concerning food, rates of growth, spawning, etc., was obtained. It should be noted that the low percentage of fertilized pickerel eggs in hatcheries is due probably to the comparatively short life of the sperms.

A full report will be submitted later.

## PROGRAM FOR THE COMING SEASON

1. Alkaline Lakes.-Transferring the experimental hatchery to Big Quill lake, for investigating the problem of the fertilization and hatching of whitefish and cisco fry, in waters of a higher salinity.

Determination, by means of small meshed gill-nets, of the approximate amount of young whitefish and cisco hatched in the Quill lakes, under natural conditions.
2. Detailed investigation of the northern part of lake Winnipeg, Nelson river, and other important lakes in the prairie provinces, in connection with whitefish and other commercial fishes.
3. Fish parasites.

FISH CULTURAL INYESTIGATIONS
Investigations in connection with fish culture embrace nearly all the work in the fresh waters of the Dominion as carried on under the board. Some of the simpler facts in connection with these various investigations are the following:Brook Trout Investigation.

Mr. H. C. White followed the results of the planting of trout fry in Forbes creek, P.E.I., for information in two directions. In the first place a comparison was made of the effectiveness, either of protecting them from large fish (trout), or of removing them from competition for food with other small fish (sticklebacks) in reducing the death rate. The results gave a reduction of about 30 per cent in the percentage of deaths in the former case, and of about 6 per cent in the latter case. In the second place the importance of having the fry spread over a considerable area was investigated by planting 111,333 and 1,000 fry in three different ten-rod sections and determining the percentage surviving by the end of the season, which proved to be 44 per cent, 21 per cent and 15 per cent respectively.

Various hatching experiments were made. The eggs were found to stand temperatures close to the freezing point without loss, but not below. Dropping eggs into pans caused injury followed by death, in unhardened eggs only when from a height of eighteen inches with all killed if the height was four feet, but in hardened eggs some died when dropped only two inches, and all when dropped eighteen inches.

## Atlantic Salmon Investigation

Mr. R. B. Kerr began a study of the life and growth of the salmon, obtaining material from the fishery near Saint John, N.B. He also studied the mortality in salmon fry kept at the Atlantic Biological Station, and found that the Chamcook lake water as delivered there through extensive piping was injurious, particularly to the smaller ones.

## Smelt Investigation

Dr. A. H. Leim examined tows made in the Magaguadavic river, N.B., by the Atlantic Biological Station, and determined that there was not much difference to be found in the numbers of smelt fry in that river between the season of 1927 when an attempt was made to salvage from two to four million eggs in a floating pan and the season of 1928, when no such effort was made. It would seem that the number of eggs salvaged will have to be much greater to show a definite influence.

## Shad Investigation.

Mr. A. A. Giffin investigated the spawning of the shad in the Saint John river, N.B., and found large numbers of eggs below Grand Falls indicating considerable spawning at that point, but none was demonstrated in the neighbourhood of Gagetown. Very little success was obtained in demonstrating successful spawning by the discovery of the shad fry. Nearly all the many small clupeoids caught were found to be alewives, and less than three dozen shad were taken, these mostly in the Beechwood-Florenceville section.

## Pond Investigation in Connection with the Rearing of Fry

Mr. W. S. Hall followed the physical and biological conditions in a series of four artificial cement ponds with stagnant water at the Atlantic Biological Station. The experiments were designed to show the effects of (1) partial shading, (2) treating with sea mussels as a fertilizer, and (3) treating with barnyard manure as a fertilizer, all in comparison with the unshaded and untreated state. In the latter (the control pond) there was very little life, light penetrated to the bottom (six feet) and the temperature was very uniform throughout, frequently warming and cooling again, which mixed the surface and bottom water ensuring very full oxygenation. The shaded pond was rather similar, but lower in temperature. The pond fertilized with mussels was very full of plant and animal life, which kept the light from penetrating, so that the bottom water remained cool, and from the decomposition became quite poor in oxygen. On the other hand the very rich plant growth in the upper layers gave a super-abundance of oxygen. The manure in the remaining pond in part floated to the surface, so that decomposition occurred throughout with a very small amount of oxygen left except quite near the surface, where alone were the conditions suitable for any particular amount of plant and animal life. This pond had the coldest bottom water.

## Hatchery Investigations

A new method of carrying eggs during the period of development was devised by Dr. Huntsman and tried out at the Bedford hatchery near Halifax by. Dr. Leim. Trout and salmon eggs were carried in trays with still water, temperature being controlled by water running over a metail hood which
enclosed the trays. A certain amount of success was obtained, but further experiments will be required. The object of this method is to provide a means of carrying eggs through on a large scale, where running water of the proper nature (apart from temperature) is not available.

The water supply of the hatchery at Middleton, N.S. was investigated repeatedly by $\mathrm{Dr}_{r}$. Leim in an attempt to determine whether it can be made safe for hatching the fish eggs. Water of rather high acidity issues under certain conditions from the neighbourhood of a plaster quarry and the origin and nature of this effluent, found to be fatal to the eggs, have been determined, but only in part.
Whitefish Investigation (Ontario)
Mr. J. L. Hart has continued his study of the life of the whitefish as it occurs in the bay of Quinte. The spawning grounds were investigated by the use of a diving suit and it was found that the eggs undergo in nature a rather heavy mortality during the winter, which was corroborated by experiment with a box, which was lowered to the bottom and which showed a winter loss of eggs of 36 per cent. The fry were found along the shores in moderate numbers, but there was no evidence that they were being eaten by other fish, which did however take the eggs.
Whitefish Investigation (Manitoba)
Mr. A. Bajkov has studied the population of whitefish in lakes Winnipeg and Winnipegosis, and the conditions, under which they are living. The numbers would seem to have kept fairly constant during the past twelve years. They grow at nearly the same rate in the two lakes and somewhat faster than do those of Lake Erie, and may attain an age of fifteen years or even more. The whitefish of the two lakes appear to be somewhat different in character, and there is no definite evidence of any migration from one lake to the other through the Dauphin river and lake Manitoba, although some fish ascend that river from lake Winnipeg for spawning purposes. In both lake Winnipeg and lake Winnipegosis the northern parts, which are deeper and cooler, are those more suitable for whitefish, and in summer particularly, when the high temperature and low oxygen content near the bottom appear to be responsible for the death of whitefish.

## Tapeworm Investigation

An investigation was made by Mr. Bajkov of the occurrence in Manitoban fishes of a tapeworm that attacks man and that appears to have been brought to this continent from Europe. None were found in whitefish or cisco, but some did occur in the flesh of pickerel, pike and ling.

## Pickerel Investigation

A study has been started of the pickerel in the lakes of Manitoba. In lake Manitoba it is the most important commercial fish, which is evidently correlated with the shallowness of that lake, whose waters are slightly alkaline and with greater salt content than in the case of the other two large lakes. The rate of growth of this fish in these lakes is such that it reaches a length of a foot in four years and of over nineteen inches in eight vears.
Introduction of Whitefish and Cisco into the Quill Lakes, Sask.
Beginning with 1924 the department, on the recommendation of the Board has been stocking the Quill lakes, which are quite alkatine and of comparatively high salinity, with whitefish and cisco fry. Mr. Bajkov has followed the results of this introduction. The whitefish have grown to a maximum weight of four and one half pounds, and they have grown faster and are of better quality than those grown in the large Manitoban lakes, due probably to the
higher temperature and the greater abundance of food which is chiefly a species of Corixa. The whitefish were first ready to spawn in 1926, but it is not known that natural spawning has been successful. Experiments have, however, proved that not only do these fish mature in such saline water, but that the sperms from the males will fertilize the eggs of the females in such water, and the eggs thus fertilized will develop and hatch.

## Investigation of Lakes in Prince Albert National Park, Sask.

Mr. D. S. Rawson conducted a survey of certain typical lakes and streams in this park, of which the chief were Waskesiu lake and the Beartrap Creek system. Waskesiu lake exhibits a stratified condition with a tendency to bottom stagnation, which appears to explain the absence of lake trout. Pike are the predominant fish and will require stringent regulations for conservation. Kingsmere lake of about the same size, but deeper, has less stratified water, and the bottom conditions are fresher, so that lake trout occur and may yield good angling. The streams are of less value, as they are either weedy, slow, and infested with pike, hence unsuitable for desired game fish, or else short, heavily shaded and barren of food materials, hence presenting poor angling possibilities.

## Investigation of Lake Athabasca

Mr. G. C. Whiteley, Jr., visited this lake for a preliminary survey of the conditions. A collection of fish and plankton was made and water temperatures taken.

## Pacific Salmon Investigation

Dr. R. E. Foerster with headquarters at Cultus Lake, B.C., continued the program for a long period study of the comparative effectiveness of natural and artificial propagation of the sockeye salmon. A count was made of the down-stream migrating young from the lake, which totalled 452,770, most of which are expected to have been the result of the spawning of the autumn of 1926, from which $5,916,524$ fry were liberated in the following year. An analysis is being made to determine the proportion among the migrants of fish from such spawning. During the migration 99,701 sockeye were marked by fin removal to determine their fate as regards return as adults for spawning. Coho and pink salmon migrants were also counted and marked.

None of the adult sockeye reaching the lake in 1928 were permitted to spawn naturally, but all were retained for artificial propagation. From 8,099 fish (those lost by death not being included) $27,784,000$ eggs were obtained and distributed to three hatcheries. A total of 443 returns were obtained from various sources, but principally at Cultus lake, of the sockeye salmon marked as yearlings at that lake in 1926.

Experiments with eggs, sperms, and hybrid salmon have been continued, and the conditions in Cultus lake, where the fry develop, are being followed throughout the year.

## Pacific Trout Investigation

The trout in a number of localities in British Columbia have been studied by Professor J. R. Dymond, assisted by Mr. C. McC. Mottley. It is concluded that the so-called rainbow trout of British Columbia belongs to two species-the steelhead in the coastal area and the Kamloops trout in the interior. The latter runs into numerous geographical races in different parts of the province.

## PUBLICATIONS

The following publications have appeared during the year in connection with the work on fish cultural research:-
Dymon, J. R.-The trout of British Columbia. Trans. Amer. Fish. Soc., 1928.
Neave, Ferris.-Reports of the Jasper Park Lakes Investigations, 1925-26, II. Plectopera. Contr. Can. Biol. \& Fish., N.S., Vol. IV, No. 13.
Bere, R-Reports of the Jasper Park Lakes Investigations, 1925-26, III. The leeches. Contr. Can. Biol. \& Fish., N.S. Vol. IV, No. 14.
Neave, Ferris.-Reports of the Jasper Park Lakes Investigations, 1925-26, IV. Aquatic insects. Contr. Can. Biol. \& Fish., N.S. Vol. IV, No. 15.
Neave, F., and Bajkov A.-Reports of the Jasper Park Lakes Investigations, 1925-26, V. Food and Growth of Jasper Park Fishes. Contr. Can. Biol. \& Fish., N.S. Vol. IV, No. 16.
Wallis, J. B.-Reports of the Jasper Park Lakes Investigations, 1925-26, VI. The beetles. Contr. Can. Biol. \& Fish., N.S. Vol. IV, No. 17.

## REPORTS

The following reports have been presented during the year:-
Kerr, Robert B.-Report of Investigations on the Atlantic salmon (Salmo salar) during 1928. Leim, A. H.-
(1) Shad Investigations in 1928.
(2) Smelt Investigations in 1928.
(3) Examination of water supply, Windsor Hatchery, Windsor, N.S., October 25, 1928, November 18, 1928, and February 7, 1929.
White, H. C.-Trout fry plauting experiments in Forbes Brook in 1928.
Whiteley, Geo. C.-Diary of expedition to Lake Athabasca, summer of 1928.
Bajkov, A.-
(1) Investigations in connection with the whitefish Coregonus clupeaformis (Mitchill).
(2) Preliminary report on Lakė Manitoba pickerel investigations.
(3) Report on investigation of alkaline lakes.
(4) Annual report of Prairie Lakes Investigations.

Hall, W. S.-
(1) Supervision of Pond work.
(2) Movement in Ponds.

Hart, J. L.-The natural history of the whitefish Coregonus clupeaformis (Mitchill).
Rawson, D. S.-The game situation in Prince Albert National Park.
Dymond, J. R.-British Columbia trout investigation.
Chaisson, A. F.-A report on the lobster fishery in Northumberland Strait.
Robertson, A. D.-Experiments on oyster growth, Hillsborough River, P.E.I., summer 1928.

# APPENDIX No. 3 

## FISH CULTURE

Annual Report by J. A. Rodd, Director

The fish cultural operations of the department during the calendar year 1928 were devoted almost entirely to the propagation of the more important fresh-water and anadromous food and game fishes, such as Atlantic salmon and speckled trout in the Maritime Provinces; whitefish, pickerel, cutthroat, rainbow, brown, and Loch Leven trout in the Prairie Provinces; and Pacific salmon -principally sockeye-cutthroat, Kamloops, rainbow and speckled trout in British Columbia. In response to an annually increasing public demand greater attention was paid to the propagation of game trout. Increased facilities for retaining and feeding fry, so as to afford a longer season for distribution, were provided at several establishments where such development was feasible.

The total distribution for 1928 was 59 per cent larger than it was during the preceding year, being increased from $295,283,782$ to $470,302,380$, an increase of $175,018,598$. The number of each species distributed were:-

STATEMENT, BY SPECIES, OF THE FISH AND FISH EGGS DISTRIBUTED FROM THE HATCHERIES DURING THE YEAR ENDED DECEMBER 31, 1928

| Species | Green eggs | Eyed eggs | Fry | $\begin{aligned} & \text { Advanced } \\ & \text { fry } \end{aligned}$ | Fingerlings | Yearlings and older fish | Total distribution |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Salmo salar-Atlantic salmon... | 300 | 104,070 | 3,832,725 | 4,473,300 | 11,346,337 |  | 19,756,732 |
| salmon. |  |  |  | 98,230 |  | 78 | 98,308 |
| Salmo irideus-Rainbow trout.. |  | 175,500 | 321,127 |  | 399,346 | 3,954 | 809,927 |
| Salmo clarkii-Cuthroat trout. |  |  | 1,731,591 |  | 2,212 | 9 | 1,733,812 |
| Salmo rivularis-Steelhead salmon. |  | 12,083 | 164,760 |  |  |  | 176,843 |
| Salmo rivularis kamloops-Kamloops trout. |  | 1,117,975 | $1,036,661$ |  | 3,656 |  | 2,158,292 |
| Salmo trutta levenensis-Loch |  |  |  |  | 3,650 |  | 2,158,292 |
| leven trout.......... |  |  |  | 46,096 | 483,398 | 9,419 | 538,913 |
| Salmo fario-Brown trout...... |  |  |  |  | 472,143 | 4,760 | 476,903 |
| Oncorhynchus nerka-Sockeye salmon. |  | 33,041,965 | 50,359, 788 | 550, 000 | 4,687, 237 | 1,992 | 88,640,982 |
| Oncorhynchus tschawytschaSpring salmon. |  | $544,000$ | - 313,500 | 500, 0 |  | 1,992 | $88,00,982$ $1,075,577$ |
| Oncorhynchus kennerlyi-KennerIy's salmon |  | 54,000 | 205,000 |  | 218, 77 |  | $1,015,57$ 205,000 |
| Oncorhynchus kisutch-Coho salmon. |  | 499,380 | 205,00 |  |  |  | 499,380 |
| Salvelinus fontinalis-Speckled trout. |  | 276,400 | 654,268 | 546,000 | 3,079,834 | 5,171 | 499,380 $4,561,673$ |
| Coregonus clupeiformis-Whitefish. | 3,225,000 | 100,000 | 125, 858, 026 |  |  | b,1 | 129,183, 026 |
| Gristivomer namaycush-Salmon trout. |  |  | 125,858,020 |  | 12 |  | 12, 12 |
| Stizostedion vitreum-Pickerel... | 187, 680,000 |  | 32,617,000 |  |  |  | 220,297,000 |
|  | 190,905,300 | 35,871,373 | 217, 094, 446 | 5,713,626 | 20,692,252 | 25,383 | 470,302,380 |

In addition to the distributions that were made from the hatcheries, twentysix lakes and streams received allotments of fingerlings or older fish from other bodies of water. This work was very largely confined to the Prairie Provinces, where there are many districts which are not readily accessible to existing hatcheries, and many bodies of water of indifferent quality in which the higher class of fishes, such as are handled in our hatcheries, are not likely to live and thrive. This work involved the capture and transfer, in many instances for considerable distances, of 44,932 fish, comprising seven different species. The individual transfers were as follow:-

| Waters Stocked | Transferred from | Stage | Crappie | Kamloops trout | Minnows | Perch | Pickorel | Rainhow trout | Sunfish | Totals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Anderson's lake, Sask., on S. 1-12, T. 45, R. 12, W. 2 |  |  |  |  |  |  |  | - ......... |  |  |
|  | Stonoy cako. | Mearlings. |  |  |  | 300 |  |  |  | 325 |
| Coyute lake, Sask., S. 22, T. 10, R. 5, W. 2.... | North Dakota Game and Fish Comm. | Mature................. |  |  |  |  |  |  | 42 | 42 |
|  |  | Fingerlings.............. | 102 |  |  |  |  |  |  |  |
| Echo lake, Sask., S. 19-24, T. 40, R. 14, W. $2 .$. | Stoney lako,................. | Large..................... | 7 |  |  | 2,000 |  |  |  | 109 2,000 |
| Gordnn's lake, Sask., S. 10-27, T. 45, R. 10, W. 3 | Meeting lako. | Fry............. . . . . . . . . . . |  |  |  | 20 | . |  |  |  |
|  | " | Fingerlings. |  |  |  | 160 10 |  |  |  | 190 |
| Holon's lake, Sask.، S. 20, 29, 30, T. 34, R. 2, | Devils lake. | Yearlings. |  |  |  | 400 |  |  |  |  |
| H" " ${ }^{\text {" }}$ | " | Mature |  |  |  | 25 |  |  |  | 425 |
| Hudson Bay lake, Sask., S. 29, T. 27a, R. 15, | Eeho lake. | Yerrlings. . . . . . . . . . . . . | . $\cdot$. ${ }^{\text {a }}$. . |  |  | 1,000 | .......... |  |  | 1,000 |
| Knutson lake, Sask., S. 31,32, T. 49, R. 15, W. 3 | Murray lako. |  |  |  |  | 1,200 |  |  |  | 1,200 |
| Larsen lako, Sask., S. I, T. 50, R. 16, W. 3.... | Muray | Advanced fry.............. |  |  |  | 300 |  |  |  | 300 |
| Old Wi ves or 'Noteku Creek, Sask., S. 15, T. 11, | Echo lako. | Yorrlings. |  |  |  | 1,500 |  |  |  | 1,500 |
| R. 10, W. 3 . |  |  |  |  |  |  |  |  |  |  |
| Schlosser's lake, Sask., S. 17-18, T. 39, R. 25. | Wakaw lake. | Yearlings............... |  |  |  | 1,500 |  |  |  |  |
| W.2. " ${ }^{\prime \prime}$ | Burton lake | Yearlings, |  |  |  | 1,000 |  |  |  | 2,500 |
| Stonay lake, Sask., or Fumholdt lake, S. 31-34, T. 30 and S. 5,6 of T. 37, R. 22, W. 2. |  | Yearlings. |  |  |  | 1,000 |  |  |  | 1,000 |
| Swedo jake, Sask., S. $11-14, T$, 40 , R. $10, \mathrm{~W} .3$ | Jnekfish lake | Fingerlings. |  |  |  | 3,800 |  |  |  | 3,800 |
| Tadies lake, Sask., S. 14, T. 42, R. 10, W. $3 . .$. | Murray lake. | Advaneed fry |  |  |  | 1,000 |  |  |  | 1,000 |
| Wood river, Sask., 18 mls. nerth of Gravelhourg. | Echo lake... | Yearlings............... |  |  |  | 750 |  |  | .......... |  |
| Wood river, Sask., 7 mls . S. E. of Gravolhourg | Balwator................... | Yearlings... |  |  |  | 750 |  |  | ........... | 1,500 10 |
| Bertha lake, Waterton Lakes Park, Alta....... | Backwater adjacent to Bertha Creok. | Mature. |  |  |  |  |  | 10 | ......... | 10 72 |
| Cottage lake, Alta.4 S. 30, T. 52, R. 1, W. 5... | Lac la Nonne. . . . . . . . . . . . . . . . | Mature. |  |  |  | 27 | 45 | ............ | .... | 72 700 |
| Elkwater lake, Alta., S. 22-26, 'J. 8, R. 2, W. 4 . | Razzlo Dazzlo Crcek. Mayntan lake. | Mature. 5 inches to 0 inches. |  |  | 700 | 50 |  |  |  | 700 50 |
| Glory lake, Alta., S. 21-22, T. 53, R. 1, W. $5 .$. | Mayntan lake. <br> Lac la Nonne. | 5 inches to 0 inches. Maturo. |  |  |  | 50 |  |  |  | 50 |
| Nakrmun lake, Alta., S. 33-37, 3-4, T. 56, 57, R. 2, W. 5 . | Lac la Nonne. | Maturo. |  |  |  |  | 55 45 |  |  | 65 72 |
| Romeo lake, Alta., S. 30-31, T. 58, R. 6, W. $5 .$. | " ${ }^{\text {a }}$................. | Mature. . . . . . . . . . . . . . . |  |  | ....... | 27 46 | 45 36 |  |  | 72 82 |
| Roses lake, Alta., S. 36, P. 54, R. 1, W. 5..... | Pout " | Manture. ${ }^{2}$ year olds and |  |  |  | 46 | 36 |  |  | 82 000 |
| Badger lake, B.C., 30 mls. nortl of Kamloops | Paul ercek.... Pimantar creok | $\left\{\begin{array}{l}2 \text { yenr olds and } \\ \text { yearlines.... }\end{array}\right.$ |  | 2,000 |  |  |  |  |  | 2,000 |
| Madelinelake, B.C. T. 17, R. 10, W. $6 .$. | Pmantan creek | \{2 yoar olds and |  | 2,000 |  |  |  |  |  | 2,000 |
| Pinantan lako, B.C., Kamloops Distriet...... | Pinantan creok | $\{$ yemlings..... |  | 21,000 |  |  |  |  |  | 21,000 |
| Silent lake, B.C., S. 5, T. 21, R. 14, W. $0 . . . . .$. | " | \{2 year olds and |  | 800 |  |  |  |  |  | 800 |
| Warren lake, B.C., T. 20, R. 15, W. 0......... | " ................... | \{ ycarlings............ |  | 600 |  |  |  |  |  | 600 |
|  |  |  | 100 | 27,000 | 700 | 10,800 | 181 | 10 | 42 | 44,032 |


| Water stocked | Transferred from | Transforred by | Stage | $\begin{gathered} \text { Large } \\ \text { mouth } \\ \text { black bass } \end{gathered}$ | Perch |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Cooking lake, Alta. | Mayntan lake. | Cooking lake Cottagers. |  |  | 62 |
| Elkwater lake, Alta... | Creston, B.C. | Enkwator lako Cottagers......................................... | Yearlings and older. |  | 62 |
| Mayatan lake, Alta...... Pigeon lake, Alta | " | Northorn Alberta Game and Fish "rotective Association.... |  | 100 200 | …... |
| Pigeon lake, Alta. <br> Wabamun lake, Alta........ | " | " $\quad$ " $\quad$ " $\quad$ " | "" $\qquad$ | 200 | ....... |
|  |  |  |  | 700 | 62 |

The seeding of isolated waters, to which it is not feasible to transfer fry from existing haticheries, with eyed eggs was continued in British Columbia, and thirteen million and thirteen thousand sockeye salmon eggs collected in the Pemberton district below Hell's Gate on the Fraser were planted in the one-time spawning beds of such important areas as Stuart, Francois and Quesnel lakes in the upper Fraser above Hell's Gate. The whitefish hatching battery on the C.G.S. Bradbury was enlarged and utilized at the egg collecting camp at Dauphin river, Lake Winnipeg, in handling the eggs as they were collected there until they could be transferred and placed in the hatchery at Gull Harbour. This battery was again utilized for distribution purposes, and a considerable number of whitefish fry from the Gull Harbour hatchery, in the southerly portion of Lalie Winnipeg, were distributed, as they hatched, much farther north and over a far more extensive area than would have otherwise been feasible.

Fish cultural officers are annually becoming more familiar with the waters in their respective distribution areas, which they regard as a farmer does his farm, and endeavour to seed them to the best advantage with the crops of fry and older fish that are annually available for that purpose so as to obtain the best result in mature fish. In addition to inspections by fish cultural officers, a considerable number of lakes and streams were also examined and reported on by the supervisors of fisheries and the fishery overseers, particularly in the Prairie Provinces. Copies of all reports of this nature are supplied in duplicate to the Chairman of the Research Committee of the Biological Board on Fish Culture for the information of the committee's workers in the respective districts. Several important inspections were made and detailed reports were submitted by the District Inspectors of hatcheries with regard to the possible effect of proposed power developments on spawning grounds; the introduction of non-indigenous species, the location of egg-collecting camps and hatchery sites. Inspections and investigations of a special nature are also referred to the committee as occasion arises.

Prospecting camps were operated at several points for the purpose of determining the possibilities for collecting eggs for fish cultural purposes. New hatcheries were opened in Antigonish and Yarmouth counties, Nova Scotia, and at Swan Creek, lake Manitoba. A description of these establishments is given elsewhere in this report.

At the close of 1928 there were thirty main hatcheries, ten subsidiary hatcheries, four salmon retaining ponds and several egg collecting stations, all of which are fully equipped, and have been in operation during 1928, with the exception of the newly constructed pickerel hatchery on lake Manitoba. The output from these establishments during 1928 was as follows:

HATCHERY OUTPUT, BY PROVINCES, OF EGGS, FRY AND OLDER FISH DURING 1928


| Established | Hatchory | Looation | Species | Green egg | $\begin{gathered} \text { Eyed } \\ \text { eggs } \end{gathered}$ | Fry | $\begin{gathered} \text { Advanced } \\ \text { iry } \end{gathered}$ | Tinger" lings | $\begin{aligned} & \text { Yearlings } \\ & \text { and older } \\ & \text { fish } \end{aligned}$ | $\begin{gathered} \text { Total } \\ \text { distribution } \\ \text { by species } \end{gathered}$ | Total distribution by hatoheries |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1876 | Bediord. | Halifax Co., N.S. | Atlantic salmon | (b) 300 | 4,070 | 51 | 460,000 | 1,092,700 |  | 1,557,121 |  |
|  |  |  | Speckled trout.. |  | 5,050 |  |  | 1, 819,500 |  | 824,550 | 2,381,671 |
| 1902 | Margaree. | Inverness Co., N.S | Atlantic salmon. Speckled trout.. |  |  |  | 775,000 | $1,465,000$ 106,900 | 428 | $2,240,000$ 107,328 | $2,347,328$ |
| 1912 | (a) Lindloff | Richmond Co., N,S | Atlantic salmon. |  |  | 746,000 |  |  |  | 746,000 | $2,347,328$ 746,000 |
| 913 | Middleton. | Annapolis Co., N.S. | Atlantic salmon. |  |  |  | 325,000 | 1,424,000 |  | 1,749,000 |  |
|  |  |  | Speckled trout...... |  | 1,350 | 30,000 | 80,000 | 338,000 | 1,117 | 450,467 | 2,199,467 |
| 1906 | Windsor. | Hants Co.t N.S. | Atlantic salmon.... |  |  | 300 |  |  |  | 300 | 300 |
| 1928 | Florenceville. | Carleton Co., N,B | Atlantio salmon. |  |  |  | 160,000 | 1,528,346 |  | 1,688,346 |  |
|  |  |  | Speckled trout., |  |  |  | 50,000 | 527,000 | 50 | 577, 050 | 2,265,396 |
| 1880 | Grand Fiolls. | Victoria Co., | Atlantio salmon. |  |  | 0,000 | 949,700 | 1, 008, 950 |  | 2,624,650 | 2,205,300 |
|  |  |  | Speckled trout.. |  |  | 180,000 | 240,000 | 1, 303, 012 |  | 783,612 | 3,408,262 |
| 915 | (a) Tobique | Victoria Co., N.B | Atlantic salmon.... |  |  | 665,000 |  |  |  | 665,000 | 665,000 |
| 914 | St. John. | St. John Co., N.B. | Atlantic salmon.... |  |  |  | 530,000 | 35,748 |  | 565,748 |  |
|  |  |  | Brown trout, |  |  |  |  | 304,143 | 4,746 | 308,889 |  |
|  |  |  | Landleoked salmon. |  |  |  | 98, 230 |  | 78 | 98, 308 |  |
|  |  |  | Lochleven trout. |  |  |  | 46,096 | 8,698 | 9,419 | 64, 213 |  |
|  |  |  | Rainbow trout. | . . . . . . . . | 500 | 25,000 | 60,000 | 422 625,382 | 3,052 2,252 | 4,874 712,634 | 1,754,666 |
| 1874 | Miramiohi | Northumborland Co., N.B. | Atlantio salmon..... |  | 100,000 |  |  | 3,941, 120 |  | 4,041,120 | 4,041, 120 |
| 1874 | Restigouche | Restigouche Co., N.B. .............. | Atlantic salmon.... |  |  | 740,000 | 1,067,600 | 115, 750 | ac. | 1, 923,350 | $\because 1,923,350$ |
| 1914 | (a) Nipisiguit............ | Glougostor Co., N.B............... | Atlantic salmon.... |  |  | 447,374 |  |  |  | 447,374 618,653 | 447,374 |
| 1906 | Kelly's Pond. | Queen's Co., P.E.I....... . . . . . . . | Atlantio salmon.... Rainbow trout. |  |  | 345, 000 | 206,000 | $\begin{aligned} & 67,653 \\ & 11,409 \end{aligned}$ | …....... | 618,653 11,409 |  |
|  |  |  | Speckled trout. |  |  |  | 116,000 | 297,355 |  | 413,355 | 1,043,417 |
| 1914 | Gull Harbour |  | Pickarel. |  |  | 13,047,000 |  |  |  | 13, 047, 000 |  |
| 1014 | Cull Harbour | Winnipeg, Man. | Whitefish........... | (b) 3,225,000 |  | 54,880, 000 |  |  |  | $58,105,000$ | $71,152,000$ |
| 928 | (d) Swan Creok | Swan Creok, Lake. . . . . . . . . . . . . . | Pickercl. | 187,340,000 |  |  |  |  |  | $187,340,000$ | $187,340,000$ |
|  |  | Manihota, Man. |  |  |  |  |  |  |  | 340,000 |  |
| 1909 | Winnipegosis | Snake Island, Lake Winnipogosis, Man. | Whitefish. | 340,000 |  | 51,099,020 |  |  |  | $51,009,026$ | 51,439,020 |
| 915 | Fort Qu'Appelle... | Fort Qu'Appelle, Sask. . . . . . . . . . . | Brown trout. . ..... Pickerel |  |  |  | .... | 38,000 | .......... | $\begin{array}{r} 38,000 \\ 10,570,000 \end{array}$ |  |
|  |  |  | Pickerel. <br> Whitefish. |  |  | $10,570,000$ $15,190,000$ |  |  |  | $\begin{aligned} & 19,570,000 \\ & 15,190,000 \end{aligned}$ | 34, 807,000 |
| 1014 | Banff................. | Banff | Whitefish. <br> Brown trout. |  |  | 15,196,000 |  | 130,000 | 14 | $\begin{array}{r}15,130,014 \\ \hline 1,110,013\end{array}$ | 34, 007,000 |
|  |  |  | Cutthront trout.... |  |  | 1,10,000 |  |  | 1 | $1,110,013$ |  |
|  |  |  | Lochloven trout.... |  |  |  |  | 474, 700 |  | 474,700 |  |
|  | - |  | Rainbow trout...... |  |  | 177,985 |  | 387, 515 | 2 | 565,502 |  |
|  |  |  | Solmon trout... |  |  |  |  |  |  | 12 |  |
|  |  |  | Speckled trout..... |  |  |  |  |  |  |  |  |
| 1917 | (a) Spray Lakes.......... |  | Cutthroat trout..... |  |  | 319,670 |  |  |  | 319,670 190,773 | $\begin{aligned} & 319,670 \\ & 190,773 \end{aligned}$ |
| 1928 | (a) Jasper Park., ${ }^{\text {a }}$, ...... | Jasper Park, Alta................... | Spockled trout...... |  |  | 190,773 |  |  |  | 190,773 | 190,773 |
| 1027 | Lesser Slave Lako.... | Lesser Slave Lake, Alta........... | (No distribution)... |  |  |  |  |  |  |  | 82,800 |
| 1928 | Waterton Lakes....... | Waterton Lakos Park, Alta........ | Cutthroat trout.... | . . . . . . . . |  | 82,800 1 1,894 |  |  |  | 82, 2084 | 82,800 |
| 1016 | Cultus Lake.......... | Cultus Lake, B.C.................. | Kamloops trout. Steolhead salmon. |  | $\begin{aligned} & 28,000 \\ & 12,083 \end{aligned}$ | 1,804 |  |  |  | 13,583 | 43,477 |
| 1905 | (a) Harrison Lake.. | Harrison Lake, B.C | Sockeye salmon.... |  | 3,543,965 |  |  |  |  | 3,543,965 | 3,543,965 |
| 1922 | (a) Lloyds Creok.......... | Lloyds Creok, Kamloops District, | Kamloops trout.... |  | 500,000 | 449,000 |  |  |  | 1,030,000 | 1,039,000 |


(a) Subsidiary hatchory.
(c) $2,002,000$ of theso wero planted from the 1928 Fall eollection.
(d) Collecting camps.

Variouis experiments and investigations with equipment, methods, etc., and in feeding fry and older fish with different kinds of food in different combinations were conducted at several hatcheries. The nature of the experiments undertaken were as follows. Uncompleted experiments or work of this nature that did not develop improvements in existing equipment or methods are not referred to.

## RIVERS INLEI HATCHERY

## F. A. Tingley, Superintendent

Eighteen experimental plantings of green sockeye salmon eggs from the collection of 1927 eggs gave the following returns:-

|  | Planted | Loss |
| :---: | :---: | :---: |
| No. 1 Water hardened eggs.... <br> No. 2 Washed eggs, unhardened. <br> No. 3 Eggs in milt. | $1 \frac{1}{2}$ hours after spawning | 2011276 |
|  |  |  |
|  |  |  |
| No. 4 Water hardened eggs |  | 22 |
| No. 5 Washed eggs, unhardened | 3 hours after spawning. | 28 |
| No. 6 Eggs in milt.. |  | 33 |
| No. 7 Water hardened eggs. |  | 27 |
| No. 8 Washed eggs, unhardened | 5 hours after spawning. | 22 |
| No. 9 Eggs in milt............ | - | 360 |
| No. 10 Water hardened eggs |  | 6 |
| No. 11 Washed eggs, unhardened. | 7 hours after spawning. | 39 |
| No. 12 Eggs in milt.......... |  | 1,440 |
| No. 13 Water hardened eggs |  | 41 |
| No. 14 Washed eggs, unhardened. | 9 hours after spawning. | 6 |
| No. 15 Eggs in milt... |  | 1,800 |
| No. 16 Water hardened eggs. |  | 10 |
| No. 17 Washed eggs, unhardened | 12 hours after spawning | 3 |
| No. 18 Eggs in milt. |  | 2,160 |
| Total. |  | 6,304 |

The superintendent reports that screening of each planting was not undertaken until the fry were half developed to the free swimming stage, when they were found to have spread all through the gravel between the plantings. All plantings were therefore enclosed together by two screens and three traps were installed to catch the fry. From May 30 to June 22, eighty thousand three hundred and thirty-five fry were trapped. When the enclosure was practically clear of fry, each planting was dug up and picked over carefully and dead eggs from each planting were found as shown above. The definite results obtained in fry and dead eggs were as follows:-

| Dead eggs counted or measured. | 6,304 |
| :---: | :---: |
| Fry taken out of traps. | 80,335 |
| Eggs or fry unaccounted. | 33,261 |
| Total planter | 119,900 |

Each planting contained one quart of hardened eggs-six thousand seven hundred, or an equal number of unhardened eggs, except No. 12, which contained six thousand. Part of the eggs unaccounted should be represented as dead eggs, particularly in plantings Nos. 12, 15 and 18.

It appeared that the loss in these three plantings was considerably in excess of the sum of losses from all the other plantings, but the superintendent was unable to prevent a large number of eggs in 12, 15 and 18 from drifting away, and only those that were counted or measured were included in the loss shown above. There were very few unaccounted dead eggs from the twelve plantings of water hardened and washed eggs, and in Nos. 16 and 17, which were planted twelve hours after spawning, there appeared to be as few dead as have ever been found in any planting of eyed eggs. There is no doubt that a considerable
number of the thirty-three thousand two hundred and sixty-one unaccounted eggs were hatched and had escaped down the stream bed beneath the screen.

From the results obtained it would seem that green eggs water-hardened, or washed only, can be planted to give as good results as can be obtained with eyed eggs. There seems to be nothing gained by leaving the eggs in milt, and if they are left in milt for seven hours before planting, the loss is very heavy. The eggs that were washed and placed in trays without being water-hardened were found to have hardened in the tray within twelve hours.
"Two lots of seven hundred and seventy-five eggs each were laid down in 1927 to show the difference in loss between the first and last eggs spawned from the same fish. The eggs from one fish were spawned into three pans in approximately equal parts and fertilized immediately in the usual way. Seven hundred and seventy-five eggs measured from the first lot and a like quantity taken from the last lot were placed in separate baskets in a trough, where the losses were recorded as they were picked. The loss from the first lot was 1.42 per cent and from the last $12 \cdot 12$ per cent. Obviously this is an extreme case, since the loss in seven hundred and seventy-five eggs, taken from the last one-third

"An experiment to determine the effect of exposure in water on the fertility of eggs and milt was repeated again in the autumn oi 1928, under conditions slightly different from those obtaining in the experiment of the previous year. The following results were obtained:-


Each of the eight lots above contained four hundred and ninety eggs. Lots one to four were made up of the egge from one fish, spawned in a moist pan and thoroughly mixed before they were divided and fertilized. Lots five to eight were taken from another fish and treated in the same way before being divided into lots. By so mixing the eggs the mature and less mature are more equally divided among the different lots than they would be if each lot was taken as spawned from the fish. However, in mixing the eggs there is some exposure to water, so that the total time of exposure is greater than indicated in the table above; and probably the result of increased exposure is seen in No. 5 above which shows a loss of 32 per cent against only 7 per cent for the corresponding lot reported last year."

## anderson lake hatchery

## David Bothwell, Superintendent

Six plantings of water-hardened sockeye salmon eggs from the collection of 1927 gave the following results. Each planting contained three thousand five hundred and eighty eggs:-

| Length of time between spawning and planting | Number of fry liberated | Number of bad eggs |
| :---: | :---: | :---: |
| No. 1-1 hour. | 3,224 | 356 |
| No. 2- 3 hours. | 3,385 | 195 |
| No. 3-5 hours. | 3,144 | 436 |
| No. 4- 7 hours. | $\stackrel{2}{2,072}$ | 1,508 |
| No. 5-9 hours. | 3,424 | 156 |
| No. 6-11 hours. | 3,481 | 99 |
|  | 18,730 | 2,750 |

90655-102

Five plantings of fertilized, washed, but not water-hardened, eggs gave the following results. Each planting contained four thousand seven hundred and thirty-eight eggs:

| ength of time between spawning and planting | Number of fry <br> liberated | Number of bad eggs |
| :---: | :---: | :---: |
| No. 1-1 hour. | 4,315 | 423 |
| No. 2-3 hours. | 4,076 | 662 |
| No. 3-5 hours. | 3,749 | 989 |
| No. 4-7 hours. | 4,555 | 183 |
| No. 5-9 hours. | 4,372 | 366 |
|  | 21,067 | 2,623 |

## kennedy Lake fatchery

W. P. Forsythe, Superintendent

Five plantings of sockeye salmon eggs were made from one to twelve hours after they were fertilized and gave the following results. Each planting contained one thousand eggs:-

|  | Length of time between fertilization and planting | Number of fry counted |
| :---: | :---: | :---: |
| No. 1-1 hour after fertilization. . |  | 307 |
| No. 2-3 hours | " | 670 |
| No. 3-5 " | " | 766 |
| No.4-7 " | " | 886 |
| No. 5-12 " | " | 534 |
|  | Total. | $\begin{array}{r} 3,163 \\ \text { or } 63 \cdot 26 \% \end{array}$ |

Just before the commencement of the hatching period, screens were placed below the plantings to catch the emerging fry, which were counted out daily, the first on April 4 and the last on May 22. No. 1 planting became badly silted which undoubtedly caused considerable of the loss that occurred in it.

## Cowichan hatchery

## J. H. Castley, Superintendent

Six plantings of fertilized but unhardened coho salmon eggs gave the following results. Each planting contained three thousand eggs:-

|  | Length of time left in milt before planting | Number of live fish counted | $\begin{gathered} \text { Percentage } \\ \text { of } \\ \text { hatch } \end{gathered}$ |
| :---: | :---: | :---: | :---: |
| No. 1-1 hour. |  | 1,653 | $55 \cdot 1$ |
| No. 2-2 hours. . |  | 1,350 | 45. |
| No. 3-5 hours. |  | -990 | 33. |
| No. $4-7$ hours.. |  | 741 | 24.7 |
| No. 5-9 hours.. |  | 1,076 | 35.86 |
| No. 6-12 hours. |  | 1.166 | 33.68 |

ST. JOHN HATCHERY

J. D. Nichol, Superintendent

The following experiment in feeding canned salmon to fry and fingerlings was tried. The experiment began May 29, 1928. Three thousand were retained in each tank.

| Species | Food | Experiment ended | Loss | Percentage loss |
| :---: | :---: | :---: | :---: | :---: |
| Speekled trout. | All liver. | Nov. 3 . | 922 | $30 \cdot 7$ |
| " | Canned salmon and liver, 50\% each. | " 3. | 702 | $23 \cdot 4$ |
| " | Canned salmon. | " 3. | 1,475 | $49 \cdot 2$ |
| Atlantic salmon. | All liver. | " ${ }^{\text {، }} 27$. | 779 | 26 |
| " | Canned salmon and liver, $50 \%$ each. | 27. | 865 | 28.8 |
| " | Canned salmon................... | 27. | 1,651 | 55 |
| Brown trout. | All liver. | 27. | 815 | $27 \cdot 2$ |
| " | 50\% liver and 50\% canned salmon. | "، 27 | 1,431 | $47 \cdot 7$ |
| " | Canned salmon. | " 27 | 1,789 | $59 \cdot 6$ |

The fish fed all liver were by far the best. Those fed entirely on salmon were largely pin heads.

Tests of the following foods for speckled trout fingerlings were conducted. Two thousand fingerlings were fed from June 27 to November 3.

| Food | Loss | Percentage Loss |
| :---: | :---: | :---: |
| Half clam meal and half liver | 376 | 18.9 |
| One quarter clam meal and three-quarters liver. | 300 | $15 \cdot 0$ |

Tests were also conducted with yearling speckled trout-troo hundred in each retainer.

| Food | Loss | Percentage Loss | Yield of Eggs |
| :---: | :---: | :---: | :---: |
| Liver. | 19 | $9 \cdot 5$ | 57,413 |
| One-half clam meal and one-half liver. | 18 | 9.0 | 44,427 |
| One-quarter clam meal and three-quarters liver. | 16 | $8 \cdot 0$ | 57,810 |
| One-half liver and one-hali fish. | 43 | 21.5 | 25,906 |
| All canned salmon. | 45 | 22.5 | 22,302 |

Fifty each male and female speckled trout two years old, brood stock, were fed in four of the thirty-three-foot ponds from June 3 with the following results:-


The fish fed the smallest quantity of liver produced more ova per fish but at a lower percentage of fertility. The difference in the cost of feeding between the three pound and nine pound groups was approximately five cents per fish. While the total collection obtained from those fed canned salmon was inferior to that obtained from liver fed groups, the percentage of fertility was considerably better.

In addition to the experiments, tests and investigations with equipment, methods, foods and breeding, that are continually underway at the various hatcheries, an extensive program of investigations and research-which is only limited by the difficulty that is experienced in finding properly trained workers to undertake definite problems of a fish cultural nature-is going on under the direction of the Biological Board of Canada. In spite of this handicap the following fish cultural problems are receiving attention and in some of them considerable progress has been made.

The Biological Board of Canada is in effect the scientific division of the Fisheries Department. It is composed of representatives from the leading universities of Canada, two representatives from the wholesale fish trade (one from the Atlantic and the other from the Pacific), and two Government officials. From the standpoint of scientific attainments, the board could scarcely be excelled, and consequently the scientific interests of the fisheries could scarcely be in better hands. A committee of the board (the Research Committee on Fish Culture) deals with fish cultural problems and reports to the board. The director, or head of the Fish Cultural Division is a member of the Research Committee on Fish Culture, and also a member of the Biological Board.

Considerable progress has been made in an investigation into the lifehistory of sockeye salmon. This investigation is to cover a period of twelve years ending in 1936, and, amongst other matters, will include a determination of the relative value and efficacy of different methods of artificial propagation and of natural reproduction; the value of ponds to enable the hatchery output to be artificially fed and distributed when they are one year old as compared with the value and results that accrue from the distribution of the same output in the fry and fingerling stages; the probable results and the advisability of transferring sockeye eggs from one system, or district, to another, such as from the Fraser to the Skeena river, and vice versa, and from the lower to upper Fraser river areas; the origin of unexpected and unexplained runs of sockeye that have occurred in recent years, and that may occur in the near future in the Fraser river system. The advisability of transferring pink salmon eggs or fry from the northern to the southern districts of British Columbia, and vice versa in the off years, with a view to producing equal runs in both districts every year is receiving attention.

An investigation has been made into the life history of the ciscoes of lake Ontario, including their natural habitat, food, growth, etc. The advisability of introducing cisco into the waters of Jasper Park as food for the trout, as well as the effect of different temperatures and salinity on the development of their egge, has received attention.

An investigation is being made into the life-history of whitefish, including a determination of the stage or stages at which greatest mortality occurs; extent and cause of said mortality, their habitat, food, enemies, competitors, and the importance of artificial propagation in maintaining such fisheries, and the best methods of carrying on such propagation. 'Some feeding and marking of whitefish fry has also been done.

An investigation into the life history of Atlantic salmon, including their food, enemies, competitors, etc., is under way.

The prospects for success and the advisability of attempting to establish Atlantic salmon in selected streams in British Columbia is receiving attention.

An investigation into the life-history of the shad, including artificial propagation and natural reproduction has been going on for several years.

An investigation into the life history of the smelt of the Atlantic, including natural reproduction, has been going on for several years. Their value as food for other fish has been considered.

An investigation into the life history of the trout of British Columbia, including size, relative growth, colouration, racial difference, etc., is being continued in the form of a detailed study of the Kamloops trout, with a view to the development of a fish cultural policy for that species.

An investigation into the life-history of eastern speckled trout, including a determination of the relative value of artificial propagation and natural reproduction, their food, competitors, enemies, etc., has been going on for several years. The best and most economical age at which to distribute the hatchery output of this species is receiving attention.

An investigation into the life-history of pickerel in the Prairie Provinces, with particular reference to lake Manitoba, is going on.

An investigation into the life-history of the oysters of the Atlantic and Pacific coasts, including the effects of temperature, salinity, food, habitat, etc., is under way.

An investigation into the life-history of the lobster, including its breeding, size, abundance, etc., has been going on for several years.

Considerable progress has been made in an investigation of alkaline lakes in the Prairie Provinces, with a view to having them produce an annual crop of food fish, including experiments in the fertilizing and hatching of eggs in these alkaline waters to determine the margin of safety and the possible results that may be expected from natural reproduction in such waters.

Biological surveys have been made or are in progress of the waters of the Jasper and of the Prince Albert National Parks, Manitou lake, Quill lakes, etc. Biological surveys of typical classes of lakes or of lakes typical of certain districts are undertaken from time to time.

Investigations are under way to determine the relative value of various foods for both adults and fry, including the determination of a ration to improve the general quality of the eggs produced by trout in their second year; to promote the production of natural trout food (for fry and adult fish) in hatchery ponds by fertilization, aquatic vegetation, etc. Aquatic vegetation with its attached insect life is being introduced into the waters of Jasper Park with a view to increasing the food supply for fish in these waters.

The cultural possibilities of the amphipod gammarus in ponds to serve as fish food is receiving attention.

Diseases and parasites of fish and fish eggs, and a study of the physical and other conditions that may lower the vitality and pave the way for disease, with a view to removing the cause and preventing a recurrence, are receiving attention.

Courses of instruction in such subjects as chemistry, physics, limnology, etc., have been given the hatchery officers in the Maritime Provinces. Such courses are being continued in the east and are also being extended to British Columbia.

All the space desired in any or all of the hatcheries throughout the country is available for experimental work to the Biological Board and its subcommittee on fish culture. The Cultus Lake hatchery, British Columbia, is given over entirely to the sockeye salmon investigations.

FREE TRANSPORTATION
The Canadian National Railway, Canadian Pacific Railway, Dominion Atlantic Railway, Pacific Great Eastern Railway, Esquimalt and Nanaimo Railway, Kettle Valley Railway, and the Cumberland Railway and Coal Com-
pany continued their generous assistance and co-operation by furnishing free transportation for shipments of game fish and game fish eggs with their attendants. The extent of this co-operation is indicated in the following summary:-

| Railways | Total mileage on trip passes | $\begin{aligned} & \text { Number } \\ & \text { of } \\ & \text { passages } \end{aligned}$ | Mileage baggage car permit |  |  | Number cases or cans |  |  | Number of permits |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Full | Empty | Total | Full | Empty | Total |  |
| C.N.R. | 19,222 | 180 | 10,555 | 13,124 | 23,682 | 876 | 869 | 1,745 | 181 |
| C.P.R. | 17,524 | 118 | 9,516 | 10,363 | 19,879 | 559 | 564 | 1,123 | 136 |
| D.A.R. | 2,366 | 31 | 1,407 | 1,407 | 2,814 | 123 | 123 | 246 | 37 |
| E. \& N.R. | 672 | 12 | 343 | 343 | 686 | 41 | 41 | 82 | 12 |
| $\begin{aligned} & \text { K.V.R.... } \\ & \text { P.G.E.R. } \end{aligned}$ | 178 | 1 <br> 4 | 296 89 | 89 | 296 178 | 3 | 6 | 12 | 1 |
|  | 40,258 | 346 | 22,206 | 25,329 | 47,535 | 1,608 | 1,603 | 3.211 | 371 |

[^4]Gratifying reports regarding the results that are apparent from the distribution of hatchery products continue to accumulate from all districts where fish cultural operations are carried on. In many districts local organizations, such as Boards of Trade, Angling and Protective Associations, Service Clubs, as weil as private individuals, have provided transportation and otherwise assisted in distribution work. In a few instances the necessary facilities were provided, and allotments of eggs and fry that were made by the department were hatched, retained and fed for several months at the expense of the local organizations, but under the general direction and supervision of the nearest fish cultural officer.

The Causapscal Fishing Club courteously agreed to the capture of parent salmon for hatchery purposes in their preserves in 1927, when 115 parent fish were secured, and a similar courtesy was extended in 1928, when 152 fish, yielding over 583,000 eggs, were secured. Operations were carried on under the personal direction of Superintendent Mowat, of the Restigouche hatchery, where the eggs were laid down.

The Restigouche Riparian Association placed its power boat and crew at the disposal of the department for collecting parent salmon from the fishing stands and transferring them to the salmon retaining pond at New Mills, New Brunswick.

The Armstrong Independent Fisheries Limited co-operated in making distributions to northern lake Winnipegosis by providing their tug Armenon and part crew-the balance of the crew being drawn from the hatchery employees. After the fry were distributed the hatehery staff assisted the company to place out the channel buoys.

The officials and employees of other federal departments, provincial officers, the officers and crews of fisheries patrol and protection boats, have been most cordial in their co-operation in all instances where they could be of assistance. The Research Committee of the Biological Board gave prompt and courteous consideration to all problems and difficulties that were referred to them. All of this assistance and co-operation is gratefully acknowledged.

Various exchanges of eggs were made, particulars of which are given elsewhere in this report, and kamloops and cutthroat trout eggs were supplied the Tokyo Angling and Country Club, of Tokyo, Japan. The chib reports that these eggs reached them in splendid condition, with a loss of only 4 per cent.

The department is most fortunate in having in its employ a staff of efficient fish cultural officers who are most conscientious in the discharge of
their duties. Only one exception to this general condition has occurred in recent years, and the delinquent suffered a well-deserved suspension without pay for six months, and was demoted as superintendent and transferred to another district with the rank of a hatchery assistant. On the other hand, several permanent appointments and well-merited promotions were made within the service.

The department participated with assortments of hatchery products and fish indigenous to the respective districts in exhibits for portraying our natural resources. An exhibit of seven species of fish, ranging from six months to six years of age, and including black lbass, rainbow, brown, speckled, loch leven and hybrid trout and Atlantic salmon, from the St. John hatchery was made at the St. John exhibition in September. A similar exhibit, comprising salmon trout, cutthroat, speckled, rainbow and brown albino trout, with preserved specimens, was made from the Banff hatchery to the Calgary exhibition in July. A comprehensive exhibit of fish indigenous to the district was made at the Edmonton exhibition by the Supervisor of Fisheries, and a similar exhibit was made at the Nelson fair from the Nelson hatchery. Cutthroat yearlings and speckled trout fingerlings from the Cowichan hatchery were displayed at the New Westminster exhibition, and kamloops trout, speckled trout and spring salmon were supplied to Hastings Park aquarium in Vancouver.

From the 1927 collection exchanges of eyed Atlantic salmon eggs were made with the United States Bureau of Fisheries, the State of New Hampshire and the Trout Brook Company of Hudson, Wisconsin, for loch leven, brown, rainbow and cutthroat trout eggs. Exchanges of Atlantic salmon eggs collected in 1928 with the United States Bureau of Fisheries and with the Bureau of Fish Culture, California, have been arranged.

The total collection of speckled trout eggs from wild fish was nearly double that of last year.

The efforts that have been made for several years by the Bedford hatchery staff were discontinued as it did not appear that the results that might be attained were likely to be commensurate with the trouble and expenditure involved; fair increases were made by the staffs of the Margaree and Nelson hatcheries, and the Kelly's Pond and Cowichan hatcheries more than doubled their collections of the previous year. A satisfactory collection was made from the pond fish at the newly established hatchery at Florenceville, but the yield from the St. John hatchery ponds was considerably smaller than it was in 1927. Detailed record of the numbers of speckled trout eggs that were collected in 1928, and the disposal that was made of them up to December 31 of that year are given in a subsequent statement.

In addition to the local collections six million one hundred and forty-three thousand six hundred and eighty-five speckled trout eggs were purchased. Two hundred and fifty thousand were allotted to Jasper park hatchery, Alberta, and the balance to Maritime hatcheries as detailed in a later statement.

## Maritime Provinces, Eastern Division

## District Inspector of Hatcheries, James Catt

While small increases over the preceding year were made in the numbers of Atlantic salmon eggs collected at the New Mills and the St. John retaining ponds where the parent fish are purchased from the early run commercial catch, the late summer and autumn runs at several other collecting points were below the average, and the collections at these places were not as large as they have been in recent years. The total collection of Atlantic salmon eggs from all sources was consequently over seven million smaller than it was in 1927.

Details of the numbers of such eggs collected and the disposal that was made of them up to December 31,1928 , are given in a subsequent statement.

The collection of landlocked or sebago salmon eggs was continued in a more or less experimental way in the Chamcook lakes, N.B., to determine, so for as may be feasible, before incurring the cost of a permanent camp, the number of such eggs that may be expected from this source in an average season. Slightly over 168,000 eggs were taken.

## ANTIGONISH HATOHERY

## Geo. Sutherland, Superintendent

The new salmon and trout hatchery described elsewhere in this report was completed late in the season and placed in charge of Mr. George Sutherland, who has had a long experience in the Miramichi hatchery, New Brunswick, as well as experience in fish cultural work in other parts of the Maritime Provinces. Operations were scarcely under way at the close of the year, but the plant and equipment was complete and had received four hundred and twenty-two. thousand salmon eggs from River Philip, four hundred and sixty thousand nine hundred and sixty speckled trout eggs from the American Fish Culture Company, and eight hundred speckled trout fingerlings from the best stock at the St. John hatchery, as the nucleus of a brood stock at the new establishment.

## BEDFORD HATCHERY

## Geo. Heatley, Superintendent

The supply of Atlantic salmon eggs from the collection of 1927 was secured for this establishment from the Miramichi pond, but the supply of Atlantic salmon eggs for 1928, viz., two million thirty-eight thousand five hundred, was secured from the camp that was recently opened at River Philip, and the supply of speckled trout eggs, viz., one million four hundred and seventy-three thousand two hundred, was secured from commercial firms as it was evident from the experience of recent years that the collection of such eggs from wild fish in that district was not commensurate with the time and expenditure involved.

Assistant Butler of this establishment was in charge of the collection of landlocked salmon eggs in Chamcook lakes, New Brunswick, where one hundred and sixty-eight thousand and four eggs were secured for incubation in St. John hatchery. A new ten-inch, wire-wound wooden pipe was laid from the canal to the immediate vicinity of the hatchery, from which point an eightinch branch leads to the hatchery troughs and another to the outside rearing tanks. The screened area at the intake of the supply pipe and the well were decked over, thus adding to the security of the water supply.

Salmon and trout fry, as required, were supplied by this hatchery to Dalhousie University and the Biological Station at Halifax. Space was also allotted in the hatchery to members of the Biological Board for carrying on independent research work.

Practically all of the output of this hatchery, except a few eggs and fry for experimental purposes, was fed and distributed in the advanced fry and fingerling stages. One million, five hundred and fifty-seven thousand one hundred and twenty-one Atlantic salmon and eight hundred and twenty-four thousand five hundred and fifty speckled trout were planted out.

## MARGAREE HATCHERY

## L. J. Burton, Superintendent

Iu addition to the ninety-one thousand one hundred and twenty-two speckled trout eggs obtained from the hatchery ponds, an effort was for the first time made to collect such eggs in the Pleasant bay and Pollets river dis-
tricts. Weather conditions throughout were very unfavourable, and while the number of eggs obtained, one hundred and eleven thousand seven hundred and thirty-five, was not large, prospects are considered sufficiently promising to warrant a further effort next year. In all, two hundred and two thousand eight hundred and fifty-seven speckled trout eggs were taken. Two million five hundred and forty-nine thousand seven hundred and sixty-six Atlantic salmon eggs were procured from the Margaree salmon pond and points in the Margaree river.

A new ten-inch, wire-wound wooden pipe line was laid, as the capacity of the old iron pipe had become considerably lessened through corrosion. A new dam was also built at the intake and other necessary repairs were made at this establishment. The greater part of the output was fed and distributed in the advanced fry and fingerling stages. Two million two hundred and forty thousand Atlantic salmon and one hundred and seven thousand three hundred and twenty-eight speckled trout were planted out.

The Lindloff hatchery, a subsirliary to Margaree, was operated in the usual manner and received its supply of salmon eggs, eight hundred thousand, from Bedford. From this number seven hundred and forty-six thousand were hatched out and distributed in local waters.

## Margaree salmon retaining pond

## J. P. Chiasson, Superintendent

Parent salmon are purchased from a number of commercial fishermen who previously operated in what is known as the Inside harbour, and who have pooled their interests and operate one large, small-mesh trap suitable for taking salmon for hatchery purposes, instead of several smaller traps that were previously operated at various points by these men. On September 8 the trap was put in commission to fish five days a week. On the other two days of the week the leads were raised to permit the free ascent of the salmon to the angling waters above. As it became apparent that the number of salmon that were being taken would not be sufficient to meet requirements, the trap was fished continuously throughout the week, beginning September 26. From September 15 to October 20, three hundred and seventy-two salmon were impounded, but on October 21 a severe freshet carried out the trap and damaged the twine. It was reset on October 25, but a second freshet inmediately carried away and damaged it to such an extent that it could not be repaired so as to resume operations. An effort was therefore made to augment the number of salmon at that time in the pond by sweeping the up-river pools, but the high water nullified such operations.

The fish in the pond were stripped between November 13 and December 3, and yielded two million five hundred and fifteen thousand eggs, all of which were laid down in the Margaree hatchery in splendid condition. The salmon did extremely well in retention, and there was a loss of only one fish throughout the whole of the season.

MiddLeton Hatchery

## H. V. Gates, Superintendent

This establishment handles Atlantic salmon and speckled trout. The salmon eggs, one million three hundred and thirty-five thousand five hundred and thirty-seven in number, were secured from the Miramichi pond, and the trout eggs, six hundred thousand, from Paradise Brook Trout Company. In the autumn of 1927 two thousand speakled trout fingerlings were liberated in the water supply pond of the hatchery. In August and September of 1928 the pond was drained and thirteen hundred yearlings were obtained. No artificial food was given to these fingerlings while they were in the pond.

The superintendent reports a small run of Atlantic salmon in the western portion of the province in 1928, probably due to the very dry season, but as compared with this apparent scarcity, the Mersey river carried one of the heaviest runs that it has known for a long time. The Mersey is, however, one of the largest rivers in the western part of the province, and the water is controlled by storage dams, thus maintaining a fairly uniform flow throughout the season. The fishery overseer for the district reports that a large percentage of the salmon taken in the Mersey in 1928 are somewhat different in shape from those that have been caught in other years, and is consequently of the opinion that the comparatively large run that has been established is the result of the distribution of fry from the Middleton hatchery, which receives its quota of salmon eggs from the Miramichi river.

The distributions from Middleton amounted to one million seven hundred and forty-nine thousand Atlantic salmon, and four hundred and fifty thousand four hundred and sixty-seven speckled trout.

## RIVER PHILIP EGG-COLLECTING CAMP

## George Heatley and George Sutherland, Officers in Charge.

An egg-collecting camp was opened in a more or less experimental way in the vicinity of the power plant on river Philip, primarily for the purpose of securing Atlantic salmon eggs for the new hatchery at Antigonish. A good run of salmon, particularly in the late summer and early autumn, has in recent years developed in this stream, and prospects for collection appear more favourable there than in any other stream in eastern Nova Scotia. Water conditions were not as favourable as they usually are, but a total of six hundred and fifteen fish were secured, yielding two million four hundred and sixty thousand five hundred eggs, which were laid down as follows: Antigonish hatchery, four hundred and twenty-two thousand; Bedford hatchery, two miilion thirty-eight thousand five hundred.

## WINDSOR HATCHERY

## F. M. Millett, Superintendent

The Windsor hatchery was not in active operation because drainage from certain gypsum quarries of the district finds its way, under certain conditions, into the hatchery supply and has been found to be fatal to egge and fry. As the pumping from the quarries in question was discontinued early in the season, it was hoped that the injurious matter would have been washed away or have become neutralized. A few eggs were, therefore, placed in the hatchery, but during a freshet the injurious element above referred to was found to be nearly as fatal as it had been during the previous year.

## YARMOUTH HATCHERY

## H. V. Gates, Acting Superintendent

The new salmon and trout hatchery in Yarmouth county, which is described elsewhere in this report, was completed and equipped in the autumn of 1928. No collection of eggs was made in the district, but eight hundred speckled trout fingerlings were received from the St. John hatchery as the nucleus of a brood stock. Four hundred and ninety thousand three hundred speckled trout eggs, purchased from the American Fish Culture Company, were laid down. Atlantic salmon and additional speckled trout eggs have been arranged for.

## FLORENCEVIJLE HATCHERY

## K. G. Shillington, Superintendent

This establishment, located on White Marsh creek about one mile from Florenceville, N.B., on the westerly side of the St. John river, was opened in the
autumn of 1927, and will cover in its distribution area the sentral portion of the province along the St. John valley and the upper portions of the southwest Miramichi, that cannot be readily reached from other hatcheries. It is fully equipped and up-to-date in all particulars, being provided with a series of ponds which may be extended as development renders necessary. The salmon egge were obtained as follows: St. John and Miramichi each supplied one million eggs early in the year, and St. John supplied two million five hundred and seventyseven thousand nine hundred and sixty during the autumn. A small but satisfactory collection of three hundred and four thousand and eighty-eight speckled trout eggs was obtained from the hatchery ponds but the greater part of this supply was purchased from commercial firms-one million from Paradise Brook Trout Company early in the year and four hundred and fifty-two thousand nine hundred and eighty-five from American Fish Culture Company during the autumn. One thousand and fifty speckled trout brood stock was also supplied from St. John early in the season. Florenceville distributed during 1928 one million six hundred and eighty-eight thousand three hundred and forty-six Atlantic salmon and five hundred and seventy-seven thousand and fifty speckled trout.

GRAND FALLS HATCHERY

## Paul Parent, Superintendent

Grand Falls hatchery propagates Atlantic salmon and speckled trout. No local collections are carried on and the supplies of eggs are annually received from other sources.

Early in the year it received seven hundred thousand Atlantic salmon eggs from Miramichi hatchery and during the autumn three million six hundred and forty-three thousand one hundred and twenty from St. John pond. It received nine hundred thousand speckled trout, by purchase, early in the season from Paradise Brook Trout Co. The following distributions were made: Atlantic salmon, two million six hundred and twenty-four thousand six hundred and fifty; speckled trout, seven hundred and eighty-three thousand six hundred and twelve.

The Tobique hatchery is subsidiary to Grand Falls, and is utilized to facilitate the distribution of Atlantic salmon in that strean, which has become the most important spawning tributary of the St. John river system. This hatchery received seven hundred thousand Atlantic salmon eggs from Grand Falls hatchery (Miramichi eggs), of which six hundred and sixty-five thousand hatched out and were distributed.

## MIRAMICHI HATCHERY

## Frank Burgess, Superintendent

The superintendent of the Miramichi hatchery is responsible for the operation of the Miramichi hatchery and the Miramichi salmon retaining pond. The parent salmon are purchased by tender and contract from the late summer and early autumn run, which usually occurs in large numbers in the Miramichi and its tributaries. In 1928 commercial fishing for salmon was comparatively poor for both the drifters in Miramichi bay and the trap-net fishermen. This condition continued into the late summer and the usual number of fish was not secured for the retaining pond. One thousand two hundred and ninety-one were; however, obtained from the successful contractor between September 12 and October 23. This number was supplemented by two hundred and eleven that were seined by the hatchery staff in the "Big Pool" in the Northwest Miramichi. The eggs secured were laid down as follows: Middleton hatchery, one million three hundred and thirty-five thousand five hundred and thirty-seven; Miramichi hatchery, six million one hundred and thirty-five thousand one hundred
and eighty-six. Miramichi during the year shipped out the following Atlantic salmon eggs: Nipisiguit hatchery, one hundred and fifty thousand; Florenceville hatchery, one million; Grand Falls hatchery, seven hundred thousand; Kelly's Pond hatchery, four hundred and fifty thousand; Cowichan Lake hatchery and Alberni district, one million; Trout Brook Cc., five hundred thousand; New Hampshire state, one million; United States Bureau of Fisheries, one million. The distribution from Miramichi during 1928 was four million forty-one thousand one hundred and twenty Atlantic salmon, all planted out in the fingerling stage, except for one hundred thousand eyed eggs that went to British Columbia.

## NEW MILLS SALMON RETAINING POND

Wm. White, Superintendent
The salmon for the New Mills pond are purchased from commercial fishermen of the vicinity. Most of the fish impounded are from the early run. In 1928, out of a total of 360 fish, 321 were secured during the month of June. Stripping operations covered the period between October 23 and November 12, a total of one million seven hundred and twenty-three thousand two hundred and thirty-five eggs being secured, all of which were laid down in the Restigouche hatchery. A loss of only four fish occurred during the season, although most of the fish were in the pond from June until the latter part of October.

## Restrgouche (flatlands) hatchery

## W. A. Mowat, Superintendent

The commercial catches in the upper end of the bay Chaleur and the angling in the Restigouche and its tributaries, as a whole, was not up to the average of recent years. The falling off in the commercial fishery is attributed by many persons to porpoises in unusual numbers in the bay. Water conditions in the river were not favourable for angling. The water in the river was at a low stage comparatively early in June and continued in this condition until late September, when a ssudden rise occurred. By the middle of October salmon are reported as having been quite plentiful on all the spawning grounds of the main river and in the various tributaries. The Causapseal Fishing Club, controlling a large portion of the Matapedia river, kindly agreed to the department securing parent salmon in their area, as it did during the previous year. Salmon were found to be rather scarce at the beginning of operations, but became plentiful as the work proceeded. A total of one hundred and fifty-two were taken by seining which yielded five hundred and eighty-three thousand three hundred eggs, all of which were laid down in the Restigouche hatchery. This collection was supplemented by receipt of one million seven hundred and twenty-three thousand two hundred and thirty-five salmon eggs from New Mills pond. The local distribution for 1928 was made largely in the advanced fry and fingerling stages. The great bulk of the output at this establishment is distributed by scow. The fry are transferred by hand from the hatchery troughs and tanks to the towing scow or pontoon which is moored in the river in front of the hatchery. The scow is then towed to the upper reaches of the river and the fry are thus liberated as desired and over an extremely wide area. In all, one million nine hundred and twenty-three thousand three hundred and fifty salmon were planted out.

The Nipisiguit hatchery is a subsidiary of the Restigouche hatchery. No effort was made to capture parent salmon or collect eggs in the Nipisiguit in 1928, as there was an unusually poor showing of fish in the river. It, therefore, received its supply of eggs in the eyed stage from the Restigouche hatchery. The 1928 quota, five hundred and fifteen thousand six hundred and fifty, was
obtained as follows: From New Mills pond via Restigouche hatchery, three hundred and sixty-five thousand six hundred and fifty; from Miramichi pond via Miramichi hatchery, one hundred and fifty thousand. The distribution for 1928 was four hundred and forty-seven thousand three hundred and seventyfour.

## ST. JOHN HATCHERY

## J. D. Nichol, Superintendent

The St. John hatchery has a larger and more extensive system of ponds than any other hatchery operated by the federal Government, and handles a greater variety of fish, including Atlantic salmon, land locked or sebago salmon, brown, loch leven, rainbow and speckled trout. Several experiments in selective breeding, feeding different quantities and kinds of food in different rations and combinations are carried on at this establishment, which also supplies the St. Andrews Biological Station with various allotments of eggs and fry for experimental purposes. This hatchery supplies more than its own requirements of speckled trout eggs, and is the only one in the eastern division that produces the eggs of other species from domesticated brood stock. The greater part of the output is distributed in older than the advanced fry stage. The nucleus of the brood stocks of speckled trout at Florenceville, Antigonish, and Yarmouth hatcheries have been supplied from St. John. It also acts as a clearing house for most of the shipments of eggs that are made to and from the Maritime Provinces. During 1928 exhibits of seven species were made at the St. John exhibition, St. John, N.B. During the calendar year the following collection of eggs were made: speckled trout-one million four hundred and sixty-six thousand one hundred and eight; Landlocked salmon-one hundred and sixty-eight thousand and four; Brown trout-one hundred and fifty thousand two hundred and seventy-two; Hybrid brown trout-ten thousand five hundred; Loch leven trout--fifty-eight thousand two hundred and twenty-two; Rainbow troutthree thousand four hundred and twenty. Out of the shipments of one million eight hundred and ninety-three thousand six hundred and eighty-five speckled trout eyed eggs purchased from the American Fish Culture Company and received in December, 1928, sixteen thousand two hundred and forty from the different shipments were held at St. John for comparative purposes. One million eighteen thousand five hundred and eighty Atlantic salmon eggs were laid down from the salmon pond. From the eggs on hand early in 1928, one million Atlantic salmon were shipped to Florenceville hatchery. St. John supplied the following speckled trout as a nucleus for brood stocks: Florenceville-one thousand and fifty; Yarmouth-eight hundred; Antigonish-eight hundred. St. John made the following distributions: Atlantic salmon-five hundred and sixtyfive thousand seven hundred and forty-eight; Brown trout-three hundred and eight thousand eight hundred and eighty-nine; Landlocked salmon-ninetyeight thousand three hundred and eight; Loch leven trout-sixty-four thousand two hundred and thirteen; Rainbow trout-four thousand eight hundred and seventy-four; Speckled trout-seven hundred and twelve thousand six hundred and thirty-four-a total distribution of one million seven hundred and fiftyfour thousand six hundred and sixty-six.

## ST. JOHN SALMON RETAINING POND

## J. D. Nichol and K. G. Shillington

J. D. Nichol is responsible for the operations of this establishment, but on account of the volume and importance of operations at the St. John hatchery, Mr. Shillington was in charge of stripping operations at the pond during 1928.

The parent fish are purchased from the early run commercial catch. One thousand four hundred and forty-nine were secured from this source between

May 31 and August 30. Stripping operations extended from October 24 to November 9, yielding a total of seven million two hundred and thirty-nine thousand six hundred and sixty eggs, which were laid down as follows: Florenceville hatchery-two million five hündred and seventy-seven thousand nine hundred and sixty; Grand Falls hatchery-three million six hundred and fortythree thousand one hundred and twenty; St. John hatchery-one million eighteen thousand five hundred and eighty. The run of salmon in the St. John harbour was not as large as was expected and very few were taken in the commercial nets and weirs in the latter part of the season. The area of the pond was nearly doubled by moving the upper fence upstream and a large amount of gravel was removed from the mouth of Little river in which the pond was constructed so as to provide a freer circulation of water, a quicker run-off with the ebb of the tide, and also to enable the effect of the incoming tides to be more quickly felt in the pond.

## KELLY'S POND HATCHERY

## F. C. Hayley, Superintendent

Collections of Atlantic salmon, speckled trout, and rainbow trout eggs were made from this hatchery. The salmon eggs were collected in the Morell river, where the parent fish were captured by seining between October 10 and November 22. Seven hundred and eighteen thousand five hundred eggs-more than double the collection of 1927-were secured, all of which were laid down in Kelly's Pond hatchery. Early in 1928 four hundred and fifty thousand Atlantic salmon eyed eggs were received from the Miramichi hatchery. Three hundred and fifty-seven thousand three hundred and thirty-six speckled trout eggs were collected from the hatchery water supply pond and from six other ponds in the province. Until 1928 the owners or proprietors of mill ponds were paid at the rate of ten cents each for all fish of ten inches and over in length that were' placed at the disposal of the hatchery officers in a healthy, vigorous condition. These fish were stripped and liberated by the hatchery employees. In 1928, however, the owners of the ponds in question were paid at the rate of one dollar per thousand for such eggs as reached the eyed stage. The necessary retaining crates, dip-nets, etc., were furnished by the department. In addition, five hundred thousand speckled trout purchased eggs were secured early in 1928 from Paradise Brook Trout Company. Fourteen thousand one hundred and ten rainbow trout eggs were secured in Pisquid lake, which received its first allotment of this species in 1924. This is the only water in the province where this species is found. Distributions made during 1928 were as follows: Atlantic salmon-six hundred and eighteen thousand six hundred and fifty-three; Rainbow trouteleven thousand four hundred and nine; Speckled trout-four hundred and thirteen thousand three hundred and fifty-five-a total of one million fortythree thousand four hundred and seventeen.

## PRAIRIE PROVINCES-CENTRAL DIVISION

## District Inspector of Hatcheries, S. J. Walker

The collection of whitefish eggs in this division was over seventy-one million larger than it was in 1927. Increases over the previous year's collection of approximately twenty-seven million were made in both lake Winnipegosis and lake Winnipeg. Experimental fishing for hatchery purposes was continued in the Jackfish-Murray lakes, Saskatchewan, where an increase of over one million eggs was made. Over eighteen million eggs were collected by the staff of the new hatchery that was opened in the autumn of 1928 on Lesser Slave lake. All previous records in the collection of piekerel eggs in this district were exceeded,
principally by the success that was attained in Swan creek, lake Manitoba, where experimental fishing was carried on with a view to determining the number of eggs that might be expected at this point. Over one hundred and eightyseven million were secured, and this success, coupled with the results of previous years, led to the construction of a pickerel latchery at this point, to be ready for operation in the spring of 1929. Test fishing for pickerel was also carried on in the Jackfish-Murray lakes, where over nineteen million eggs were secured and laid down in the Fort Qu'Appelle hatchery. The collection in lake Winnipeg was slightly smaller, while that in Sioux lake was slightly larger than in the previous year.

Commercial fishermen, fish dealers, boards of trade, and others interested in the fisheries of lake Winnipeg are petitioning for the construction of a hatchery to replace the Dauphin river establishment that was burned a few years ago. As supplies of eggs, in addition to those that are at present available, would be necessary for such a hatchery, test fishing for whitefish eggs was carried on at Pigeon bay and Berens river, on the easterly shore of lake Winnipeg.

Details as the numbers of whitefish and pickerel eggs collected in 1928 and the disposal that was made of them up to December 31 of that year are given in a subsequent statement.

## gull harbole (lake winnipeg) hatchery

## C. P. Paulson, Superintendent

Approximately seventy per cent of the whitefish fry that resulted from the collection of 1927 were distributed by scow and motorboat in the general vicinity of Big island. Over sixteen million eggs were placed in the hatching battery on the C.G.S. Bradbury and taken to Berens river, one hundred miles north of the hatchery. The resultant fry were given, as they hatched, a widespread distribution in this area. The 1928 supply of whitefish eggs were collected from pound nets operated by the hatchery staff at the nouth of the Little Saskatchewan or Dauphin river. The leads of the net which close the river were raised from six o'clock Saturday evening until six o'clock on the Sunday following, throughout the operations. The net was in commission on September 19, and was pulled out on October 27. Fishing was generally poor in September, but improved during the early part' of October. A total of twenty-two thousand three hundred and fourteen whitefish was taken, of which three thousand seven hundred and eighty male fish taken in the early part of the season were liberated above the net as they were caught. The first eggs were obtained on October 19 and the total collection amounted to ninety-six million three hundred and seventy-five thousand. All the eggs from Dauphin river camp were laid down in Gull Harbour hatchery. As the fish in the retainers were not ripening in a satisfactory manner, the operations were brought to a close on November 5, with the liberation of eleven thousand eight hundred and eighty-five fish. On October 14 some experimental fishing for hatchery purposes was done in Pigeon bay on the east shore of the lake. The most promising locations in Pigeon bay and Berens river districts were tested, but the results were far from encouraging, the total collection amounting to three million two hundred and twenty-five thousand eggs. These eggs were fertilized and planted on the reefs near where the nets were set.

Pickerel eggs were again collected in the vicinity of the quarry, Big island. The ice was late in breaking up and fishing did not commence until May 18. The run of fish was light, possibly due to the late breaking up of the ice, but the eggs secured were generally satisfactory. Seventeen million five hundred and ten thousand eggs were taken. When it was observed that the run was over at the quarry, an effort was made at Grassy narrows but it was found that
the fish there had also left the spawning grounds. The great majority of the fry were distributed in lake Winnipeg, but two million were transferred to Selkirk and allotted to a number of the smaller lakes in the southerly part of the province. Some two thousand five hundred whitefish were marked at the Dauphin river spawning area with a view to gaining definite information regarding the movements of these fish. Gull Harbour hatchery during 1928 distributed thirteen million forty-seven thousand pickerel and fifty-eight million one hundred and five thousand whitefish.

## SWAN CREEK (Lake manitoba) Hatchery

Geo. E. Butler, Acting Superintendent

Experimental fishing for hatchery purposes was carried on at Swan creek, lake Manitoba, to determine the possibilities for collecting pickerel eggs for hatchery purposes at this point. Twelve thousand and thirty-eight pickerel were taken, which yielded one hundred and eighty-seven million three hundred and forty thousand eggs. These eggs were fertilized, waterhardened and distributed on the spawning grounds of the district. In view of the large collection, tenders were invited, and a pickerel hatchery constructed and equipped for operation during the spring of 1929.

## WINNIPEGOSIS HATCHERY

## Geo. E. Butler, Superintendent

Parent whitefish were caught in pound nets operated by the hatchery staff in Waterhen river. They were transferred to the lagoon at the hatchery where they were retained until they had ripened. The nets were set on September 14 and continued until October 27. Fourteen thousand five hundred and thirty fish were caught which yielded one hundred and twenty-one million eggs. Ninety-six million of these were laid down in the Winnipegosis hatchery and twenty-five million transferred to Fort Qu'Appelle hatchery. Weather conditions were favourable. The collection made was considerably larger than those of recent years, and the eggs were of good quality. Improved fishing conditions in the south end of the lake are indicated by the increase in the number of fishermen who are now operating there.

A number of whitefish fry were marked at this hatchery by the removal of one pectoral fin, by an employee of the Biological Board, and some two thousand five hundred parent whitefish were marked in the autumn by the hatchery staff, with a view to gaining information regarding the movements of these fish.

Some experimental fishing for pickerel eggs was made in Valley river, lake Dauphin. Large numbers of rough fish were caught, but the pickerel operations were not sufficiently successful to warrant continuing them another season, as only three hundred and forty thousand eggs were taken.

Distributions made during 1928 amounted to three hundred and forty thousand pickerel and fifty-one million ninety-nine thousand and twenty-six whitefish.

Two rooms were fitted up for the hatchery as an addition to the sleeping quarters for the staff, and other minor repairs were effected.

FORT QU'APPELLE HATCHERY

## W. C. Mapes, Superintendent

During 1928 the whitefish floor tank and one side of the whitefish battery were removed and replaced by one single tier battery and twenty-four trout troughs each nine feet long in four sets of six troughs each. The troughs in the two upper sets overflow into the others. Two fry tanks ten by twelve
each were built outside the hatchery and provided with a removable roof. This change in equipment was primarily for the purpose of facilitating the hatching of trout for stocking waters in the province which heretofore have been stocked by transfer of fry from the hatchery at Banff.

A collection of pickerel eggs was carried on at Arnolds point, Sioux lake, where ten million four hundred and fifty-five thousand eggs were obtained. Unfavourable weather conditions prevailed, and the lateness of the season delayed the setting of the nets. Drifting ice necessitated constant changing of the nets from place to place, and also prevented their being operated at the most favourable points in the river. Nineteen million three hundred and eighty thousand pickerel eggs were received also from Cochin, Saskatchewan. Twentyfive milhion whitefish eggs were secured from the Winnipegosis hatchery and four million two hundred thousand from Jackfish-Murray lakes near Cochin, Saskatchewan, but no efforts were made to collect in the Fishing Lakes near the hatchery as the returns of the previous year did not warrant the expenditure. In addition to the lakes that were stocked with hatchery fry, six different bodies of water received allotments of fish aggregating seven thousand five hundred perch yearlings and seven hundred minnows by transfer from other bodies of water. One hundred and fifty-two thousand one hundred Loch Leven tront eggs were received in an exchange with the United States Bureau of Fisheries. These were incubated and the resultant fry will be distributed in waters in the Cypress hills district. Distributions made during the year amounted to thirtyeight thousand Brown trout, nineteen million five hundred and seventy thousand pickerel, fifteen million one hundred and ninety-nine thousand whitefish-a total of thirty-four million eight hundred and seven thousand.

## Cochin Egg Collecting Station

Experimental fishing was carried on, under the direction of Assistant 0 . Bright, of the Fort Qu'Appelle hatchery, in the creek between Jackfish and Murray lakes in the spring and autumn of 1928 , with a view to ascertaining the numbers of pickerel and whitefish eggs that are obtainable at this point for hatchery purposes. Four thousand and eighty pickerel were taken between April 11 and May 14, of which four hundred and fourteen females were stripped, yielding nineteen million three hundred and eighty thousand eggs which were laid down in the Fort Qu'Appelle hatchery. Similar operations were conducted in the autumn, and twenty-two thousand six hundred and ninety-nine whitefish were caught between September 27 and November 17. The catch was smaller than that of the previous year, and is attributed to the prevalence of northwest winds which choked up the creek where it enters Jack fish lake. Conditions similar to those met with in the previous year were again encountered, and extremely cold weather occurred before the fish that were held in retention had ripened. Notwithstanding the large number captured only one hundred and thirty-seven females had ripened and were stripped before climatic conditions, with heavy frosts, made it necessary to liberate the remainder. The eggs taken-four million two hundred thousand-were laid down at Fort Qu'Appelle.

## BANFF HaTCHERY

## J. E. Martin, Superintendent

The Banff hatchery covers in its distribution area an extremely large territory, extending from Jasper Park at Edmonton on the north to the international boundary on the south, including a number of foothill streams in this teritory. It also handles more than the average number of species, which in 1928 included cutthroat, rainbow, brown, Loch Leven, and salmon trout. A large percentage of this output is distributed in the fingerling stage, and the distribution extended from May 20 until September 22.

The rainbow, brown, Loch Leven, and cutthroat trout eggs are secured by purchase or exchange, and not by local collections, except for a few rainbow taken from the hatchery pond. The eggs laid down were secured as follows: Rainbow trout, three thousand eight hundred and twenty-five from the hatchery ponds, two hundred and nineteen thousand from Trout Brook Company, four hundred and eighty-three thousand six hundred from state of New Hampshire; Salmon trout-one hundred and ninety-seven thousand two hundred from Cold lake, Alberta; Cutthroat trout-two hundred thousand from S. S. Drew, Troy, Montana; nịe hundred and sixty-two thousand eight hundred from United States Bureau of Fisheries, five hundred and thirty-seven thousand six hundred from state of New Hampshire; Brown trout-one hundred and fifty-five thousand two hundred and thirty from Trout Brook Company; Loch Leven trout-three hundred and fifty-two thousand two hundreci and fifty-six from United States Bureau of Fisheries. The hatchery water supply has, up to the present, been obtained from the town's service, which is of uniformly low temperature. As this low temperature, on occasions, unduly delays hatching and development, a creek in the vicinity was tapped and connected by a pipe line with the hatchery, which gives a much greater range of temperature, and it is hoped will enable the earlier eggs to be advanced and the fry distributed, thus affording a longer distribution season and more room for the later varieties. Distributions made during the year amounted to two million two hundred and eighty thousand two hundred and forty-two by species as follows: Brown trout -one hundred and thirty thousand and fourteen; Cutthroat trout-one million one hundred and ten thousand and thirteen; Loch Leven trout-four hundred and seventy-four thousand seven hundred; Rainbow trout-five hundred and sixty-five thousand five hundred and two; Salmon trout-twelve; Speckled trout-one. Exhibits of fish in various stages were made at Edmonton and Calgary exhibitions and at Pincher Creek Forest exhibit.

## Spray Lakes Hatchery

The Spray Lakes hatchery is subsidiary to the Banff establishment, and is carried on under its direction. Two trap-nets are operated, one at the head of the chain of lakes and the other in the creek connecting the first and second lake. The season was backward with much snow in the hills, which delayed the run, and when the snow melted freshet conditions were induced which flooded the entire flats surrounding the trap-nets. Undoubtedly a large proportion of the trout escaped in this way at the uppet net, but the collection at the lower net was not so seriously affected. The collection of three hundred and eightyfive thousand five hundred and seventy eggs, which was considerably smaller than those of recent years, was hatched and the resultant fry, three hundred and nineteen thousand six hundred and seventy, distributed at the Spray lakes.

## Cold Lake Egg Collecting Station

Test fishing was carried on in Cold lake, northwest of Edmonton, under the divection of Superintendent Martin, of the Banff hatchery, for the purpose of determining the numbers of salmon trout eggs that might be expected in this lake under average conditions. After prospecting the most favourable looking locations with gill-nets, the vicinity of Murray island was selected, and stakes were driven and pound-nets set at Rinde point, about three miles east of the island. The result of these efforts was not encouraging, and it appears from the experience of the last two seasons that the spawning grounds of Cold lake are so extensive that there is no great collection of spawning fish at definite points, but that they spawn more or less over the whole of the lake. Three hundred and thirty-eight thousand eight hundred and fifty eggs of indifferent quality
were secured, but a heavy loss occurred before the remaining balance-one hundred and ninety-seven thousand two hundred-were laid down in the Banff hatchery.

With a view to gaining some information regarding the approximate numbers of suckers and other coarse fish in Cold lake, a trap-net was operated in Medley river, one of the tributary streams, by Fishery Guardian H. Turcotte, in June. He was unable to maintain the net in position during the freshets, which brought down a large amount of debris. Thirteen thousand four hundred and sixty-seven suckers were, however, taken, and information gathered which will enable operations to be undertaken on a larger scale should such be deemed advisable.

LESSER SLAVE LAKE (CANYON CREEK) HATCHERY

## H. J. Reid, Superintendent

The whitefish and pickerel hatchery at Lesser Slave lake was completed, a wharf built, equipment installed, and grounds improved, during the summer. Test fishing for pickerel was also carried on in Buffalo bay, near Grouard, at the westerly end of Lesser Slave lake. Superintendent Reid reached the village of Grouard on April 21, while the ice was still quite firm in the river and adjacent bay. As the pickerel appeared to be ascending the river under the ice a camp was established on a branch creek about fifteen miles up Heart river, The camp, with the adjoining territory, was almost immediately flooded by freshets, and operations were removed to the vicinity of Grouard. Efforts made at various places near Grouard were neutralized by freshets carrying ice and floating debris of all kinds. There were only five hundred and sixty female fish, of which two hundred and nineteen were ripe in a total catch of five thousand, six hundred and thirty. All fish taken were liberated. Test fishing, with gill-nets, was carried on from October 1 for the purpose of locating the most productive whitefish spawning grounds. As a result of this fishing one pound-net was set at Nine Mile point on October 18, and a second on the north shore about fourteen miles from the hatchery on October 25. Stormy weather prevailed, which injured the north shore net and it was removed on November 3. The Nine Mile point net was put out of commission by drift ice on November 1, and was not reset as conditions were so unfavourable. Fishing with gill-nets was continued until November 23, when an examination was made of conditions at Whitefish lake. The river between the lakes was still open, but the run of whitefish had passed. As the ice was sufficiently firm to carry, gill-net fishing was resumed in Lesser Slave lake on December 1, and the catches of the commercial fishermen at Faust were examined. The total collection of whitefish eggs, amounting to eighteen million five hundred thousand were laid down in the Lesser Slave Lake hatchery.

The installation of the equipment, including a duplex pumping plant and electric generator, was completed. A four hundred-foot wharf was built which not only includes a landing but a shelter for the boats and the pound-net pots in which the parent fisl are retained. Two launches were supplied. The larger, Utikuma (Cree for "Big Whitefish"), has a length of forty-five feet over all, beam ten feet six inches, moulded depth four feet nine inches, draft three feet, carvel built, and is equipped with a six cyclinder, four cycle, medium duty Kermath engine, of from forty to sixty-five rated horse power. This boat has accommodation for four men. The smaller boat Utikumasis (Cree for "Little Whitefish"), has a length of twenty-eight feet over all, beam eight feet five inches, moulded depth three feet three inches, draft fourteen inches, carvel built, and is equipped with a four cylinder, four cycle, medium duty Universal engine.

## G. E. Bailey, Acting Superintendent

The new trout hatchery in the Waterton Lakes Park, southern Alberta, was completed, settling tank built, a portion of the property cleared of shrub, and fenced, and general surroundings improved. The equipment was made ready for operations, and eighty-eight thousand and fifty cutthroat trout eggs from Yellowstone Park, Wyoming, were laid down in the troughs. Of this number eighty-two thousand, eight hundred hatched and were distributed in the district.

## JASPER SUB-HATCHERY

One hundred and ninety thousand, seven hundred and seventy-three eastern speckled trout were distributed in the Medicine-Maligne Lake system of Jasper Park from the subsidiary hatchery which was fitted up particularly for the introduction of the species mentioned to the system in question, which was previously barren of fish life. The two hundred and fifty thousand eggs which were secured by purchase from the Paradise Brook Trout Company were cared for by the Park's staff under the general direction of the Supervisor of Fisheries for Alberta. The fry were distributed under unusually difficult conditions by Assistant Bright, of the Fort Qu'Appelle hatchery, the necessary assistance, including trucks, pack-horses, etc., being provided by the Parks Branch.

British Columbia, Western Division<br>District Inspector of Hatcheries, C. W. Harrison

The total collection of sockeye salmon eggs in the Fraser River watershed was twenty-seven million one hundred and seven thousand larger than that of 1927, and nearly twenty-five million larger than the collection that was madey in 1924, the corresponding year of the four-year cycle which obtains in the Fraser river.

The total collection of all species in the watershed was seventy-three million two hundred and thirty thousand eight hundred, as compared with forty-nine million three hundred and forty-six thousand five hundred in 1924.

These figures, coupled with reports from various sections, indicate some improvement over recent years in conditions that obtained on the spawning grounds in 1928.

The collection of salmon eggs in the Fraser River watershed in 1924 compares with that of 1928, as follows:-

| - | - | Pitt lake | Cultus lake | Harrison lake | Pemberton | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sockeye. | 1924 | 5,678,000 | 5,075,000 | 6,518,000 | 31,200,000 | 48,471,000 |
|  | 1928 | 5,550,000 | 32,656, 624 |  | $35,010,000$ | 73,216,624 |
| Coho.. | 1924 |  |  | 66,000 |  | 66,000 |
| Spring | 1924 |  |  | 577,500 |  | 577,500 |
| Chum. | 1924 |  |  | 228,000 |  | 228,000 |
|  | 1928 |  |  |  |  | 220,000 |
| Steelhead. | 1924 |  | 4,000 |  |  | 4,000 |
| - | 1928 | ........... | 14,200 | ............ |  | 14,200 |

1924-Total of all salmon-49,346,500.
1928-Total of all salmon-73,230,824.

In the other parts of the province results varied considerably, although on the whole somewhat smaller runs and collections of eggs were made. There was a heavy run of sockeye at Babine and of steelhead at Cowichan lake. Anderson lake also showed an increased run. Heavy floods at Gerrard greatly interfered with operations, and freshets at Lloyds creek damaged the traps considerably. Penask lake carried on experimental collection work.

## Fraser River Watershed

PITY LAKE HATCHERY

## J. McIsaac, Superinterdent

A heavy run of sockeye occurred in the Pitt Lake district and in addition to a collection of five million five hundred and fifty thousand eggs, which is slightly larger than that of the previous year, the natural spawning grounds were very well seeded. The usual collecting camps at Four Mile, Seven Mile and Ten Mile creeks, Mountain Slough and Charles Peter's creek were operated. Over one-half million of the fry were retained and fed to the fingerling stage. The 1928 distribution of sockeye from eggs secured the previous season amounted to four million eight hundred and sixty-five thousand one hundred and seventvthree.

## CULTUS LAKE HATCFERY

## A. Robertson, Superintendent

While the actual fish cultural work at Cultus Lake was conducted by the fish cultural staff, such operations were carried on so as to best suit the program of research laid out by the Biological Board of Canada. In 1927, the whole of the sockeye run that reached the outlet of Cultus Lake was counted over the fences and allowed to proceed to the spawning grounds for natural reproduction. Consequently no local collection for hatchery purposes was made that season, but the hatchery was utilized to take care of nearly four million sockeye eggs that were obtained in Trout or Hatchery creek, Harrison lake. These eggs were eyed at Cultus and returned to the Harrison district for distribution. The run of sockeye in 1928 was of about the same proportions as the run of 1924. The females, however, outnumbered the males to the extent of three to one. The whole of the run of nearly fifteen thousand fish was retained in Sweltzer creek, the outlet of Cultus lake. Some of the early fish were consequently retained for nearly three months, and throughout the season a considerable number died before they could be stripped or had reproduced naturally. Under ordinary hatchery conditions, the early fish are allowed to ascend, and throughout the season the fish that are not donated to the Indians for food are passed over the fences as they are stripped and allowed to ascend to the spawning grounds above. The total collection of eggs at this point amounted to thirty-two million six hundred and fifty-six thousand six hundred and twenty-four eggs. Over twentyseven and a half million were taken in the usual way, and as the fish were stripped they were slit and the eggs remaining in them secured. This method yielded slightly over five million eggs additional. Six million seven hundred and twenty-four thousand five hundred and seventy-four of the eggs taken were laid down in Cultus Lake hatchey; seven million seven hundred and forty-four thousand in Smiths Falls hatchery, which is adjacent and subsidiary to Cultus; also seventeen million nine hundred and eighty-eight thousand and fifty eggs were sent to Harrison lake and two hundred thousand to Pemberton hatcheries.

A small collection of steelhead salmon eggs was made at Sweltzer creek, viz., fourteen thousand two hundred in the spring of 1928, and thirty thousand Kamloops trout eggs, transferred from Lloyd's creek, were planted from this establish-
ment. 1928 distributions from Cultus amounted to twenty-nine thousand eight hundred and ninety-four Kamloops trout and thirteen thousand five hundred and eighty-three steelhead salmon. Five hundred suckers were also killed in the vicinity by the staff of the Cultus Lake hatchery. Five thousand humpback or pink salmon eggs were taken by the Biological Board for experimental purposes.

## HARRISON LAKE HATCHERY

## E. V. Epps, Acting Superintendent

The Harrison Lake hatchery, which has not been continuously operated for several years, was fitted up and utilized for handling eggs collected in Cultus lake in excess of the capacity of that place. Seventeen million nine hundred and eighty-eight thousand and fifty sockeye eggs were handled, the first being received on November 24 and the last on December 14. A fair run of sockeye made' its appearance in Trout or Hatchery creek at this establishment, but no efforts were made to secure their egge as it appeared that the hatchery would be taxed to its capacity with eggs from Cultus lake. Three million five hundred and forty-three thousand nine hundred and sixty-five sockeye eyed eggs were distributed locally.

## PEMBERTON HATCHERY

## T. W. Graham, Superintendent

A satisfactory run of sockeye reached the Birkenhead river in 1928, although somewhat smaller than the run of 1924. This last-mentioned run was considered by the oldest residents to have been the largest that they had ever seen. Thirty-five million and ten thousand eggs were secured (two million by the incision method). This number was supplemented by receipt of two hundred thousand sockeye eggs from Cultus lake and forty-five thousand Kamloops trout from Lloyds Creek hatchery. Thirteen million and thirteen thousand sockeye eggs were transferred to the Stuart Lake district, where eight million and eight thousand were planted in the François and Quesnel lakes, and the balance laid down in Stuart Lake hatchery. A good natural seeding must have occurred because sockeye were arriving in the river and were present in considerable numbers after the fences had been removed and spawning operations had been discontinued. Distributions amounted to forty-two thousand six hundred Kamloops trout and twenty-eight million five hundred and thirty-three thousand sockeye salmon.

STUART LAKE HATCHERY

## H. C. Crawford, Superintendent

As it appeared doubtful that the usual allotment of sockeye eggs could be secured in the Fraser river for the Stuart Lake hatchery, collecting operations were undertaken at Fifteen Mile and Pierre creeks, Babine lake. As the season advanced and the usual and expected heavy run did not materialize in Lakelse lake, collecting operations in Babine lake for the Stuart Lake hatchery were terminated, and the eggs obtained-six million one hundred and four thousandtransferred to the Babine hatchery. Five million five thousand sockeye eggs from the Pemberton hatchery were later in the season transferred to Stuart Lake. One million five hundred and eighty-two thousand of this number were planted in the eyed stage in Hoy creek and the remainder were incubated as fry at the hatchery. The distribution of sockeye fry from the Stuart Lake hatchery in barren lakes in the vicinity has for several years given splendid returns in the way of migrating fingerlings and yearling fish. The usual migration did not occur last season, and on investigation it was found that in both Crawford and Rainbow lakes the sockeye had apparently become landlocked, as twenty
sockeye were caught in one night's fishing ranging in size from what appeared to be two-year-old fish to several carrying eggs in a well developed state. In addition to the usual repairs, thirty new hatching troughs were made, the roof of the hatchery reshingled and a new foundation placed under the dwelling-house during the summer.

On October 28, five million five thousand eggs from the Pemberton hatchery reached Burns lake, for the purpose of continuing the seeding that was started in 1926 of the Nadina river at the head of Francois lake. This operation was in charge of Superintendent Hearn of the Lakelse Lake hatchery. Owing to the abnormally low state of the water considerable difficulty was experienced in getting the scow with the eggs to the usual landing place up river. Transportation of eggs and equipment was effected by small boats, team and pack horses, and planting operations were commenced on October 31, but little could be accomplished on account of the extremely cold weather. Owing to the low state of the water the areas that were seeded in previous years did not afford sufficient space, but made available other equally suitable riffles. Operations were satisfactorily completed on November 8. As one of the objects of this planting is to gain information regarding the results that may be expected from the planting of Upper Fraser areas with eggs collected in the Lower Fraser, the various tributaries of Francois lake have been carefully examined since the first seeding was done in 1926. This inspection indicates that in the aggregate extremely few sockeye reached this area in 1928. One dead sockeye was picked up at the mouth of Uncha, but none were observed in Nithe river, Ormond creek or Trout creek. A small number were observed in the Stellaco river, as well as in the Nadina.

The run of sockeye to the Shuswap district was light compared with the runs of the preceding four years, and is estimated by the local officers to have exceeded ten thousand in number. The majority remained in Little river, very few going into Adams river, where an extremely heavy run occurred in 1926. The run at Bridge river canyon on the Fraser was greater than the runs of 1926 and 1927. A small run estimated at four hundred fish entered Seton lake, but none were observed on the usual spawning grounds of Seton or Anderson lakes in this system. An unusual and unexplained run, estimated at from eight to ten thousand, occurred in Raft river, larger than any that had been seen by the residents for many years. Some of these fish were found dead along the river, which had not spawned and did not show any outward bruise or sign of injury. The run to the Chilco lake district is reported to have been the best for at least fourteen years, and is estimated at twenty thousand by the local guardian, while a comparatively small number were observed in Horsefly river in the Quesnel lake system. A small run was observed in the Bowron river. Three million three thousand eyed sockeye eggs from Pemberton were planted in the Quesnel district during the fall of 1928.

## RIVERS INLET HATCEERY

## F. A. Tingley, Superintendent

The run of sockeye to the various spawning grounds of Owikeno lake, as a whole, was below the average of recent years, but there was no alarming scarcity in any section. The officers who were familiar with the situation are of the opinion that the smaller run of 1928 is attributable to a scarcity of four-year fish, probably due to the abnormal freshet that occurred in the late fall of 1924, which thoroughly scoured the principal spawning grounds of the district. In reporting on this freshet, under date of December 26, 1924, the superintendent of the hatchery at that time said that, "the recent abnormal freshets have so thoroughly scoured out all the creeks and rivers in this district that all the eggs deposited naturally by the salmon have been destroyed so that any return from this year's brood fish will depend on the eggs at present in the hatchery ". The
run to Genesi creek was a good average for that stream and the collection of eggs was above the average, as the result of an additional trap and holding the fence until the end of the run. The Genesi sockeye were of a larger average size than usual. The run to Quap consisted of approximately ninety per cent large fish apparently five year old and though it was undoubtedly below the average of recent years, it was in the opinion of the hatchery superintendent not as poor as the collection figures would indicate. Usually during the spawning season there is a succession of freshets that bring the sockeye into the traps in great numbers, but this year there was only one day of high water in the creeks-October 16-when one million six hundred and seventy-five thousand eggs were taken at Quap. In both Quap and Genesi creeks, a great many sockeye spawned below the fence, but in a normal season the majority of these fish would have been trapped. The average height of the lake in October, 1928, was three feet four inches by the guage at the hatchery as compared with five feet four inches for October, 1927, which was a normal season. Towards the end of the season an effort was made to secure spawning sockeye from the Indians who were catching fish for smoking purposes in the Whannock river. The collection of sockeye for 1928 was fourteen million sixty thousand five hundred. All the fry hatched from the collection of 1927 were fed from the time that the food sac was about one-half absorbed until they were fully developed and distributed. A total of twenty million sixty-eight thousand seven hundred and eighty-six sockeye was planted out.

The road, besides the usual minor repairs, was extended about three hundred yards down river to reach a better landing for the freight scow. This extension was graded and a thirty-foot bridge built across a gully. The carpenter shop was raised and a new foundation, including sills, joists and flooring, put in. The exterior of the hatchery and several outbuildings, and the interior of the men's quarters were painted. A new fence at Genesi, a new trap at Quap and a cabin fourteen feet by eighteen feet, for use of the egg planting staff at Indian river, were built.

## SKEENA RIVER WATERSEED

The total collection of sockeye eggs in Skeena river watershed, viz., fifteen million and sixty-five thousand, was slightly smaller than that of the previous year.

## LAKELSE LAKE HATCHERY

## C. R. T. Hearn, Superintendent

The run of sockeye to the Lakelse lake area was considerably smaller than the average run of recent years, notwithstanding the unusual heavy seeding of this district, both naturally and artificially, in 1924. The total collection at this point of five million five hundred and twenty-five thousand eggs, while considerably below the average of recent years, was an improvement on the small collection of 1927. Fences and traps were installed in Granite, Hot Springs, Salmon, Scullabuchan and Williams creeks in preparation for an average run as a result of the heavy natural seeding of four years previously. For some unaccountable reason the hoped for numbers did not materialize and a severe freshet occurred on August 9, which seriously damaged the fences in Williams and Scullabuchan creeks, which are the heaviest producers, and allowed the fish in the traps and below the fences at that time to ascend to the upper waters. This occurrence is estimated to have reduced the collection that would otherwise have been made by approximately three and one-half milion eggs. One hundred and thirty thousand Kamloops trout eggs from Lloyds creek were distributed from this station. Good results were obtained from the retaining ponds, into which upwards of one million fry were liberated directly from the troughs. After retention and feeding for a short period, seven hundred thousand were distributed in Lakelse lake; the remainder were held until October. The food
sonsisted of well-screened fish meal obtained from the Prince Rupert Marine Products Company. All sections of the pond system were deepened, a log gasoline and oil house constructed, exterior of hatchery and mess house painted, and a large quantity of material, including one hundred tons of rock, was placed on the site of the Williams creek fence in preparation for the building of a substantial foundation for the fence at this point, which owing to the alluvial nature of the creek bed is easily damaged by the severe freshets. In addition to the one loundred and thirty thousand Kamloops mentioned above, eight million three hundred and seventy-five thousand five hundred sockeye were distributed.

## BABINE LAKE HATCHERY

## R. H. Eaton, Superintendent

In comparison with the scarcity of sockeye salmon in the Lakelse lake, Babine lake and its various tributaries carried a heavy run of sockeye. In the early season before the run to this district had cleveloped, Superintendent Crawford of the Stuart Lake hatchery was directed to collect sockeye eggs in Babine lake with a view to utilizing them for seeding the Stuart and Francois lake districts of the Fraser river, and later replace them with eggs from the lower Fraser. As the commercial pack in the Skeena was not up to expectations, the above-mentioned instructions were cancelled, and the eggs collented by Superintendent Crawford, six million one hundred and four thousand, were transferred to the Babine Lake hatchery. With this shipment was received three million and forty thousand eggs which had been taken in Morrison creek, where a large number of fish were impounded. This creek as well as the various other important streams such as Fifteen Mile, Pierre, Fulton and Babine river were Well seeded. Various reports intimated that, with the exception of the Lakelse Lake area, the whole of the spawning grounds of the Skeena river system carried a satisfactory run and will be well seeded in the natural way under favourable low-water conditions. Nearly one and one-half million of the fry were retained in ponds until early July, when rising temperature necessitated their liberation. Babine lake hatchery made a distribution of seven million nine hundred and nine thousand three hundred and seventy sockeye during the year.

The foundations, sills and a considerable portion of the flooring of the mess house and paint shop were renewed, and a woodshed and storeroom built.

## Vancouver Island

The total collection of salmon eggs for the three hatcheries in Vancouver island was slightly smaller than that of 1927 . The numbers obtained at the following points are as follows:-

| Anderson Lake hatchery- |  |
| :---: | :---: |
| Sockeye salmon. | 8,799,000 |
| Kennedy Lake hatehery- |  |
| Sockeye salmon. | 2,829,600 |
| Cowichan Lake hatchery- |  |
| Spring salmon. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . $1,620,000$ |  |
| Steelhead salmon. | 173,700 |
|  | 13,422,300 |

ANDERSON JAKE HATCHERY

## David Bothwell, Superintendent

Superintendent Bothwell estimates that seventy thousand sockeye reached the spawning grounds of Anderson lake, which is an increase of five thousand fish over his estimate of the return for 1924 . Favourable weather conditions prevailed throughout the egg-collecting season of 1928. No difficulty was experienced in securing all the eggs desired and no adverse condition occurred up to the end of the year to interfere with the results of natural reproduction. The
run of coho is estimated as being ten per cent, the run of chum fifty per cent, and the run of spring salmon to this district ten per cent, respectively, better than the runs of the previous year. Eight million seven hundred and ninetynine thousand sockeye eggs were taken, of which six hundred and seventy-two thousand were secured by incision after the fish had been spawned in the usual way. Two million and two thousand eyed eggs from the 1928 collection were before the end of December planted in the streams at the head of Great Central lake, and as the natural seeding of Anderson lake was so abundant, smaller plantings will be made in other waters of the district that were not so fortunate. There was a good run of sockeye in Stamp river and the fishway that was built over the Stamp River falls in 1927 proved efficient. Good runs also occurred in the Sproat and Somas rivers. The distribution from Anderson lake hatchery during the year amounted to eight million two hundred and two thousand and sixty-three sockeye.

A new wharf one hundred and twenty-five feet long was built to replace the one that was destroyed during the storms of the previous winter. Two rows of new posts were put under the hatchery, and all the joists, one-half of the floor and the head tank were renewed. A blacksmith shop ten feet by twelve feet was built of split cedar.

## COWICHAN LAKE HATCHERY

## J. H. Castley, Superintendent

A greater variety of fish are handled at Cowichan Lake than at any other station in the province. These include spring, coho, pink and Atlantic salmon, and steelhead, cutthroat, kamloops, eastern speckled and Cranbrook trout (a cross between kamloops and cutthroat trout). The spring run of spring salmon to Cowichan lake was good, but not so heary as that of the previous year, while the fall run of this species was equal to the run of 1924, which was the best on record since the hatchery was opened. Not only were the fisl numerous, but were larger than the usual average size. The total collection of this species, one million six hundred and twenty thousand, was obtained on one spawning bed in the river within three hundred yards of the hatchery.

There was also a good run of coho salmon, but none were taken, as the hatchery was filled to capacity with eggs of other species.

The run of steelhead was the heaviest in years. A fresh run of this species ascended about the middle of May, which is the latest that was ever observed by the present overseer. Owing to freshets, considerable difficulty was experienced in handling the nets, and the collection of this species, viz., one hundred and seventy-three thousand seven hundred eggs, was slightly smaller than that of last year.

One hundred and five thousand cutthroat were collected in Cottonwood and Nixon creeks and thirty-eight thousand two hundred eastern speckled trout eggs were collected in Spectacle lake. The last mentioned was supplemented by one hundred and five thousand two hundred speckled trout eggs secured from the hatchery ponds.

The cross between kamloops and cutthroat trout mentioned above was made in 1927 at Cranbrook hatchery. A small number of eggs were shipped to Cowichan where they hatched out. At the end of 1928, forty-six still survived, then over one and one-half years old. Local collections were augmented by allotments of two hundred thousand kamloops trout eggs from Lloyd's creek; one hundred and seventy-three thousand three hundred and sixty cutthroat trout eggs from a commercial firm, and one million atlantic salmon eggs from the Miramichi hatchery, one hundred thousand of which were planted in the Alberni district as eyed eggs; also five thousand pink salmon collected by the research station at Cultus Lake and transferred to Cowichan for observation until maturity, if possible.

Angling in the river is reported to have been considerably above the average of recent years.

Over two hundred and thirty-three thousand of different species were distributed as fingerlings.

The following distributions were made during 1928: Atlantic salmon-eight hundred and ninety thousand and seventy; coho salmon-four hundred and ninety-nine thousand three hundred and eighty; cutthroat trout-two hundred and twenty-one thousand three hundred and twenty-nine; kamloops trout-two hundred thousand five hundred and sixty-four; speckled trout-sixty thousand eight hundred and thirty-eight; spring salmon-one million seventy-five thousand five hundred and seventy-seven; steelliead salmon-one hundred and sixty-three thousand two hundred and sixty-a total of three million one hundred and eleven thousand and eighteen.

## KENNEDY LAKE HATCHERY

## W. P. Forsythe, Superintendent

As Superintendent Forsythe was in charge of egg collecting operations at Cultus Lake during the autumn of 1928, and as Superintendent Robertson of that station was engaged in observations at Hell's Gate canyon, egg collecting operations at Kennedy Lake were therefore in charge of Mr. G. J. Morgan. Although the commercial catch of sockeye in the Clayoquot sound was above the average of recent years, there was a comparatively small escapement to the spawning grounds of Kennedy lake. The first fish was caught on October 24, and the last on November 9, a total of two thousand one hundred and twelve being taken. Of this number eight hundred and forty-nine only were females, which yielded two million eight hundred and twenty-nine thousand six hundred sockeye eggs. The small run of sockeye that usually ascend the streams tributary to Kennedy lake in June and spawn in late August and early September did not appear, although one hundred and eighty-three thousand eggs were taken from this run in 1924. The run to Elk river that year was estimated at upwards of one thousand fish. The later run from which the eggs are secured was estimated at between three and four thousand fish, with males and females in the proportion of almost three to one. The spawning grounds of Clayoquot arm, Cold creek and Clayoquot river were lightly seeded and no sockeye were observed in Elk river. Weather conditions were favourable and no freshets or other injurious conditions occurred up to December 31. The distribution from the 1927 collection was three million one hundred and thirtynine thousand and fifty sockeye.

One new pond was excavated and finished of the series adjacent to the hatchery. Two additional ponds were excavated and will be completed in time to be of service in handling the 1929 hatch. No fry were this season distributed direct from the hatchery troughs. They were released into the series of ponds above mentioned, through the hatchery outlet flumes, where they were fed for from a week to ten days. The fry are conveyed from these ponds through pipes direct to the distributing scows by which they are distributed as desired over the whole of the lake. They are not handled with dip-nets or in any otler way during the process of distribution.

## Southern Interior

## NELSON-GERRARD Hatcheries

## Weldon Reid, Superintendent

The Nelson-Gerrard hatcheries cover an extensive territory and collect and distribute several species. Six hundred and ninety thousand two hundred speckled trout eggs were collected in Boundary and Violin lakes where the species were introduced a comparatively short time ago. When the rainfall is small, the water of Boundary lake is inclined to become stagnant, and this
condition is reflected in the quality of the eggs secured. While water conditions, and consequently the eggs were better than they were last year, they received some unavoidable injury from their transfer for a distance of fifty miles over roads that were undergoing repairs. Four hundred and eighty-five thousand four hundred and fifty were obtained from this lake, and two hundred and four thousand seven hundred and fifty of good quality from Violin lake.

Three hundred and twenty-nine thousand two hundred and sixty rainbow trout eggs were collected in Cottonwood and Six Mile lakes. Local collections were supplemented by allotments of three hundred thousand kamloops trout eggs from Gerrard and thirty thousand speckled trout eggs from Spokane hatchery, U.S.A., the latter in exchange for fifteen thousand kamloops trout fry from Nelson. Thirty thousand speckled trout eggs from here were sent to Cranbrook hatchery in exchange for cutthroat trout.

Two hundred and twenty-three thousand two hundred redfish or Kokanee eggs were colle'cted in the West Arm of Kootenay lake, about fifteen miles east of Nelson. This is the first collection of the species in the district, and was made with a view to its re-establishment in Okanagan lake where their spawning grounds have been seriously decreased by irrigation projects. In 1928 distributions from NeIson amounted to one million two hundred and sixty-three thousand two hundred and fifteen as follows: Kamloops trout-two hundred and ninetynine thousand and eight; kennerly's salmon-two hundred and five thousand; rainbow trout-three hundred and eighteen thousand one hundred and forty-two; speckled trout-four hundred and forty-one thousand and sixty-five.

Exhibits of various species were made at the Nelson Fair, held during the autumn of 1928.

The Gerrard hatchery is subsidiary to Nelson and is devoted to the propagation of kamloops trout, of which species five hundred and fifty-one thousand seven hundred eggs were collected. A good run of such fish took place in the Lardeau river in 1928. High water, which occurred about a month earlier than usual, and reached a greater height than it ever did before in the memory of local residents, greatly interfered with operations. Fences and pens were flooded and broken and there was four feet of water in the hotel at Gerrard. Two hundred and sixteen thousand two hundred and fifty-one kamloops trout were planted out from this hatchery during the year.

## LLOYD'S CREEK EYEING STATION

## G.J. Morgan, Acting Superintendent

Traps were operated in Paul and Pinantan creeks and Hyas Long lake for kamloops trout. The first fish appeared in the creeks on April 22 at a time when freshet conditions were experienced which did considerable damage to all the traps. These conditions continued for the first two weeks of the season and made the roads practically impassable, so that the crew were unable to give the usual attention to the traps at the two places last mentioned. The traps at Pinantan were badly flooded during this period and consequently the collection of eggs was not up to that of the previous year. The collection at Paul creek was well up to the average, while that at Hyas Long lake was smalle: than was expected. Owing to these unfavourable conditions the total collection was nearly one million smaller than that of 1927.

The total collection was one million six hundred and ninety-eight thousand kamloops taken from the following collection points: Paul creek-one million and ninety-six thousand; Pinantan creek-four hundred and sixty-five thousand; Hyas-Long lake-one hundred and thirty-seven thousand. The following shipments of eyed eggs were made: Cowichan Lake hatchery-two hundred thousand; Cultus Lake hatchery-thirty thousand; Lakelse Lake hatchery-one hundred and thirty thousand; Pemberton hatchery-forty-five thousand; Cranbrook hatchery-one hundred and fifty thousand; Japan-fifty thousand. The distribution from the hatchery was one million and thirty-nine thousand.

## SUMMERLAND HATCHERY

The hatchery at Summerland has up to the present been operated under the direction of Fishery Overseer Gartrell, and has been utilized only for the hatching of eggs from other points, and no local collections have been made. It is being utilized in connection with the introduction of eastern whitefish into the larger lakes of southern British Columbia, and in February, 1928, five million such eggs, which were collected in Lake Winnipegosis, were transferrred from the Fort Qu'Appelle hatchery where they had been eyed. The resultant fry-four million seven hundred and eighty thousand-were distributed in Okanagan lake. Allotments of kamloops trout and little redfish, or kokanee eggs were handled at this station for a short period before they were distributed. The numbers planted out have in this case, due to their short retention, been credited to the originating hatcheries as follows: Kamloops trout-Penask lake, one hundred and twenty thousand; little redfish-Nelson hatchery, two hundred and five thousand.

## PENASK LAKE

Early in May, 1928, Hatchery Assistants A. P. Hills of the Cowichan Lake hatchery, and J. W. Dalzell, of the Pemberton hatchery, were assigned to undertake egg collecting operations in an experimental way to ascertain the prospects for making reasonable collections of kamloops eggs in Penask and adjoining lakes in Nicola valley. These officers found conditions rather unfavourable largely due to the heavy snowfall of the previous winter, which caused greater: and more prolonged freshets than were expected. It was also necessary for them to improvise accommodation and build the necessary fences and retainers. Two hundred and eleven thousand five hundred kamloops eggs were secured, and in view of the apparent abundance of trout, arrangements have been made to continue operations on a more permanent basis with a view to establishing a permanent collecting camp should the result of next spring's operations warrant such expenditure. A distribution of two hundred thousand nine hundred and seventy-five kamloops was made.

## CRANBROOK HATCHERY

Mr. H. J. Ryder, Assistant at the Anderson I.ake hatchery; was again in charge of operations at the Cranbrook hatchery which was built and is maintained by various local organizations. The department each season loans an experienced hatchery officer, has loaned cettain equipment, and in 1928 contributed to the extent of three hundred dollars towards the cost of egg collection. The distribution of the output is under the direction of the Department and not more than twenty-five per cent is distributed outside of the Cranbrook district. Local collections were supplemented by thirty thousand speckled trout from Nelson and one hundred and fifty thousand kamloops trout from Lloyd's creek. The average collection of cutthroat trout eggs is larger than that made from any other hatchery in British Columbia.

The 1928 collection of cutthroat trout eggs taken in Fish and Munroe lakes amounted to eight hundred and fifty-four thousand one hundred and ninety. Twenty-one thousand Cranbrook or hybrid trout were also taken in Munroe lake. Fifty thousand cutthroat trout eggs were sent to Tokyo Angling and Country Club, Tokyo, Japan, and ninety-seven thousand five hundred cutthroat to Stanley Park hatchery, British Columbia.

Distributions for 1928 were as follows: cranbrook or hybrid trout-sixteen thousand six hundred and fifty; cutthroat trout-seven hundred and fifteen thousand seven hundred and fifty; kamloops trout-one hundred and forty-four thousand eight hundred; speckled trout-thirty thousand; a total of nine hundred and seven thousand two hundred.

The following table shows by species the local collections of eggs made during 1928, the points where such eggs were taken and hatchery in which the eggs were laid down with numbers laid down in each case.



[^5]The following summary gives, by species, the total receipt of eggs during the year ended December 31, 1928:-
Atlantic salmon ..... 22,745,684
Landlocked salmon. ..... 168,004
Rainbow trout ..... 350,615
Cutthroat trout ..... 490,570
Steelhead salmon ..... 187,900
Kamloops trout ..... 2,461,200
Sockeye salmon ..... 113,970,724
Spring salmon. ..... $1,620,000$
Speckled trout ..... 3,164,564
Whitefish ..... 243,300,000
Salmon trout ..... 338,850
Pickerel ..... 235, 025,000
Brown trout ..... 150,272
Brown trout (Hybrid) ..... 10,500
Lochleven trout.223,200
624,265,305

The following purchases were also made:-

The following purchases were also made:-

The following purchases were also made:-

Cutthroat trout eyed eggs from Castle lake Trout Co., Creed, Colorado, laid

Cutthroat trout eyed eggs from Castle lake Trout Co., Creed, Colorado, laid

Cutthroat trout eyed eggs from Castle lake Trout Co., Creed, Colorado, laid  down in Stanley Park hatchery, Vancouver, B.C.  down in Stanley Park hatchery, Vancouver, B.C.  down in Stanley Park hatchery, Vancouver, B.C.
Cutthroat trout eyed eggs from Columbia River Trout hatchery, Vancouver,
Cutthroat trout eyed eggs from Columbia River Trout hatchery, Vancouver,
Cutthroat trout eyed eggs from Columbia River Trout hatchery, Vancouver, Washington State, laid down as follows:- Washington State, laid down as follows:- Washington State, laid down as follows:- Cowichan Lake hatchery Cowichan Lake hatchery Cowichan Lake hatchery ..... 173,360 ..... 173,360 ..... 173,360
Stanley Park hatchery
Stanley Park hatchery
Stanley Park hatchery ..... 50,640 ..... 50,640 ..... 50,640
Kennerly's salmon.
Kennerly's salmon.
Kennerly's salmon.8,000
Cutthroat trout eyed eggs from S. S. Drew, Troy, Montana, laid down inBanff hatchery, Alta
Rainbow trout eyed eggs from Trout Brook Co., Hudson, Wis., laid down in224, 000
200,000
Banff hatchery, Alta.
Banff hatchery, Alta.
Speckled trout eyed eggs219,000laid down as follows:-
Antigonish hatchery ..... 460,960
Bedford hatchery ..... 473, 200
Yarmouth hatchery ..... 490, 300
Florenceville hatchery ..... 452,985
St. John hatchery ..... 16,240
Speckled trout eyed eggs fro
laid down as follows:-
Bedford hatchery. ..... 1,000,000
Middleton hatchery ..... 600,000
Florenceville hatchery. ..... 1,000,000
Grand Falls hatchery ..... 900, 000
Kelly's Pond hatchery
Kelly's Pond hatchery ..... 500,000 ..... 500,000
Jasper Park hatchery. ..... 250,000 ..... 250,000
$1,893,685$
Grand total of eggs received during calendar year 1928 ..... 631,059, 990
The following exchanges were made:-
In exchange for Atlantic salmon-
Brown trout eyed eggs from Trout Brook Co., Hudson, Wisconsin, laid down in Banff hatchery, Alta. ..... 155,230
Rainbow trout eyed eggs from State of New Hampshire, laid down in Banff hatchery, Alta ..... 483,600 Lochleven trout eyed eg
Banff hatchery, Alta ..... 352,250
Ft. Qu'Appelle hatchery, Sask. ..... 152,100 ..... 504,356
Cuthroat trout eyed eggs from United States Bureau of Fisheries, laid down as follows:-
 ..... $1,050,850$
Cutthroat trout eyed eggs from State of New Hampshire, laid down in Banff hatchery, Alta. ..... 537, 600
In exchange for Kamloops and Speckled Trout:-
Cutthroat trout eyed eggs from Cranbrook hatchery, laid down in Stan- ley Park hatchery, B.C. ..... 97,500
In exchange for Kamloops trout-
Speckled trout eyed eggs from R. H. Yorke, Metaline Falls, Washington, laid down in Nelson hatchery, B.C ..... 30,000

STATEMENT OF EGGS AND FISH SUPPLIED TO OTHER THAN DOMINION GOVERNMENT HATCHERIES DURING 1928

| Species | Number | Eggs or Fish | Source | To |
| :---: | :---: | :---: | :---: | :---: |
| Atlantic salmon. Atlantic salmon. | $\left.\begin{array}{r} 4,370 \\ \hline \end{array} \right\rvert\, \begin{array}{r} 500,000 \end{array}$ | Eggs | Bedford hatche Miramichi hatec | Biological Board. <br> Trout Brook Co.-Exchange for Brown trout shipped via Warren Fish hatchery, Warren, N.H. |
| Atlantic salmon. | 1,000,000 | " |  | State of New Hampshire, Warren Fish hatchery, Warren, N.H.-Exchange for Rainbow trout. |
| Atlantic salmon. | 1,000,000 | * | " $\cdots$ | United States Bureau of Fisheries, East Orland, Maine, U.S.A.-Exchange for Cutthroat trout. |
| Atlantic salmon. | (a) 1,208 | Fish | $\left\{\begin{array}{l}\text { Bedford hatchery (51) } \\ \text { St. John hatchery (1157) }\end{array}\right.$ | \}Biological Board. |
| Kamloops trout. | 50,000 | Eggs | Lloyd's Creek hatchery | Tokyo Angling and Country Club,Tokyo, Japan.-Sold. |
| Kamloops trout. | 150,000 | " | " " | Cranbrook hatchery.-Exchange for Cutthroat trout. |
| Kamloops trout. | 15,000 | Fish | Nelson hatchery........ | R. H. Yorke, Esq., Metaline Falls, Washington, U.S.A.-Exchange for speckled trout eyed eggs. |
| Cutthroat trout.. | 50,000 97,500 | Eggs | Cranbrook hatchery.... | Tokyo Angling and Country Club, Tokyo, Japan.-Sold. <br> Stanley Park hatchery, B.C. Anglerg' Association.-Exchange for Kamloops and speckled trout eggs supplied by Department. |
| Cutthroat trout. | 8,000 | " | Castle Lake Trout Co... | Stanley Park hatchery, B.C. Anglers' Association.-Sold. |
| Cutthroat trout. | 50,640 (a) 5,050 | " | Columbia river trout hatchery. | Stanley Park hatchery, B.C. Anglers' Association-Donation. |
| Speckled trout.. Speckled trout... | (a) $\begin{array}{r}5,050 \\ \\ 1,350\end{array}$ |  | Bedford hatchery.. Middleton hatchery | Biological Board. <br> G. D. Campbell, Weymouth, N.S.Sold. |
| Speckled trout... | $30,000$ |  |  | Cranbrook hatchery.-Exchange for Cutthroat trout. |
| Speckled trout... | (a) . 1,157 | Fish. | St. John hatchery. | Biological board. . |

(a) The Research Committee on Fish Culture of the Biological Board was supplied as requested with such eggs and fry as were available at the various hatcheries.

In the interest of economy and convenience in the distribution of fry, the following transfers of eyed eggs were made in 1928:-

| Species | From | To |  | Number |
| :---: | :---: | :---: | :---: | :---: |
| Atlantic salmon. | (a) Bedford hatchery | Lindloff hatchery. |  | 800,000 |
|  | (a) Grand Falls hatchery. $\therefore$ | Tobique hatchery. |  | 700,000 |
|  | (a) St. John hatchery...... | Florenceville hatchery |  | 1,000,000 |
|  | (a) Miramichi hatchery.... | Nipisisuuit hatchery |  | 365,650 150000 |
|  | (a) Miramichi hatchery. | Florenceville hatchery |  | 1,000,000 |
|  | (a) Miramichi hatchery.. | Grand Falls hatchery. |  | 700,000 |
|  | (a) Miramichi hatchery.... | Kelly's Pond hatchery...... |  | 450,000 |
|  | (a) Miramichi hatchery | Cowichan Lake hatchery | (c) | 1,000,000 |
| Whitefish. ...... | (a) Fort Qu'Appelle. | Suminerland hatchery |  | 5,000,000 |
|  | (b) Gerrard hatchery ...... | Nelson hatchery... |  | 300,003 |
|  | (b) Loyds Creek hatchery. | Cowichan Lake hatchery. | (d) | 200,000 30,00 |
|  | (b) Lloyds Creek hatchery. | Lakelse Lake hatcliery |  | 130,000 |
|  | (b) Lioyds Creek hatchery. | Pemberton hatchery. |  | 45,000 |
| Sockeye salmo | (b) Stuart Lake hatchery. | Babine Lake hatchery |  | 6,104,000 |
|  | (b) Pemberton hatchery. | Stuart Lake hatchery. | (c) | 13,013,000 |


| (a) 1927-Fall collection. <br> (b) 1928-Collection. |  |
| :---: | :---: |
| (c) Laid down in Cowichan hatchery. | 900,000 |
| Planted as eyed eggs in Alberni district. | 100,000 |
|  | 1,000,000 |
| (d) Laid down in Cultus Lake hatchery | 2,000 |
| Planted as eyed eggs. | 28,000 |
|  | 30,000 |
| (e) Laid down in Stuart Lake hatchery | 5,005,000 |
| Planted as eyed eggs in Francois Lake district. | 5,005,400 |
| Planted as eyed eggs in Quesnel Lake district. | 3,003,000 |
|  | 13,013,000 |

The following transfers of speckled trout brood stock were made during 1928:-

| From | To | Number |
| :---: | :---: | :---: |
| St. John hatchery. | Antigonish hatchery. | 800 |
| " | Yarmouth hatchery. | 800 |
| " | Florenceville hatchery | 1,050 |

## MARKING OF FISH

With a view to obtaining definite information regarding the movements of the whitefish that are taken for hatchery purposes at the egg collecting camps at the mouth of the Dauphin river, lake Winnipeg, and at the entrance to Waterhen river, lake Winnipegosis, the marking of such fish at these points, which was commenced in the previous year, was continued in 1928. Considerable speculation and difference of opinion has existed for sometime amongst the interested fishermen regarding the movements of whitefish in these lakes and connecting waters; some being of the opinion that fish from lake Winnipegosis migrated to lake Winnipeg and vice versa.

Aluminum tags were attached to the caudal fin of the fish. In 1927 those used in lake Winnipeg were marked with the letter "A", while those used in lake Winnipegosis were blank. In 1928 those used in lake Winnipeg were marked with the letter "O", and those in lake Winnipegosis with the letter " B". Recaptures that have been reported to date indicate that any considerable migration does not occur between the lakes mentioned. Eighteen of the tags attached in lake Winnipeg in 1927 have been returned. Six of these fish were taken in lake St. Martin, and the remainder in lake Winnipeg. Two hundred and forty of the tags attached at this point in 1928 have been returned to date. All of these were obtained from fish that were taken in lake Winnipeg, not far from the point where they were liberated. One hundred and ninety-four of the tags that were attached in lake Winnipegosis in 1927 have been returned, and a considerable number of marked fish reported. One of these recaptures was made in Waterhen lake, and the remainder in lake Winnipegosis. The points at which the recaptures were made indicate a decided migration from the southerly to the northerly end of the lake. No recaptures of fish that were marked in 1928 were reported to the Department up to the end of that year. The following marking of whitefish and salmon was done in 1928:-

STATEMENT OF THE MARKING OF SALMON AND WHITEFISH DURING 1928

| - | Species | Number marked | Date of marking | Nature of Mark | Object-To throw some light on |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Margaree river, N.S. | Atlantic salmon stripped | 100 |  | Silver tag attached to dorsal fin. | The movements of the salmon that resort to this river to spawn. |
| Miramichi river, N.B......... | " | 100 | Oct. 31 | " " | " |
| Matapedia river, N.B.......... | " | 100 | Oct. 26-29. | " " | " |
| Tabusintac river, N.B......... | Atlantic salmon unstripped. <br> Atlantic salmon stripped | 17 8 | May 16-18; 22; 27................ <br> Oct. 19-20 | " " " | " " |
| Anderson lake, Ternan creek, B.C. | Sockeye salmon fingerlings. | 183 |  | Removal of adipose fin. | The movements of the fingerlings and the percentage that return as adults. |
| Kennedy Lake, B.C........... | " " .. | 506 | Jan. 6............................... | Removal of adipose fin and anal fin. | aduts. " ، |
| " " ....... | " " .. | 7,970 | Oct. 26-Nov. 1............... | Removal of adipose fin and | " ." |
| Lake Winnipeg, Dauphin River, Man. | Whitefish, unstripped... | 2,478 | Sept. 26-29; Oct. 1-3, 5-6....... | posterior portion of anal fin. <br> Tags series " O " attached to caudal fin. | The movements of whitefish in this lake. |
| Lake Winnipegosis, Waterhen river, Man., and hatchery iagoon. | Whitofish (2,038 unstripped 423 stripped). | 2,461 | Sept. 28-30; Oct. 1, 2, 6, 8, 12, 13, 15, 17, 19,22, 23 ; Nov. 8-10. | Tag series " $B$ " attached to caudal fin. |  |

Necessary repairs, considerable improvement, and expansion was made at existing hatcheries, and new hatcheries were established at Antigonish and Yarmouth, N.S., and at Swan River, lake Manitoba.

The Yarmouth hatchery is located at the outlet of lake George, Yarmouth county. The hatchery building is seventy-four and one-half feet long by thirty-eight feet wide, and is equipped with forty standard hatchery troughs each sixteen feet long, and with sixteen floor tanks each fourteen feet long by twenty-four inches wide. Provision is also provided for two living rooms for the staff, an cffice, feed room, ice storage, coal room and storage space for equipment. The dwelling is thirty feet square, containing seven rooms and bathroom. A double garage is also provided. The rearing pond system consists of twelve ponds each one hundred and fifty feet long by five feet wide, constructed with reinforced concrete side walls and gravel bottoms. This system may be extended to a considerable extent as desired. The water supply is provided by a reinforced concrete dam at the outlet of lake George, with an eight-inch wood stave pipe to the hatchery, and a twelve-inch pipe to the rearing ponds. The dwelling is equipped with sanitary plumbing, heated with a hot air furnace, and all buildings are lighted with electricity developed by a gasoline operated plant.

The Antigonish hatchery is similar to the Yarmouth establishment, and is located at Frasers Mills on the South river, fourteen miles from the town of Antigonish. The water supply is obtained from the South river, where a concrete dam, equipped with a fishway, was built. A twenty-inch wood stave pipe conducts the water from the dam to the hatchery, and the rearing ponds. The rearing pond system consists of twelve ponds each one hundred and fifteen feet long by five feet wide, constructed with concrete side walls and gravel bottoms. This system may be extended to a considerable extent as development warrants.

After investigation and test fishing, extending over three seasons, a pickerel hatchery was constructed on Swan creek, on the easterly side of lake Manitoba, near the town of Lundar. The hatchery building is fifty-seven and one-half feet long by thirty-one and one-half feet wide, one story, and contains two hatching batteries each twenty-two feet long, with five tiers of troughs which provide accommodation for three hundred and twelve hatching jars. The floor tank is twenty-one feet ten inches by eight feet eight inches, inside dimensions. Three rooms are provided under the same roof for the staff. The water supply is obtained from Swan creek by means of a steam boiler and duplex pump.

The names of the waters that were stocked during the calendar year 1928 from the several hatcheries, with the size of the individual allotments, are given in the following statements:-

BEDFORD HATCHERY

| - | Atlantic salmon green eggs | $\begin{gathered} \text { Atlantic } \\ \text { salmon } \\ \text { eyed } \\ \text { eggs } \end{gathered}$ | Atlantic salmon fry | $\left\|\begin{array}{c} \text { Atlantic } \\ \text { salmon } \\ \text { ad- } \\ \text { vanced } \\ \text { fry } \end{array}\right\|$ | $\begin{array}{\|c\|} \text { Atlantic } \\ \text { salmon } \\ \text { No. I } \\ \text { finger- } \\ \text { lings } \\ \hline \end{array}$ | Atlantic salmon No. 2 fingerlings | Speckled trout eyed eggs | $\left\lvert\, \begin{gathered} \text { Speck- } \\ \text { ledtrout } \\ \text { No. } \\ \text { finger- } \\ \text { lings } \end{gathered}\right.$ | Speckledtrout No. 2 finger- lines lings |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ashburn Golf and Country Club (Halifax <br> Co.)- <br> Artificial Pond. |  |  |  |  |  |  |  |  |  |
| Barney river (Pictou Co.) ${ }^{\text {a }}$. |  |  |  |  |  |  |  | 500 |  |
| Brora lake............... |  |  |  |  |  |  |  | 2.500 |  |
| Barrington Passage- |  |  |  |  |  |  |  | 2,500 |  |
| Barrington river- |  |  |  |  |  |  |  |  |  |
| Left branch... |  |  |  |  | 20,000 |  |  |  |  |
| Lish's brook. |  |  |  |  | 20,000 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Jack's lake. |  |  |  |  |  |  |  |  | 40,000 |
| Sackville river. |  |  |  | 130,000 |  | 15,000 |  |  | 4,000 |
| Little Sackvile rive |  |  |  | 130,00 |  | 15,000 |  |  | 00 |
| William's lake... |  |  |  |  |  |  |  |  | 30,000 |
| Biological Board- |  |  |  |  |  |  |  |  |  |
| Prof. Bean Dalhousie University |  | , 20 |  |  |  |  | ,000 |  |  |
| Mr. Belleveau.................. | 300 |  |  |  |  |  |  |  |  |
| Dr. Leim, Dalhousie Uni versity |  | 50 |  |  |  |  | 50 |  |  |
| Prof. Gowanloch, Dalhousie University |  |  | 51 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Chezzetcook river- |  |  |  |  |  |  |  |  | 12,000 |
| Chezzetcook Ialet. |  |  |  |  | 20,000 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Chaia lake................ |  |  |  |  |  |  |  | 30,000 |  |
| Little Salmon river |  |  |  | 66,000 | 20,000 |  |  | 30,00 |  |
|  |  |  |  |  |  |  |  |  |  |
| Eastriver (Lun. Co.)- |  |  |  |  |  |  |  |  |  |
| Whistler lake... |  |  |  |  |  |  |  | 22,000 |  |
|  |  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |  |  |  |
| West Branch. |  |  |  |  |  |  |  | 10,000 |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Folleigh lake.. |  |  |  |  |  |  |  | 32,000 |  |
| Gaspereau river- |  |  |  |  |  |  |  |  |  |
| Hubbard river (Halifax Co.)- |  |  |  |  |  |  |  |  |  |
| Sawlor river.. |  |  |  |  | 33,000 |  |  |  |  |
| Jordan Bay- |  |  |  |  |  |  |  |  |  |
| Four Mile Brook......... |  |  |  |  | 50,000 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Donohue lake............... |  |  |  |  |  |  |  | 22,000 |  |
| Maccan river (Cumberland Co. |  |  |  |  |  | . 24,700 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Martin river (Lun. Co.).................. |  |  |  |  |  | 20,000 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Merigomish Harbour |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Gairloch lake............................... | . | ........ | ........ | ........ | 15,000 | ....... | ........ | 2,500 |  |
|  |  |  |  |  |  |  |  |  |  |
| Dollar lake............................. ........ ......................... 33,000 |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Opper Musquodoboit |  |  |  |  | 33,000 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| $\xrightarrow[\text { Big Caribou riv }]{\text { Litle Carihou r }}$ |  |  |  |  |  |  |  | 5,500 |  |
|  |  |  |  |  |  |  |  | 2,750 |  |

BEDFORD HATCHERY-Concluded

| - | Atlantic salmon eggs | Atlantic salmon eyed eggs | Atlāntic salmon fry | Atlantic salmon adyanced fry | Atlantic salmon No. 1 fingerlings | Atlantic salmon No. 2 fingerlings | Speckled trout eyed eggs | Speckledtrout No. 1 finger- lings | Speckledtrout No. 2 fingerlings |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Oisier river (Halifax Co.) |  |  |  | 66,000 |  |  |  |  |  |
| Black Point lake... |  |  |  |  |  |  |  | 40,000 |  |
| Five Island lake. |  |  |  |  |  |  |  | 25,000 |  |
| Sheldrake lake.............. |  |  |  |  |  |  |  |  | 8,000 |
| Parrsboro river (Cum. Co.)Leal's lake. |  |  |  |  |  |  |  |  | 25,0010 |
| Petpeswick river (Halifax Co.) Petpeswick lake |  |  |  |  |  |  |  | 20,000 | 30,000 |
| River John (Pictou Co.) |  |  |  |  |  |  |  |  |  |
| Black river... |  |  |  |  |  |  |  | 8,250 |  |
| Diamond brook |  |  |  |  |  |  |  | 2,750 |  |
| East Branch.... |  |  |  |  |  |  |  | 5,500 |  |
| Gammon brook |  |  |  |  |  |  |  | 2.750 |  |
| Stewarts brook. |  |  |  |  |  |  |  |  |  |
| Sutherlands brook |  |  |  |  |  |  |  | 2,750 |  |
| West branch .......... |  |  |  |  |  |  |  | 11,000 |  |
| Salmon river (Guys. Co.). |  |  |  |  | 30,000 |  |  |  |  |
| Salmon river (Col. Co.)Archibalds ponds. |  |  |  |  |  |  |  |  | 5,000 |
| Riversdale lake...... |  |  |  |  |  |  |  | 20,000 |  |
| Sea- ${ }_{\text {Grants }}$ lake (Guys. Co.) |  |  |  |  |  |  |  | 10,000 |  |
| Morrison lake (Guys. Co.) |  |  |  |  |  |  |  | 20,000 |  |
| Shag BayNine mile river... |  |  |  | 66,000 |  |  |  |  |  |
| Shubenacadie river- |  |  |  |  |  |  |  |  | 12,000 |
| Kings or Brierly brool |  |  |  | 33.000 |  |  |  |  | 12,000 |
| Kinsac river.. |  |  |  | 33,000 |  |  |  |  |  |
| Roden river |  |  |  |  | 20,000 |  |  |  |  |
| Waverley lake. |  |  |  | 66,000 |  |  |  |  |  |
| South river (Antigonish Harbour) |  |  |  |  | 40,000 |  |  |  |  |
| St. Croix riverMeander river (Hants Co.). |  |  |  |  | 16,000 |  |  |  |  |
| St. Marys river-- |  |  |  |  |  |  |  |  |  |
| East St. Marys river (Pictou Co.) |  |  |  |  | 35,000 |  |  |  |  |
| West St. Marys river (Picto |  |  |  |  |  | 30,000 |  |  |  |
| Tatamagouche Harbour- |  |  |  |  | 30,000 |  |  |  |  |
| Terence BayMcGrath lake (Halifax Co. |  |  |  |  |  |  |  |  | 30,000 |
| Hatchet lake.... |  |  |  |  |  |  |  | 15,000 | 10,000 |
| Tracadie HarbourTracadie river (Antig. Co.) |  |  |  |  | 40,000 |  |  |  |  |
| West river (Antigonish Co.). |  |  |  |  | 40,000 |  |  |  |  |
| Gaspereau lake... |  |  |  |  |  |  |  | 30,000 |  |
| West river (Pictou Co.) |  |  |  |  | 33,000 |  |  |  |  |
| Eight Mile brook |  |  |  |  |  |  |  | 2.750 |  |
| Four Mile brook. |  |  |  |  |  |  |  | 5,500 |  |
| Six Mile brook. |  |  |  |  |  |  |  | $\begin{array}{r}2,750 \\ \hline\end{array}$ |  |
| Ten Mile brook. |  |  |  |  |  |  |  | 5,500 |  |
|  | 300 | 4,070 | 51 | 460,000 | 888,000 | 194,700 | 5,050 | 541,500 | 278,000 |

Total distribution.

## LINDLOFF HATCHERY

(Subsidiary to Margaree hatchery)


|  | LINDLOFF HATCHERY-Concluded | Atlantic salmon |
| :---: | :---: | :---: |
| Scotts river- Murray farm |  | $\begin{gathered} \text { fry } \\ 50.000 \end{gathered}$ |
| Tillard river- |  |  |
| East Tillard. |  | 60,000 |
| West Tillard |  | 75,000 |
| Ross brook. |  | 25,000 |
|  |  | 746,000 |
| Total distribution |  | 746,000 |

## MARGAREE HATCHERY




| Salmon river (Yarmouth Co.)Brooks. |  | 40,000 |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Siasiboo river (Digby Co.)Porters lake. |  |  |  |  |  |  |  | 20,000 |  |  |  |  |
| St. Mary's Bay- ${ }_{\text {Salmon river-(Digby Co.). }}$ |  |  | 25,000 |  |  |  |  | 20,000 |  |  |  |  |
| Deans Brook.............. |  |  | 25,00 |  |  |  |  |  | 10,000 |  |  |  |
| Lower salmon. |  |  |  |  |  |  |  | 20,000 | ............. |  |  |  |
| Uppersalmon...................... |  |  |  |  |  |  |  | 20,000 | . . . . . . . . . . . |  |  |  |
| Tusket riverBrooks. | 75,000 |  | 140,000 | 35,000 |  |  |  |  | , | ............. |  |  |
| Carlton river |  |  |  |  |  |  |  |  |  | 5,000 |  |  |
| Weymouth, N.s- <br> G. D. Campbell (sold to). |  |  |  |  | 1,350 |  | , |  | . $\cdot$.......... | -,000 |  |  |
| Yarmouth Harbour- <br> Milton Ponds. |  |  |  | ............. | 1,350 | . | ... |  | ..................... |  | 2,000 |  |
|  | 325,000 | 535,000 | 425,000 | 464,000 | 1,350 | 30,000 | 80,000 | 295,000 | 13,000 | 25,000 | 5,000 | 1,117 |
| Total distribution....... |  |  | $\cdots$ | . | ........ | . | . .......... | \|............ | . | ........... | 2,109,467 |  |

WINDSOR HATCHERY Atlantic
Hatchery brook-salmon
fry
Unnamed stream ..... 150
Unnamed stream ..... 150Total Distribution.300

## FLORENCEVILLE HATCHERY



GRAND FALLS HATCHERY

| - | Atlantic salmon fry | Atlantic salmon advanced fry | Atlantic salmon No. 1 fingerlings | Speckled trout fry | Speckled trout advanced fry | Speckled trout No. 1 fingerlings |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Salmon river- |  |  |  |  |  |  |
| Aubin crossing. |  | 50,000 | 50,000 |  |  |  |
| Big bogan. |  | 75,000 | 28,000 |  |  |  |
| Boat landing |  | 100,000 | 75,000 |  |  |  |
| Covered bridge |  | 20,000 | 25,000 |  |  |  |
| Davis Mill..... |  |  | 45,000 |  |  |  |
| Foley brook. |  |  | 150,000 |  |  |  |
| Little Salmon river |  | 100,000 | 75, 000 |  |  |  |
| Max Cyr Flats. |  | 50,000 | 25,000 |  |  |  |
| Mooney brook.... |  | 75,000 | 50, 000 |  |  |  |
| Tom Cote Mill... |  | 50,000 | 125,000 25,000 | 50,000 |  |  |
| St. John river- |  |  |  |  |  |  |
| Andover. |  | 50,000 | 125,000 |  |  |  |
| Argossy brook |  | 75,000 | 75,000 |  |  |  |
| Aroostock. |  |  | 250,000 |  |  |  |
| Baker lake. |  |  |  |  | 80,000 | 20,000 |
| Falls brookPrice brook (Vic. |  |  |  |  |  | 10,000 |
| Grand river.......... |  |  |  | 50,000 |  | 10,00 |
| Green river..... |  |  |  |  |  | 93,612 |
| Hatchery brook | 6,000 | 24,700 | 15,950 | ........... |  |  |
| Iroquois river |  | 50,000 | 50,000 |  |  | 75,000 |
| Inman Flat. |  | s0,000 | 55,000 |  |  |  |
| Kilburn Ferry |  | 30,000 | 25,000 |  |  |  |
| Limestone siding |  |  | 50,000 |  |  |  |
| Lower Perth |  |  | 50,000 |  |  |  |
| Little river... |  |  |  | 50,000 |  |  |
| Beaver brook |  |  |  |  |  | 50,000 |
| Ledges..... |  |  |  |  |  | 70,000 |
| Morell siding. |  | 75,000 | 50,000 |  |  |  |
| Muniac. ${ }^{\text {a }}$. |  | 50,000 | 125,000 |  |  |  |
| Nine Mile brook |  |  |  | 20,000 |  |  |
| Poitras brook. |  |  |  | 10,000 |  |  |
| Powers creek. |  |  |  |  |  | 4,500 |
| Quisibis river. |  |  |  |  | 70,000 | 500 |
| River de Shute |  | 75,000 | 25,000 |  |  |  |
| Salmon river. |  |  | 100, 000 |  |  |  |
| Siegas river.. |  |  |  |  | 80,000 |  |
|  |  |  |  |  |  | 40,000 |
| Temiscouata Co. (Que.) <br> Plainasse river- |  |  |  |  |  |  |
| Round lake. |  |  |  |  | 10,000 |  |
|  | 6,000 | 949, 700 | 1,668,950 | 180,000 | 240,000 | 363,612 |

Total Distribution
3,408,262

## MIRAMICHI HATCHERY


## MIRAMICHI HATCHERY-Concluded


## NIPISIGUIT HATCHERY

(Subsidiary to Restigouche Hatchery)

Nipisiguit river-
Bear Island.

Club House pool............................................................................................... 4500
Comeau landing................................................................................................. 27,000
Gilmore brook............................................................................................... 4000
Grilse pool. ........................................................................... 40 . 40 . 374

Long Meadow.................................................................................... 35,000
Marchall Boudreau beach..................................................... 35, 000
Middle beach......................................................................................... 40,000


447,374
Total Distribution
447,374

RESTIGOUCHE HATCHERY

| - | Atlantic salmon fry | Atlantic salmon advanced fry | Atlantic salmon No. 1 fingerlings | Atlantic salmon No. 2 fingerlings |
| :---: | :---: | :---: | :---: | :---: |
| Chaleur Bay- |  |  |  |  |
| Benjamin river |  | 40,000 |  |  |
| Charlo river. |  | 30.000 |  |  |
| Jacquet river. |  | 50,000 |  |  |
| Restigouche river. |  |  | 6,700 |  |
| Chain of Rock to Chamberlain. |  | 240,000 |  |  |
| Cheaters brook to Toms brook. |  | 240,000 |  |  |
| Christopher brook. |  | 50,000 |  |  |
| Cross Point Island. | 250,000 |  |  |  |
| Glen Emma. |  | 60,000 |  |  |
| Routhierville. |  | 60,000 |  |  |
| Walker Island. | 250, 000 |  |  |  |
| Matapedia river- |  |  |  |  |
| Causapscal... |  | 50,000 |  |  |
| Millstream Falls. |  | 50,000 |  |  |
| Milnikek river. |  | 60,000 |  |  |
| Pitts siding. |  | 50, 000 |  |  |
| St. Alexis..... |  | 27,600 |  |  |
| St. Florence... Upsalquitch river. | 240,000 | 60,000 | 65,050 |  |
| Apsamatquaghan. | 240,000 |  | 65,050 | 9,000 |
| Meadow brook. . |  |  |  | 35,000 |
|  | 740,000 | 1,067,600 | 71,750 | 44,000 |

ST. JOHN HATCHERY

|  | Atlantic Salmon |  |  |  |  | Brown Trout |  |  |  |  | Landlocked snlmon |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Advanced fry | $\left\|\begin{array}{c} \text { No. } 1 \\ \text { Gingerlings } \end{array}\right\|$ | $\left\lvert\, \begin{gathered} \text { No. 2 } \\ \text { fingerlings } \end{gathered}\right.$ | No. 3 fingerlings | No. 5 fingerlings | No. 1 fingerlings | No. 2 fingerlings | No. 3 fingerling: | No. 5 fingerlinge | Old fish | Advaneed fry | Old <br> fish |
| Bay of Fundy- |  |  |  |  |  |  |  |  |  |  |  |  |
| Artificial lnke. |  |  |  |  |  |  |  |  |  |  |  |  |
| Artificial lake No. 3 |  |  |  |  |  |  |  | ...... | ........... |  |  | ........... |
| Artificial lake No. 4 |  |  |  |  |  |  |  |  | $\text { - } \quad . . .$ |  |  | . |
| Artificial Inke No. 5. |  |  |  |  |  |  |  |  | ….......... |  |  | ........... |
|  | $75,000$ |  |  | . C . $\cdot$.......... | 2,8i4 |  | ............. | ….......... | $\cdots$ |  |  | . $\cdot$............ |
| Gardner creek (St. John Co.) Otter lake | $50,000$ | ........... |  |  |  |  | ........... |  | .......... | ... $\cdot \cdot \cdot$ |  | . |
| Otter lake. <br> Taylor lake. |  |  |  |  |  |  | .......... |  |  | ... |  | . |
| Cook lake.... |  |  |  |  |  |  |  |  |  |  |  |  |
| Douglas lake..... |  |  |  |  |  |  |  |  |  |  |  | . |
| Harnmond river (St. John and Kings Cos.) Dougherty lake (Chariotte Co.). |  |  |  |  |  |  |  |  |  |  |  | . . . . . ${ }^{\text {. }}$ |
| Hatehery Reservoir. |  | ........... |  |  |  |  |  |  | - |  |  | ........... |
| Henry lake (St. John Co. ${ }^{\text {Ho.) }}$ |  |  |  |  |  |  | .......... |  |  | . $\cdot$. | ….......... | .............. |
| Horrigan lake.............. |  |  |  |  |  |  |  |  | $\text { : } \quad \text {. }$ | .... |  | ........... |
| Lily lake (Rockwood Park) |  |  | ......... |  |  |  |  |  |  |  |  | . |
| Mareh lnke- Dark lake............... |  |  | . . . . . . . . . | .......... | .......... |  |  |  |  |  |  | - |
|  | 20,000 |  |  |  |  |  |  |  |  |  |  |  |
| Loch Lomond lako (St. John Co.) |  |  |  |  |  | 282,835 | 15,100 | 3,907 | 2,301 | 4,746 |  | .......... |
| Musqunsh (St. John and Kings Co.). |  |  |  |  |  | - + . . . . . . | .......... |  |  |  | 50,000 | .......... |
| New IRiver (Chnrlotte Co.).......... | 25.000 |  |  |  |  | ........... | ........... |  |  |  |  | . ......... |
| Pocologan river (Charlotie Co.)......... | 50.000 |  |  |  | - |  |  |  | $\text { : } \quad \text {. }$ |  |  | .......... |
| Private Pond (H. C. Mott, 13 Germain St., St. John). |  |  |  |  |  | - |  |  |  |  |  | . ......... |
| Biological Board, St. Andrews. |  | 775 | 300 | 82 | ......... |  |  |  | ........... |  |  |  |
| Petitcodine river (Westmoreland nod Albert Cos.). | 75.0ư̆ |  |  |  |  |  |  |  | ........... |  | ........... | ........... |
| Stundurd lake........................................ |  |  |  |  |  |  |  |  |  |  |  | .......... |
| Clear lake (Charlotto Co. (St. George). |  |  |  |  |  |  |  |  | .......... |  |  | - |
| $\begin{aligned} & \text { Crooked creek- } \\ & \text { MeFadden lake (Abert Co.). } \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |  |  |
| Kelly's Meadow Brook- |  |  |  |  |  |  |  |  |  |  |  |  |
| Clear lake (St. John Co.)...... |  |  |  | ... | '.......... | ........... | . . . . . . . ${ }^{\text {a }}$ | ......... |  |  |  |  |
| Magaguadavie river (Charlotte Co.) |  |  | . . . . . . . | . . . . . | . ....... | .......... |  | . |  | , | .......... | . . . . . . . . |
| Bear lake.....a........... |  |  | . . . . . . . . |  |  |  |  |  |  |  |  | ......... |
| Bonny river (Charlotte Co.) |  |  |  |  | . . . . . . . . |  |  | .......... | ...... |  | . . . . . . . . | ......... |
| Crauberry lake (York Co.).. |  |  |  |  | , | .......... | . . . . . . . . | . . . . . . . . . . |  |  |  | . . . . . . . . . . . |
| Dead water................ |  |  |  |  | . . . . . . . . . |  |  | . ......... | . $\cdot$........ | ....... | .......... | , |
| Iarvey lake (York Co.). | 20,000 | + . . . . . . . | .......... |  | .......... |  | . . . . . . . . |  |  | . . . . . |  | . |
| Lnke Utopin (Charlotte Co.). |  |  | . ........ | . ........ | $\cdot$ |  |  |  |  | ....... | . . . . . . . . | , |
| Red Rock like (Charlotte Co.) |  |  |  |  |  | ......... | . ........ | : |  |  |  | ......... |
| Mink lake (York Co.)............ |  |  |  |  |  |  |  |  |  | -•••••• | ......... | , |
| N. E. Magaguadavic. |  | . . . . . . . |  |  |  | ........, | . . . ., . ${ }^{\text {a }}$ |  |  |  |  |  |
| Trout brook......... |  |  |  | ..... | .......... |  |  |  |  |  |  |  |
| Oromocto river (Sunbury Co.). |  |  |  |  |  |  |  |  |  |  |  |  |




|  | Lochleven Trout |  |  |  |  | Rainbow Trout |  |  | Speckled Trout |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Advan- } \\ & \text { ced fry } \end{aligned}$ | No. 2 fingerlings | No. 4 fingerlings | $\begin{aligned} & 1 \frac{3}{2} \\ & \text { years } \end{aligned}$ | Old fish | Eyed eggs | No. 2 <br> fingerlings | Old fish | Fry | $\begin{aligned} & \text { Advan- } \\ & \text { ced fry } \end{aligned}$ | No. 1 <br> finger- <br> lings | No. 2 fingerlings | No. 3 fingerlings | No. 4 fingerlings | Old fish |
| Oromocto river (Sunbury Co.) |  |  |  |  |  |  |  |  |  |  | 20,000. |  |  | ........ |  |
| Three tree creek....... |  |  |  |  |  |  |  |  |  |  | 10,000. |  |  |  |  |
| Yoho lake (York Co.) |  |  |  |  |  |  |  |  |  |  | 40,000. |  |  |  |  |
| Ottawa, Ontario......... |  |  |  |  |  | 500 |  |  | ..... |  |  |  |  |  |  |
| Passamaquoddy BayBills lake. |  |  |  |  |  |  |  | . | , |  | 10,000. |  |  |  |  |
| Crey lake............. |  |  |  |  |  |  |  |  |  |  | 10,000. |  |  |  |  |
| Digdeguash river (Charlotte Co.) |  |  |  |  |  |  |  |  |  |  | 10,000. |  |  |  |  |
| Burnic lake.................... |  |  |  |  |  |  |  |  |  |  | 20,000 |  |  |  |  |
| Hitching brook (Charlotte Co.) |  |  |  |  |  |  |  |  |  |  | 10,000 |  |  | ... |  |
| St. Croix river (Charlotte Co.)- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Canous river (Charlotto Co.)Green brook (Charlotte Co.) |  |  |  |  |  |  |  |  |  |  | 10,000 |  |  |  |  |
| Cbameook lake (Charlotte Co.). |  |  |  |  |  |  |  |  |  |  | 10,000. |  |  |  |  |
| Welsh lake...................... |  |  |  | ........ |  |  |  |  |  |  | 10.000 |  |  |  |  |
| Dennis stream. | ........ |  |  | ....... |  |  |  |  |  |  | 5.000 |  |  |  | ....... |
| Murchie brook (Charlotte Co.) |  |  |  |  |  |  |  |  |  |  | 10,000 |  |  |  | ........ |
| Grand lake (York Co.)............ |  |  |  |  |  |  |  |  |  |  |  |  | ........ |  | ........ |
| Limeburner lake....... |  |  |  |  |  |  |  |  |  |  | 25,000 |  |  |  | , |
| Mobanas stream |  |  |  |  |  |  |  |  |  |  | $\begin{array}{r} 5,000 \\ 20,000 \end{array}$ |  |  |  |  |
| Soap brook (Charlotte Co.) |  |  |  |  |  |  |  |  |  |  | 20,000 |  |  |  |  |
| Stein lake................. |  |  |  |  |  |  |  |  |  |  | 10.000 |  |  |  |  |
| Riehibueto riverMolus river. |  |  |  |  |  |  |  |  |  |  | 10,000 |  |  |  |  |
| St. John river- . . |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Kennebecasis river (Kings Co.) |  |  |  |  | ... |  | . . . . . . |  |  | ........ | 20,000 | . . . . . . . |  |  |  |
| Balls lake (St. John Co.)...... |  |  |  | . . . . . . | ....... |  |  |  |  |  | 10,000 | , |  |  |  |
| Dolan lake............... |  | . . . . . . | ....... | ........ | ...... | ...... | . ....... | ....... |  |  | 10,000 |  |  |  |  |
| Green lake. |  |  |  | . . . . . . | ....... |  | , |  |  |  |  | 500 |  |  | . ....... |
| Ping Pong lake.. |  | . |  |  |  |  |  |  | ...... |  |  | 2,000 |  |  |  |
|  |  | ........ |  |  |  |  |  |  |  |  | 20,000 |  |  |  | .. ...... |
| Nerepis river (Kings and Queens Cos.) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Pokiok river (York Co.)- <br> Davidson lake (York Co.) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Davidson lake (York Co.) Georgo late (Gleenwood) |  | . . . . ${ }^{\text {a }}$ |  |  |  |  |  |  |  |  | 20,000 | . |  |  |  |
| George lake (Gleenwood) | ........ | . . . . ${ }^{\text {a }}$ |  |  |  |  |  |  |  |  | 25,000 |  |  |  | . |
| George lake (Harvey) |  | ...... |  | . . . . . $\cdot$ | ....... |  |  | ....... |  |  | 20,000 |  | 1,800 |  |  |
| Nashwaksis stream...... |  |  |  |  |  |  |  |  |  |  |  |  | 1,600 |  |  |
| Salmon river (St. John Co.) |  |  |  |  |  |  |  |  |  |  |  |  |  | ........ |  |
| Trout el eek (Kings Co.)... |  |  |  |  |  |  |  |  |  |  |  | -••••••• |  | ........ | . . . . . . ${ }^{\text {a }}$ |
| Silver lake (Westmoreland Co.). |  |  |  |  |  |  |  |  |  |  | 10,000 | . . . . . . . |  | ........ |  |
| Waweig river (Charlotte Co.) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bartlett lake (Charlotte Co.) |  |  |  |  |  |  |  |  |  |  | 10,000 |  |  |  |  |
| Tong lake (Charlotte Co.).... |  |  |  |  |  |  |  |  |  |  | 10,000 |  |  |  |  |
| West Harbour- <br> Big Meadow Brook (Charlotte Co.). |  |  |  |  |  |  |  |  |  |  | 10,000 |  |  |  |  |
|  | 46.086 | 7,551 | 1,147 | 3,891 | 5,528 | 500 | -- ${ }_{422}$ | 3,952 | 25,000 | 60,000 | 603,250 | 19,050 | 1,932 | 1,100 | 2,252 |

Total Distribution.
1,754,666

## TOBIQUE HATCHERY

(Subsidiary to Grand Falls hatchery)
'Tobique river
Atlantic salmon fry

Tobique forks
45, 000
Gaunces bogan
100,000
Grear flats. 25, 000
Haley brook. 45, 000

Hatchery brook 50,000

Millers Main rive 29,000
1.

Right hand branch of Tobique 46,000
Riley brook. 75,000
Sisson branch 25,000
Two brooks. 100,000
Waters bogan
.75, 000
Total Distribution
665,000
KELLY'S POND HATCHERY

| $\longrightarrow$ | Atlantic salmon fry | Atlantic salmon advanced fry | Atlantic salmon No. 1 fingerlings | Rainbow trout No. 2 firgerlings | Speckled trout advanced [ry | Speckled trout No. 1 fingerlings | Speckled trout No. 2 fingerlings | Speckled troutNo. 3 fingerlings |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Bedeque Bay Dunk river- |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Electric light pond.. |  |  |  |  |  | 20,000 |  |  |
| Dunk river, north branch. | 50,000 |  |  |  |  | 2, |  |  |
| Dunk river, south branch. |  | 50,000 |  |  |  |  |  |  |
| Cardigan Bay- |  |  |  |  |  |  |  |  |
| Brudenel] river |  |  | 10,000 |  |  |  |  |  |
| Cardigan river.... | 25,000 |  |  |  |  | 10,000 |  |  |
|  |  |  |  |  |  |  |  |  |
| Lairds pond....... |  |  |  |  |  | 10,000 |  |  |
| Covehead Bay- |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Black river..... |  |  |  |  |  | 15,000 |  |  |
| Fortune Bay- |  |  |  |  |  |  |  |  |
| Fortune river, west braneh.. |  | 15,000 |  |  |  | 15,000 |  |  |
| Gulf of St. Lavrence- |  |  |  |  |  |  |  |  |
| East lake............ |  |  |  |  |  |  | 3,500 |  |
| Goose river.. |  |  |  |  |  | 10,003 |  |  |
| Naufrage river. |  | 36,000 |  |  |  |  |  |  |
| North lake... |  |  |  |  |  | 20,000 |  |  |
| Schooner Pond. | 10,000 |  |  |  |  | -0,000 |  |  |
|  |  |  |  |  |  |  |  |  |
| Clarks stream. |  |  |  |  |  | 10,000 |  |  |
| Forbes brook. |  |  |  |  |  |  | 5,855 |  |
| Hatchery Pond. |  |  |  |  |  |  |  | 700 |
| Johnson river.... | 25,000 |  | 15,000 |  |  |  |  |  |
| Sherry's brook <br> Malpeque Bay- |  |  |  |  |  | 15,000 |  |  |
| Malpeque Bay- $\quad$, |  |  |  |  |  |  |  |  |
| Niminegrash river-.......................... |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Montague Elcetric light pond |  |  |  |  |  | 20,090 |  |  |
| New I.ondon Bay- |  |  |  |  |  |  |  |  |
| Hope river. . . . |  |  |  |  |  | 10,000 |  |  |
| Stanley river |  |  |  |  |  | 5,000 |  |  |
| North river- |  |  |  |  |  |  |  |  |
| Coles Pond.. |  |  |  |  | 20,000 | . |  |  |
| Milton stream | 15,000 |  |  |  |  | . |  |  |
| Northumberland Strait- |  |  |  |  |  |  |  |  |
| Belle river. |  | 15,000 |  |  |  |  |  |  |
| Smelt brook. |  |  |  |  |  | 10,000 |  |  |
| Sable river- |  |  |  |  |  |  |  |  |
| Dixon pond. Orwell Bay- |  |  |  |  |  | 10,000 |  |  |
| Orwell Bay- |  |  |  |  |  |  |  |  |
| Pictou Harbour- |  |  |  |  |  |  |  |  |
| Wentworth lagoon. |  |  |  |  |  |  |  | 1,800 |
| Pisquid lake.... |  |  |  | 11,409 |  |  |  |  |
| Rustico Harbour- |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| St New Glasgow river. |  | 15,000 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Fishers brook. |  |  |  |  | 11,000 |  |  |  |
| Gillans stream. |  |  |  |  | 25,000 |  |  |  |
| Mckennas stream. |  |  |  |  |  | 15,000 |  |  |
| Head of Bay. | 15,000 |  |  |  |  |  |  |  |
| Midgell river. | 15, |  | 15,000 |  |  |  |  |  |
| 90655-132 |  |  |  |  |  |  |  |  |

KELLY'S POND HATCHERY-Concluded


Total distribution
1,043,417

GULL HARBOUR HATCHERY

| - | Pickerel fry | Whitefish. green eggs | Whitefish fry |
| :---: | :---: | :---: | :---: |
| Lake Winnipeg- |  |  |  |
| Big island, east side. | 2,500,000 |  | 2,550,000 |
| Big island, north side | 1,000,000 |  | 10,000,000 |
| Big island, west side. |  |  | 1,500,000 |
| Black island, south side | 3,500,000 |  |  |
| Black island, west side. | 1,047,000 |  | 7,500,000 |
| Deer island, east side. | 1,000,000 |  | 4,000,000 |
| Punk island, north side. |  |  | 9,000,000 |
| Punk island, south side. |  |  | 2,000,000 |
| West shore...... |  |  | 2,000,000 |
| West shore near Grindstone Point. | 2,000,000 |  |  |
| Berens river. |  | 375,000 |  |
| Pigeon Bay. |  | 2,850,000 |  |
| Between Black Bear and Egg <br> H.B. Co's bay. |  |  | $\begin{aligned} & 1,000,000 \\ & 1,280,000 \end{aligned}$ |
| Channel island. |  |  | 1,250,000 |
| Disboro's dock. |  |  | 1,280,000 |
| Flat-head point. |  |  | 1,280,000 |
| Flat Head and Helgis. |  |  | 1,280,000 |
| Lobstick island....... |  |  | 1,280,000 |
| McKay harbour | . . ....... |  | 1,280,000 |
| McKay island.. |  |  | 1,280,000 |
| Methodist mission |  |  | 1,280,000 |
| R.C. mission. |  |  | 1,280,000 |
| Sandy bar and vicinity |  |  | 1,280,000 |
| Sheep island........... |  |  | 1,280,000 |
| Clear lake........... | 175,000 |  |  |
| Burn's or Olson's lake. | 50,000 |  |  |
| Goose or Roblin lake. | 75,000 |  |  |
| Jackfish or Mitchell's lake. | 150,000 |  |  |
| Killarney lake. | 150,000 |  |  |
| Madge lake, Sask. | 250,000 |  |  |
| Minnedosa lake. | 250,000 |  |  |
| Oddfellows lake. | 75,000 |  |  |
| Pelican lake. | 150,000 |  |  |
| Perch lake. | 125,000 |  |  |
| Red river at Selkirk | 50,000 |  |  |
| Rock lake. | 150,000 |  |  |
| Round lake. | 125,000 |  |  |
| Sorbo's lake. | 50,000 |  |  |
| Souris lake. | 175,000 |  |  |
|  | 13,047,000 | 3,225,000 | 54,880,000 |

# SWAN CREEK 

Pickerel

## WINNIPEGOSIS HATCHERY

| － | Pickerel green eggs | －Whitefish fry |
| :---: | :---: | :---: |
| Lake Dauphin－ |  |  |
| Valley river． | 340，000 |  |
| Lake Manitoba－ |  |  |
| Alice point（13 miles from hatchery） |  | 1，500，000 |
| Lake Winnipegosis－ |  |  |
| Armstrong creek（ 7 miles from hatchery） |  | 2，500，000 |
| Chartrand creek． |  | 1，598，526 |
| Devils island，southeast（ 30 miles from hatchery） |  | 2，000，000 |
| Devils island，south－west（ 30 miles from hatchery）． |  | 3，200，000 |
| Fullers bay－Lunch point（ 14 to 20 miles from hatchery） |  | 1，000，000 |
| Hunter island（18 miles from hatchery）． |  | 800，000 |
| Long island（ 12 to 14 miles from hatchery） |  | 1，500，500 |
| Mackenzie point（2 miles from hatchery） |  | 5，000，000 |
| Mossy river，and channel（4⿺辶⿱亠乂 miles from hatchery） |  | 1，000，000 |
| North Red Deer point． |  | 2，000，000 |
| Snake island，east and northeast． |  | 6，000，000 |
| Snake island，east． |  | 6，000，000 |
| Snake island，south． |  | 6，000，000 |
| Snake island，southeast． |  | 1，500，000 |
| Snake island，southwest．．．．．．．．．．． |  | 1，000，000 |
| The Fishery（ 14 miles from hatchery） |  | 3，000，000 |
| Thirty yards from hatchery． |  | 4，000，000 |
| High island，Reed point（ 34 to 38 miles from hatrhery） |  | 1，500，000 |
|  | 340，000 | 51，099，026 |

## FORT QU＇APPELLE HATCHERY

| － | Brown trout No． 1 fingerlings | Pickerel fry | Whitefish ． fry |
| :---: | :---: | :---: | :---: |
| Beaver river |  |  |  |
| Makwa lake． |  |  | 1，000，000 |
| Cowan river－ |  |  | $1,000,00$ |
| Okemasis lake．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． |  |  | 2，000，000 |
| Hudson Bay lake（not tributary to any other water） |  | 1，000，000 |  |
| Manito lake（not tributary to any other water）．．．．．． |  |  | 200，000 |
| Midnight lake－ |  |  |  |
| Birch lake．．． Milk river－ |  |  | 1，000，000 |
| Battle creek－ |  |  |  |
| Adams creek． | 14，250 |  |  |
| Mink creek． | 14，250 |  |  |
| School creek． | 4，750 |  |  |
| Tributary creek． | 4，750 |  |  |
| Moose Mountain Creek－ Gooseberry lake． |  |  |  |
| North Saskatehewan river－ |  | 800，000 |  |
| Jackfish lake． |  |  | 2，000，000 |
| South Saskatehewan river－ |  |  |  |
| Elkwater lake（Alta．）．．． |  | 1，000，000 |  |
| Qu＊Appelle river－ |  |  |  |
| Echo lake．．．． |  | 4，770，000 | 2，265，000 |
| Katepwa lake |  | 5，000，000 | 1，000，000 |
| Lebret lake．． |  | 2，000， 000 | 734，000 |
| Sioux lake．． |  | $3,000,000$ | 1，000，000 |
| Long or Last Mountain lake |  |  | 2，000，000 |
| Turtle river－ |  |  | 2， 00000 |
| Whitesand river－．．． |  |  | 2，000，000 |
| Whitesand river－ Cussed creek－ |  |  |  |
| Wilson lake |  | 400，000 |  |
| Fishing lake． |  | 1，000，000 |  |
| York lake．． |  | 600，000 |  |
|  | 38，000 | 19，570，000 | 15，199，000 |

BANFF HATCHERY

| - | Brown trout No. 1 fingerlings | Brown trout No. 2 fingerlings | Brown trout Hybrid Old fish | Cutthroat trout fry | $\begin{gathered} \text { Cutthroat } \\ \text { trout } \\ \text { No. } 1 \\ \text { finger- } \\ \text { lings } \end{gathered}$ | Cutthroat trout Old fish | Lochleven trout No. 1 fingerlings | Lochlevon trout No. 2 fingerlings | $\underset{\substack{\text { Rainbow } \\ \text { trout } \\ \text { fry }}}{ }$ | Rainbow trout No. 1 fingor* lings | Rainbow trout No. 2 fingerlings | Rainbow trout No. 3 fingerlings | Rainbow trout Old fish | Salmon trout No, 4 fingerlings | Specklad trout Old fish |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Bow river- |  |  |  |  |  | - |  |  |  |  |  |  |  |  |  |
| Anthracite creek. |  |  |  | 30,000 |  |  |  |  |  |  |  |  |  |  |  |
| Bear croek. ....., |  |  |  | 6,000 |  |  |  |  |  |  |  |  |  |  |  |
| Big Hill oreek |  |  |  | 40,000 |  |  |  |  |  |  |  |  |  |  |  |
| Boom lake... |  |  |  | 20,000 |  |  |  |  |  |  |  |  |  |  |  |
| Cascade oreokPoderson creek. |  |  |  | 15,000 |  |  |  |  |  |  |  |  |  |  |  |
| Castle oreek. ....... |  |  |  | 10,000 | $\cdot$ |  |  |  |  |  |  |  |  |  |  |
| Cold ereek. |  |  |  | 25,000 |  |  |  | .......... |  |  |  |  |  |  |  |
| Consolation lak |  |  |  | 20,000 |  |  |  |  |  |  |  |  |  |  |  |
| Exshaw lake. |  |  |  | 40,000 | . |  |  | $\cdots$ |  |  |  |  |  |  |  |
| Fish creek, north fork |  |  |  |  |  |  |  |  |  |  |  | 10,000 5,000 |  |  | . |
| Fish ereok, south fork. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Forty Mile creek. . |  | ....... |  | 25,000 |  |  |  |  |  |  |  |  |  |  |  |
| Gap lake............. |  |  |  | 30,000 50,000 |  |  |  |  |  |  |  |  |  |  |  |
| Hay Meadow croek. |  |  |  | 15,000 |  |  |  |  |  |  |  |  |  |  | +......... |
| Highwood river- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Pekisko creek..... |  |  |  |  |  |  |  |  | 12,000 |  | 16,000 |  |  |  |  |
| Cataract river <br> Lake O'H |  |  |  |  | - |  |  |  |  |  | 24,000 |  |  |  |  |
| Miller creek.. |  |  | , |  | : |  | ........... |  | $10,000$ |  |  |  |  |  |  |
| Flat oreek....... |  |  | - |  |  |  |  |  | $24,000$ |  | .......... |  |  |  |  |
| Sullivan creek. |  |  |  |  | ........... | . $\cdot . .$. | ........... |  | 32,000 |  |  |  |  |  |  |
| Horse oreek.. |  |  | , ....... | 15,000 |  |  |  |  |  |  |  |  |  |  |  |
| Jumping Pound creek |  |  |  | 40,000 |  |  |  |  |  |  |  |  |  |  |  |
| Lake Louiso., |  |  |  | 60,000 |  |  |  |  |  |  |  |  |  |  |  |
| Massive creok. |  |  |  | 40,000 |  |  |  |  |  |  |  |  |  |  |  |
| Moraine lake. | . $\cdot$.... |  |  | 40,000 |  |  |  |  |  |  |  |  |  |  | ............ |
| Pipestone creok., |  |  |  | 40.000 |  |  |  |  |  |  |  |  |  |  |  |
| Policeman creek. . ${ }^{\text {North }}$ Sheep creek |  |  |  | 40,000 |  |  |  |  |  |  |  |  |  |  |  |
| Rip Rap creek... |  |  |  | 20,000 |  |  |  |  |  |  |  |  |  |  |  |
| South Sheep oreek. |  |  |  | 30,000 |  |  | . $\cdot$. $\cdot$. . . . | .......... | . |  | , |  |  |  | , |
| Canyon craek, |  |  |  | 10,000 |  |  |  | ....... |  |  |  |  |  |  |  |
| Dyson ereek. |  |  |  | 10,000 |  |  |  | . | ......... | ............ | , |  |  |  | . |
| Georgo creek. |  |  |  | 5,000 | .......... | . $\cdot$. $\cdot$. ${ }^{\text {a }}$ | . |  |  |  |  |  |  |  |  |
| Long Prairie creek |  |  |  | 10,000 |  | ......... |  | …........ |  |  |  |  |  |  |  |
| Macabee creok. |  |  |  | 15,000 10,000 |  |  |  |  |  |  |  |  |  |  |  |
| Sibbald creek. |  |  | :....... | 10,000 10,000 |  |  |  | .......... |  |  |  |  |  |  |  |
| Spencer creek. |  |  |  | 10,000 5,000 | -......... |  |  |  |  |  |  |  |  |  |  |
| Spring creek. . . |  |  |  | 25,000 |  |  |  |  |  |  |  |  |  |  |  |
| Sundance lagoon. |  |  |  | $\begin{aligned} & 25,000 \\ & 10,000 \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |  |
| Sundance cree |  |  |  | 75,000 |  |  |  |  |  |  |  |  |  |  |  |


| Upper Vormillion lako. |  |  | \|........ | 15,000 |  |  |  |  |  |  |  |  |  |  | .......... |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Vista lake............. |  |  | ......... | 20,000 |  |  |  | ............. | .............. |  |  |  |  |  | ................. |
| Altrude lako |  |  |  | 15,000 |  |  |  |  |  |  |  |  |  |  |  |
| Whiskey creek. |  |  |  | 40,000 |  |  |  |  |  |  |  |  |  |  |  |
| Calgary, Alberta-Exhibition....... |  |  | 12 |  |  | 1 |  |  |  |  |  |  | 2 | ........ | 1 |
| Clearwater rivor- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Clear creek..... |  | 10,000 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Drummond creek Prairie oreek..... |  | 10,000 10,000 |  |  |  |  |  |  |  |  |  |  |  |  | $\left\lvert\, \begin{aligned} & 1 . \ldots \ldots \\ & \cdots \end{aligned}\right.$ |
| North fork |  | 10,000 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Muskeg creok. |  | 15,000 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Elbow river- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bragg creek. Micklo creok. |  |  |  |  |  |  |  |  |  |  |  | 10,000 10,000 |  |  | $\ldots$ |
| Mickle creok. |  |  |  |  |  |  |  |  |  |  |  | 10,000 |  |  | $\therefore$ |
| McLean creok. Permiz creok. |  |  |  |  |  |  |  |  | 13,500 | . |  | $\cdots \cdots 10,000$ |  |  |  |
| Qullum springs. |  |  |  |  |  |  |  |  | 5,000 |  |  |  |  |  |  |
| Ranger ereok. |  |  |  |  |  |  |  |  | 5,000 |  |  |  |  |  |  |
| Robinson orook |  |  |  |  |  |  |  |  |  |  |  | 5,000 |  |  |  |
| Sacree springs...... . . . . . . . . . . . . |  |  |  |  |  |  |  |  | 5,000 |  |  | 000 |  |  |  |
| Whitloy springs. . . . . . . . . . . . . . |  |  |  |  |  |  |  |  |  |  |  | 000 |  |  |  |
| Frenchman rivor, Sask.- <br> Belanzer croek |  |  |  |  |  |  |  | 25,000 |  |  |  |  |  |  |  |
| Cypross lakoSucker creok. |  |  |  |  |  |  |  | 60,000 |  |  |  |  |  |  |  |
| Kootenay riverVermillion crook. |  |  |  | 00,000 |  |  |  |  |  |  |  |  |  |  |  |
| Lizzard lake ( 14 mls, from hy.) no outlat. |  |  |  | 10,000 |  |  |  |  |  |  |  |  |  |  |  |
| McLeod riverCarrot crook- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| January creek |  |  |  |  |  |  |  |  |  |  | 25,000 |  |  |  | …', |
| Edson creok.... |  |  |  |  |  |  |  |  |  |  | 10,000 |  |  |  |  |
| Moose creok. |  | …... | . |  |  |  |  |  |  |  | 10,000 |  |  |  |  |
| Sundance creck. |  |  |  |  |  |  |  |  |  |  | 20, 000 |  |  |  |  |
| Horse croek |  |  |  |  |  |  |  |  |  |  | 10,000 |  |  |  |  |
| Wolf creok. |  |  |  |  |  |  |  |  |  |  | 6,000 |  |  |  |  |
| Mud lake (no outlet) 42 milos from hatohery. |  |  |  | 20,000 |  |  |  |  |  |  |  |  |  |  | ... |
| Old Man river- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Allison creek. |  |  |  |  |  |  |  |  |  | 20,000 |  | .......... |  |  |  |
| Burmis creek. |  |  |  |  |  |  |  |  |  | 5,000 |  | ........... |  |  |  |
| Byron creek. |  |  |  |  |  |  |  |  |  | 10,000 |  |  |  |  | ........... |
| Castlo riverMill oreek. |  |  |  | 10,000 |  |  |  |  |  |  |  |  |  |  |  |
| Crows nest river. . . . . . . . . . . . . . |  |  |  |  |  |  |  |  |  | 15,000 |  |  |  |  |  |
| Goads creek..................... |  |  |  | 解 |  |  |  |  |  | 10,000 |  |  |  |  |  |
| Gold creek.. |  |  |  | .... |  |  | . ......... |  |  | 10,000 |  |  |  |  | . . . . . . . |
| Hoggan creck. |  |  |  |  |  |  |  |  |  | 10,000 |  |  |  |  |  |
| Lyndon crook. |  |  |  |  |  |  |  |  |  |  |  | 10,000 |  |  |  |
| McGillvary oreok. |  |  |  |  |  |  |  |  |  | 5,000 |  |  |  |  |  |
| Pincher creek. |  |  |  | 15,000 |  |  |  |  |  |  | 10,000 |  |  |  |  |
| Rock creak. |  |  |  |  |  |  |  |  |  | 5,000 | .......... |  |  |  |  |
| Star creok... |  |  |  |  |  |  |  |  |  | 5,000 | ........... |  |  |  |  |
| Kioking Horso- |  |  |  |  |  |  |  |  |  |  |  |  |  |  | ........... |
| Emerald lako.... Giddio creok |  |  |  |  |  |  | ............ |  |  | 20,000 5,000 |  |  |  |  | ............ |


| - | Brown trout No. 1 fingerlings | Brown trout No. 2 fingerlings | Brown trout Hybrid Old fish | Cutthront trout fry | Cutthroat trout No. 1 fingorlings | Cutthroat trout Old fish | Lochleven trout- No. 1 finger- lings | $\left\|\begin{array}{c} \text { Lochleven } \\ \text { trout } \\ \text { No. } 2 \\ \text { finger- } \\ \text { lings } \end{array}\right\|$ | Rainbow trout Iry | Rainbow trout No. 1 fingerlings | Rainbow trout No. 2 fingerlings | Rainbow trout No. 3 fingerlings | Rainbow trout Old fish | Salmon trout No. 4 fingerlings | Speokled trout Old fish |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Belly river- |  |  |  |  |  |  |  |  |  |  |  | $\cdots$ |  |  |  |
| Carpentier creek. |  |  |  |  |  |  |  |  |  |  | 10,000 |  |  |  |  |
| Cottonwood creok. |  |  |  | . 10,000 |  |  |  |  |  |  | 10,000 |  |  |  |  |
| Mill creek.. |  |  |  | . 10,00 |  |  |  |  |  |  | 10,000 |  |  |  |  |
| Pine creek. |  |  |  | 10,000 |  |  |  |  |  |  | - 10,000 |  |  |  |  |
| Trail creok.......... |  |  |  | 10,000 |  |  |  |  |  |  | 10,00 |  |  |  |  |
| Dry Wood creek- <br> Yarrow areek. $\therefore . .$. |  |  |  | 10,000 |  |  |  |  |  |  | 10,000 |  |  |  | $\cdots$ |
| Willow creek- <br> Brown creok. |  |  |  |  |  |  |  |  |  |  | 10,000 |  |  |  | ........... |
| Burke creek.. |  | ........ |  |  |  |  |  |  | 5, $\mathbf{2 , 4 8 5}$ |  |  |  |  |  |  |
| Burton creck. |  |  |  |  |  |  | …...... |  |  |  |  | 5,000 |  |  | ............ |
| Honey creek. | . ... | ... |  |  | . . . . . . |  |  |  |  | ......... | . ......... | 5,000 |  |  |  |
| Patterson oreek |  |  |  |  |  |  |  |  | 10,000 | .......... |  | 2,515 |  |  |  |
| Quail croek..... |  |  |  | ............ |  |  |  |  | 10,000 |  |  | 2,515 |  |  | $\cdots \cdot \cdots \cdot \cdots$ |
| South fork. |  | ...... |  |  |  |  |  |  | 15,000 |  |  |  |  |  |  |
| Ottawa, Ontario. <br> Pincher creek Exhibition- |  |  |  |  | 12 |  |  |  |  |  |  |  |  | 12 |  |
| Jack Aloxandor......... |  |  | 2 |  |  |  |  |  |  |  |  |  |  |  |  |
| Rod Deer river- |  |  |  |  |  |  | 50,0000 |  |  |  |  |  |  |  |  |
| Dog Pound areok. . . . . . . . . . . . . |  |  |  |  |  |  | 70,000 |  |  |  |  |  |  |  |  |
| Swanson creok. |  |  |  | ......... | . . . . . . . . | .......... | 30,000 |  |  |  |  |  |  |  |  |
| Fallen Timber. |  |  |  | . ......... | .......... | .......... |  | 50,000 |  |  |  |  |  |  |  |
| Johnson creok. . . . . . . . . . . . . . . . |  | ....... | - | .......... | ........... |  |  | 15,000 |  |  |  |  |  |  |  |
| North Raven. South Raven. |  |  | . . . . . | .......... | ......... | .......... | 45, 000 |  |  | . . . . . . . . |  |  |  |  |  |
| South Raven...... |  |  |  |  | .......... |  | 54,700 |  |  |  |  |  |  |  |  |
| Beaver creek................. |  |  |  |  | .... | .......... | 20,000 |  |  |  |  |  |  |  |  |
| Williams oroek................... |  |  |  |  |  |  | 44,000 | .......... | . . . . . . . . | . , $\cdot$, | . . . $\quad .$. | . . . . . . . |  | . ....... | .......... |
| North Saskatchowan riverCow ereek. |  | 5,000 |  |  |  | . | 11,000 |  | ** |  |  |  |  |  |  |
| Prentice oreek. |  | 10,000 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Trappers creek. |  | 10,000 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| South Saskatchewan riverSwift current river, Sask Bone creok, Sask. | 50,000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| St. Mary's river- |  | ......... |  |  |  |  |  |  |  | ........... | ......... | . ......... |  |  |  |
| Lees creek... |  |  |  | 20,000 |  |  |  |  |  |  |  |  | . |  |  |
| Tough creek.,.................. |  |  |  | 15,000 |  |  |  |  |  |  |  |  |  |  |  |
| Two Jacks lake (no outlet) 8 miles from hatchery. |  |  |  | 15,000 |  |  |  |  |  |  |  |  |  |  |  |
| Yohoriver- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Yoho lake |  |  |  |  |  |  |  |  | 8,000 |  |  |  |  |  |  |
|  | 50,000 | 80,000 | 14 | 1,110,000 | 12 | 1 | 324,700 | 150,000 | 177,985 | 120,000 | 100,000 | 77,515 | 2 | 12 | 1 |

[^6]| Athabasca river- | JASPER PARK HATCHERY | Speckled trout fry |
| :---: | :---: | :---: |
| Medicine lake- |  |  |
| Maligne lake |  | 178,773 |
| Medicine lak |  | 12,000 |
| Total Distribution. |  | 190,773 |

## SPRAY LAKES HATCHERY

(Strbsidiary to Banff Hatchery)

| Rocky Mountain Park- | Cutthroat trout fry |
| :---: | :---: |
| Spray river- |  |
| Spray lake. | 18,000 |
| Bay north of cabin. | 45,670 |
| Bay at outlet. | 20,000 |
| Head of lake. | 92,000 |
| Bryant creek | 16,000 |
| East side of lake | 24,000 |
| Marvel lake | 24,000 |
| Smutts creek. | 8,000 |
| Upper creek. | 52,000 |
| Upper Spray lakes. | 20,000 |
| Total Distribution. | 319,670 |

WATERTON LAKES HATCHERY $\begin{gathered}\text { Cutthroat } \\ \text { trout fry }\end{gathered}$
Belly river-
Mami creek:.......... . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 6,000
Crows Nest river. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 5 .000


Bryon ereek......................................................................................... . . . . . 10,000

Rock creek. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
Star creek. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
York creek. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 5 5,000
Waterton river-
Cameron creek-
Carthew lake. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 10,000
Crooked creek. ......................................................................... . . . . . . . . 6,600
Slough below hatchery............................................................... . 200


ANDERSON LAKE HATCHERY


BABINE LAKE HATCHERY

|  | ". | Sockeye salmon eyed eggs | Sockeye salmon iry | Sockeye salmon No. 1 fingerlings |
| :---: | :---: | :---: | :---: | :---: |
| Babine lake- |  |  |  |  |
| Beaver lagoon. |  |  | 250,000 |  |
| Morrison creek. |  |  |  | 1,478,140 |
| Morrison lake.. |  |  | 4,681,230 |  |
| Talho lake- |  |  |  |  |
|  |  |  |  |  |
|  |  | 1,500,000 | 4,931,230 | 1,478,140 |

Total distribution
7,909,370

KENNEDY LAKE HATCHERY

| - | Sockeye salmon eyed eggs | Sockeye salmon advanced fry | Sockeye salmon No. 1 fingerlings | Sockeye salmon No. 3 fingerlings | Sockeye salmon No. 4 fingerlings | Sockeye salmon No. 5 fingerlings | Sockeye and chum salmon old fish (crossed) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Kennedy lake. |  | 450,000 |  |  |  |  |  |
| Alberni Bay. |  | 100,000 | 140,000 |  |  |  |  |
| Clayoquot river (upper)... | 417,500 |  |  |  |  |  |  |
| Clayoquot river (lower).... | 50,000 |  |  |  |  |  |  |
| Clayoquot ArmAt hatchery. |  |  |  |  | 20,000 |  |  |
| Beaches..... |  |  |  |  | 20,000 | 18,633 |  |
| Cold creek.. | 66,500 |  |  |  |  |  |  |
| Deer Beaches to Narrows |  |  | 100,000 |  |  |  |  |
| Duck Island. ............ |  |  | 60,000 |  |  |  |  |
| Duck Island to Martin creek. |  |  | 101,909 |  |  |  |  |
| Martin Creek to Peters Creek. |  |  | 200, 000 |  |  |  |  |
| Martin Creek to Silent Bay. |  |  | 25,000 |  |  |  |  |
| Fir Creek to Silent Bay. |  |  | 275, 000 |  |  |  |  |
| Lake Shore.............. |  |  |  | 9,000 |  | 506 | 2 |
| Narrows to High Point. . |  |  | 150,000 |  |  |  |  |
| Peninsular Bay and Agnes Island. |  |  | 150,000 |  |  |  |  |
| Peninsular Bay to Narrows.. |  |  | 15,000 |  |  |  |  |
| Snag Bay. |  |  | $\begin{array}{r} 10,000 \\ \hline 75,000 \end{array}$ |  |  |  |  |
| Ucluelet Bay |  |  | 125, 000 |  |  |  |  |
| Kennedy river- |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Juanita lake. . | 10,000 |  |  |  |  |  |  |
| Sutton slough. |  |  | 75,000 |  |  |  |  |
|  | 1,049,000 | 550,000 | 1,491,909 | 9,000 | 20,000 | 19,139 | 2 |

Total distribution.
3,139,050

COWICHAN LAKE HATCHERY

|  | Atlantic salmon |  |  |  | Coho | Cutthront trout |  |  | Kamloops trout |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| - | Fry | No. 1 <br> fingerlings | No. 4 fingerlings | No. 5 fingerlings | eyed eggs | Fry | No. 5 fingerlings | Year- lings | Eyed eggs | Fry | No. 5 fingerlings |
| Cameron lakeCameron river. |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | 30,000 | ... |  |
| Cowichan lake. | 137.500 | 3,000 |  | 3,074 |  |  |  |  |  | , | 3,606 |
| Bear creek. | 80,000 |  |  |  |  |  |  |  |  |  |  |
| Beaver creek...... | 57,500 |  |  |  |  |  |  |  |  |  |  |
| Cottonwood creok. | 80,000 |  |  |  |  | - 34,292 |  |  | 45,000 | ........ | ......... |
| Lens lake. |  |  |  |  |  |  |  |  |  |  |  |
| McKay creek | 68,000 |  |  |  | 150,000 |  |  |  |  |  | . |
| Mead creek... | 86,000 86,000 |  |  |  |  |  |  |  |  |  | +........ |
| Nixon creek..... | 86,000 80,000 |  |  |  |  | 25,000 |  |  |  |  | ........ |
| Robinson river. | 80,000 80,000 |  |  |  |  | 25,000 |  |  |  |  |  |
| Sheep creek. | 48,000 |  |  |  |  |  |  |  |  |  |  |
| Sutton creek.. | 80,000 |  |  |  |  |  |  |  |  |  |  |
| Wardroper creek | 80,00 | ..... |  |  | 124,380 |  |  |  |  |  | ........ |
| Cowichan river.... |  |  | 396 |  |  | 54,829 | 2,200 |  |  |  |  |
| Green creek. |  |  |  |  | 100,000 125,000 |  |  |  |  |  |  |
| Oliver creek.. |  |  |  |  | 125,000 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| Somenos lake. Holmes creek |  |  |  |  |  |  |  |  |  | 21,308 |  |
| Wake creek.... |  |  |  |  |  |  |  |  |  |  |  |
| Hastings Park, Van. (Aqu |  |  |  |  |  |  |  |  |  |  | 50 |
| New Westminster Exhibi |  |  |  |  |  |  |  | 8 | , |  | ......... |
| Prospect lake. |  |  |  |  |  | 15,000 |  |  |  |  |  |
| Spectacle lake...... |  |  |  |  |  |  |  |  | , |  |  |
| To SeaComox lake.. |  |  |  |  |  | 35,000 |  |  |  |  |  |
| Comox lake.. <br> Crystal lake. |  |  |  |  |  | 15,000 |  |  |  | 5,000 | . |
| Kemplake |  |  |  |  |  | 15,000 5,000 | . |  |  |  | .......... |
| Matheson Iake. |  |  |  |  |  | 5,000 |  |  |  |  |  |
| MeKay lako. |  |  |  |  |  |  |  |  |  | 25,000 25,000 |  |
| Quamichan lake.. |  |  |  |  |  |  |  |  |  | 25,000 |  |
| San Juan Pool.... |  |  |  |  |  |  |  |  |  | 65,000 |  |
| Shawnigan lake Stowell lake.. |  |  |  |  |  | 5,000 |  |  |  |  |  |
| Weston lako... |  |  |  |  |  | 5,000 |  |  |  |  |  |
|  | 883,000 | 3,000 | 390 | 3,674 | 490,380 | 210,121 | 2,200 | 8 | 75,000 | 121,008 | 3,656 |



Total Distribution.
3,111,018

CULTUS LAKE HATCHERY

| - | Kamloops trout eyed eggs | Kamloops trout fry | Steelhead salmon eyed eggs | Steelhead salmon fry |
| :---: | :---: | :---: | :---: | :---: |
| Harrison lake- |  |  |  |  |
| Hicks lake. | 18,000 |  |  |  |
| Otter lake. | 10,000 |  |  |  |
| Hatchery and Sweltzer creeks (Jct.).................... |  |  | 12,083 | 1,500 |
| Sumas Mt. <br> Devils lake (between Chilliwack and Abbotsiord) |  | 1,894 |  |  |
|  | 28,000 | 1,894 | 12,083 | 1,500 |

Total distribution. ........................................................................ . . 43,477

## GERRARD HATCHERY

|  |  | Kamloops trout fry |
| :---: | :---: | :---: |
| Kootenay lake- Lardeau river | - | 216,251 |
| Total distribution. |  | 216,251 |

HARRISON LAKE


工AKELSE LAKE HATCHERY

|  | Kamloops trout eyed eggs | Sockeye salmon eyed eggs | Sockeye salmon fry | Sockeye salmon No. 1 fingerlings | Sockeye salmon No. 3 fingerlings |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Cloyah InletCloyah lake. | 60,000 |  |  |  |  |
| Skeena river- | 6,000 |  |  |  |  |
| Lakelse lake. |  |  | 4,935,000 | 450,000 | 322,500 |
| Angelus creek. |  |  | 162,000 |  |  |
| Beaver dam. |  |  | 1,906,000 | 250,000 |  |
| Salmon creek. |  | 200,000 | 150,000 |  |  |
| Smithers DistrictBuckley riverKathlyn lake. |  |  | , |  |  |
|  | 70,000 |  |  |  |  |
|  | 130,000 | 200,000 | 7,153,000 | 700,000 | 322,500 |

Total distribution.
$8,505,500$

LLOYDS CREEK HATCHERY


Total distribution
$1,039,000$

## NELSON HATCHERY

| - | Kamloops trout eyed eggs | Kamloops trout fry | Kennerly's salmon (little Red Fish) iry | Rainbow trout eyed eggs | Rainbow trout fry | Speckled trout cyed eggs | Speckled trout fry |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Arrow lake- |  |  |  |  |  |  |  |
| Box lake... | 8,000 |  |  |  |  |  |  |
| Inonaklin river |  |  |  |  |  |  | 20,000 |
| Lower Arrow lake |  | 20,000 |  |  |  |  |  |
| Slocan lake...... |  | 40,000 |  |  |  |  |  |
| Cahill lake...... |  |  |  | 20.00 |  |  |  |
| Bonanza rreekSummit lake. | 20,000 |  |  |  |  |  |  |
| Little Slocan lake. | 20,000 |  |  |  |  |  | 20,000 |
| Whatshan lake... | 40.000 |  |  |  |  |  |  |
| Columbia river. | 100,000 |  |  |  |  |  |  |
| Big Sheep Creek | . ....... |  |  |  |  |  | 10.000 |
| Beaver creek.... |  |  |  |  |  |  | 10,000 |
| Glenmore lake. |  |  |  |  |  |  | 6,000 |
| Windermere lakeWindermere creek. |  |  |  |  |  | 40,000 |  |
| Cranbrook hateheryMoyie river- |  |  |  |  |  |  |  |
| Moyie riverSwansie creck..... |  |  |  |  |  | 30.000 |  |
| Creston-(Nr. Edmonds) |  |  |  |  |  |  | 1,000 |
| Ponds at Creston ( 80 mil |  |  |  |  |  |  | 1,000 |
| Fernie DistrictElk river- |  |  |  |  |  |  |  |
| Hartley creek. |  |  |  |  |  | 10,000 |  |
| Hosmer creek. |  |  |  |  |  | 20,000 | . . . . . . . . |
| Mrcool creek. |  |  |  |  |  | 10.000 |  |
| Morrisey creek |  |  |  |  |  | 10,000 |  |
| Lizzard creek. |  |  |  |  |  | 10.000 |  |
| Illecillewat river- |  |  |  |  |  |  |  |
| Moose ereek... |  |  |  |  |  | 25,000 |  |
| Kootenay lake- |  |  |  |  |  |  |  |
| Bear creek..... |  |  |  |  |  |  | 10,000 |
| Cottonwood lake... |  |  |  | 85. |  |  |  |
| Cottonwood ereek |  |  |  |  | 20,000 |  |  |
| Goat river- |  |  |  |  |  |  |  |
| Corn creek. |  |  |  |  |  | 10,000 |  |
| Mcadow creek. |  |  |  |  |  | 10,000 |  |
| Kaslo creek.... |  |  |  |  |  | 10.000 |  |
| Leriathan lake.. |  |  |  |  |  |  | 10.000 |
| Lime lake..... | . $\cdot .$. | ........... |  |  |  |  | 5. 0009 |
| MeGregor lake. |  |  |  |  |  |  | 5.000 10.000 |
| Kootenay river |  | 29,008 |  |  |  |  | 10,000 |
| Bear creek. . |  |  |  |  | 12. |  |  |
| Five Mile creek. |  |  |  |  | 25. | 0 |  |
| Forty-nine Mile creek. |  |  |  |  | 37. |  |  |
| Grohman creek...... |  |  |  |  | 12. | 0. |  |
| Sand creek..... |  |  |  |  |  | 0. |  |
| Six Mile lakes......... |  |  |  | 70. |  |  |  |
| Metaline Falls, Washing Yorke) |  | 15,000 |  |  |  |  |  |
| Okanagan lake- |  |  |  |  |  |  |  |
| At Summerland. |  |  | 205.0 |  |  |  |  |
| Pend D'Orille- |  |  |  |  |  | 10,000 |  |
| Boundary lake. |  |  |  |  |  |  | ...50,000 |
| Kettle river.... |  |  |  |  |  | 10.000 |  |
| Christina lake. . ${ }^{\text {co. }}$ | 15,000 |  |  |  |  | - $\cdot \cdots \cdots 10000$ |  |
| North Fork of Kettle |  |  |  |  |  | 15,000 |  |
| Smelter lake. | 12,000 |  |  |  |  | - 10000 | - |
| Salmon river... |  |  |  |  |  | - 10,000 | . $\cdot$ - |
| Headwaters...... |  |  |  |  |  | . .......... | 4,065 |
| Similkameen river- |  |  |  |  |  | 20,000 |  |
| Ashnola river... |  |  |  |  |  | . 20,000 | …10,000 |
| Tulameen river. |  |  |  |  |  | . 20.000 |  |
|  | 195,000 | 104,008 | 205. | 175 | 143. | 42 270,000 | 0 171,065 |

PEMBERTON HATCHERY

| - | Kamloops trout eyed eggs | Kamloops trout fry | Sockeye salmon eyed eggs | Sockeye salmon fry |
| :---: | :---: | :---: | :---: | :---: |
| Anderson lake. |  |  |  | 816,000 |
| Gates lake. |  |  |  | 1,360,000 |
| Birkenhead river. |  |  |  | 17,849,000 |
| Francois lakeNadina river. |  |  | 005,000 |  |
| Fraser river- |  |  | ,005,000 |  |
| Lac la Hache. | 14,000 |  |  |  |
| Garibaldi lake ( 55 miles southwest of Pemberton hatchery). | 14,000 $\mathbf{5 , 0 0 0}$ |  |  |  |
| Howe SoundPhantom lake (short distance from town of Britannia Beach) | 5,000 | 3, 000 |  |  |
| Lillooet lake- |  | 3,000 |  |  |
| Adie lake. . |  |  |  | 500,000 |
| Alta lake. |  | 20,600 |  | 50,00 |
| Quesnel districtHorsefly river. |  |  | 3,003,000 |  |
|  | 19,000 | 23,600 | 8,008,000 | 20,525,000 |

Total distribution
.28,575,600
PENASK LAKE HATCHERY


Total distribution.
200,975
PITT LAKE HATCHERY


Total distribution
4,865,173

RIVERS INLET HATCHERY


Total distribution
$.20,068,786$

STUART LAKE HATCHERY


## SUMMERLAND HATCHERY

|  | Whitefish eyed eggs | Whitefish fry |
| :---: | :---: | :---: |
| Okanagan River- |  |  |
| Okanagan lake. | 100,000 | 820,000 |
| Kelowna... |  | 400,000 |
| North side of lake |  | 2,000,000 |
| Bear creek.... |  | 300,000 |
| Peachland......... |  | 280,000 |
| South side of lake. |  | 300,000 |
| Trepanier........ |  | 300,000 280,000 |
|  | 100,000 | 4,680,000 |

Total distribution
$4,780,000$

## APPENDIX IV

## SCALIOP INVESTIGATIONS

During 1928 an examination of Mahone bay, Nova Scotia, to ascertain the condition of the scallop beds was made by Mr. Andrew Halkett, Zoologist of the Fisheries Branch, who also carried on exploratory work at Country harbour and Isaac's harbour, Nova Scotia, and off the northwestern part of Prince county, Prince Edward Island. Investigation of a report of the presence of scallops in Minas basin, Nova Scotia, was made by an officer of the Branch, but virtually no evidence to uphold the report was found.

At Mahone bay, Mr. Halkett reported, improvement in the condition of the scallop is steadily gaining. This does not imply that when the entire bay is held in view there is an improvement distinctly visible but there are spots, he reported, where the scallop resource is manifestly recovering, and, notably, spots that made up important fishing areas before the scallop became depleted in these waters. The recovery is slowly extending eastwardly and "in reality it is in general gaining over the entire bay ".

At the Country harbour-Isaac's harbour territory dragging was carried on for several days under Mr. Halkett's direction. Very few scallops were obtained and Mr. Halkett reported that the investigation showed no scallop resources of any importance.

The investigation in the gulf of St. Lawrence off Prince county, P.E.I., which augmented a preliminary exploration made in 1927, extended over the period from August 24 to October 2 and established that the best beds in the waters explored are situated off the coast between cape Kildare and Alberton. There are also beds off the coast from Tignish where scallops are obtainable in fair quantity. As a result, Mr. Halkett reported, boats must go off shore from four to seven miles before scallops can be obtained in appreciable numbers. Dragging was done for a total distance of 32,100 yards during the investigation, though operations were hindered by much stormy weather. All told, 569 scallops were obtained in these test draggings. None of them were as large as some which have been found in Mahone bay and other Maritime Province watersonly two of them measured as much as $5 \frac{1}{2}$ inches-but a catch brought ashore by commercial fishermen at the opening of the season in October were found by Mr. Halkett to be as fine a lot of scallops as had ever come under his notice. As to spawning; Mr. Halkett found by his investigation that in these waters, as in Mahone bay and elsewhere, scallop spawning occurs in September.

On page 211 is a map on which the draggings done in this investigation are indicated as well as their respective results in catch.

The arrows indicate where draggings were made. The numbers at the heads of the arrows show the sequence in which the draggings took place, and the numbers on the shafts of the arrows show how many scallops were obtained by each dragging. Save in the case of No. 1, No. 7, and No. 8, respectively, the drag was 900 yards in each instance. In the case of No. 1 the distance dragged was 300 yards, No. 7 dragging and No. 8 were each 600 yards.


Plan of the northwestern extremity of Prince County, P.E.I., with the adjacent part of the Gulf of St. Lawrence where exploratory work in locating scallop beds was engaged in from August 24 th to October 2nd, 1928.

## APPENDIX V

## REPORT OF DAVID R. DODGE CONCERNING OYS'TER CULTURE IN PRINCE EDWARD ISLAND

These beds (that is, beds in the area including Bideford river, Grand river, and Richmond bay) are very well located and could be put in shape to yield wonderful crops of oysters, as the oysters seem to grow extraordinarily rapidly in these river beds; in. fact it looks to me the greatest need of these oyster grounds is proper cultivation methods. The above-mentioned grounds, with proper methods, could be made to yield almost unlimited amounts of oysters.

There are a large number of acres in the vicinity of Richmond bay that I sounded out, and some which I staked and worked, and this ground I found to be hard and level. There are also large areas of oyster ground from Oyster creek along the shore and at Beach point all the way to Curtain island. I staked and worked with the dredges two pieces of above 120 acres and one of 20 acres at Curtain island. Part of this ground is of very fine quality, and there is a pari of it that was coated over with oyster shells. There seemed to be a coat of about four or five inches deep on one piece of sixty acres, which shells were caught with the Ostrea and put on the docks at lot No. 14 and Malpeque; 1,100 bushels were taken off the dock at lot No. 14 for spawn collecting purposes. These 1,100 bushels were planted at the narrows, at Indian island, Grand river (upper bridge), the Gillis point bridge and above Southwest bridge; and also at below the bend at Grand river near Southwest bridge. On the shells planted above the Southwest bridge an excellent set was obtained. Some of the shells had as high as sixty young oysters on them, which grew exceedingly well, and looked to be excellent. I transplanted these sets from above the Southwest bridge on to a piece of ground I had staked for them at Gillis point. The depth of the water there was six and one-half feet at low tide, and this location appeared to me to be a perfect locality to "winter" these young oysters. The oysters that were bought were planted beside the sets already mentioned at Gillis point, inshore, and south of the same piece, which is of the same depth of water. There were two lots of these purchased oysters; one of seventy barrels from Mount Stewart and one of thirty barrels from Mr. Noyes, the latter being two-year-olds. I looked all around Richmond bay and the rivers and inlets nearby, and Gillis point ground appeared the best locality obtainable.

There is a large tract of hard bottom in about twelve feet of. water all along the shore near Bendix cove. There is one long reef of rocks running nearly through this ground. I think that within three years of proper cultivation and care all of this ground could be made to yield fine crops, as it all seems to be naturally adapted to oyster growing. The rivers would produce much larger crops per acre than the bay, as the rivers would grow the oysters much faster.

With the spawners now on hand, there should be a splendid set on all the shells now on the docks at Grand river and Malpeque, as they will be in perfect condition for another season.

The real needs are a proper oyster boat and a good-sized power tender to carry shells and seed up and down the rivers and creeks. This oyster boai should be about fifty feet in length and be equipped with a fifty-horsepower gasolene engine and not draw over four and one-half feet of water, which would permit operation on all the small beds in the rivers, which is now impossible with the Ostrea. A boat of this description would pay for itself in one season, from the proceeds gained by the increase of growth due to transplanting, for which no provision is made at present.

These bays and rivers have such nice clear, pure water that they should raise a quality of oysters that would demand the very highest market price.

## APPENDIX VI

## REPORT OF C. BRUCE, A.M.E.I.C., FISHERIES ENGINEER

Under the classification "Clearing Rivers and Building Fishways" the policy of the department to extend this work as opportunity and conditions permitted was continued throughout the year. Gratifying results were apparent in many instances where work had previously been done, possibly the outstanding example of this being the Mersey river in Nova Scotia. Fishways were installed in five dams on this river in 1923 to overcome obstructions which had prevented the ascent of fish. During the season of 1928 the catch by anglers exceeded 1,600 salmon, and reports from officers of the department stated that during the summer there were large numbers in the river.

The development of rivers throughout Canada for hydro-electric and other utilities is assuming much larger proportions. The centralization of such developments for the purpose of providing large blocks of power, which may be distributed to supply extensive districts, has led to the construction of dams much greater in height than was formerly the case. Many of these developments provide problems in connection with the ascent of fish over the dams as well as the adequate protection for their descent to the sea which have yet; to be solved.

A general inspection covering the works contemplated during the season was made and the following were undertaken:-

NOVA SCOTMA
Barrington River, Shelburne County.-Screens were installed at the outlets of the tailrace channels from the woollen mill and electric lighting dams to prevent the ascent of salmon and direct them into the main river channel where they could ascend the fishways.

Roseway River, Shelburne County.-Fishways in the first three dams from the mouth of the river were repaired and enlarged.

Clyde River, Shelburne County.-The fishway at the Queens dam was repaired, and at several points between the head of tide and this dam, a distance of about one mile, where shallow bars occurred, channels were opened to permit the passage of fish during low stages of water in the river.

Green Harbour River, Shelburne County.-Work in connection with deepening channels over shallow portions of the river bed to facilitate the ascent of salmon was completed during low water in the summer.

Broad River, Queens County.-The fishway in the dam at the mouth of the river was enlarged and improved.

Mersey River, Queens County.-Due to a greater usage of water by the power plant operating for electric lighting, conditions at the fishway in the dam connected therewith became unsuitable for the passage of salmon, and it was necessary to enlarge and extend it to meet this condition. Wire fencing was erected around three fishways to prevent access thereto by poachers.

Lequille River, Anpapolis County.-A wire screening was placed across the forebay of the Town of Annapolis Electric Power plant to prevent the destruction of young salmon when descending the river.

Nictaux River, Annapoiis County.--The old wooden fishway in the C. S. Roger's dam, which was only partly effective, was replaced by a modern concrete fishway. The work was done by contract.

Porters Lake, Halifax County.-The outlet of this lake, which is directly into the ocean, is subject to filling in by heavy storms, thereby preventing the entrance of smelts and gaspereaux, which provide a remunerative fishery. The channel became blocked during the summer and it was necessary to provide an opening.

Ship Harbour River, Halifax County.-A concrete fishway was built in the John Lewis dam near the mouth of the river.

Osier River, Halifax County:-Designs were furnished to Messrs. Hubley and McDonald , who built a fishway in their dam on this river.

Shinimicas River, Cumberland County.-A fishway was built in the John Smith dam on this river, and an opening made in an old unused dam. Evidence was secured that salmon ascended the river during the fall run.

Little Salmon River, Halifax County.-Designs were furnished to the owner, J. C. Shaw, for a fishway in his dam on this river.

Moose River, Colchester County.-Designs were furnished for a fishway in a dam to be built on this river.

Morrisons Pond, Victoria County.-A passage for fish was opened to the Bras d'Or lakes.

Trout Brook, Inverness County.-A channel was opened through the bar at the mouth of the brook to facilitate the passage of trout.

In several instances where obstructions had formed in streams which prevented the passage of trout and salmon they were removed, the following streams being dealt with: McInnes brook, McLennans brook, Inverness county; and Murphy brook, McKinnon brook, Richmond county.

## NEW BRUNSWICK

Magaguadavic River, Charlotte County.-A contract was awarded for the construction of a fishway over the falls at the mouth of the river and work proceeded throughout the summer. The fishway was advanced to approximately seventy-five per cent of completion when owing to high water it was necessary to abandon it until the following year.

Mispec River, St. John County.-The construction of a fishway was undertaken to connect with the gate opening through a large stone dam at the mouth of the river.

Becaguimac River, Carleton County.-A fishway was built in the John Sayre dam on this river to facilitate the ascent of salmon.

## PRINCE EDTYARD ISLAND

Morell River, Kings County.-The fishway in Laird's dam on this river was repaired to make it more effective.

## MANITOBA

St. Andrews Locks, Red River-Designs were prepared and submitted to the Department of Public Works for modifications to the partitions of the fishway, in the dam at the locks.

Whitemud River.-Designs were prepared and submitted to the provincial Public Works Department for a fishway in the Galloway dam on this river.

Moose Jaw Creek.-Designs were prepared for fishways for the Pasqua dam owned by the Canadian Pacific Railway and for the high-pressure dam owned by the city of Moose Jaw, and submitted to the owners for execution of the works.

## ALBERTA

Beaver Creek.-A design was prepared for a fishway in a dam on this creek owned by Johnson Brothers.

## BRITISH COLUMBIA

Work removing obstructions to the ascent of salmon under the direct supervision of the engineers was performed on the following streams: Black creek, North bay and Cecilia creeks, Alouette river, Big Qualicum river, Marble creek, Salmon river (lower mainland), Salmon creek (Babine lake), 103rd creek, Oyster creek, Wilson creek, Rupert Arm creek (Main river), Bulkley river.

This work in general embraced the removal of log jams and rock obstruetions, which either hindered and delayed the passage of salmon to their spawning grounds or else entirely prevented such passage.

In addition to the above, minor obstructions were removed under the supervision of the local overseers. In these instances, where the expenditure is only small, it is the custom, unless engineering advice is necessary, to instruct the local overseer or guardian to do the work, thus obviating considerable expense for travelling. The following streams received attention: Gates lake and creek, Johnson river, Koeye river, Deer creek, Little river, Birkenhead river, Hobarten river (Nitinat Arm), Bush creek, Bear creek, Blaney creek, Koprino river, Dena river, Royston creek, Carrington bay, Johnson creek, Stoney creek, Sucker creek, Nicomekl river, Sidney Inlet creek, Esperanza Inlet creek and Kis-suckkis creek.

Stamp Falls Fishway.-During the construction of this fishway the previous year the water continued so high that the lowest step and pool could not be completed. The work was successfully carried out and the fishway entirely cleared of accumulations of rock which had been carried in by winter freshets.

Solloway Creek.-Designs were prepared for a small fishway in a timber dam.

Under the classification "Fish Culture" the following works were undertaken during the year:-

## NOVA SCOTIA

Yarmouth Hatchery.-Designs were prepared and a contract awarded for the construction of a complete hatchery establishment at the outlet of lake George, Yarmouth county.

The hatchery building is seventy-four and one-half feet long by thirtyeight feet wide, and provides accommodation for forty standard batching troughs each sixteen feet long, as well as sixteen floor tanks each fourten feet long by twenty-four inches wide. Provision is made as well for two living rooms for the staff, an office, feed room, ice storage, coal room and storage space for equipment.

The dwelling is thirty feet square, containing seven rooms and bathroom, and a double garage is provided.

The rearing pond system consists of twelve ponds, each 150 feet long by 5 feet wide, constructed with reinforced concrete side walls and gravel bottoms.

The water supply is provided by a reinforced concrete dam at the outlet of lake George, with an eight-inch wood stave pipe to the hatchery and a twelveinch pipe to the rearing pond system.

The dwelling is equipped with sanitary plumbing, heated with a hot-air furnace, and all buildings throughout are lighted with electricity developed by a gasolene-operated plant.

Antigonish Hatchery.-A hatchery establishment similar to that provided in Yarmouth county was built in Antigonish county at Fraser's Mills on the South river.

The rearing pond system consists of twelve ponds, each 115 feet long by 5 feet wide, constructed with concrete side walls and gravel bottoms.

The water supply is obtained from the South river, where a concrete dam, equipped with a fishway, was built. A twenty-inch wood stave pipe conducts the water from the dam to the hatchery and rearing pond systen.

Margaree Hatchery.-A new ten-inch wood stave pipe, eleven hundred feet long, was laid from the water supply to the hatchery to replace two six-inch wrought iron pipes, which had become so corroded that they would not provide an adequate supply. The dam for the water supply, which had been seriously damaged by freshets, was thoroughly repaired.

Bedford Hatchery.-A new ten-inch wood stave pipe was laid from the water supply in the Sackville river to the hatchery to augment the volume required.

## NEW BRUNSWICK

Florenceville Hatchery.-The remainder of the rearing pond system, uncompleted last year, consisting of three ponds each 126 feet long by 5 feet wide, was built. This system now contains eight ponds of the above dimensions.

## MIANITOBA

Swan Creek Hatchery, Lake Manitoba.-Sites for a hatchery for the propagation of pickerel having been inspected, the department approved of one at Swan creek, an inlet on the easterly side of lake Manitoba, near the town of Lundar.

Designs were subsequently prepared and a contract for the construction of a hatchery completed. The building is fifty-seven and one-half feet long by thirty-one and one-half feet wide, containing two batteries providing a capacity of 312 hatching jars. Living accommodation for the staff consists of three rooms. A steam boiler and duplex pump were installed to provide water for the operation of the hatchery.

## SASKATCHEWAN

Qu'Appelle Hatchery.-In order to provide for the propagation of trout at this hatchery, a portion of the whitefish battery and the inside floor tank were removed. In the space gained thereby twenty-four standard dimension troughs, each ten feet long, were installed. Two whitefish fry tanks, each ten feet by twelve feet, were built outside the hatchery to take the place of the floor tank.

An addition eight feet by twenty-two feet was built on the garage building to provide stable room.

## alberta

Lesser Slave Lake Hatchery.-The contract for this hatchery was completed early in the year, after which the installation of machinery was undertaken, the plant consisting of two steam boilers and two duplex pumps arranged so that either boiler may be used with either pump.

Owing to the difficulty that has been met with in northern climates in protecting the intake pipe from frost, which has on some occasions resulted in the pipe being broken even when laid to a considerable depth, a method designed to prevent this was adopted.

The intake, which is a six-inch wrought iron pipe, about 400 feet long, was laid from the hatchery encased inside a twelve-inch diameter wire wound wood stave pipe for a distance of 300 feet, or sufficient so that the outer end of the casing would be submerged in the lake below ice level, the land portion of the pipe being placed in excavation. The waste water from the operation of the hatchery is discharged through the wooden easing so that the intake is continuously surrounded with water slightly above freezing temperature due to its circulation through the hatchery. In the event that frost penetrates to the pipe, any movement which may occur is taken up by the casing, thus preventing a rupture of the intake.

The heating system for the hatchery and apartments on the second floor was installed, the entire system being supplied by the exhaust steam from the pumps, with an emergency connection for live steam.

A wharf, 400 feet long, was built out from the shore of the lake, consisting of three sections, the first or shore section being cribwork, 110 feet long by 20 feet wide, the second section pile trestle work with decking for a length of 220 feet, and the outer section cribwork seventy feet long by twenty feet wide, with a twenty-foot by twenty-foot ell at end to afford protection for the hatchery boats. A well was provided in the outer section from which the water supply for the hatchery is pumped, thus affording a measure of filtration.

Designs were prepared and contracts completed for two gasolene launches for use at the hatchery, the larger being forty-five feet long and the smaller thirty feet long. The smaller boat is fitted with tunnel stern and raising propeller for use in shallow water and in connection with nets.

## BRITISHE COLUMBIA

Lakelse Lake Hatchery.-The spawning fence at Williams creek, badly sccured by winter freshets, was completely replaced and the bank of the river adjacent protected with cribbing.

Pemberton Hatchery.-Part of the foundation and floor of the hatchery were renewed.

Babine Lake Hatchery.-The foundation and lower logs of the mess house and outhouse were renewed and the interior of the mess house lined with threeply cottonwood panelling.

Stuart Lake Hatchery.-The entire roof of this establishment was reshingled.

Harrison Lake Hatchery.-New posts were set to prevent the collapse of the hatchery building which, owing to rotting of foundations, was in a precarious condition. Estimates were also completed for the complete reconditioning of the hatchery. Later, in order to accommodate surplus eggs, the hatchery was enquipped with fifty new troughs, a head tank and water supply.

Cowichan Lake Hatchery.-A new boat-house, measuring twenty feet by thirty feet, was built.

In addition to repair work, surveys were made for the purpose of securing the necessary data in connection with the establishment of two proposed eyeing stations: one at Blackwater creek, Pemberton district, and one at Penask lake, Okanagan district.

Taft, B.C.-Plans were prepared and the construction of three fry ponds undertaken under the supervision of the engineers.

The ponds each measure sixty feet long, sixteen feet wide, and three feet deep; with a centre partition forty feet long, designed so that the water enters at the upper end and after flowing the length of the pond on one side of the partition, returns to a discharge at the same end on the other side of the partition.

The ponds are built of two-inch fir, with slip tongue joints, with the requisite sills and posts.

The water for the ponds is obtained from the supply of an abandoned mill site at Taft, permission having been obtained to connect with the old water mains from the owners and from the Canadian Pacific Railway Company, who have prior rights to the water system for tank purposes.

## BIOLOGICAL STATIONS

Departure Bay, B.C.-Two salt-water tanks were installed, constructed of heavy galvanized iron wire with galvanized angle iron frames set between $\log$ floats and arranged to rise and fall with the tide between creosoted piles.

A fire protection system consisting of a gasoline pump, pipe lines and hydrants to the various buildings was installed.

A hot water heating system was installed in the old biological building.
Designs were prepared and contract completed for a new residence building. The building is laid out forming an ell, the main part measuring fortytwo feet by forty-six feet, and the wing fifty and one-half feet by twenty-five feet.

The basement under main building contains a large dining room, furnace room and various storage rooms. The main floor provides the several living rooms and the upper floor is entirely bedrooms. The wing can be entirely closed off in the winter when assistance at the station is reduced to the minimum. The building is heated with hot water, lighted with electricity and piped throughout for fresh water.

Marine Laboratory, Eastern Passage, N.S.-A contract was awarded and the construction of the building in connection with this establishment completed.

## INVESTIGATIONS

Hell's Gate and Bridge River Rapids, Fraser River.-The investigations which had been carried on at these points by the Board of Engineers, appointed for the purpose, have, for the time being, been completed and reports covering both situations were submitted. Daily reading of the water heights are being maintained at the two gauges at Hell's Gate.

Shuswap River Falls.-Investigation was made into the feasibility of providing a fishway for a clam seventy feet in height at this point. As a result of these investigations it was ascertained that the passage of salmon could not be assured and under the circumstances it was recommended that the construction of the fishway be not required.

Nimpkish River.-Proposals in connection with the development of electrical energy on this stream by the construction of a dam 200 feet high were given careful study, as the importance of the fisheries at this point demand that the question of a fishway be given every consideration. The actual construction of the project has not yet been commenced.

Investigations were made of obstructions on the Yakoun river and Queens cove, and of the falls on the Buckley river, with a view to remedying unfavourable conditions for the ascent of salmon.

Dexter P. Cooper Project.-Investigation was made into the probable effects on the fisheries of the proposed installation of dams across the mouth of Passamaquoddy bay and report submitted to the sub-committee of the North American Committee on Fisheries Investigations.

## GENERAL

Considerable numbers of plans for equipment and maps relating to the fisheries were prepared during the year.

## APPENDIX No. 7

## FISHERIES

FINANCIAL STATEMENT, 1928-29

| Vote No. | Service | Appropriation | Expenditure |
| :---: | :---: | :---: | :---: |
|  | (Salaries and disbursements, |  | §. cts. |
| 238 | ; Fisheries Patrol Service. | 950,060 00 | 949,922 70 |
|  | Fisheries Protection Service. |  |  |
| 239 | Building fishways, etc.... | 20,000 00 | $\checkmark 19,27546$ |
| 240 and 487 | Legal and incidental expenses............. | 6,00000 | : 5,20395 |
| 241 | Conservation and development of deep sea fisheries. | 130,000 00 | 113,582 73 |
| 242 | Fisheries Intelligence Bureau. . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 1,00000 | \% 817432 |
| 243 $-\quad 244$ |  | 30,000 00 | - 28,06967 |
| 245 and 491 |  | 442,000 31,500 00 | 434,47158 36,41929 |
| 246 and 488 | Marine Biological Board . . . . . . . . . . . . . . | 200,100 00 | 200, 100:00 |
| 489 | Oyster culture. | 10,000 00 | 9,921 34 |
| 490 | Hair seal bounty................................................... . . . | 25,000 00 | 24,997 00 |
| $\begin{aligned} & 16 \text { and } 414 \\ & \text { stationary } \end{aligned}$ |  | 1,845,600 00 | 1,822,707 14 |
|  | Civil Government salaries. | 121,080 00 | 100,69404 |
|  | Contingencies. | 25,000 00 | 24,968 85 |
|  | Fishing bounty | 160,000 00 | 151,411 20 |
|  |  | 2,151,680.00 | 2,099,781 23 |
|  | MiscellaneousGratuities. |  | 44000 |
|  |  |  | 2,100,221 23 |

STATEMENT OF REVENUE RECEIVED DURING FISCAL YEAR 1928-29.


Refund of fees received prior to 1928-1920.

| $. \$ 1,12010$ |
| ---: |
| .$\quad 060$ |
|  |
|  |
|  |
|  |
|  |

DETAILED STATEMENT OF SALARIES AND DISBURSEMENTS OF FISHERY OFFICERS

| Provinces | Totals | Inspectors, Overscers and Wardens |  | Allowances |  |  | $\begin{gathered} \text { Gasolene } \\ \text { and } \\ \text { oil } \end{gathered}$ | Special Guardians |  | Sundry |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Salaries | Disbursements | Auto | Boat | Horse |  | Wages | Expense |  |
| Nova ScotiaGeneral. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
|  |  | 13,434 19 | 89086 |  |  |  |  |  |  | 2,612 05 |
| Nova ${ }_{\text {«c }}$ | 38,881 24 | 16,005 00 | 2,699 13 | 3,20000 | 75000 | 15432 |  | 15,935 04 | 453 | 2, 9152 |
|  | 39,010 48 | 19,115 48 | 4,514 04 | 4,149 46 | 40000 |  | 17777 | 9,648 50 | 68947 | 31576 |
| Halifax School. | 39,968 81 | 20,228 14 | 4,082 85 | 4,000 00 | 15000 | 7500 |  | 11,248 75 | 8065 | $103 \cdot 42$ |
|  |  |  |  |  |  |  |  |  |  |  |
|  | 136,252 02 | 68,782' 81 | 13,641 27 | 11,349 46 | 1,300 00 | 22932 | 17777 | 36,833 19 | 81545 | 3,122 75 |
| Prince Edward Island- <br> Prince Edward Island No. 1.... <br> No. 2.... | 15,540 52 | 9,960 00 | 2,153 71 | 1,748 50 |  |  |  | 1,472 70 | 1000 | 19561 |
|  | 4,089 61 | 1,500 00 | 52757 |  | 15000 |  | 12294 | 1,266 00 | 49243 | 3067 |
|  | 19,630 13 | 11,460 00 | 2,681 28 | 1,748 50 | 15000 |  | 12294 | 2,738 70 | 50243 | 22628 |
| New Brunswick- <br> New Brunswick |  |  | 1,733 85 | 1,181 10 | 30614 |  | 16162 | 5,11750 | 8288 | 9973 |
|  | 42,521 98 | 16,271 61 | 1,30116 | 3,715 00 | 1,150 20 |  | 74967 | 15,969 70 | 88714 | 47750 |
|  | .25,792 51 | 10,067 07 | 1,51670 | 90000 | 10875 |  | 15089 | 12,928 06 |  | 61.04 |
|  | 88,103 48 | 37,444 85 | 6,551 71 | 5,796 10 | 1,625 09 |  | 1,062 18 | 34,015 26 | 97002 | 03827 |
| Quebec............................... | 12894 |  | 12894 |  | ............ |  | ............ |  |  |  |
| Manitoba.............................. | 21,510 94 | 9,874 00 | 3,667 15 | 60000 | 60000 | 87500 | 24798 | 2,878 19 | 2,597 97 | 17065 |
| Saskatchewan........................ | 21,891 59 | 11,141 61 | 3,850 95 | 1,200 00 | 16875 | 75000 |  | 1,843 75 | 2,777 88 | 15265 |
| Alberta............................... | 23,768 30 | 11,079 19 | 4,290 93 | 1,275 00 | 40000 | 60000 | 14954 | 3,098 00 | 2,180 65 | 9499 |
| British ColumbiaGeneral. | 27,875 39 | 21,080 00 | 1,892 11 |  |  |  |  |  |  | 4,923 28 |
| British Columbia | 43,87479 | 11,407 00 | 9,511 72 |  |  |  |  | 11,670 37 | 9,587 74 | 1,697 96 |
|  | 35,009 05 | 13,865 31 | 7,409 09 |  |  |  |  | 8,67140 | 62772 325 | 4;435 53 |
|  | 28,703 28 | 15,630 00 | 7,948 35 |  |  |  |  | 3,274 21 | 32519 | 1,525 53 |
|  | 135,462 51 | 61,962 31 | 26,761 27 |  | ............ | ............. |  | 23,615 98 | 10,540 65 | 12,582 30 |
| General Account.. | ..13,105 16 |  |  |  |  |  |  |  |  | 13,105 16 |

SUMMARY

| Provinces | Totals | Inspectors, Overseers and Wardens |  | Allowances |  |  | Gasolene and oil | Special Guardians |  | Sundry |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Salaries | Disbursements | Nuto | Boat | . Horse |  | Wages | Expense |  |
| $\cdots$ | \$ cts. | \$ cts. | \$ cts. | S cts. | S . cts. | \$ cts. | S cts. | \$ . cts. | \$ ets. | \$ cts. |
| Nova Scotia. | 136,252 02 | 68,782 81 | 13,041 27 | 11,340 46 | 1,300 00 | 22932 | 17777 | 36,833 19 | 81545 | 3,122 75 |
| Prince Edward Island. | 19,630 13 | 11,460 00 | 2,081 28 | 1,748 50 | 15000 |  | 12294 | 2,735 70 | 50243 | 22023 |
| New Brunswick. | 88,103 48 | 37,444 85 | 6,551 71 | 5,70010 | 1,625 09 |  | 1,062 18 | 34,015 20 | 97002 | 63827 |
| Quebec... | 12804 |  | 12894 |  |  |  |  |  |  |  |
| Mnnitoba. | 21,510 94 | 9,874 00 | 3,667 15 | 60000 | 60000 | 87500 | 24708 | 2,878 10 | 2,597 9 - | - 170 i |
| Saskatchewan. | 21,891 59 | 11,14161 | 3,856 95 | 1,200 00 | 16875 | 75000 |  | 1,843 $75^{\circ}$ | 2,777 88 | 15205 |
| Alberta.. | 23,768 30 | 11,679 19 | 4,290 93 | 1,275 00 | 40000 | 60000 | 14054 | 3,098.00 | 2,180 65 | 9499 |
| British Columbia. | 135,462 51 | 61,962 31 | 26,761 27 |  |  |  |  | 23,615 98 | 10,540.65. | 12,582 30 |
| General Account | 13,105 16 |  |  |  |  |  |  |  |  | 13.10516 |
| Totals. | 450.85307 | 212,344 77 | 61.57950 | 21,960 06 | 4.24384 | 2,454 32 | 1,760 41 | 105,023 07 | 20.38505 | 30,093 05 |

[^7]EXPENDITURE 1928-29
Detailed statement of fisheries patrol service

| Establishments and Accounts | Total Dr. | - | Pay-list | Board or Provisions | - Tuel | Repairs |  | Supplies |  |  | Clothing | Sundry |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | Hull | Engine | Engine | Deck | Stewards |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Mildred McCoil | 6,012 43 | 11,054 01 | 4,480 97 |  | 50607 | 19775 | 1,2795 | 31505 | 14512 | 10656 | $\begin{array}{lll}51 & 11\end{array}$ | 18185 |
| Lulu T. (Chartered)......... | 1,752 20 | 1,752 20 | 53269 |  | 10763 |  |  | 1391. |  | 120 |  | 1,096 77 |
|  | 12,806 21 |  | 7,824 88 | 15000 | 1,053 61 | 33849 | 1,231 68 | 46892 | 21405 | 21011 | 6035 | 1,40264 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| Chartered Boats |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| Ostrea... | 8,260 54 |  | 65701 | 22070 | 80308 | 3,191 19 | 2,165 53 | 36328 | 18431 | 2944 | 5310 | 59290 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| Spy.... | 87763 | 14,677 12 | 65806 |  |  |  |  |  |  |  |  | 21957 |
|  | 16,212 20 |  | 6,103 50 | 22070 | 1,048 45 | 3,265 33 | 2,108 71 | 40910 | 18431 | 4374 | 5310 | 2,595 26 |
| New Brunswick- |  |  |  |  |  |  |  |  |  |  |  |  |
| Phalarope.. | 6,590 33 | 11,543 26 | 5,190 00 |  | 77350 |  | 9436 | 35413 | 6420 | 7355 | 2559 | 1500 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lloyd George. | 31476 1,28628 |  | 21500 |  | 880 180 49 |  |  |  |  |  | 1596 | 7500 80450 |
|  | 1,065 77 | 5,660 91 | 1,532 00 |  | 50404 |  |  | 1691 | 232 |  |  | 2,010 50 |
| - Pontiac | 17,210 17 |  | 10,231 00 |  | 1,716 40 | 1752 | 1,003 45 | 90077 | 12410 | 12495 | 4155 | 3,050 43 |
| Manitoba- |  |  |  |  |  |  |  |  |  |  |  |  |
| Britisf Columbia- |  |  |  |  |  |  |  |  |  |  |  |  |
| Poplar Island Warehouse. | 2,189 76 | 2,189 76 | 1,306 60 | 50. | 8785 | 1965 | 1080 | 19401 |  | 1820 |  | -552 59 |






|  |  |
| :---: | :---: |
| 43667 |  |
| 50000 | . . . . . . . |
| 49677 |  |
| 14194 |  |
| 1,20000 |  |
| 90000 |  |
| 54000 |  |
| 25000 |  |
| 90000 | 100 |
| 1,320 00 |  |
| 32088 |  |
| 17000 |  |
| 22581 |  |
| 49677 |  |
| 18333 |  |
| 32000 |  |
| 15667 |  |
| 40000 |  |
| 24333 |  |
| 21000 |  |
| - 37043 |  |
| 55000 |  |
| 31667 |  |
| 32903 |  |
| 30161 |  |
| 38129 |  |
| 16333 |  |
| 37010 |  |
| 1,25800 |  |
| 84000 |  |
| 11000 |  |
| 10000 |  |
| 11828 |  |
| 47000 |  |
| 30500 |  |
| 57000 |  |
| 1,270 05 |  |
| 17333 |  |
| 20258 |  |
| 25161 |  |
| 17000 |  |
| 33226 |  |
| 42742 |  |
| 1,200 00 |  |




|  |  |  | . . . . . . . . . | 21200 |
| :---: | :---: | :---: | :---: | :---: |
| 760 |  |  |  | 13500 |
| 3080 |  |  |  | 15425 |
| 134 |  |  |  |  |
| 1680 |  |  |  | 15400 |
|  |  |  |  | 5500 |
| 712 |  |  |  | 6500 |
| 939 | 218 |  |  | 1,056 35 |
| 4702 |  |  |  | 43020 |
| 1650 |  | 400 |  | 16600 |
| 1125 |  |  |  | 7700 |
| 4414 |  | 440 |  | 32450 |
| 4718 |  |  |  | 67625 |
| 5815 |  | 393 |  | 20000 |
| 428 |  | 156 |  | 5300 |
| 425 |  |  |  | 7650 |
| 600 |  | 100 |  | 15000 |
| 445 |  |  |  | 5700 |
| 895 |  | 100 |  | 9400 |
| 820 |  |  |  | 4700 |
| 4670 |  | 150 |  | 30950 |
| 491 |  |  |  | 11200 |
|  |  |  |  | 6270 |
| 1592 |  | 162 |  | 11050 |
| 2400 |  |  |  | 17000 |
| 480 |  | 200 |  |  |
| 879 |  | 203 |  | 9800 |
| 310 |  |  |  | 10300 |
| 4155 |  | 324 |  | 18100 |
| 250 |  |  |  | 11200 |
| 1806 |  |  |  | 5000 |
| 1041 |  |  |  | 11400 |
| 1223 |  | 553 |  | 87160 |
| 5755 |  | 612 |  | 92310 |
| 463 |  | 1.56 |  | 3500 |
|  |  |  |  | 3000 |
| 480 |  |  |  | 14475 |
| 3443 |  | 324 |  | 18700 |
| 1035 |  | 084 |  | 17400 |
| 1811 |  |  |  | 42180 |
| 297 |  |  |  | 5300 |
| 1140 |  | 400 |  | 7900 7800 |
| 1179 |  |  |  | 7800 |
| 504 |  |  |  | 5100 18400 |
| 858 3350 |  |  |  | 18400 13300 |
| 3330 |  |  |  | 13300 35895 |
| 417 |  | 382 | . . ${ }^{\text {. . . . . . }}$ | 35895 |

DETAILED STATEMENT OF FISHERIES PATROL SERVICE—Ooncluded


SUMMARY

| Nova Scotia | 12,806 21 |  | 7,824 88 | 150 | 1,053 61 | 33849 | 1,231 66 | 46892 | 21405 | 21011 | 6035 | 1,402 64 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Prince Edward Island | 16,212 29 |  | 6,193 59 | 22070 | 1,048 45 | 3,265 33 | 2,198 71 | 40910 | 18431 | 4374 | 5310 | 2,595 26 |
| New Brunswick | 17,210 17 |  | 10,231 00 |  | 1,716 40 | 1752 | 1,003 45 | 90077 | 12410 | 12495 | 4155 | 3,050 43 |
| Manitoba | 22, 68003 |  | 10,158 08 | 2, 92183 | 6,23731 | 77448 | + 7770 | $415 \cdot 87$ | 1, 09129 | 12589 | 69100 | , 186448 |
| British Columbia | 225,170 77 |  | 111,464 73 | 2,942 43 | 20,912 25 | 1,655 40 | $\begin{array}{r}6,98987 \\ 3 \\ \hline 15\end{array}$ | 5,978 28 | 1,120 03 | 2,17106 |  | 71,63246 300 |
|  | 294,085 62 |  | 145,872 28 | 6,086 56 | 30,968 02 | 6,051 22 | 11,504 54 | 8,172 94 | 2,733 78 | 2,675 75 | 1,150 26 | 78,87027 |

DEtailed statement of fisheries protection service


SUMMARY


Expendfrure, 1928-29
DETAILED STATEMENT OF FISH CULTURE

| Hatcheries | Salaries | $\begin{aligned} & \text { Mainten- } \\ & \text { ance } \end{aligned}$ | Total of hatchery | Total of provinces |
| :---: | :---: | :---: | :---: | :---: |
|  | \$ cts. | S cts. | \$ cts. | S cts. |
| Nova Scotia. |  |  |  | 111,139 02 |
| Antigonish. | 36000 | 35,233 08 | 35,593 08 |  |
| Bedford.. | 2,685 00 | 8,107 60 | 10,792 60 |  |
| Lindloff. |  | 94422 | -94422 |  |
| Margaree. | 4,200 00 | 4,73020 | 8,93020 |  |
| Margaree Pond | 27097 | 1,864 08 | 2,135 05 |  |
| Middleton. | 2,376 67 | 4,932 97 | 7,309 64 |  |
| Windsor. | 1,500 00 | 2,113 46 | 3,613 46 |  |
| Yarmouth | 24000 | 41,580 77 | 41,820 77 |  |
| Prince Edward Island- |  |  |  | 4,799 60 |
| Kelly's Pond Hatchery. | 3,060 00 | 1,739 60 | 4,799 60 |  |
| New Brunswick. |  |  |  | 62,034 34 |
| Florenceville | 1,150 00 | 11,414 00 | 12,564 00 |  |
| Grand Falls. | 2,526 13 | 2,618 37 | 5,144 50 |  |
| Miramichi. | 2,820 00 | 3,178 38 | 5,998 38 |  |
| Miramichi Pond |  | 2,145 87 | 2,145 87 |  |
| Nepisiquit...... |  | -847 02 | -847 02 |  |
| New Mills Pond. | 72000 | 3,041 92 | 3,761 92 |  |
| Restigouche. | 2,76000 400 | 3,696 22 47 00 | 6,45647 2600 |  |
| St. Rohn Hatehery | 2,270 00 | 9,910 81 | 12,180 81 | . |
| St. John Pond. |  | 12,668 55 | 12,668 55 |  |
| Tobique. |  | 24082 | 24082 |  |
| Manitoba. |  |  |  | 30,335 78 |
| Dauphin River Spawn Camp |  | 1,677 88 | 1,67788 |  |
| Dauphin River. |  | 29495 | 29495 |  |
| Gull Harbour......... | 2,019 35 | 4,03027 | 6,049 62 |  |
| Swan Creek Hatchery Winnipegosis......... |  | 7,777 38 | 7,777 38 |  |
| Winnipegosis.. | 2,691 67 | 11,844 28 | 14,535 95 |  |
| Saskatchewan. |  |  |  | 8,753 11 |
| Qu'Appelle. | 3,000 00 | 5,753 11 | 8,753 11 |  |
| Alberta. |  |  |  | 68,736 67 |
| Banff...... | 3,240 00 | 5,018 90 | 8,258 90 |  |
| Cold Lake. |  | 1,12509 | 1,125 09 |  |
| Jasper Park....... |  | 50065 | - 50065 |  |
| Lesser Slave Lake | 1,164 84 | 49,120 49 | 50,285 33 |  |
| Spray Lakes. |  | 1, 00253 | 1,00253 .756417 |  |
| Waterton Park. | 60000 | 6,964 17 | -7,064 17 |  |
| British Columbia. |  |  |  | 123,217 69 |
| General.. | 8,225 78 | 2,815 71 | 11,041 49 |  |
| Anderson. | 2,338 87 | 6,802 73 | 9,141 60 |  |
| Babine. | 3,140 22 | 7,419 94 | 10,56016 |  |
| Cowichan. | 3,531 27 | 3,435 14 | 6,966 41 |  |
| Cranbrook Eyeing station. | 45790 | 78340 | 1,24130 |  |
| Cultus. | 2,201 46 | 5,169 17 | 7,370 63 |  |
| Gerrard. | 5935 | 1,872 86 | 1,932 21. |  |
| Harrison. | 50074 | 4,543 15 | 5,043 89 |  |
| Kennedy .................... | 2,918 79 | 4,511 31 | 7,430 10 |  |
| Lloyds Creek Eyeing Station Nelson Eyeing Station....... | 48298 | 1,727 43 | 2,210 41 |  |
| Nelson Eyeing Station.. | 2,218 75 | 3,909 19 | 6,127 94 |  |
| Pemberton................... | 4,98406 | 6,905 57 | 11,889 63 |  |
| Penask Lake Eyeing Station. | 70000 | $\bigcirc 99778$ | 1,697 78 |  |
| Pitt........................ | 1,530 16 | 4,955 88 | 6,486 04 |  |
| Rivers Inlet | 3,615 20 | 7,315 34 | 10,930 54 |  |
| Skeena. | 4,469 22 | 10,601 00 | 15,070 22 |  |
| Stuart........ | 2,171 13 | 5,006 21 | 7,177 34 |  |
| Summerland. | 18755 | 71245 | 90000 |  |
| General Account. | 6,360 00 | 19,095 37 | 25,455 37 | 25,455 37 |
| - | 89,752 06 | 344,719 52 | ............. | 434,471 58 |

## DETAILED STATEMENT OF FISH CULTURE-Concluded

SUMMARY

| Hatcheries' | Salaries | Mainten- ance | Total of hatchery | Total of provinces |
| :---: | :---: | :---: | :---: | :---: |
|  | 8 cts. | \$ cts. | \$ cts. | \$ cts. |
| Nova Scotia.......... | 11,632 64 | 99,506 38 | 111, 13902 |  |
| Prince Edward Island | -3,060 00 | 1,739 60 | -4,799 60 |  |
| New Brunswick. | 12,250 13 | 49,784 21 | 62,034 34 |  |
| Manitoba. | 4,71102 | 25,624 76 | 30,335 78 |  |
| Saskatchewan | 3,000 00 | 5,753 11 | 8,753 11 |  |
| Alberta. | 5,004 84 | 63,731 83 | 68,736 67 |  |
| British Columbia | 43,733 43 | 79,484 26 | 123,217 69 |  |
| General Account. | 6,360 00 | 19,095 37 | 25,455 37 |  |
|  | 8975206 | 344,719 52 | ........... | 434,47158 |

## DETAILED STATEMENT OF CONSERVATION AND DEVELOPMENT OF DEEP SEA FISHERIES, 1928-29

| General Account. | . 5 | - 7,396 98 |
| :---: | :---: | :---: |
| Demonstration building |  | 2,446 51 |
| Destruction hair seals. |  | 70992 |
| Destruction of predatory fish |  | 1200 |
| Marine laboratory |  | 17,300 69 |
| Shell fish. |  | 2264 |
| Scallop investigation. |  | 6,276 99 |
| Technical education. |  | 2,040 69 |
| Transportation of fish (collecting boats) |  |  |
| General Account. | 93279 |  |
| Bickerton-Canso service | 16,081 40 |  |
| Sonora-Halifax service. | 19,624 36 |  |
| Cape Breton service | 19,793 79 |  |
| Lockport-Port Latour service. | 3,135 48 |  |
| Royal Commission. |  | $\begin{aligned} & 59,56782 \\ & 17,80849 \end{aligned}$ |
|  |  | \$ 113,582 73 |

SUMMARY BY PROVINCES FISHERIES EXPENDITURE, 1928-29

| Appropriations | General | Nova Scotia | Prince Edward Island | New Brunswick | Quebec | Manitoba | Saskatchewan | Alberta | British Colum bia | Totals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Salaries and disbursements F.O... | 13,10516 | 136,252 02 | 19,630 13 | 88,103 48 | 12894 | 21,51094 | 21,891 59 | 23,768 30 | 135,462 51 | 459,853 07 |
| Fisheries Patrol Service. | ${ }_{6}^{615}$ | 12,806 21 | 16,212 29 | 17,210 17 |  | 22,680 03 |  |  | 225, 17077 | 294,085 62 |
| Fisheries Protection Service | 11,974 72 | 77,460 53 | 11634 | 2,115 10 |  |  |  |  | 104,317 32 | 195,984 01 |
| Fish culture......... | 25,455 37 | 111,139 02 | 4,799 60 | 62, 03434 |  | 30,335 78 | 8,753 11 | 68,736 67 | 123,217 69 | 434,471 58 |
| Building fishways, etc............ | 450 | 5,287 50 | 1500 | 6,612 08 |  | 115 | 060 | 015 | 7,354 48 | 10,275, 46 |
| Conservation and development of deep sea fisheries. |  | 79,393 42 | 6,29783 |  |  |  |  |  | 72192 | 113,582 73 |
| Fisheries Intelligence Bureau...... | 28466 | 15132 | 19344 | 11400 |  |  |  |  |  | 74342 |
| Hair seal bounty. |  | 11,119 50 | 1,361 50 | 2,478 00 |  |  |  |  | 10,038 00 | 24,997 00 |
| Inspection of pickled fish........ | 34277 | 20,484 94 | 1,710 41 | 1,984 41 |  |  |  |  | 3,547 14 | 28,069 67 |
| International Fisheries Commission (Halibut) | 36,419 29 |  |  |  |  |  |  |  |  |  |
| Legal and incidental expenses..... |  | 41760 |  | 53034 |  |  |  |  | 4,256 01 | 5,203 95 |
| Oyster culture............. |  |  | 9,921 34 |  |  |  |  |  |  | 0,92134 |
| Marine Biological Board. | 200,100 00 |  |  |  |  |  |  |  |  | 200,100 00 |
| Fishing bounty........ |  | 79,077 60 | 9,334 30 | 19,387 80 | 43,611 50 |  |  |  |  | 151,411 20 |
| Totals. | 314,862 18 | 533,589 66 | 69,592 18 | 200,569 72 | 43,740 44 | 74,527 90 | 30,645 30 | 92,505 12 | 614,085 84 | 1,974,118 34 |
| Civil Government Salaries. <br> Contingencies. |  |  |  |  |  |  |  |  |  | $\begin{array}{r} 100,69404 \\ 24 ; 96885 \end{array}$ |
| Gratuities. . |  |  |  |  |  |  |  |  |  | $2,099,78123$ 44000 |
|  |  |  |  |  |  |  |  |  |  | 2,100,221 23 |

## DETAILED STATEMENT OF MARINE BIOLOGICAL BOARD EXPENDITURE, 1928-29



# APPENDIX No. 8 STATEMENT OF EXPENDITURE AND REVENUE, BY PROVINCES, IN FISHERIES SERVICES 1867-1928 UNDER DOMINION GOVERNMENT 

SUMMARY

| -...-- | Expenditure | Revenue |
| :---: | :---: | :---: |
|  | \$ cts. | \$ cts. |
| Nova Scotia. | 4,539,773 56 | 325,405 09 |
| Prince Edward Island. | 721,471 71 | 99,013 97 |
| New Brunswick. | 3,425,778 83 | 552,772 12 |
| Quebec. | 2,425,733 12 | 341, 26199 |
| Ontario.... ${ }_{\text {Man }}$ North-West Territories | 3, 214, 67113 | 520,13596 4,77925 |
| Manitoba......... | 1,647,963 15 | 293,431 81 |
| North-West Territories | -58,258 58 | 9,775 23 |
| Alberta. | 409,563 06 | 177, 34385 |
| Saskatchewan. | 514,589 40 | 90,729 60 |
| British Columbia. | 10,692,574 77 | 2,618,817 69 |
| Hudson Bay District................... | . 29,343 94 | -10,70775 |
|  |  | 82183 |
|  | 27,703,135 54 |  |
| Nova Scotia,-Prince Edward Island and New Brunswick. | 4,879,239 21 |  |
|  | 32,582,374 75 |  |
| Expenditures, general..... | $\begin{array}{rrr} 35,802,297 & 39 \\ 7,430,315 & 41 \end{array}$ | . |
| Fishing bounty, 1882-1928............... | 43,232,612 80 |  |

FISHING BOUNTIES

|  | Year | Nova Scotia | $\underset{\text { Brunswick }}{\text { New }}$ | Prince Edward Island | Quebec | Totals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 5 cts. | $s$ cts. | $s$ cts. | \$ ets. | \$ ets. |
| 1882. |  | 106,098 72 | 16,997, 00. | 16,137. 00 | 33,052 75 | 172,285 47 |
| 1883: |  | -89,432 50 | 12,395 20 | 8,577 14 | 19,940 01 | 130,344 85 |
| 1884. |  | 104,934 09 | 13,576 00 | 9,230 96 | 28,004 93 | 155,718 98 |
| 1885. |  | 103,999 73 | 15,908 25 | 10,166 65 | 31,464 76 | 161,539 39 |
| 1886. |  | 98,789 54 | 17,894 57 | 10,935 87 | 33,283 61 | 160,903 59 |
| 1887. |  | 99,662 03 | 19,699 65 | 12,528 51 | 31,907 73 | 163,757 92 |
| 1888. |  | 89,778 90 | 18,454 92 | 12,092 96 | 32,858 75 | 150,185 53 |
| 1889. |  | 90,142 51 | 21,026 79 | 13,994 53 | 33,362 71 | 158,526 54 |
| 1890. |  | 91,235 64 | 21,108 33 | 11,686 32 | 34, 21072 | 158,241 01 |
| 1891. |  | 92,377 42 | 17,235 96 | 12,771 30 | 34,507 17 | 156,891 85 |
| 1892. |  | 109,410 39 | 10,864 61 | 9,782 79 | 29,694 35 | 159,752 14 |
| 1893. |  | 108,060 67 | 12,524 09 | 9,328 62 | 28, 32072 | 158, 23410 |
| 1894. |  | 111,460 03 | 12,690 80 | 7,875 79 | 28,040 18 | 160,066 80 |
| 1895. |  | 110,765 27 | 12,919 32 | 9,285 13 | 30,598 27 | 163,567 99 |
| 1896. |  | 98,048 95 | 13, 60288 | 9,745 50 | 32,992 44 | 154,389 77 |
| 1897. |  | 102,083 50 | 13,454 50 | 9,809 00 | 32,157 00 | 157,504 00 |
| 1898. |  | 103,730 00 | 13,746 00 | 10,188 00 | 31,795 00 | 159,459 00 |
| 1899. |  | 106,598 50 | 13,514 50 | 7,822 00 | 32,065 00 | 160, 00000 |
| 1900. |  | 101,448 00 | 13,562 50 | 10,589 00 | 33,203 00 | 158,802 50 |
| 1901 |  | 101,024 50 | 13,420 50 | 8,335 50 | 33,161 50 | 155,942 00 |
| 1902. |  | 100,455 70 | 14,555 80 | 8,716 55 | 36,125 45 | 159,853 50 |
| 1903. |  | 99,714 15 | 14,872 75 | 9,652 50 | 34,703 30 | 158,943 70 |
| 1904. |  | 99,286 44 | 15,110 80 | 9,179 35 | 33,651 65 | 157,228 24 |
| 1905. |  | 100,664 35 | 15,379 50 | 8,317 20 | 34,185 60 | 158,546 65 |

FISHING BOUNTIES-Concluded

| Year | Nova Scotia | New Brunswick | Prince Edward Island | Quebec | Tetal |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $S$ cts. | $5 . \mathrm{cts}$. | $\$ \mathrm{cts}$. | S cts. | 5 cts |
| 1906. | 99,518 80 | 16,24755 | 8,839 40 | 34,410 00 | 159,015 75 |
| 1907 | 93,381 70 | 16,454 50 | 10,175 95 | 36,101 35 | 156,113 50 |
| 1908 | 98,156 20 | -17,203 75 | 9,708 90 | 34;931 05 | 159,999 90 |
| 1909 | 95,413 60 | 15,480 15 | 8,973 85 | 35,354 25 | 155,221 85 |
| 1910. | 96,468 20 | 16,531 05 | 9,55780 | 36,609 70 | 159,166 75 |
| 1911. | 99,424 90 | 15,795 00 | 8,669 -85 | 36,109 95 | 159,999 70 |
| 1912. | 97,904 25 | 15,109 75 | 11, 11900 | 35,863 40 | 159,996 40 |
| 1913. | 93,456 00 | 16,385 05 | 11,081 85 | 37,738 35 | 158,661 25 |
| 1914 | 94,990 54 | 17,536 50 | 10,339 65 | 36,717 45 | 159,584 14 |
| 1915 | 90,611 05 | 17,609 95 | 9,513 95 | 41;006 10 | 158,741 05 |
| 1916. | 88,212 10 | 17,540 15 | 9,961 95 | 44,285 60 | 159,999 80 |
| 1917-18. | 86,115 60 | 17,538 35 | 10,754 75 | 45,484 40 | 159,893 10 |
| 1918-19 | 85,000 65 | 17,114 35 | 10,392 35 | 47,167 90 | 159,675 25 |
| 1919-20. | 85,521 05 | 16,085 20 | 8,702 20 | 44,828 25 | 155,136 70 |
| 1920-21 | 93,873 00 | 13,773 70 | 8,11070 | 36,761 90 | 152,519 30 |
| 1921-22. | 91,410 20 | 14,640 60 | 9,413 00 | 43,986 00 | 159,449 80 |
| 1922-23. | 93,254 45 | 16,311 25 | 7,704 40 | 39,902 45 | 157,172 55 |
| 1923-24 | 91,261 55 | 16,123 25 | 10,153 65 | 42,378 35 | 159,916 80 |
| 1924-25. | 86,300 20 | 15,634 05 | 11,410 15 | 46,482 00 | 159;826 40 |
| 1925-26. | 82,550 35 | 18,824 30 | 10,670 70 | 47,939 45 | 159,984 80 |
| 1926-27. | 83,006 90 | 16,72100 | 13,221 55 | 46,818 65 | 159,768 10 |
| 1927-28. | 82,107 00 | 19,906 80 | 12,095 45 | 44,266 55. | 158,375 80 |
| 1928-29. | 79,077 60 | 19,387 80 | 9,334 30 | 43,61150 | 151,411 20 |
|  | 4,506,177 42 | 748,469 27 | 473,626 52 | 1,702,042 20 | 7,430,315 41 |

STATEMENT SHOWING THE ANNUAL EXPENDITURE ON ACCOUNT OF MARINE. POLICE SERVICE ON THE ATJANTLC COASTS OF CANADA FOR PATROLLING THE TERRITORIAL FISHERIES 1870-1874 INCLUSIVE


192,833 69
During the period 1875 to 1885 , inclusive, the Washington Treaty, which gave United States fishermen the use of Canadian Inshore fisheries, was in force.

On the expiry of the Fishery Articles of the Treaty of Washington, the present Fisheries Protection Service was organized in 1886. The following is a statement of the annual expenditure on such account from 1886 to $1928-29$ inclusive.

FISHERIES PROTECTION SERVICR
In addition to Cruisers, entered under Ontario. Quebec and British Columbia:-

(No proper division of the expenditure of these roving Cruisers could be made between the Maritime Provinces, although pro rata shares are fairly chargeable to N.S., N.B., and P.E.I.)


A pro-rate share of this amount is chargeable to the Provinces of N.S., N.B., and P.E.I.

## STATEMENT SHOWING THE ANNTAL EXPENDITURE OF, AND REVENUE COLLECTED BY THE DOMINION GOVERNMENT ON ACCOUNT OF THE FISHERIES SERVICE SINCE CONFEDERATION.

Province of Nofa Scotla

| Year | General Service | Cruisers | Fish Breeding | Total | Revenue |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ cts. | S cts. | S cts. | S cts. | \$ cts. |
| 1867. |  |  |  |  |  |
| 1868. | 22528 |  |  | 22528 | 12,275 25 |
| 1869 | 2,572 23 |  |  | 2,572 23 | 84846 |
| 1870 | 9,728 26 |  |  | 9,728 26 | 1,373 24 |
| 1871. | 8,794 37 |  |  | 8,794 37 | 3674 |
| 1872 | 8,34139 |  |  | 8,34139 | 5145 |
| 1873. | 8, 68907 |  |  | 8,68907 | 15930 |
| 1874. | 10,585 13 |  |  | 10,585 13 | 12394 |
| 1875. | 12,265 86 |  |  | 12,265 86 | 55100 |
| 1876. | 14,655 76 |  | 6,870 33 | 21,526 09 | 40300 |
| 1877. | 15,127 49 |  | 3,488 27 | 18,615 76 | 1,520 71 |
| 1878. | 15, 29283 |  | 3,400 00 | 18,692 83 | 1,442 38 |
| 1879. | 14,312 76 |  | 2,687 <br> 3,323 <br> 16 | 17,000 17,503 71 | 1,796 1,506 |
| 1880. | 14,180 14,909 42 |  | 3,323 <br> 3,454 <br> 16 | 17,503 71. | 1,506 2,779 49 |
| 1881. | 14,909 16,479 41 |  | 3,454 5,858 5 | 18,363 <br> 22,338 <br> 19 | 2,779 1,111 61 |
| 1883. | 16,247 14 |  | 4,191 34 | 20,438 48 | 2,005 29 |
| 1884. | 15,600 01 |  | 4,728 11 | 20,428 12 | 1,833 18 |
| 1885. | 17,503 45 |  | 4,610 81 | 22,114 26 | 2,616 28 |
| 1886. | 17,852 33 |  | 7,478 23 | 25,330 56 | 2,166 53 |
| 1887. | 18,092 21 |  | 6,701 89 | 24,794 00 | 1,585 28 |
| 1888. | 18, 30802 | 9 | 6,850 27 | 25,158 29 | 3,905 44 |
| 1889. | 20,20109 | \% | 6,688 75 | 26,889 84 | 2,744 23 |
| 1890. | 17,395 24 | \% | 6,606 95 | 24,002 19 | 5,424 95 |
| 1891 | 17,844 19 | E | 5,863 75 | 23,707 94 | 5,891 65 |
| 1892. | 18,755 86 |  | 10,289 80 | 29,045 66 | 3,803 42 |
| 1893. | 19,444 22 |  | 5,045 22 | 24,489 44 | 6,782 02 |
| 1894. | 20,420 81 | 甶 | 4,982 12 | 25,402 93 | 5,296 27 |
| 1895. | 23,555 38 | 9 | 5,054 24 | 28,609 62 | 7,075 07 |
| 1896. | 23,049 41 |  | 5;010 39 | 28,059 80 | 6,180 93 |
| 1897. | 23, 68233 | 0 | 4,077 07 | 27,759 40 | 5,239 55 |
| 1898. | 21,683 91 | z | 3,525 03 | 25,208 94 | 5,31708 |
| 1899. | 25,348 11 |  | 2,465 19 | 27,813 30 | 4,668 22 |
| 1900. | 27,461 91 | © | 3,410 84 | 30,872 75 | 5,494 49 |
| 1901. | 35,730 69 | $\stackrel{\square}{0}$ | 11,19482 | 46,925 51 | 6,595 94 |
| 1902. | 32,618 00 |  | 8,810 31 | 41,428 31 | 6,084 65 |
| 1903. | 39,118 79 | . | 7,413 55 | 46,532 34 | 3,962 45 |
| 1904. | 30,003 01 | 岩 | 6,348 22 | 36,35123 | 3,716 75 |
| 1905. | 32,619 85 | 0 | 11,372 65 | 43,992 50 | 6,71858 |
| 1906. | 49,35110 |  | 33,203 27 | 82,55437 | 4,934 43 |
| 1907. | 24,989 09 | \% | 6,259 25 | 31,248 34 | 3,11873 |
| 1908-09 | 87,420 00 |  | 20,969 27 | 108,389 27 | 5,369 70 |
| 1909-10. | 81, 69870 |  | 15,722 27 | 97,420 97 | 3,821 81 |
| 1910-11. | 117,394 67 |  | 28,023 29 | 145, 41796 | 7,749 60 |
| 1911-12. | 141,148 00 |  | 42,72700 | 183,875 00 | 5,912 65 |
| 1912-13. | 97,085 47 |  | 46,411 56 | 143,49704 | 6,730 00 |
| 1913-14. | 125,305 94 |  | 45,732 88 | 171,038 82 | 7,682 50 |
| 1914-15. | 124,977 45 |  | 37, 47070 | 162,448 15 | 7,415 80 |
| 1915-16. | 117,27106 |  | 34,914 01 | 152,185 07 | 6,969 18 |
| 1916-17. | 126, 41667 |  | 33,543 89 | 159,960 56 | 7,176 70 |
| 1917-18. | 139,964 62 |  | 36,057 56 | 176,022 18 | 6,663 94 |
| 1918-19. | 112,689 57 |  | 17,233 22 | 129, 92279 | 7,612 81 |
| 1919-20. | 92,197 95 |  | 16,243 01 | 109,160 96 | 10,213 28 |
| 1920-21. | 111,196 47 |  | 22,077 83 | 133,274 30 | 12,189 62 |
| 1921-22. | 112,521 25 |  | 21,247 10 | 133,768 35 | 12,840 39 |
| 1922-23. | 121,336 89 |  | 27,399 27 | 148,73616 | 12,720 42 |
| 1923-24. | 138, 67111 |  | 42,395 03 | 181,06614 | 9,480 38 |
| 1924-25 | 153,463 48 |  | 32,467 75 | 185,931 23. | 10,627 54 |
| 1925-26. | 170,967 83 |  | 31,053 08 | 202,020 91 | 9,539 68 |
| 1926-27. | 171,975 48 |  | 29,869 84 | 201,845 32 | 10,973 25 |
| 1927-28. | 237, 09763 |  | 28, 14893 | 265, 24656 | 11,758 25 |
| 1928-29. | 253,106 30 |  | 111,139 02 | 364,245 32 | 12,816 88 |
|  | 3,607,662 51 |  | 932,111 05 | ,539,773 56 | 325,405 09 |

(*Revenue from licenses to U.S. Fishing Vessels to which the Province has no exclusive title.)

## STATEMENT SHOWING THE ANNUAL EXPENDITURE OF，AND REVENUE COLLEC－ TED BY THE DOMINION GOVERNMENT ON ACCOUNT OF THE FISHERIES SERVICE SINCE CONFEDERATION

Province of Prince Edward Island

|  | Year | General Service | Cruisers | Fish Breeding | Total | Revenue |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | \＄ |  | \＄ | \＄ | \＄ |
| 1867. |  |  |  |  |  |  |
| 1868. |  |  |  |  |  |  |
| 1869. |  |  |  |  |  |  |
| 1870. |  |  |  |  |  |  |
| 1871. |  |  |  |  |  |  |
| 1872. |  |  |  |  |  |  |
| 1873. |  |  |  |  |  |  |
| 1874. |  | 40562 |  |  | 40562 |  |
| 1875. |  | 45954 |  |  | 45954 |  |
| 1876. |  | $\begin{array}{r}46102 \\ 1,974 \\ \hline\end{array}$ |  | ．．．．．．．．． | 46102 |  |
| 1878. |  | 1，974 70 |  |  | 1，974 70 |  |
| 1879 |  | 1，293 25 |  |  | 1，836 1,293 |  |
| 1880. |  | 2，686 49 |  | 4，49424 | 7，180 83 | 4000 |
| 1881. |  | 2，691 49 |  | 85211 | 3，54360 | 4000 |
| 1882. |  | 2，756 48 |  | 76032 | 3，516 80 | 4000 |
| 1883. |  | 2，716 64 |  | 80732 | 3，523 96 | 8000 |
| 1884. |  | 2，767 98 |  | 77140 | 3，53938 | 8000 |
| 1885. |  | 3，028 03 |  | 75106 | 3，769 09 | 4000 |
| 1886. |  | 3，187 73 |  | 68717 | 3，874 90 | 4000 |
| 1887. |  | 4，044 49 | 9 | 1，200 21 | 5，244 70 | 12800 |
| 1888. |  | 3，402 51 | Z | 75532 | 4，157 83 |  |
| 1889. |  | 3，746 69 | $\cdots$ | 14031 | 3，887 00 | 14000 |
| 1890. |  | 3,113 <br> 3,242 <br> 15 | E | 37800 | 3,113 <br> 3,620 <br> 1 | 30288 667 |
| 1892. |  | 1，835 65 | －i | 3780 | 3，620 25 | 66700 16600 |
| 1893. |  | 2，847 60 | 日 |  | 2，847 60 | 30410 |
| 1894. |  | 3，078 55 | $A$ |  | 3，078 55 | 98015 |
| 1895. |  | 3，796 58 |  |  | 3，796 58 | 3，312 30 |
| 1896. |  | 3，555 87 | $\infty$ | ．．．．．． | 3，555 87 | 2，161 85 |
| 1897. |  | 3，744 36 | ＇ | ． | 3，744 36 | 2，032 25 |
| 1898. |  | 6，775 78 | $\stackrel{3}{3}$ |  | 6，775 78 | 2，707 57 |
| 1899. |  | 5.83235 | － | －－．．．．．．．．．． | 5，832 35 | 2，242 24 |
| 1900. |  | 7，364 20 | 蜽 | ．．．．．．．．．． | 7，364 20 | 2，207 12 |
| 1901. |  | 7.93403 | ¢ | ．．．．．．．．． | 7，934 03 | 1，525 30 |
| 1902. |  | 7，814 02 | ．${ }^{\text {．}}$ |  | 7，814 02 | 1，843 45 |
| 1903. |  | 7，081 60 | 云 |  | 7，08160 | 2，007 35 |
| 1904. |  | 7，320 96 | 0 | 10，733 51 | 18，054 47 | 1，983 42 |
| 1906. |  | 6.87905 | 8 | 6，813 77 | 13，692 82 | 2，046 50 |
| 1907. |  | 5，841 67 | 0 |  | 15，794 14 | 2，206 25 |
| 1908－09． |  | 14，996 00 |  | 7，18747 | 22，183 47 | 2，393 66 |
| 1909－10． |  | 13，657 56 |  | 8，139 50 | 21，797 06 | 2，359 93 |
| 1910－11． |  | 38，570 72 |  | 8，874 42 | 47，445 14 | 2，499 63 |
| 1911－12． |  | 13，681 00 |  | 8，876 00 | 22，537 00 | 2，477 50 |
| 1912－13． |  | 13，558 06 |  | 6，105 63 | 19，663 69 | 2，927 96 |
| 1913－14． |  | 13,72889 |  | 7，383 45 | 21， 112 ？ 4 | 2，24．5 60 |
| 1914－15． |  | 17，369 93 |  | 8，071 93 | 25，44186 | 2，046 50 |
| 1915－16． |  | 14，794 05 |  | 9，658 61 | 24，432 66 | 3，165 35 |
| 1916－17． |  | 15,84323 |  | 7，21118 | 23，054 41 | 3，597 18 |
| 1917－18． |  | 19，076 19 |  | 7，994 24 | 27，070 43 | 3，256 26 |
| 1918－19． |  | 15，722 08 |  | 3，003 84 | 18，725 92 | 2，561 19 |
| 1919－20． |  | 17，43098 |  | 2，918 40 | 20，349 38 | 4，741 68 |
| 1920－21． |  | 22，911 72 |  | 4，312 69 | 27，224 41 | 3，720 12 |
| 1921－22． |  | 15，430 17 |  | 4，304 58 | 19，734 75 | 2，876 47 |
| 1922－23． |  | 17，996 16 |  | 4，801 56 | 22，797 72 | 5，854 88 |
| 1923－24． |  | 22，111 52 |  | 4，859 03 | 26，970 55 | 4，441 95 |
| 1924－25． |  | 26，051 31 |  | 5，147 60 | 31，198 91 | 3，134 90 |
| 1925－26． |  | 26，719 74 |  | 6， 60994 | 33，329 68 | 3，467 88 |
| 1927－28． |  | 20，302 73 |  | 4，533 27 | 24,83600 | 3，403 13 |
| 1928－29． |  | 39，129 65 |  | 4，799 60 | 43，929 25 | $\begin{aligned} & 3,76628 \\ & 3,451 \quad 25 \end{aligned}$ |
|  |  | 553，107 22 |  | 168，364 49 | 721，471 71 | 99，013 97 |

## STATEMENT SHOWING THE ANNUAL EXPENDITURE OF, AND REVENUE COLLEC TED BY THE DOMINION GOVERNMENT ON ACCOUNT OF THE FISHERIES SERVICE SINCE CONFEDERATION

Province of New Brunswick:


## STATEMENT SHOWING THE ANNUAL EXPENDITURE OF AND REVENUE COL LECTED BY THE DOMINION GOVERNMENT ON ACCOUNT OF THE FISHERIES SERVICE SINCE CONFEDERATION.

Province of Quebec

|  | Year | General Service | Cruisers | Fish <br> Breeding | Total | Revenue |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | \$ cts. | \$ cts. | \$ cts. | \$ ets. | S cts. |
| 1867. |  | 10,272 82 | 14,426 53 |  | 24,699 35 | 6,998 90 |
| 1868. |  | 17,889 92 | 11,374 95 |  | 29,264 87 | 4,910 87 |
| 1869 |  | 6,909 61 | 10,800 00 |  | 17,709 61 | 4,585 80 |
| 1870 |  | 6,570 42 | 9,924 51 |  | 16,494 93 | -7,99721 |
| 1871. |  | 7,000 6,489 68 | 9,000 00 |  | 16,00000 | 6,290 85 |
| 1873. |  | 6,489 <br> 7,829 <br> 84 | 12,000 9,000 00 |  | 18,489 68 | 4,569 69 |
| 1874. |  | 9,265 31 | 10,000 00 | 6,106 00 | 16, 829.94 | 4,98383 <br> 8,523 <br> 84 |
| 1875. |  | 9,808 34 | 10,000 00 | 8,515 46 | 28,323 30 | 8,52354 8,904 85 |
| 1876 |  | 14,282 65 | 23, 83282 | 9,016 74 | 47,132 21 | 6,437 00 |
| 1877. |  | 13,521 44 | 17,059 21 | 5,670 86 | 36,251 51 | 5,881 72 |
| 1878 |  | 12,723 88 | 19,967 11 | 6,685 85 | 39,3768 | 5,453 27 |
| 1880 |  | 13,60606 | 8,994 48 | 5,772 90 | 28,373 44 | 6,286 07 |
| 1881 |  | 15,123 79 | $\begin{array}{rl}1,880 & 08 \\ 50,550 & 18\end{array}$ | 4,70134 | 19, 17320 | 7,124 42 |
| 1882 |  | 14,819 22 | 56,965 <br> 20 | 3, 9448 | 71,118 <br> 50,933 | 9,286 18 |
| 1883. |  | 13,287 30 | 26,555 46 | 9,148 712 | 50,933 47,829 88 | 7,165 32 |
| 1884. |  | 13,186 26 | 19,935 53 | 8, 51211 | 41, 63390 | 2,715 02 |
| 1885. |  | 13,531 77 | *31,514 07 | 10,072 52 | 55', 11836 | 3,325 35 |
| 1886 |  | 13,938 21 | 26,091 20 | 9,19789 | 49,227 30 | 2,963 75 |
| 1887. |  | 14,966 55 | 18,293 16 | 8,740 66 | 42,00037 | 3,804 66 |
| 1888. |  | 13,463 37 | 17,233 51 | 8,921 13 | 39,618 01 | 5,394 99 |
| 1889. |  | 12,991 63 | 16,034 04 | 10,228 72 | 39,254 39 | 3,390 79 |
| 1891. |  | 9,67094 10,66698 | 15,00191 | 8,37015 | 33, 04300 | 5,409 81 |
| 1892. |  | 10,917 36 | 14,026 98 | 8,34194 | 34,952 28 | 3,64214 |
| 1893. |  | 11,761 34 | 14,688 97 | 9,337 79 | 35,788 10 | 5,24188 |
| 1894. |  | 11,69282 | 25,645 29 | 8,63541 | 45,973 52 | 7,211 82 |
| 1895. |  | 12,459 34 | 19,523 86 | 8,854 64 | $40 ; 83784$ | 8, 83618 |
| 1896. |  | 11,87043 | 20,661 78 | 8,260 50 | 40,792 71 | 8,160 98 |
| 1897. |  | 12,910 80 | 12,059 54 | 7,059 45 | 32,029 79 | 7,876 12 |
| 1898. |  | 11, 14016 | 13,781 53 | 6,128 40 | 31,050 09 | 7,571 15 |
| 1899 |  | 11,350 27 | 21,680 55 | 5,700 58 | 38,731 40 | 6,287 71 |
| 1900. |  | 5,452 41 | 18,970 42 | 12,701004 | 37, 12387 | 2,543 04 |
| 1902 |  | 7,93403 | $16 ; 258$ 24,995 46 | 15,218 64 | 39,411 11 | 4,73892 |
| 1903. |  | 6,585 86 | 21,021 00 | $\begin{array}{r}\text { 20, } \\ 8,080 \\ \hline 182\end{array}$ | 51,380  <br> 35 986 | 2,49885 4,37915 |
| 1904. |  | 7,619 67 | 23,011 05 | 11,454 24 | 32,084 96 | 4,370 5,070 4 |
| 1905. |  | 6,769 16 | 15,976 88 | 14,140 65 | 36,886 69 | 4, 64856 |
| 1906. |  | 8,123 0t | 26,969 49 | 12,617 01 | 47,709 54 | 7,564 39 |
| 1907. |  | 5,590 94 | 22,763 29 | 10,683 24 | 39,037 47 | 8,145 97 |
| 1908-09. |  | 11,960 00 | 36,402 00 | 16,760 46 | 65,122 46 | 6,79791 |
| 1909-10. |  | 10,316 05 | 25,81196 | 19,292 31 | 55,420 32 | 4,947 46 |
| 1910-11. |  | 8,984 36 | 42,975 48 | 20, 29050 | 72, 25034 | 5,336 61 |
| 1912-13. |  | 17,020 00 | 32,998 00 | 18,104 00 | 68,15200 | 6,044 75 |
| 1913-14. |  | 10,998 48 | 25,321 81 | 17,152 03 | 53,472 32 | 8,095 79 |
| 1914-15. |  | 11,503 00 | 29,760 30,644 81 | 23, <br> 22,000 <br> 182 | 62, 73558 | 5,286 89 |
| 1915-16. |  | 6,995 74 | 31,893 30 | 17,323 62 | 64,147 56,212 66 | 7,638 6,00685 |
| 1916-17. |  | 7,168 09 | 26,356 47 | 14,274 14 | 47,798 70 | 6,981 14 |
| 1917-18. |  | 8,399 76 | 42,752 33 | 19,727 25 | 70,879 34 | 7,664 73 |
| 1918-19. |  | 7,470 58 | $41,563 \quad 30$ | 12,923 27 | 61,957 15 | 8,121 80 |
| 1919-20. |  | 9,793 46 | 33, 67999 | 13,125 26 | 56,598 71 | 8,085 78 |
| 1920-21. |  | 33,182 26 | 45,963 09 | 15,955 38 | 95, 100073 | 6,536 90 |
| 1921-22. |  | 23, 81541 | 49,947 22 | 18,772 19 | 92, 13482 | 14,357 39 |
| 1922-23. |  | 2, 14660 | 90432 | 2,668 48 | 5,719 40 |  |
| 1923-24. |  | 28290 | 14381 |  | 42671 |  |
| 1924-25. |  | 17847 |  |  | 17847 |  |
| 1925-26. |  | 59652 |  |  | 59657 |  |
| 1926-27. |  | 12312 |  |  | 12312 |  |
| 1927-28. |  | 14484 |  |  | 14484 |  |
| 1928-29. |  | 12894 |  |  | 12894 | 19270 |
|  |  | 623,978 59 | ,240,740 91 | 561,003 62 | 2,425,733 12 | 341,261 99 |

STATEMENT SHOWING THE ANNUAL EXPENDITURE OF, AND REVENUE COL LECTED BY THE DOMINION GOVERNMENT ON ACCOUNT OF THE FISHERIES SERVICE SINCE CONFEDERATION.

Province of Ontario

|  | Year | General Service | Cruisers | Fish <br> -Breeding | Total | Revenue |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | \$ cts. | § cts. | S cts. | S cts. | S cts. |
| 1867. |  | 6, 10800 |  |  | 6,108 00 | 3,492 00 |
| 1868 |  | 6,526 96 |  |  | 6,526 96 | 1,927 02 |
| 1869. |  | 8,547 65 |  |  | 8,547 65 | 2,739 13 |
| 1870. |  | 5,995 72 |  | 2,874 47 | 8,870 19. | 6,165 56 |
| 1871. |  | 5,825 98 |  | 4,446 34 | 10,272 32 | 5,039 35 |
| 1872. |  | 4,36443 |  | 5,529 73 | 9,894 16 | 4,818 57 |
| 1873. |  | 4, 34432 |  | 3,697 16 | 8, 04148 | 4,54750 |
| 1876. |  | r 12,8157381 |  | $\begin{array}{r}\text { 5, } 635 \\ 12,92090 \\ \hline 12\end{array}$ | 14,02455 25,73663 | 4,47805 4,64021 |
| 1877. |  | 13,521 44 |  | 12,132 70 | 25,654 14 | 4,67325 |
| 1878 |  | 12,723 88 |  | 4,949 77 | 17,673 65 | 5,202 00 |
| 1879 |  | 11,741 40 |  | 7,102 54 | 18,843 94 | 6,188 80 |
| 1880. |  | 12,003 37 |  | 5,300.71 | 17,30408 | 6,465 95 |
| 1881. |  | 11,506 74 |  | 5,422 63 | 16,929 37 | 7,795 99 |
| 1882. |  | 11,729 77 |  | 8,655 82 | 20,385 59 | 9,849 18 |
| 1883. |  | 13, 60200 |  | 7,761 45 | 21,363 45 | 9,980 28 |
| 1884 |  | 15,192 73 |  | 8,011 17 | 23,203 90 | 11,345 14 |
| 1885 |  | 17,135 98 |  | 8,690 15 | 25,826 13 | 11,914 37 |
| 1886. |  | 17,900 74 |  | 9,696 54 | 27,597 28 | 15,917 62 |
| 1887. |  | 19,534 01 |  | 8,880 14 | 28,414 15 | 15,063 57 |
| 188 |  | 19,860 52 |  | 9,529 00 | 29,389 52 | 18,251 25 |
| 1889. |  | 19, 26498 | 2,63146 | 11,311 33 | 33,207 77 | 24,266 06 |
| 1890. |  | 14,539 87 | 2,254 63 | 11,49431 | 28,288 81 | 23,666 95 |
| 1891. |  | 15,540 30 | 2,769 29 | 11,76981 | 30,079 40 | 26,611 70 |
| 1892. |  | 15,155 83 | 5,064 91 | 9,281 37 | 29,502 11 | 26,708 00 |
| 1893. |  | 20,116 91 | 32,940 56 | 11,194 65 | 64,252 12 | 30,623 09 |
| 1894. |  | 22,634 37 | 20,022 18 | 10,821 43 | 53,477 98 | 28,632 82 |
| 1895. |  | 21,938 56 | 19,373 24 | 8,755 93 | 50,067 73 | 33,211 60 |
| 1896. |  | 24, 91748 | 17,295 94 | 9,468 37 | 51,681 79 | 35,681 68 |
| 1897. |  | 21,592 40 | 15,948 43 | 8,774 19 | 46,315 02 | 32,814 66 |
| 1898. |  | 19,239 34 | 15,155 43 | 9,976 74 | 44,371 51 | 30,574 57 |
| 1899. |  | 11,784 22 | 15,122 45 | 9,982 10 | 36,888 97 | 5,830 85 |
| 1900. |  | 3,604 94 | 12,250 72 | 10,675 72 | 26,53138 | 79412 |
| 1901. |  | 3,819 57 | 11,304 51 | 12,835 60 | 27,959 68 | 71735 |
| 1902. |  | 4,445 93 | 11,764 87 | 12,445 31 | 28, 65611 | 37342 |
| 1903. |  | 4,660 53 | 12,334 37 | 14, 84436 | 31, 83926 | 1,81:83 |
| 1904. |  | 4,500 43 | 45, 13310 | 15,300 46 | 64,933 99 | 2,578 48 |
| 1905. |  | 4,294 60 | 109,560 51 | 13, 83232 | 127,687 43 | 1,47191 |
| 1906 |  | 4,949 67 | 32,585 51 | 15,069 17 | 52,604 35 | 49915 |
| 1907. |  | 3,188 34 | 32,698 85 | 14,112 42 | 49,999 61 | 34910 |
| 1908-09. |  | 14,898 00 | 36,038 00 | 28,358 02 | 79,294 02 | 79078 |
| 1909-10. |  | 9, 67224 | 26,009 14 | 22,614 30 | 58,295 68 | 1,520 75 |
| 1910-11. |  | 11,788 30 | 24,237 49 | 24,39321 | 60.41900 | 28025 |
| 1911-12. |  | 28, 12700 | 28,006 00 | 47, 61100 | 103, 74400 | 6845 |
| 1912-13. |  | 13,213 90 | 30,01523 | 61,580 26 | 104, 80941 | 54874 |
| 1913-14. |  | 22,733 57 | 27,650 61 | 68,877 81 | 119,261 99 | 80669 |
| 1914-15. |  | 23,048 82 | 30,169 08 | 103, 18220 | 156,400 10 | 91880 |
| 1915-16. |  | 19,468 64 | 28,216 58 | 63,712 73 | 111,397 95 | 2,600 65 |
| 1916-17. |  | 14,588 69 | 25,994 06 | 85,922 62 | 126, 50537 | 80870 |
| 1917-18. |  | 15,838 94 | 36,708 63 | 69,864 18 | 122, 41175 | 2,345 48 |
| 1918-19. |  | 4,586 56 | 53,404 30 | 64,996 55 | 122,987 41 | -631 85 |
| 1919-20. |  | 24700 | 39,575 17 | 75,479 78 | 115,301 95 | 1,421 80 |
| 1920-21. |  | 509 | 84,373 39 | 82,320 21 | 166,698 69 | 9,221 25 |
| 1921-22 |  |  | 52,260 83 | 80,403 37 | 132,664 20 | 44,425 97 |
| 1922-23. |  |  | 27,901 41 | 79,690 16 | 107,591 57 | 4,169 29 |
| 1923-24. |  |  | 35562 | 84,180 87 | 84,536 49 | 6,076 71 |
| 1924-25. |  |  |  | 79,471 88 | 79,471 88 | -957 73 |
| 1925-26. |  |  |  | 79,938 10 | 79,93810 | 9,719 28 |
| 1926-27. |  |  |  | 19,894 97 | 19,894 97 | 12691 |
| 1928-29. |  |  |  | 2538 | -25 38 |  |
|  |  |  |  |  |  |  |
|  |  | 666,744 26 | 967,126 52 | 1,580,800 35 3 | 3,214,671 13 | 520,135 96 |

*Manttoba and Northwest Territories

| Year | General Service | Cruisers | Fish Culture | Total | Revenue |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1867-68. | S cts. | \$ cts. | S cts. | S cts. | S cts. |
| 1868-69. |  |  |  |  |  |
| 1869-70. |  |  |  |  |  |
| 1870-71. |  |  |  |  |  |
| 1871-72... |  |  |  |  |  |
| $1872-73 .$ |  |  |  |  |  |
| 1873-74. |  |  |  |  |  |
| 1874-75. | 28865 |  |  | 28865 |  |
| 1875-76. |  |  |  |  |  |
| 1876-77.. | 25000. |  |  | 25000 |  |
| 1877-78. | 20000. |  |  | 20000. |  |
| 1878-79. | 20000. |  |  | 20000 |  |
| 1879-80. | 1975. |  |  | 1975 |  |
| $1880-81 . .$ |  |  |  |  |  |
| 1881-82. | 80955 150 00 |  |  | 809 150 50 00 |  |
| 1883-84. | 87240. |  |  | \$72 40 |  |
| 1884-85. | 76300. |  |  | 76300 |  |
| 1885-86. | 1,920 73. |  |  | 1,920 73 |  |
| 1886-87. | 2,468 25. |  |  | 2,468 25 | 500 |
| 1887-88. | 2,816 64 |  |  | 2,81664 | 81925 |
| 1888-89. | 2,84816 |  |  | 2,548 16 | 84800 |
| 1889-90. | $\begin{array}{r}2,604 \\ 3 \\ \hline 609 \\ \hline 0 .\end{array}$ |  |  | 2,60470 | 79400 |
| 1891-92. | $\left.\begin{aligned} & 3,609 \\ & 3,593 \\ & 3, \end{aligned} \right\rvert\, .$ |  |  | 3,609 <br> 3,593 <br> 13 | $\begin{aligned} & 1,23400 \\ & 1,079 \\ & 00 \end{aligned}$ |
|  | 23,414 291 |  |  | 23,414 29 | 4,779 25 |

STATEMENT SHOWING TEE ANNUAL EXPENDITURE OF, AND REVENUE COLITECTED BY THE DOMINION GOVERNMENT ON ACCOUNT OF THE FISHERIES SERVICE. SINCE 1892.
*Province of Manttobs

*Subsequent to 1892, see Manitoba and Northwest Territories Separate Sheets.
90855-16

STATEMENT SHOWING ANNUAL EXPENDITURE OF, AND REVENUE COLLECTED BY THE DOMINION GOVERNMENT ON ACCOUNT OF THE FLSHERIES SERVICE SINCE 1906

Province of Sagkatceiewan

|  | Year | General Services | Cruisers | Fish Culture | Total | Revenue |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | \$ cts. | S cts. | S ets. |  |  |
| 1906-07. |  | 2,677 77 |  |  | 2,677 77 | 50900 |
| 1907-08. |  | 7,2749 |  |  | $\cdot 7,27749$ | 94860 |
| 1908-09. |  | 6,591 00 |  |  | 6,591 00 | 1,085 50 |
| 1909-10. |  | 6,474 57 |  |  | 6,474 57 | 1,209 44 |
| 1910-11 |  | 10,470 46 |  |  | 10,470 46 | 1,246 00 |
| 1911-12. |  | * 26,040 00 |  |  | * 26,040 00 | 1,3475 |
| 1.912-13. |  | * 17,850 00 |  |  | * 17,85000 | 4,268 50 |
| 1913-14. |  | * 24,964 74 |  | 13,969 84 | * 38,934 58 |  |
| 1914-15. |  | * 34,130 50 |  | 20,642 23 | 54,772 73 | $\begin{aligned} & 4,32965 \\ & 3.195 \end{aligned}$ |
| 1915-16. |  | * 31,294 44 |  | 4,714 72 | $36,00916$ | $\begin{aligned} & 3,19500 \\ & 3,103 \quad 25 \end{aligned}$ |
| 1916-17. |  | 16,002 16,959 11 |  | 4,897 <br> 5,732 <br> 96 | 20,90074 22,69207 | 3,10325 3,64365 |
| 1918-19. |  | 16,966 19,019 11 |  | 5,529 4,147 4,16 | 22,49572 23,16627 | 4,98283 4,32100 |
| 1920-21. |  | 12, 70020 |  | 7,180 29 | 19,880 49 | 4,077 30 |
| 1921-22. |  | 15,330 53 |  | 6,15700 | 21,487 53 | 3,474 31 |
| 1922-23. |  | 14,212 56 |  | 7,887 32 | 22,099 88 | 2,904 65 |
| $1523-24$. |  | 14,281 88 |  | 6,981 38 | 21,263 26 | 3,589 50 |
| 1924-25. |  | 16,469 50 |  | 8,505 56 | 24,975 06 | 6,706 39 |
| 1925-26. |  | 18,156 07 |  | 6,873 95 | 25,030 02 | 6,066 35 |
| 1926-27 |  | 18,590 43 |  | 6, 87844 | 25,468 87 | 6,057 68 |
| 1927-28. |  | 19,593 93 |  | 7,792 50 | 27,386 43 | 6,274 24 |
| 1928-29. |  | 21,892 19 |  | 8,753 11 | 30,645 30 | 9,178 99 |
|  |  | 387,945 25 |  | 126,644 15 | 514,589 40 | 90,729 60 |

*Includes Alberta.

STATEMENT SHOWING THE ANNUAL EXPFNDITURE OF AND REVENUE COLLECTED BY THE DOMINION GOVERNMENT ON ACCOUNT OF THE FISHERIES SERVICE SINCE 1906.

Province of Alberta


[^8]
## STATEMENT SHOWING ANNUAL EXPENDITURE OF, AND REVENUE COLLECTED BY THE DOMINION GOVERNMENT ON ACCOUNT OF THE FISHERIES SERVICE SINCE CONFEDERATION.

Province of British Columbla


STATEMENT SHOWING ANNUAL EXPENDITURE OF, AND REVENUE COLLECTED BY THE DOMINION GOVERNMENT ON ACCOUNT OF THE FISHERIES SERVICE SINCE 1900.

Yukon

|  | Year | General Service | Cruisers | Fish Culture | Total | Revenue |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | \$ cts. | \$ cts. | \$ cts. | \$ ets. | S cis. |
| 1900-01. |  | 1,159 81 |  |  | 1,159 81 | $\begin{array}{r}40600 \\ \hline 130\end{array}$ |
| 1901-02. |  | 2,066 1,522 1,50 |  |  | 2,066 1,522 1,50 | 1,13000 32000 |
| 1902-03. |  | 1,52200 |  |  | 1,522 00 | 32000 24000 |
| 1903-04. |  | 1,400 1,400 |  |  | 1,400 1,4000 | 24000 340 00 |
| 1905-06. |  | 1,083 31 |  |  | 1,083 31 | 28200 |
| 1906-07. |  | 1,030 35 |  |  | 1,030 35 | 17300 |
| 1907-08. |  | 1,226 30 |  |  | 1,.226 30 | 27400 |
| 1908-09. |  | 1,019 00 |  |  | 1,019 00 | 22800 |
| 1909-10. |  | 2,416 63 |  |  | 2,416 63 | 45700 |
| 1910-11. |  | 1,984 95 |  |  | 1,984 95 | 90750 |
| 1911-12. |  | 2,095 00 |  |  | 2,095 00 | 20325 |
| 1912-13. |  | 1,909 83 |  |  | 1,909 83 | 34200 |
| 1913-14. |  | 1,520 00 |  |  | 1,520 00 | 22600 |
| 1914-15. |  | 2,158 80 |  |  | 2,158 80 | 30400 |
| 1915-16. |  | 1,794 75 |  |  | 1,794 75 | 31500 |
| 1916-17. |  | 1,482 65 |  |  | 1,482 65 | 27500 |
| 1917-18. |  | 1,530 75 |  |  | 1,530 75 | 37500 |
| 1918-19. |  | 53150 |  |  | 53150 | 42500 |
| 1919-20. |  | 1165 |  |  | 1165 | 21500 |
| 1920-21. |  |  |  |  |  | 28000 |
| 1921-22. |  |  |  |  |  | 37500 |
| 1922-23. |  |  |  |  | . . . . . . | 32000 |
| 1923-24. |  |  |  |  |  | 33000 |
| 1924-25. |  |  |  |  | . | 34000 |
| 1925-26. |  |  |  |  | . . . . . . . | 35500 |
| 1926-27. |  |  |  |  |  | 35000 |
| 1927-28. |  |  |  |  |  | 50500 |
| 1928-29. |  |  |  |  |  | 41500 |
|  |  | 29,343 94 |  |  | 29,343 94 | 10,707 75 |

STATEMENT SHOWING THE ANNUAL EXPENDITURE OF, AND REVENUE COLLECTED BY THE DOMINION GOVERNMENT ON ACCOUNT OF THE FISHERIES SERVICE SINCE 1892.

Northwest Territories

| Year | General Service | Cruisers | Fish Culture | Total | Revenue |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | S cts. | S cts. | $\leqslant$ cts. | \$ ets. | S cts. |
| 1892-93. | 1,770 41 |  |  | 1,770 41 | 19700 |
| 1893-94. | 3,14394 |  |  | 3,143 94 | - 21114 |
| 1894-95. | 3,515 16 |  |  | 3,515 16 | 30950 |
| 1895-96. | 2,963 02 | . |  | 2,963 02 | 58650 |
| 1896-97. | 2,18158 | . ....... |  | 2,18158 | 34413 |
| 1897-98. | 2,324 66 |  |  | 2,324 66 | 39387 |
| 1898-99. | 4,065 68 |  |  | 4,065 68 | - 15050 |
| 1899 -00. | 3,848 25 |  |  | 3,848 25 | 1,522 50 |
| 1900-01. | 6,251 39 |  |  | 6,25139 | 81655 |
| 1901-02. | 5,928 22 |  |  | 5,928 22 | 95007 |
| 1902-03. | 7,076 26 |  |  | 7,076 26 | 1,350 50 |
| 1903-04. | 7,317 49 |  |  | 7,317 49 | . 92250 |
| 1904-05. | 7,003 55 |  |  | 7,003 55 | 1,15150 |
| 1905-06. | 11,124 22 |  |  | 11,124 22 | 86897 |
|  | 58,258 58 |  |  | 58,258 58 | 9,775 23 |

Note.-For Alberta and Saskatchewan subsequent to 1906 see separate statements for each.

STATEMENT SHOWING ANNUAL EXPENDITURE OF, AND REVENUE COLLECTED BY THE DOMINION GOVERNMENT ON ACCOUNT OF THE FISHERIES SERVICE.

Hudson Bay District

| Year | General Service | Cruisers | $\underset{\text { Culture }}{\text { Fish }}$ | Total | Revenue |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ cts. | s cts. | \$ cts. | \$ cts. | \$ cts. |
| 1903-04. |  |  |  |  | 1000 |
| 1905-06. |  |  |  |  | 1000 |
| 1906-07. |  |  |  |  | 1000 |
| 1907-08. |  |  |  |  | 3600 |
| 1909-10. |  |  |  |  | 30183 |
| 1910-11.. |  |  |  |  | 10000 |
|  |  |  |  |  | 82183 |
|  |  |  |  |  |  |

## APPENDIX No. 9

## LIST OF UNITED STATES FISHING VESSELS WHICH ENTERED CANADIAN PORTS ON THE PACIFIC COAST DURING THE YEAR ENDED DECEMBER 31, 1928

| Name of Vessel | Number of times entered | Tonnage | Number of men in crew | Reason for Entry | Quantity of fish landed |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 6 |  | Shelter. | ewt. |
| Ann..... | 9 | 14 | 4 | Land fish, bait and ice.... | 100 |
| Anna J. | 12 | 22 | 6 | Land mait and | 2,040 |
| Augusta. | 13 | 19 |  | " | 1,680 |
| Atlantic. | 10 | 24 | 9 | " ${ }^{\text {a }}$............. | 2,240 |
| Albatross. | 11 | 40 | 13 | " , bait and ice. | 1,440 |
| Arctic. | 5 | 29 | 7 | " , water, fuel. | 340 |
| Arrow. | 8 | 40 | 9 | Land fish........... | 2,100 |
| Attu.. | 4 | 37 | 10 |  | 1,200 |
| Alten. | 6 | 43 | 10 | " ${ }_{\text {c }}$ | 2,580 |
| Akutan. | 7 | 46 | 9 | " | 2,200 |
| Atlas.. | 9 | 31 | 7 | " | 2,100 |
| Addington. | 10 | 26 | 6 | " | 1,180 |
| Actor...... | 1 | 7 | 2 | " | 100 |
| Avona. | 1 | 9 | ${ }_{3}^{3}$ | " "............... | 100 |
| Alentian. | 8 | 36 | 13 | " . bait and ice, ord | 20 |
| Arue. | 9 | 23 | 6 | " , bait and ice, ord man. | 80 |
| Anna Helen.. | 2 | 10 | 3 | Water, engine trouble.... |  |
| Aminca. | 1 | 25 | 11 | Land fish................ | 140 |
| Angeles. | 8 | 28 | 6 | Bait and ice........ |  |
| Aloha. | 9 | 19 | 6 |  |  |
| Antler. | 10 | 26 | 5 | Land fish, bait. | 312 |
| America. | 7 | 25 | 11 | Bait and ice.. |  |
| Arcade. | 10 | 14 | 4 | " |  |
| Alice B. | 11 | 13 | 5 | " |  |
| Argo. | 6 | 26 | 6 | " |  |
| Alco... | 1 | 37 | 4 | Cargo in transit.. |  |
| Alo K. 431 | 2 | 4 | 1 | Shelter.......... |  |
| Arcturna. | 1 | 8 | 2 |  |  |
| Bravo. | 7 | 14 | 3 | Land fish. | 580 |
| Betty.. | 11 | 15 | 5 |  | 1,280 |
| Baltic. | 7 | 20 | 5 | " | 1,080 |
| Brothers. | 10 | 13 | 5 | " | 2,220 |
| Brunvoll. | 10 | 37 | 7 | " | 1,500 |
| Bonanza.... | 6 | 30 | 6 |  | 1,500 |
| Brunvoll II. | 5 | 27 | 6 | bait and ice, transit. | 80 |
| Brisk. | 3 | 37 | 9 | * , ................. | 820 |
| Bolinda. | 7 | 22 | 6 | " , bait and ice. | 640 |
| Blanco... | 7 | 24 | 6 | " , bait and ice. | 80 |
| Betty Jane.. | 6 | 34 | 7 | " , bait and ice. | 40 |
| Beaver. | 7 | 17 | 5 | " , bait and ice. | 84 |
| Bride. | 1 | 8 | 2 | Shelter.. |  |
| Bill II. | 1 | 4 | 9 | " |  |
| Cedric. | 4 | 19 | 6 | " | 450 |
| Celtic. | 9 | 39 | 9 | Land fish. | 2,520 |
| Coolidge. | 9 | 32 | 6 | " | 1,920 |
| Constitution. | 9 | 39 | 13 | " | 1,740 |
| Chum. | 4 | 6 | 3 | "، ${ }^{\text {c }}$, ........... | 320 |
| Columbia. | 8 | 41 | 9 | "، .. | 2,340 |
| Caroline. | 1 | 4 | 2 | " | 40 |
| Cora... | 10 | 4 | 2 | " | 380 |
| Chelsea. | 7 | 51 | 10 | " , bait and | 1,740 |
| Charlotte. | 4 | 4 | 2 | $\because$ | 180 |
| Clipper.. | 3 8 | 54 20 | 10 5 | Water, bait and ice. | 1,560 |

List of United States Fishing Vessels Which Entered Canadian Ports on the Pacific Coast During the Year Ended December, 31, 1928—Continued

| Name of Vessel | Number of times entered | Tonnage | Number of men in crew | Reason for Entry | Quantity of fish Landed |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Corona. | 9 | 19 | 11 | Bait and ice. | cru. |
| Curlew. | 10 | 18 | 5 | " , shelter |  |
| Chancellor. | 4 | 14 | 5 | " |  |
| C. 88 A.... | 1 | 4 | 2 | Shelter................ |  |
| Discovery.... | 12 | 10 | 4 | Land fish, bait and ice, orders. | 80 |
| Defense. | 4 | 20 | 5 | Land fisi.................. | 520 |
| Democrat. | 8 | 27 | 6 | " ${ }^{\text {c }}$ | 1,540 |
| Doric... | 8 | 42 | 10 | " | 2,520 |
| Daily. | 7 | 26 | 6 | " .. | 1,360 |
| Dalco. | 2 | 4 | 2 | " | 80 |
| Dorothy. | 1 | 98 | 11 | Water.... |  |
| Diana... | 11 | 22 | 6 | Land fish, bait and ice, land sick man. | 120 |
| Don Q. | 3 | 9 | 1 | Land fish................ | 200 |
| Dove L. 747. | 1 | 3 | 1 | Bait and ice.... |  |
| Eldorado.. | 10 | 47 | 10 | Land fish... | 3,320 |
| Eureka. | 14 | 11 | 4 |  | 1,040 |
| Eureka. | 3 | 4 | 2 | " | 120 |
| Eastern Point. | 14 | 4 | 3 | " | 660 |
| Estep... | 6 | 26 | 6 | " , water | 260 |
| Excel.. | 9 | 27 | 6 | " | 1,660 |
| Explorer. | 8 | 34 | 9 | " | 2, 360 |
| Electra. | 8 | 48 | 10 | " | $\stackrel{2,220}{2,760}$ |
| Eagle. | 9 | 66 | 10 | " $\quad$ baitandio...... | 2,760 100 |
| Eidsoold. | 5 | 15 | 5 3 | " , bait and ice. | 100 160 |
| Emma.... | 9 | 10 | 3 | " $\quad$ bait and ice | 160 60 |
| Eclipse... | 16 | 44 | 11 | Bait and ice, engine troub |  |
| Eleanora. | 1 | 16 | 5 |  |  |
| Ellas B.. | 1 | 5 | 2 | Stores....... |  |
| Edie... | 1 | 6 | 5 | " . |  |
| Elsie.. | 1 | 6 | 2 | Shelter...... |  |
| Foremost. | 7 | 66 | 10 | Land fish.. | 3,400 |
| Flattery. | 8 | 10 | 3 |  | 560 |
| Franklin. | 5 | 34 | 9 | "، .............. | 1,420 |
| Fairway. | 9 | 19 | 5 | " , bait and ice. | 380 |
| Flamingo. | 3 | 13 | 5 | " ${ }^{\text {c }}$ | 20 |
| Forward. | 10 | 18 | 5 | Bait and ice, water... |  |
| Fremont.. | 3 | 10 | 4 | . " land fish. | 34 |
| Flint.. | 8 | 24 | 6 | Bait and ice............ |  |
| Faith. | 13 | 7 | 3 | Land fish, bait and ice. | 131 |
| Forerunner. | 1 | 3 | 2 | Bait and ice......... |  |
| Falcon.. | 1 | 8 | 2 | Shelter................. |  |
| Gloria.. | 13 | 17 | 5 | Land fish, water, bait and | 420 |
| Glacier. | 13 | 13 | 6 | Land fish. | 1,600 |
| Grayling. | 7 | 16 | 5 |  | 1,140 |
| Gony. | 5 | 12 | 5 | " , bait and ice | 180 480 |
| Garland. <br> Grant | 7 8 | 10 | 3 9 | , | 2,080 |
| Gjoa. | 7 | 3 | 3 | " | 640 |
| Gretchen. | 8 | 8 | 3 | " , bait and ice | 43 |
| George T | 1 | 0 | 2 | Shelter... |  |
| Going. | 1 | 6 | 2 | " |  |
| Grant.i. | 10 | 12 | 4 | Land fish. | 1,000 |
| Hazel ${ }^{\text {H }}$ | 14 | 24 | 5 | " | 2,140 |
| Hilda. | 8 | 10 | 3 | * | 450 |
| Havana. | 8 | 41 | 10 | " | 2,140 |
| Helgeland. | 7 | 56 | 10 | " | 1,520 |
| Happy... | 6 | 12 | 4 | "\% $\quad$ \%......... | 800 |
| Harding. |  | 19 | 6 | bait and ic | 200 |
| Hyperian. | 1 | 10 | 3 | " | 120 |
| Harding. |  | 11 | 5 | Water.... |  |
| H.A. 310. | 1 | 4 | 2 | Shelter.. |  |
| H.H. 18. | 1 | 4 | 1 | " |  |
| Hanna... | 1 | 11 | 5 | " |  |
| H. 563 A. | 1 | 4 | 3 7 | Land fish, bait and ice. | 2,200 |
| Ilene.. | 11 | 33 30 | 7 | Land *sh, bait and .c..... | 1,68 |
| Ithona..... | 8 | 20 | 6 | " . .............. | 1,380 |

List of United States Fishing Vessels Which Entered Canadian Ports on the Pacific Coast During the Year Ended December, 31, 1928-Continued

| - Name of Vessel | Number of times entered | Tonnage | Number of men in crew | Reason for Entry | Quantity of fish landed |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Ivanhoe. | 6 | 27 | 7 | Land fish, bait and ice... | cwt. 960 |
| Ionic. . . | 10 | 24 | 6 | " , water, bait and ice. | 160 |
| Imperial. | 2 | 23 | 4 | " , bait and ice........ | 200 |
| Irene.... | 1 | 5 | 2 | Stores. |  |
| Inland. | 1 | 4 | 2 | Shelter. |  |
| Ipswich | 1 | 6 | 2 |  | 720 |
| Jack... | 17 | 4 15 | 3 | Land "ish............... | 160 |
| June. Todd No. 11 | 10 | 12 | 5 | ، , bait and ice. | 1,220 |
| Jennie F. Decker. | 1 | 16 | 5 | " " | 11 |
| J. H. F. No. 281 K. | 1 | 5 | 2 | Repairs. |  |
| Kanatak........... | 4 | 39 | 9 | Land fish. | 760 |
| Kanaga. | 9 | 47 | 9 |  | 3,260 |
| Kenebec. | 6 | 4 | 3 | " ${ }^{\text {a }}$................ | 420 |
| Kodiak. | 7 | 38 | 13 | "" , water, bait and ice. | 540 |
| Katalla. | 4 | 16 | 5 | Bait and ice, stores, engine trou |  |
| Koprino. | 1 | 49 | 5 | Bait and ice................. |  |
| Kinki... | 1 | 5 | $\stackrel{2}{3}$ | Stores... . . |  |
| K. C. Jones. | 1 | ${ }_{5}^{6}$ | 3 | " |  |
| K. $800 .$. | 2 | 5 | 2 | En . ............ |  |
| Kanaga Native.. | 1 | 13 6 | ${ }_{2}^{6}$ | Engine trouble...... |  |
| Kalart.. | 12 | 6 10 | $\stackrel{3}{3}$ | Land fish. | 1,020 |
| Lumen. | 12 | 10 | $\stackrel{3}{5}$ | Land fish. | 1,400 |
| Lindy. | 10 | 49 | 10 | " | 2,780 |
| Lenor. | 9 | 14 | 4 | " | 1,240 |
| Liberty. | 6 | 44 | 10 | " | 1,320 |
| Lituya.. | 7 | 30 | 7 | "، | 1,260 |
| Lovera. | 2 | 4 | 4 | "، .. | 100 |
| Leviathian,... | 8 | 29 | 6 | $"$ | 1,200 |
| La Polama.. | 5 | 14 | 11 | " ${ }^{\text {a }}$, bait and ice, stores. | 40 |
| Lebanon. | 9 | 15 | 8 | Land fish, bait and ice...... | 20 |
| Lillum M. | 1 | 9 | 3 | Bait and ice..... |  |
| L. 996. | 1 | 5 | 2 | Stores.. |  |
| Lulu 8694. | 1 | 4 | 2 | Shelter... |  |
| Middleton. | 8 | 24 | 6 | Land fish. | 1,260 |
| Mitkof. | 5 | 42 | 9 | ${ }^{6}$ | 1,740 |
| Majestic. | 9 | 33 | 16 | "، $\quad$ bait........ | 2,700 |
| Mars.... | 10 | 9 | 4 | "، , bait and ic. | 2,160 |
| Marmot. | 7 | 30 | 9 | " | $\begin{array}{r}2,160 \\ \hline 10\end{array}$ |
| Mildred II. | 1 | ${ }_{25}^{31}$ | 5 | " bait and ice. | 60 120 |
| Madeline J. | 8 | 25 | 5 | " , bait and ice. | 260 |
| Muria. | 2 | 27 | 10 | " | 1,800 |
| Mary.... | 10 | 16 | 8 | Bait and ice. |  |
| Merit. | 4 | 11 | 4 | " |  |
| Minnie Berna. | 1 | 10 | 4 | " |  |
| Mermaid. | 13 | 19 | 5 | Land fish, bait. | 198 |
| Mariner. | 10 | 21 | 5 | Bait and ice.. |  |
| Mildred. | 1 | 19 | 5 | Repairs........ |  |
| M. 3404. | 1 | 5 | 1 | Engine trouble. |  |
| M. 663 . | 1 | 5 | 1 | Stores.... |  |
| My own.... | 1 | 14 | 3 |  |  |
| Memories.. | 1. | 8 | 2 | Shelter.. |  |
| Millers Bay. | 1 | 5 | 1 | ، |  |
| M. 3501.. | 1 | 4 3 | ${ }_{2}^{2}$ | Water. |  |
| M. 177. | 11 | 3 35 3 | $\stackrel{2}{10}$ | Land fish. | 3,160 |
| North. | 11 | 35 38 | 10 | Land ${ }^{\text {\% }}$ | 3,840 |
| Northern. |  | 38 30 | 10 9 | * | 2,280 |
| Nordic. | 9 6 | 19 | 6 | " | 1,240 |
| Norland. | 7 | 20 | 5 | , bait and ice | 180 |
| National. | 7 | 40 | 9 | water | 1,520 |
| Nordby N . ${ }^{\text {Nanma }}$ Jane. | 2 | 4 | 2 | " ${ }^{\text {a }}$, ...... | 40 |
| Neptune. | 7 | 43 | 13 | " , water, bait and ice. | 617 |
| Nomad.. | 2 | 15 | 4 | Bait and ice, engine trouble... |  |
| Naomi. | 3 13 13 | 3 .9 | 3 3 3 | Land fish. bait andic...... | 14 |
| Northa | 1 | 6 | 2 | Shelter. . |  |
| Nebraska | 1 | 5 | 2 |  |  |
| Neoma M. 1516... | 1 | 3 | 3 |  |  |

List of United States Fishing Vessels Which Entered Canadian Ports on the Pacific Coast During the Year Ended December, 31, 1928-Continued

| Name of Vessel | Number of times entered | Tonnage | Number of men in crew | Reason for Entry | Quantity of fish landed |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Omany 2... | 5 | 34 | 7 | Land fish. | cwt. |
| Onah 3.... | 17 | 18 | 5 | ** |  |
| Orient 4. | 8 | 48 | 13 | " ,bait and ice. | 2, 60 |
| Oceanus 1.. | 12 | 26 | 6 | Bait and ice, repairs.... |  |
| Polaris. | 8 | 45 | 9 | Land fish.......... | 1,880 |
| Panama. | 6 | 35 | 10 |  | 1,780 |
| Pacific. | 6 | 44 | 10 | " | 2,400 |
| Portlock | 10 | 36 | 9 | " $\%$.... | 2,760 |
| Pierce. | 12 | 14 | 4 | , water | 920 |
| Prosperity. | 8 | 25 | 6 | " | 1,600 |
| Paragon... | 5 | 69. | 12 | " | 1,980 |
| Pegge... | 3 | 44 | $3^{*}$ | " | 240 |
| Pioneer.... | 6 | 48 | 10 | " $\quad$.................... | 1,800 |
| President. | 13 | 24 | 7 | " , water, bait and ice, stores, engine trouble. |  |
| Pioneer III. | 6 | 26 | 5 | stores, engine trouble................ | 320 |
| Presleo... | 13 | 14 | 5 | Bait and ice, shelter, land fish. | 139 |
| Pershing | 1 | 18 | 5 | Bait and ice................... |  |
| Petrel.. | 1 | 7 | 2 | Shelter.......... |  |
| Polaris. | 1 | 4 | 2 |  |  |
| Pacific H.A. 335. | 1 | 4 | 2 | " |  |
| Pauline. | 1 | 6 | 2 | 4 |  |
| Quin.... | 1 | 5 | 2 | Stores. |  |
| Reliance No. 1. | 9 | 19 | 5 | Land fish. | 1,280 |
| Reliance.. | 12 | 14 | 4 |  | 1,560 |
| Reliance. | 9 | 8 | 3 | " | 660 |
| Resolute. | 8 | 47 | 9 | " | 1,520 |
| Rainier. | 14 | 4 | 3 | " | 1,020 |
| Rainier. | 9 | 39 | 9 | " | 1,920 |
| Radio.. | 4 | 63 | 10 | " | 1,080 |
| Reform.. | 3 | 6 | 5 | " | 220 |
| Rambler. | 4 | 10 | 3 | " | 320 |
| Rival.. | 4 | 4 | 3 | " ${ }^{\text {\% }}$............... | 340 |
| Restitution | 10 | 24 | 5 | Water, bait and ice, stores. |  |
| Repeat.... | 5 | 14 | 4 | Bait and ice, shelter... |  |
| Reliance. | 4 | 11 | 3 | " , land and fish | 17 |
| Republic.. | 7 | 24 | 6 | " |  |
| Rqosevelt. | 4 | 51 | 13 | " ${ }^{\text {c }}$, |  |
| Rosario.. | 1 | 16 | 5 | Land fish, bait and ice.. | 60 |
| Royal.. | 2 | 15 | 5 | Bait and ice...... |  |
| Rakel... | 1 | 5 | 1 | Engine trouble... |  |
| Ricaryon.. | 1 | 6 | 3 | Repairs....... |  |
| Rose M.H. 370 | 1 | 4 | 2 | Shelter...... |  |
| Red Star. . | 1 | 19 | 2 | " |  |
| Rebel.. | 1 | 4 | 2 | " |  |
| Star. | 9 | 12 | 3 | Land fish.. | 960 |
| Sentinel. | 13 | 21 | 6 |  | 2,580 |
| Sherman. | 15 | 18 | 5 | ، . | 2,240 |
| Summer | 8 | 34 | 10 | * . | 2,100 |
| Sitka. | 7 | 50 | 10 | " | 2,360 |
| Sunset. | 11 | 37 | 9 | " | 2,460 |
| Sirino. | 7 | 17 | 4 | « ${ }^{\text {a }}$. ........................ | 760 |
| Sund'E.. | 1 | 36 | 9 |  | 120 |
| Superior. | 5 | 26 | 6 | " | 1,040 |
| Seymour. | 5 | 44 | 10 | bait | 1,020 |
| Seattle 6. | 7 | 55 | 11 |  | 1,860 |
| Senator.... | 8 | 11 | 7 | " $\quad$............ | 1,680 |
| Sea Bird 4. Spray..... | 5 | 28 | 7 | " , bait and ice. | 740 |
| Spray.. | 5 | 20 | 6 | " , bait and ice. | 520 |
| Sylvia.: | 11 | 30 | 6 | " ${ }^{\text {c }}$, bait and ice engine trouble | 120 |
| Summit. | 10 | 21 | 6 | Land fish, towing in transit.......... | 40 |
| Sadie K2. | 2 | 16 | 5 | Bait and ice.......................... |  |
| Sammy 1. | , | 8 | 5 | " $\because$..................... |  |
| Selina J.. | 11 | 9 | 4 | " , shelter................ |  |
| Superior. | 8 | 18 | 5 | Land fish, bait and ice. | 102 |
| Swing... | 1 | 5 | 2 | Bait and ice..... |  |
| Service. | , | 5 | 2 | Stores. |  |
| Star. | 1 | 7 | 2 | Engine trouble.. |  |
| Starcol. | 1 | 20 | 5 | In transit............................. |  |
| Sarah E. 3. | 1 | 7 | 2 | Shelter............................. |  |
| Snark.... | 1 | 7 0 | 2 3 |  |  |

List of United States Fishing Vessels Which Entered Canadian Ports on the Pacific Coast During the Year Ended December, 31, 1928-Concluded

| Name of Vessel | Number of times entered | Tonnage | Number of men in crew | Reason for Entry | Quantity of fish landed |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Teddy J. 4. | 13 | 13 | 5 | Land fish.. | cwt. $1,980$ |
| Tyee 13... | 6 | 13 | 4 |  | 780 |
| Thelma M 5. | 7 | 7 | 3 | " | 580 |
| Thor 10.. | 7 | 25 | 13 | , bait and ice. | 800 |
| Thor 9. | 9 | 4 | 2 | " ${ }^{\text {a }}$, .......................... | 460 |
| Tahoma 2 | 13 | 18 | 7 | " ${ }^{\text {a }}$, $\cdot$........................ | 1,760 |
| Tatoosh 3 . | 4 | 26 | 6 | - ${ }^{\text {ait........ }}$ | 840 |
| Trinity 12. | 5 | 41 | 10 | " , bait and ice. | 880 |
| T. 2181. | 1 | 3 | 3 | " ${ }^{\prime}$......... | 60 |
| Thelam II 6. | 7 | 26 | 6 | "" , bait and ice......... | 140 |
| TordeusKjold II.. | 8 | 39 | 15 | Bait and ice bait and ice stores.. | 80 |
| Texas 8......... | 2 | 16 |  | Bait and ice. |  |
| Templar 7 | 1 | 13 | $\stackrel{2}{3}$ | Shelter... |  |
| Unimak 3. | 7 4 | 10 27 | 3 6 | Land "ish. | 620 450 |
| Uranus 2. | 4 | 20 | 5 | " , water, bait and ice stores. | 100 |
| Unimak 4. | 11 | 22 | 8 | Land fish, bait and ice.............. | 60 |
| Viking 8.. | 13 | 11 | 4 | " | 930 |
| Venus 7.. | 9 | 25 | 8 | " | 1,720 |
| Venus 6. | 10 | 4 | 3 |  | 720 |
| Vausee 2. | 7 | 58 | 10 | " ${ }^{\text {a }}$, | 1,760 |
| Visitor 10. | 5 | 4 | 3 |  | 1220 |
| Venture 5. | 4 | 36 | 7 |  | 1,000 |
| Viola 9... | 3 | 4 | 3 | " baitand ice. | 200 |
| Valero 1.. | 8 | 6 | 3 <br> 5 | "" bait and ice........................... |  |
| Volunteer 12. | 2 | 20 9 | 5 <br> 3 | Bait and ice........ | . |
| Ventura 3. | 1 | 6 | 2 | Shelter. |  |
| Verna 4. | 1 | 5 | 2 | " |  |
| Woodrow 12. | 6 | 23 | 5 | Land fish, water, bait and ice. | 140 |
| Wizard 11.. | 5 | 49 | 9 | Land fish. | 1,780 |
| Western 6. | 7 | 41 | 9 |  | 1,540 |
| Wabash 2. | 16 | 6 | 3 | " | 880 |
| Wenterslad 4. | 1 | 9 | $\stackrel{2}{2}$ |  | 40 |
| Wave 1. | 10 | 7 | 3 | " , water. | 450 |
| Wireless 10. | 18 | 19 | $\stackrel{6}{5}$ | " , bait and ice | 180 |
| Wilson 9. | 1 | 19 | 5 | " | 100 |
| Westfjord 3. | 3 | 17 | 5 | Bait and ice, water. |  |
| White Star 8. | 11 | 17 | 5 | Bait and ice.. |  |
| Wesley 5.. | 10 | 9 4 |  | Shelter |  |
| White Star No. 2. | 1 | 4 5 | 3 | Shelter |  |
| White Star 7. | 3 | $\begin{array}{r}5 \\ 41 \\ \hline\end{array}$ | 10 |  |  |
| Yakutat 4. | 9 7 | 41 31 | 10 | Land fish. | 2,160 1,360 |
| Yellowstone 5. | 2 | 22 | 6 | " | 360 |
| Yakutat 3. | 1 | 50 | 11 | Bait and ice. |  |
| Yaquina 2. | 7 | 29 | 6 |  |  |
| Yakina I. | 1 | 5 | 2 | On way north. |  |
| Zenith $1 .$. | 6 | 47 | 9 | Land fish... | 1,020 |

## APPENDIX No. 10

## LIST OF UNITED STATES FISHING VESSELS WHICH ENTERED CANADIAN PORTS ON THE ATLANTIC COAST DURING THE YEAR ENDED DECEMBER 31, 1928

| Name of vessel | $\begin{aligned} & \text { Number } \\ & \text { of } \\ & \text { times } \\ & \text { entered } \end{aligned}$ | Tonnage | Number of crew | Reason for entry | Quantity of fish landed, if any |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Acushla. | 4 | 70 | 23 | Shelter. | lbs. |
| Alden.. | 3 | 44 | 14 | To purchase a boat, shelter |  |
| Amia and Ella. | 15 | 27 | 8 | Shelter...................... |  |
| American. | 2 | 63 | 23 |  |  |
| A. Pratt Andrew. | 1 | 33 | 7 | " |  |
| Aeolns... | 7 | 16 | 8 | * |  |
| Annie Ellen. | 1 | 27 | 8 |  |  |
| Angie L. Marshall.... | 1 | 56 | 21 | " ${ }^{\text {a }}$, |  |
| Benjamin M. Wallace | 1 | 49 | 16 | Repairs.. |  |
| B. T. Heilman....... | 1 | 17 | 7 | Water..... |  |
| Barbara........ | 12 | 9 | 8 | Shelter.... |  |
| Bernice and Bessie. | 14 | 27 | 7 | Shelter and repairs. |  |
| B. T. Hillman... | 7 | 17 | 8 |  |  |
| Catherine.... | 1 | 77 | 27 | Repairs and shelter. |  |
| Col. Lindberg. | 2 | 28 | - 11 | Shelter.............. |  |
| Col. Lindberg | 7 | 41 | 9 |  |  |
| Dawn.. | ${ }^{6}$ | 79 21 | 27 8 | Shelter and sick man. |  |
| Desire. | 1 | 36 | 8 | She!ter. |  |
| Dawn. | 1 | 71 | 27 | " |  |
| Elsie.. | 6 | 66 | 21 | " |  |
| Eleanor Nickerson. | 1 | 113 | 27 | " |  |
| Elk....... | 6 | 66 | 21 | " |  |
| Ellen T. Marshall. | 4 | 75 | 25 | " |  |
| Edith C. Rose. | 3 | 70 | 21 | " |  |
| Elizabeth A. | 2 | 34 | 8 | " |  |
| Elizabeth A. | 12 | 6 | 8 | " |  |
| Elizabeth A. | 2 | 24 | 8 | " |  |
| Elmer E. Gray. | 71 | 23 | 3 | " |  |
| Ethel B. Penny.... | 2 | 56 | 22 | " |  |
| Elizabeth W. Nunan. | 2 | 48 | 20 | " |  |
| Fannie Belle. | 1 | 19 | 7 | " |  |
| Funchal. | 10 | 20 | 9 | " . |  |
| Flora L. Oliver. | 5 | 59 | 21 | " |  |
| Gertrude De Costa. | 12 | 61 | 19 | Shelter, water, land sick m |  |
| Governor Foss.... | 6 | 88 | 20 | Shelter, land sick man.. |  |
| Governor Prince. | 2 | 56 | 13 | Shelter................... |  |
| Gossoon. ......ii | 3 | 51 | 27 | Shelter, supplies, home voy |  |
| Grand Marshall. | 6 | 70 | 27 | Shelter, water.............. |  |
| Glossow. ......... | 1 | 51 | 26 | Shelter, land sick man. |  |
| Gladys L'Creamer. | 7 | 16 | 7 | Shelter................. |  |
| Glener...... | 1 | 38 | 15 |  |  |
| Henry Ford.......... | 1 | 92 | 25 | " ${ }^{\text {a }}$ - ${ }^{\text {and......... }}$ |  |
| Herbert Parker..... | $\begin{array}{r}3 \\ 12 \\ \hline\end{array}$ | 78 | 23 8 8 | " , land sick man |  |
| Hazel M. Jackson.... | 11 | 26 | 8 | 4 ". |  |
| Imperator. | 1 | 79 | 21 | " ${ }^{4}$,repairs. |  |
| Isabelle Parker. | 1 | 48 | 27 | " |  |
| Irene and Mabel. | 9 | 41 | 10 | " |  |
| Isabella.. | 7 | 11 | 8 | " |  |
| Ingomiar. | 1 | 85 | 22 | " |  |
| Isabel M. | 1 | 13 | 8 | " |  |
| Isabelle.. | 1 | 34 | 8 | " |  |
| Josephine DeCosta. | 1 | 60 | 20 | " |  |
| John A. Cooney. | 7 | 14 | 8 | , water |  |
| John T. Fallon.. | 2 | 60 | 23 | , |  |
| Joffre...... | 7 | 80 | 23 | , repairs. |  |
| J. M. Marshall. | 3 | 60 | 22 |  |  |
| Killarney.... | 6 | 73 | 18 | " , reporting lost ma taining fuel oil. |  |

Last of United States Fishing Vessels Which Entered Canadian Ports on the Atlantic Coast During the Year Ended December 31, 1928-Concluded

| - Name of vessel | $\begin{aligned} & \text { Number } \\ & \text { of } \\ & \text { times } \\ & \text { entered } \end{aligned}$ | Tonnage | Number of crew | Reason for entry | Quantity of fish landed, if any |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Katherine Burke.. | 1 | 68 | 15 | Shelter. | lbs. |
| Lark.............. | 2 | 127 | 27 | " |  |
| Laura Goulart | 16 | 73 | 21 | " |  |
| L. A. Dunton. | 7 | 94 | 25 | " , land sick man. |  |
| Lincoln. | 9 | 42 | 15 | Shelter, purchase fuel oil for home voyage. |  |
| Louisa R. Sylva. | 1 | 92 | 8 | Shelter and land sick man........... |  |
| Louise B. Marshall.. | 5 | 74 | 19 | Repairs, and to take on board and convey to U.S. salvaged equipment from wreck of Gov. Marshall |  |
| Mary E. O'Hara. | 9 | 49 | 23 | Shelter.............................. |  |
| Mary F. Ruth... | 1 | 33 | 7 | Repairs to lighting system.......... |  |
| Mary Sears. | 4 | 61 | 19 | Shelter, repairs. . . . . . . . . . . . . . . . . . . |  |
| Mao IV... | 1 | 53 | 6 | Shelter, water.... |  |
| Mary A. | 6 | 17 | 8 | Shelter......... |  |
| Mildred Robinson. | 1 | 73 | 7 | " |  |
| Morning Star. | 2 | 57 | 23 | ${ }^{4}$. |  |
| Mercedes. | 11 | 11 | 7 | " , repairs...................... |  |
| Mary M. | 16 | 20 | 8 | ، |  |
| Mary and Ruth. | 1 | 33 | 7 | " |  |
| Minnie M. | 13 | 28 | 8 | " |  |
| Mabel E. Bryson.... | 8 | 23 | 7 | " |  |
| Madeline and Flora. | 1 | 43 33 | 7 | "، -destroyed by fire while in |  |
| Mary and Ruth.... | 1 | 33 | 7 | $\begin{gathered} \text { " } \text {, destroyed by fire while in } \\ \text { port.......................................... } \end{gathered}$ |  |
| Natalie Hammond. | 5 | 51 | 23 | Shelter... |  |
| Notus. | 4 | 14 | 4 | " , repairs. |  |
| Nickerson. | 12 | 23 | 8 | " , water. |  |
| Newcastle. | 8 | 19 | 8 | " |  |
| Oretha F. Spinney. | 2 | 65 | 11 | ${ }^{6}$ |  |
| Pilgrim. | 3 | 52 | 22 | " |  |
| Patara. | 1 | 152 | 7 | " .... |  |
| Philip P. Mantha. | 1 | 61 | 22 | " ${ }^{6}$....... |  |
| Paolina... | 1 | 19 | 12 |  |  |
| Provendiza II..... | 2 | 18 | 11 |  |  |
| Ruth and Margaret. . | 5 | 62 | 23 | Engine repairs, shelter. |  |
| Rhodora........... | 1 | 70 | 19 | Shelter. |  |
| Richard J. Nunan. | 3 | 55 | 13 | ، |  |
| Rita Aviator. | 3 | 22 | 12 | " |  |
| Shamrock. | 2 | 68 | 27 | " | , |
| Squanto. | 4 | 81 | 8 | ${ }^{\prime}$ |  |
| Sunapee.. | 14 | 18 | 9 | " |  |
| Stranger. | 1 | 22 | 12 | " |  |
| Thos, S. Gorton. | 1 | 92. | 7 | " |  |
| Teazer... | 1 | $59^{\circ}$ | 22 | " |  |
| Teaser... | 2 | 97 | 20 | " ${ }^{\prime \prime}$ |  |
| Thelma. | 1 | 28 | 12 | " |  |
| Virginia. | 9 | 30 | 17 | " , repairs |  |
| Virginia R. | 3 | 51 | 6 |  |  |
| Wanderer. | 2 | 132 | 28 | " , repairs |  |
| Waltham. | 13 | 44 | 10 |  |  |
| William Landry. | 15 6 | 13 | 7 23 | " ${ }^{\text {a }}$, repairs and repairs to rudder |  |
| Zilpha. | 11 | 13 | 7 | " , repairs....................... |  |

## APPENDIX No. 11

The following is a statement of the different kinds of licenses issued by the several supervisors, during the 1928-29 season:-
Magdalen ISLANDS, Quebec-Supervisor S. T. GallantKind of Licenses-Number of Licensed Issued
Lobster fishing licenses. ..... 682
Lobster packing licenses. ..... 16
Lobster packing extensions-10
Fish cannery licenses ..... 1
Certificates under section 66-3
Herring seine licenses. ..... 20
Herring trap-net licenses.27 (6 Cod Trap-nets)
Smelt gill-net licenses.
2
Smelt bag-net licenses.
755 (6 Cod Trap-nets)
PRINCE EDWARD ISLAND-Supervisor S. T. Gallant
Lobster fishing licenses. ..... 1,878
Lobster packing licenses.
103
103
Lobster paeking extensions-54
Oyster fishery licenses. ..... 223
Quahaug fishery licenses ..... 26
Fish eannery licenses.
Fish eannery licenses. ..... 20 ..... 20
Certificates under Section 66-7
Reduction Works licenses ..... Nil
Trap-net fishing licenses. ..... 4
Scallop fishery licenses. ..... 3
Lobster pound licenses. ..... 1
Smelt gill-net licenses. ..... 324 ..... 324
Smelt bag-net licenses. ..... 249
2, 831
NOVA SCOTIA-DISTRICT No. 1-Supervisor A. G. MeLeod
Lobster fishing licenses ..... 2,023
Lobster packing licenses ..... 43
Lobster packing extensions-45
Oyster fishery licenses ..... 111
Fish cannery licenses. ..... 4
Certificates under Section 60-67 (1 cancelled).
Reduction works licenses ..... Nil
Herring weir liecnses ..... 3
Trap-net fishing licenses. ..... 40
Salmon gill-net or drift-net licenses ..... 40
Salmon trap-net, pound-net or weir licenses. ..... 197
Special angling permits ..... 131
Lobster pound lieenses ..... Nil
Smelt bag-net licenses. ..... 23
Smelt gill-net licenses. ..... 196
2,811
NOVA SCOTIA-DISTRICT No. 2-Supervisor D. H. Sutherland3,268 (4 eancelled)
Lobster fishing licenscs.
Lobster packing licenses ..... 48
Lobster paching extensions-75
Oyster fishery licenses. ..... 85
Quahaug fishery licenses. ..... 2
Shad gill-net or drift-net licenses. ..... 6
Fish eannery licenses ..... 6
Certificates under Section $66-100$ (1 cancelled)
3
3
Seine licenses. ..... 132
Herring weir licenses ..... 13
Trap-net fishing licenses. ..... 95
Salmon gill-net or drift-net licenses
399 (1 cancelled)
Salmon trap-net, pound-net or weir licenses. ..... 1.4 (5 can. and 1 des.)
Special angling permits ..... 75
Seallop fishery licenses ..... Nil
Lobster pound licenses. ..... 6
Smelt bag-net licenses. ..... 207
Smelt gill-net licenses.268 (3 cancelled)
Lobster pound certificates-193 (1 cancelled)

## NOVA SCOTLA-DISTRICT No. 3-Supervisor H. H. Marshall

Kind of Licenses-Continued

Kind of Licenses-Continued

Kind of Licenses-Continued

Kind of Licenses-Continued

Kind of Licenses-Continued

Kind of Licenses-Continued

Kind of Licenses-Continued

Kind of Licenses-Continued

Kind of Licenses-Continued

Kind of Licenses-Continued

Kind of Licenses-Continued

Kind of Licenses-Continued

Kind of Licenses-Continued

Kind of Licenses-Continued

Kind of Licenses-Continued

Kind of Licenses-Continued               Number of licenses issued               Number of licenses issued               Number of licenses issued               Number of licenses issued               Number of licenses issued               Number of licenses issued               Number of licenses issued               Number of licenses issued               Number of licenses issued               Number of licenses issued               Number of licenses issued               Number of licenses issued               Number of licenses issued               Number of licenses issued               Number of licenses issued               Number of licenses issued

Lobster fishing licenses

Lobster fishing licenses

Lobster fishing licenses

Lobster fishing licenses

Lobster fishing licenses

Lobster fishing licenses

Lobster fishing licenses

Lobster fishing licenses

Lobster fishing licenses

Lobster fishing licenses

Lobster fishing licenses

Lobster fishing licenses

Lobster fishing licenses

Lobster fishing licenses

Lobster fishing licenses

Lobster fishing licenses .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3,303 (4 cancelled) .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3,303 (4 cancelled) .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3,303 (4 cancelled) .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3,303 (4 cancelled) .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3,303 (4 cancelled) .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3,303 (4 cancelled) .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3,303 (4 cancelled) .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3,303 (4 cancelled) .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3,303 (4 cancelled) .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3,303 (4 cancelled) .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3,303 (4 cancelled) .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3,303 (4 cancelled) .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3,303 (4 cancelled) .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3,303 (4 cancelled) .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3,303 (4 cancelled) .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3,303 (4 cancelled)

Lobster packing licenses.

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Lobster packing extensions-14

Lobster packing extensions-14

Lobster packing extensions-14

Lobster packing extensions-14

Lobster packing extensions-14

Lobster packing extensions-14

Lobster packing extensions-14

Lobster packing extensions-14

Lobster packing extensions-14

Lobster packing extensions-14

Lobster packing extensions-14

Lobster packing extensions-14

Lobster packing extensions-14

Lobster packing extensions-14

Lobster packing extensions-14

Lobster packing extensions-14

Shad gill-net or drift-net license

Shad gill-net or drift-net license

Shad gill-net or drift-net license

Shad gill-net or drift-net license

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Shad gill-net or drift-net license .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3 .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3 .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3 .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3 .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3 .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3 .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3 .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3 .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3 .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3 .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3 .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3 .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3 .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3 .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3 .....  .....  .....  .....  .....  .....  .....  .....  .....  .....  ..... 3

Fish cannery licenses

Fish cannery licenses

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Certificates under Sec. 66-176 (1 can. and 1 des.)

Certificates under Sec. 66-176 (1 can. and 1 des.)

Certificates under Sec. 66-176 (1 can. and 1 des.)

Certificates under Sec. 66-176 (1 can. and 1 des.)

Certificates under Sec. 66-176 (1 can. and 1 des.)

Certificates under Sec. 66-176 (1 can. and 1 des.)

Certificates under Sec. 66-176 (1 can. and 1 des.)

Certificates under Sec. 66-176 (1 can. and 1 des.)

Certificates under Sec. 66-176 (1 can. and 1 des.)

Certificates under Sec. 66-176 (1 can. and 1 des.)

Certificates under Sec. 66-176 (1 can. and 1 des.)

Certificates under Sec. 66-176 (1 can. and 1 des.)

Certificates under Sec. 66-176 (1 can. and 1 des.)

Certificates under Sec. 66-176 (1 can. and 1 des.)

Certificates under Sec. 66-176 (1 can. and 1 des.)

Certificates under Sec. 66-176 (1 can. and 1 des.)

Reduction works licenses

Reduction works licenses

Reduction works licenses

Reduction works licenses

Reduction works licenses

Reduction works licenses

Reduction works licenses

Reduction works licenses

Reduction works licenses

Reduction works licenses

Reduction works licenses

Reduction works licenses

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Reduction works licenses

Reduction works licenses .....  .....  .....  .....  .....  .....  .....  .....  ..... 10 .....  .....  .....  .....  .....  .....  .....  .....  ..... 10 .....  .....  .....  .....  .....  .....  .....  .....  ..... 10 .....  .....  .....  .....  .....  .....  .....  .....  ..... 10 .....  .....  .....  .....  .....  .....  .....  .....  ..... 10 .....  .....  .....  .....  .....  .....  .....  .....  ..... 10 .....  .....  .....  .....  .....  .....  .....  .....  ..... 10 .....  .....  .....  .....  .....  .....  .....  .....  ..... 10 .....  .....  .....  .....  .....  .....  .....  .....  ..... 10 .....  .....  .....  .....  .....  .....  .....  .....  ..... 10 .....  .....  .....  .....  .....  .....  .....  .....  ..... 10 .....  .....  .....  .....  .....  .....  .....  .....  ..... 10 .....  .....  .....  .....  .....  .....  .....  .....  ..... 10 .....  .....  .....  .....  .....  .....  .....  .....  ..... 10 .....  .....  .....  .....  .....  .....  .....  .....  ..... 10 .....  .....  .....  .....  .....  .....  .....  .....  ..... 10

Herring weir licenses

Herring weir licenses

Herring weir licenses

Herring weir licenses

Herring weir licenses

Herring weir licenses

Herring weir licenses

Herring weir licenses

Herring weir licenses

Herring weir licenses

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Herring weir licenses .....  .....  .....  .....  .....  .....  .....  ..... 63 .....  .....  .....  .....  .....  .....  .....  ..... 63 .....  .....  .....  .....  .....  .....  .....  ..... 63 .....  .....  .....  .....  .....  .....  .....  ..... 63 .....  .....  .....  .....  .....  .....  .....  ..... 63 .....  .....  .....  .....  .....  .....  .....  ..... 63 .....  .....  .....  .....  .....  .....  .....  ..... 63 .....  .....  .....  .....  .....  .....  .....  ..... 63 .....  .....  .....  .....  .....  .....  .....  ..... 63 .....  .....  .....  .....  .....  .....  .....  ..... 63 .....  .....  .....  .....  .....  .....  .....  ..... 63 .....  .....  .....  .....  .....  .....  .....  ..... 63 .....  .....  .....  .....  .....  .....  .....  ..... 63 .....  .....  .....  .....  .....  .....  .....  ..... 63 .....  .....  .....  .....  .....  .....  .....  ..... 63 .....  .....  .....  .....  .....  .....  .....  ..... 63

Trap-net fishing licenses

Trap-net fishing licenses

Trap-net fishing licenses

Trap-net fishing licenses

Trap-net fishing licenses

Trap-net fishing licenses

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Trap-net fishing licenses .....  .....  .....  .....  .....  .....  ..... 129 .....  .....  .....  .....  .....  .....  ..... 129 .....  .....  .....  .....  .....  .....  ..... 129 .....  .....  .....  .....  .....  .....  ..... 129 .....  .....  .....  .....  .....  .....  ..... 129 .....  .....  .....  .....  .....  .....  ..... 129 .....  .....  .....  .....  .....  .....  ..... 129 .....  .....  .....  .....  .....  .....  ..... 129 .....  .....  .....  .....  .....  .....  ..... 129 .....  .....  .....  .....  .....  .....  ..... 129 .....  .....  .....  .....  .....  .....  ..... 129 .....  .....  .....  .....  .....  .....  ..... 129 .....  .....  .....  .....  .....  .....  ..... 129 .....  .....  .....  .....  .....  .....  ..... 129 .....  .....  .....  .....  .....  .....  ..... 129 .....  .....  .....  .....  .....  .....  ..... 129

Salmon gill-net or drift-net licenses

Salmon gill-net or drift-net licenses

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Salmon gill-net or drift-net licenses

Salmon gill-net or drift-net licenses .....  .....  .....  .....  .....  ..... 312 .....  .....  .....  .....  .....  ..... 312 .....  .....  .....  .....  .....  ..... 312 .....  .....  .....  .....  .....  ..... 312 .....  .....  .....  .....  .....  ..... 312 .....  .....  .....  .....  .....  ..... 312 .....  .....  .....  .....  .....  ..... 312 .....  .....  .....  .....  .....  ..... 312 .....  .....  .....  .....  .....  ..... 312 .....  .....  .....  .....  .....  ..... 312 .....  .....  .....  .....  .....  ..... 312 .....  .....  .....  .....  .....  ..... 312 .....  .....  .....  .....  .....  ..... 312 .....  .....  .....  .....  .....  ..... 312 .....  .....  .....  .....  .....  ..... 312 .....  .....  .....  .....  .....  ..... 312

Salmon trap-net, pound-net or weir licenses

Salmon trap-net, pound-net or weir licenses

Salmon trap-net, pound-net or weir licenses

Salmon trap-net, pound-net or weir licenses

Salmon trap-net, pound-net or weir licenses

Salmon trap-net, pound-net or weir licenses

Salmon trap-net, pound-net or weir licenses

Salmon trap-net, pound-net or weir licenses

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Salmon trap-net, pound-net or weir licenses

Salmon trap-net, pound-net or weir licenses

Salmon trap-net, pound-net or weir licenses

Salmon trap-net, pound-net or weir licenses

Salmon trap-net, pound-net or weir licenses

Salmon trap-net, pound-net or weir licenses

Salmon trap-net, pound-net or weir licenses .....  .....  .....  .....  ..... 64 .....  .....  .....  .....  ..... 64 .....  .....  .....  .....  ..... 64 .....  .....  .....  .....  ..... 64 .....  .....  .....  .....  ..... 64 .....  .....  .....  .....  ..... 64 .....  .....  .....  .....  ..... 64 .....  .....  .....  .....  ..... 64 .....  .....  .....  .....  ..... 64 .....  .....  .....  .....  ..... 64 .....  .....  .....  .....  ..... 64 .....  .....  .....  .....  ..... 64 .....  .....  .....  .....  ..... 64 .....  .....  .....  .....  ..... 64 .....  .....  .....  .....  ..... 64 .....  .....  .....  .....  ..... 64

Salmon net permits

Salmon net permits

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Salmon net permits .....  .....  .....  .....  ..... 40 .....  .....  .....  .....  ..... 40 .....  .....  .....  .....  ..... 40 .....  .....  .....  .....  ..... 40 .....  .....  .....  .....  ..... 40 .....  .....  .....  .....  ..... 40 .....  .....  .....  .....  ..... 40 .....  .....  .....  .....  ..... 40 .....  .....  .....  .....  ..... 40 .....  .....  .....  .....  ..... 40 .....  .....  .....  .....  ..... 40 .....  .....  .....  .....  ..... 40 .....  .....  .....  .....  ..... 40 .....  .....  .....  .....  ..... 40 .....  .....  .....  .....  ..... 40 .....  .....  .....  .....  ..... 40

Special angling permits

Special angling permits

Special angling permits

Special angling permits

Special angling permits

Special angling permits

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Special angling permits .....  .....  .....  ..... 756 .....  .....  .....  ..... 756 .....  .....  .....  ..... 756 .....  .....  .....  ..... 756 .....  .....  .....  ..... 756 .....  .....  .....  ..... 756 .....  .....  .....  ..... 756 .....  .....  .....  ..... 756 .....  .....  .....  ..... 756 .....  .....  .....  ..... 756 .....  .....  .....  ..... 756 .....  .....  .....  ..... 756 .....  .....  .....  ..... 756 .....  .....  .....  ..... 756 .....  .....  .....  ..... 756 .....  .....  .....  ..... 756

Scallop fishery licenses

Scallop fishery licenses

Scallop fishery licenses

Scallop fishery licenses

Scallop fishery licenses

Scallop fishery licenses

Scallop fishery licenses

Scallop fishery licenses

Scallop fishery licenses

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Scallop fishery licenses

Scallop fishery licenses .....  .....  ..... 197 (4 cancelled) .....  .....  ..... 197 (4 cancelled) .....  .....  ..... 197 (4 cancelled) .....  .....  ..... 197 (4 cancelled) .....  .....  ..... 197 (4 cancelled) .....  .....  ..... 197 (4 cancelled) .....  .....  ..... 197 (4 cancelled) .....  .....  ..... 197 (4 cancelled) .....  .....  ..... 197 (4 cancelled) .....  .....  ..... 197 (4 cancelled) .....  .....  ..... 197 (4 cancelled) .....  .....  ..... 197 (4 cancelled) .....  .....  ..... 197 (4 cancelled) .....  .....  ..... 197 (4 cancelled) .....  .....  ..... 197 (4 cancelled) .....  .....  ..... 197 (4 cancelled)

Labster pound licenses

Labster pound licenses

Labster pound licenses

Labster pound licenses

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Labster pound licenses

Labster pound licenses

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Labster pound licenses .....  ..... (2 cancelled) .....  ..... (2 cancelled) .....  ..... (2 cancelled) .....  ..... (2 cancelled) .....  ..... (2 cancelled) .....  ..... (2 cancelled) .....  ..... (2 cancelled) .....  ..... (2 cancelled) .....  ..... (2 cancelled) .....  ..... (2 cancelled) .....  ..... (2 cancelled) .....  ..... (2 cancelled) .....  ..... (2 cancelled) .....  ..... (2 cancelled) .....  ..... (2 cancelled) .....  ..... (2 cancelled)

Smelt bag-net licenses

Smelt bag-net licenses

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Smelt bag-net licenses

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Smelt bag-net licenses

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Smelt bag-net licenses

Smelt bag-net licenses

Smelt bag-net licenses

Smelt bag-net licenses .....  ..... 22 .....  ..... 22 .....  ..... 22 .....  ..... 22 .....  ..... 22 .....  ..... 22 .....  ..... 22 .....  ..... 22 .....  ..... 22 .....  ..... 22 .....  ..... 22 .....  ..... 22 .....  ..... 22 .....  ..... 22 .....  ..... 22 .....  ..... 22
Smelt gill-net licenses.
Smelt gill-net licenses.
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Smelt gill-net licenses.
Smelt gill-net licenses. ..... 73 ..... 73 ..... 73 ..... 73 ..... 73 ..... 73 ..... 73 ..... 73 ..... 73 ..... 73 ..... 73 ..... 73 ..... 73 ..... 73 ..... 73 ..... 73
Lobster pound certificates-182 (1 cancelled).
Lobster pound certificates-182 (1 cancelled).
Lobster pound certificates-182 (1 cancelled).
Lobster pound certificates-182 (1 cancelled).
Lobster pound certificates-182 (1 cancelled).
Lobster pound certificates-182 (1 cancelled).
Lobster pound certificates-182 (1 cancelled).
Lobster pound certificates-182 (1 cancelled).
Lobster pound certificates-182 (1 cancelled).
Lobster pound certificates-182 (1 cancelled).
Lobster pound certificates-182 (1 cancelled).
Lobster pound certificates-182 (1 cancelled).
Lobster pound certificates-182 (1 cancelled).
Lobster pound certificates-182 (1 cancelled).
Lobster pound certificates-182 (1 cancelled).
Lobster pound certificates-182 (1 cancelled). ..... 5,020 (10 cancelled) ..... 5,020 (10 cancelled) ..... 5,020 (10 cancelled) ..... 5,020 (10 cancelled) ..... 5,020 (10 cancelled) ..... 5,020 (10 cancelled) ..... 5,020 (10 cancelled) ..... 5,020 (10 cancelled) ..... 5,020 (10 cancelled) ..... 5,020 (10 cancelled) ..... 5,020 (10 cancelled) ..... 5,020 (10 cancelled) ..... 5,020 (10 cancelled) ..... 5,020 (10 cancelled) ..... 5,020 (10 cancelled) ..... 5,020 (10 cancelled)
NEW BRUNSWICK-DISTRICT No. 3-Supervisor H. E. Harrison
Shad gill-net or drift-net licenses ..... 270
Sturgeon fishery licenses. ..... 10
Whitefish fishery licenses ..... 14
Salmon net permits ..... 159
Gaspeneau pound-net or trap-net licenses ..... 8
Salmon gill-net or drift-net licenses ..... 122
Salmon trap-net, pound-net or weir licenses ..... 102
Bass fishery licenses ..... 36
Smelt gill-net licenses
Nil
Nil
Smelt bag-net licenses.722
NEW BRUNSWICK-DISTRICT No. 1-Supervisor J. F. Calder
Lobster fishing licenses. ..... 520
Shad gill-net or drift-net licenses ..... 50
Fish cannery licenses ..... 9
Certificates under Section 66-3.
Reduction works licenses ..... 4
Herring weir licenses ..... 653
Clam permits ..... 101
Salmon gill-net or drift-net licenses ..... 91
Herring seine licenses. ..... 15
Scallop fishery licenses ..... 3
Lobster pound licenses ..... 6
Smelt gill-net licenses. ..... Nil
Smelt bag-net licenses ..... Nil
Lobster pound-certificates-245
Lease of Dark harbour fishing privileges-1 ..... 1,452
NEW BRUNSWICK-DISTRICT No. 2-Supervisor A. L. Barry
Lobster fishing licenses. ..... 1,981
Lobster packing licenses ..... 103 (1 cancelled)
Lobster packing extensions-43
Oyster fishery licenses. ..... 959
Quahaug fishery licenses. ..... 85
Fish cannery licenses ..... 7
Reduction works licenses ..... Nil
Herring weir licenses ..... Nil
Gaspereau pound-net or trap-net licenses ..... 111
Salmon gill-net or drift-net licenses........
Salmon trap-net, pound-net or weir licenses ..... 395
Scallop fishery licenses ..... Nil
Bass fishery licenses. ..... 209
Smelt bag-net licenses ..... 6,107
Lobster pound licenses ..... 3
Lobster pound certificates-414 (1 cancelled).
MANITOBA-Supervisor J. B. Skaptason
Kind of Licenses-Concluded Number of licenses issued
Special angling permits. ..... 1,143
Pound-net licenses...... ..... 16
 ..... 3,958 (3 cancelled) ..... 177
Commercial sturgeon fishery licenses ..... 30
Domestic sturgeon fishery licenses. ..... Nil
Receipt books-74 ..... 6,325 (3 cancelled)
SASKATCHEWAN-Supervisor G. C. Macdonald

| Special angling permits | 351 (1 cancelled) |
| :---: | :---: |
| Commercial and fisherman's fishery licenses. | 1,138 (19 cancelled) |
| Domestic fishery licenses. | 180 (4 cancelled) |
| Indian and half-breed permits | 950 |
| Commercial sturgeon fishery licenses. | Nil |
| Domestic sturgeon fishery licenses. | Nil |

ALBERTA-SUPERvisor R. T. Rodd


British CoLUMBLA-Supervisor J. A. Moteerwell
Fish cannery licenses. ..... 5
Reduction works licenses.
39 (8 cancelled)
Special angling permits (per annum) ..... 207 ( 1 cancelled)
Special angling permits (per diem).
${ }^{1}$
Abalone fishery licenses924 (13 cancelled)
Indian Permits.
Crab fishery licenses. ..... 140
Smeltior Sardine fishery licenses.
75
75
Sturgeon fishery licenses.
176
Miscellaneous licenses. ..... 4,463
Salmon fishery licenses.
Salmon fishery licenses. ..... 943 cancelled)
Salmon trolling licenses.
7
Salmon trap-net licenses
Salmon purse-seine licenses353 (4 cancelled)
22
Licenses to a captain of a salmon (purse or drag) seine boat278 ( 7 cancelled)
Salmon curing licenses. ..... 33
Salmon cannery licenses
76
76
Boat license to buy fresh salmon from fishermen. ..... 233 (4 cancelled)
License to a person engaged in cold storage or fish packing to buy fresh salmon from fishermen ..... 74
Grayfish fishery licenses. ..... 420
Licenses to assistant operator of salmon (purse or drag) seine used un- der license 1,725 (3 cancelled)
Licenses to assistant in a boat used in operating a salmon gill-net ordrift-net997
Cod fishery licenses.
443
443
Herring or pilchard gili-net or drift-net licenses. ..... 39
Herring or pilchard purse seine licenses.
Herring or pilchard dra ..... 2
Nil118 (1 cancelled)
License to a captain of a herring or pilchard seine boat ..... 102
Herring curing licenses.
33
33
Licenses to assistant operator of a herring or pilchard purse seine. ..... 936
Whale factory licenses. ..... 2
Counterfoil of pelagic sealing certificates-1914,892 (50 cancelled)
yUKON
Special fishery licenses. ..... 26
PACIFIC COAST
Licenses to United States fishing vessels ..... 246
Total.60,791 ( 110 can . and 1 des.)

## APPENDIX No. 12

$\cdot$ Return showing the Details of Prosecution for Offences Against the Fisheries Act During Fiscal Year 1928-29 NOVA SCOTIA -DISTRICT No. 1-Superyisor, A. G. McLeod


NOVA SCOTLA-DISTRTCT No. 2-Suremvisor, D. H, Sutherdand

| 1 | J. Alvin Reid. | Sawdust pollution....... | Iittle River, N.S. | Fined $\$ 20$ and costs. |
| :---: | :---: | :---: | :---: | :---: |
| 2 | E. Maloney. | Setting lobster gear before opening of scason., | Roy's Island | Fined $\$ 20$ and costs. |
| 3 | Roy Weatherby | Leaving shore for fishingr ground before $6 \mathrm{am} . \mathrm{m}$, | Malagash Point. | Fined $\$ 5$ and costs. |
| 4 | Roy Iangille. | Leaving shore for fishing ground before $6 \mathrm{a} . \mathrm{m}$. | Malagash Point. | Fined \$15 and costs. |
| 5 | John Drummond | Leaving shore for fishing ground before $6 \mathrm{a} . \mathrm{m}$. | Malagash Point. | Fined \$15 and costs. |
| 6 | George Tatteric. | Leaving shore for fishing ground before $6 \mathrm{am} . \mathrm{m}$, | Malagash Point. | Fined \$15 and costs. |
| 7 | George Langille. | Leaving shore for fishing ground before $6 \mathrm{a} . \mathrm{m}$. | Malagasl Point. | Fined $\$ 15$ and costs. |
| 8 | Harold Smith. | Leaving shore for fishing ground before 6 a.m. | Malagash Point. | Fined \$15 and eosts. |
| 9 | Allie Allan... | Offering for sale frugments of lobsters......... | Skimer's Cove. | Fined $\$ 5$ and costs. |
| 10 | George Clarke. | Having berried Iobsters in possession. | Wallace. | Fined \$25 and costs. |
| 11 | Ellsworth Porter | Illegal fishing of lobsters.............. | Gulf Shore | Fined \$25 and eosts. |
| 12 | Tucker Matatall. | Leaving shore for fishing grounds before 6 a.m | Saddle Island | Fined \$15 and costs. |
| 13 | Daniel MacIntosh. | Dynamiting of Liscomb liver. | Liscomb River | Case dismissed. |
| 14 | Thomas Warddell, Jr | Irlegal fishing of trout.......... | South Brook, Harrison's Lake. | Fined \$5 and costs. |
| 15 | Thomas Waddeli, S | Illegal figling of trout. | South Brook, Hirrison's Lake. | Fined $\$ 5$ and costs. |
| 16 | Percy Ripley | Illegal fishing of trout. | South lBrook, Harrison s Lake. | Fined 85 and costs. |
| 17 | Calvin Siddall | Illegal fishing of salmon | ainecan River.................. | Fined \$10. |
| 18 | Frank Blair... | Illegal fishing of salmon. | Maccan River. | Fined \$10. |
| 19 | Daniel Mcaloney | Illegal fisling of salmon. | Maecan River. | Fined \$10. |
| 20 | Eugene Atkinson. | Illegal fishing of salmon. | Macean River. | Fined S10. |
| 21 | George Gilroy. | Illegal fishing of salmon. | Vaccan River. | Fined $\$ 10$ and costs. 1 net confiscated. |
| 22 | Duncan MLoNeilI. | Illegal fishing of salme | Vacear River. | Fined $\$ 10$ and costs. 1 net confiscated. |
| 23 | Ronald Thompson | Itleral fishing of salmon. | Maccan River. | Fined \$10 and costs. 1 net confiscated. |
| 24 | Willinm Older... | Ellegal fisling of salmon. | Macent River | Fined $\$ 50$ and costs. 1 salmon net confiscated. |
| 25 | James Warren. | Illegal fishing of salmon. | Macear River. | Fined $\$ 100$ and costs. 1 salmon net confiscated. |
| 26 | Roy. Skidmore | Illegal fishing of salmon. | Macean River. | Fined $\$ 50$ and costs. 1 salmon not con- |
| 27 | Chas. Ryan | tllegal fishing of salmon | Macean River. |  |
| 28 | Richard J. Stuart | Having lobsters in possession, closed season | Halifax | fiscated. <br> Fined \$10. Confiscated 1 rowbont, 2 prs. oars, 2 prs. rowlocks, 1 kit bag, 10 hand pots, 4 lobsters. |
| 29 30 | Richard Stuart. | Having lobsters in possession, closed season. | Halifix. . . . . . | Fined $\$ 10$. Confiscated 1 rowboat, 2 prs. oars, 2 prs. rowlocks, 1 kit bag, 10 hand pots, 4 lobsters. |
| 30 | John L, Moore. | Illogal fishing of salmon. | Economy River. | Fined $\$ 10$ and costs. |
| 31 | Neil White... | Illegal fishing of salmon. | North River.. | Fined \$1 and costs. |
| 32 | William Byard. | Illegal fishing of salmon. | North River. | Fined 55 and costs. |
| 33 | Benjamine Brooks | Illegal fishing of salmon. | Macean River. | Finod \$1 and costs or ten days in jail. |
| 34 | Daniel Ross.. | rilegal fishing of salmon. | Maccan River. | Case dlismissed. |
| 35 | Jack M1cIsaac. | lllegal fishing of salmon. | Maccan River. | Case dismissed. |
| 36 | Josepli Mrelanson | Illegal fishing of salmon. | Maccan River. | Case dismissed. |
| 37 | Joseph Murphy | Itlegal fishing of salmon. | Waugh's River. | Fined \$20 and costs. |
| 38 | Joseph Murpliy. | Unlawfully obstructing guardian. | Waugh's River. | Imprisonment for 1 week. |

Return showing the Details of Prosecution for Offences Against the Fisheries Act During Fiscal Year 1928-29—Continued
NOVA SCOTIA-DISTRICT No. 2-Concluded

| Pros. <br> Nos. | Name of Offender | Nature of Offence | Place of Offence | Result of Prosecution |
| :---: | :---: | :---: | :---: | :---: |
| 39 | James Francis. | Unlawfully obstructing guardian. | Fishway, near Oxford | Fined \$100 and costs or 1 month in jail. |
| 40 | N. W. King. | Illegal fishing of salmon.......... | Near Oxford....... | Fined \$4 and costs. |
| 41 | Lewis Thornwaite | Illegal fishing of salmon. | Near Oxford | Fined \$4 and costs. |
| 42 | Harold Young. | Illegal fishing of salmon. | West River.. | Fined \$40 and costs. |
| NOVA SCOTIA District No. 3-Supervisor, H. H. Marshall |  |  |  |  |
| , | Rodrick Ham. | Illegal fishing of salmon... | Mosher's Falls, Gold River... | Fined \$10 and costs. |
| 2 | George Muise.. | Illegal fishing of gasporeau. | Tusket's Falls, Tusket River.. | Fined \$5 and costs. |
| 3 | Aubrey Penall. | Illegal fishing of salmon.... | Plymouth Stump, Gold River. | Case dismissed. |
| 4 | John B. Hatt. | Preparing to fish for salmon. | Plymouth Stump, Gold River. | Case dismissed. |
| 5 | Stuart Whynot. | Illegal fishing of salmon... | LaHave River................. | Fined \$25 and costs. |
| 6 | Trnest Weagle. | Illegal fishing of salmon. | LaHave River | Fined $\$ 25$ and costs or 20 days in jail. |
| 7 | Ernest Weaglo | Illegal fishing of salmon. | LaHave Rive | Fined $\$ 25$ and costs or 20 days in jail. |
| 8 | Willet Conrad. | Illegal fishing of salmon.. | Rose Bay. | Fined \$10 and costs. |
| 9 | Edward Albright | Tllegal fishing of lobsters. | Freeport. | Fined $\$ 5.25$ and costs. |
| 10 | John Albright.... | Tile eral fishing of lobsters. | Frecport. | Fined 5.25 and costs. |
| 11 | Emerson Albright | Illegal fishing of lobsters. | Freeport. | Fined \$5.25 and costs. |
| 12 | William Albright. | Illogal fishing of lobsters. | Freeport. | Fined $\$ 5.25$ and costs. |
| 13 | Charles North. | Lllegal fishing of shad. | Annapolis River | Fined $\$ 25$ suspended sentence 2 yrs. and had confiscated 1 net. |
| 14 | Bert Harte. | Illegal fishing of shad. | Annapolis River. | Case dismissed. |
| 15 | Russel Keddy | Illegal fishing of shad. | Annapolis River............... | Fined $\$ 25$ suspended sentence 2 yrs. and had confiscated from him 1 dip net. |
| 16 | Merlin Whitman. | Illegal fishing of shad. | Annapolis River.. | Fined $\$ 25$ suspended sontence 2 yrs. and had confiscated from him 1 dip net. |
| 17 | Harold Minard | Illegal fishing of shad. | Annapolis River. | Case dismissed. |
| 18 | Reginald Stoddart | Illegal fishing of shad. | Annapolis River. | Case dismissed. Suspend dentence |
| 19 | Ronald Schaffner.. | Illegal fishing of slad. | Annapolis River. | Fined $\$ 25$ and costs. Suspended sentence for 2 years. |
| 20 | John Batson. | Illogal fishing of shad | Annapolis River. | Fined $\$ 25$ and costs. Suspended sentence for 2 years. |
| 21 | Reginald Stoddart. | Illegal fishing of shad | Annapolis River............... | Fined \$25 and costs. Suspended sentence for 2 years. |
| 22 | Stephen Labradore. | Illegal fishing of salmon....................... | LaHave River | Fined 812 and costs. |
| 23 | Stephen Labradore. | Obstructing fishery overseer while performing his duties. | LaHave River | Sentenced to 25 days imprisonment. |
| 24 | Leander Levy | Illegal fishing of lobsters........................ | Lunenburg | Fined \$5 and costs. |

PRINCE EDIVARD ISLAND-Stpervisor, S. T. Gallant

| 1 | Peter MacMahon. | Having smelts in possession. | New Anman, Prince Co | si. |
| :---: | :---: | :---: | :---: | :---: |
| 2 | John Reeves... | Having smelts in possession. | New Annan, Prince Co. |  |
| 3 | Philip Gain. | Having lobsters in his possession in close season.... | Alberton Bay.......... | S20 and had confiscated from him 15 traps, 130 fms. rope. |
| 4 | Denzie Smith | Having lobsters in his possession in close season. | Alberton Bay | $\$ 60$ or 30 days in jail. |
| 5 | John Skerry | Having lobsters in his possession in close scason.. | Alberton Bay. | $\$ 60$ or 30 days in jail. |
| 6 | Alfred Powers. | Having lobsters in his possession in close season. | Alberton Bay. | $\$ 60$ or 30 days in jail. |
| 7 | Waldo Matthews | Having lobsters in his possession in close season.. | Alberton Bay | $\$ 50$ and had confiscated from him' 1 case of lobsters. |
| 8 | Patrick Prille | Having lobsters in his possession in close season.. | Campbellton | \$60 or 30 clays in jail. |
| 9 | Lloyd Cook. | Having lobsters in his possession in elose season.. | Cape Wolic. | \$60 and costs $\$ 21.35$ or 30 days in jail. |
| 10 | Jerome Doucette. | Having lobsters in his possession in close season.... | Pleasant View | 860 and costs or 30 days in jail and had confiscated from him 1 boiler, 7 pans, 1 set of scales and 1 closing machine. |
| 11 | Wilfrid Doucette | Having lobsters in his possession in close season.. | Pleasant View. | \$60. |
| 12 | Claud Cormier.. | Having lobsters in his possession in close season.. | Pleasant Viow. | $\$ 50$. and costs or 30 days in jail and confiscation of 1 case of lobsters. |
| 13 | Wm. Arsenault. | Having lobsters in his possession in close season... | Lot 16 | $\$ 50$ and costs or 30 days in jail and had confiscated from him it cases of lobsters. |
| 14 | Reginald MeHugh. | Having lobsters in lis possession in close season... | Norway | 860 and costs or 30 days in jail and had confiscated from him 70 cans of lobsters |
| 15 | Gratton MeHugh . | Having lobsters in his possession in close season.... | Norw | 860 and costs or 30 days in jail and had confiscated from him il cases of lobsters. |
| 16 | James Monoghon. | Having lobsters in his possession in close season... | Camplellton | \$45 and costs $\$ 0$ or 30 days in jail. |
| 17 | Frasor Coughin. | Having lobsters in his possession in close season., | Camplelito | 860 and costs $\$ 35.20$ or 60 days in jail. |
| 18 | John II. Coughtin. | Having berried lobsters in his possession.. | Campbelton | 810 and costs of court or 15 clays in jail. |
| 19 | Lawrence Murphy | Having berried lobsters in his possesssion. | Camploellton. | 510 and costs of court or 15 days in jail. |
| 20 | Fred Jay and T'atrick Kielly.. | Fishing smelt bar-net in the span of bridge........ | Pisqued Bridge | $\$ 2$ and had confiscated from him 1 smelt bag-not. |

NEW BRUNSWICK—DISTRICT No. 1-Suphivisor, J. F. Calder


Return showing the Details of Prosecution for Offences Against the Fisheries Act During Fiscal Year 1928-29-C Continued
NEW BRUNSWICK-DISTRICT No. 1-Concluded

| Pros. Nos. | Name of Offender | Nature of Offence | Place of Offence | Result of Prosecution |
| :---: | :---: | :---: | :---: | :---: |
| 7 | Chas. Ramsdell. | Having illergal lobsters in his possession. | Near Wood Island. | 325.00 and had confiscated from him 26 |
| 8 | Lloyd Benson. | Having illegal lobsters in his possession | Near Scal Cove | illcgal lobsters. <br> $\$ 30.00$ and had confiscated from him 22 |
| 9 | Joseph Morehouse |  |  | illegal lobsters. |
|  |  |  |  | $\$ 25.00$ and had confiscated from him 22 illogal lobsters. |
| 10 | Harley Small | Having illegal lobsters in his possession | Near Scal Cove | $\$ 15.00$ and had confiscated from him 35 illegal lobsters. |
| 11 | Murray Stackhouse | Fishing during Sunday close time period. | St. John Harbour. | \$10.00. |
| 12 | ${ }^{\text {Arthur Croit. }}$ Peter McDade | Tishing during Sunday close time period. Fishing during Sundny close time period. | St. John Harbour. | \$10.00. |
| 14 | Paul MeDade. | Fishing during Sunday close time period. | St. John Harbour | \$10.00. |
| 15 | Anthony Belyea. | Trishing during Sunday close time period. | St. John Harbour. | \$10.00. |
| 16 | Chas. E. Sweet. | Fishing during Sunday close time period. | St. John Harbour, | \$10.00. |
| 17 | Ouriel Hamm. | Tishing during Sunday elose time period. | St. John Harbour. | \$10.00. |
| 18 | Alex. Thompson | Fishing during Sunday close time period. | St. John Harbour | \$10.00. |
| 19 | Fred Belyea. | Fishing during Sunday close time period. | St. John Harbour | \$10.00. |
| 20 | Scott Ingalls | Having illegal lobsters in his possession. | Tngall's Head, Grand Manan. | $\$ 25.00$ and had confiscated from him 38 illegal lobsters. |
| 21 | Chester Guptill | Having illegal lobsters in his possession | Ingall's Head, Grand Manan. | \$25.00 and had confiscated from him 38 illegal lobsters. |
| 22 | Gordon Tippet | Fishing during Sunday close time period | St. Jolın Harbour | \$10.00. |
| 23 | Hazen Lord | Having illegal lobsters in his possession. | Near Adam's Isl'd | $\$ 25.00$ and had confiscated from him 3 traps and 5 lobsters. |
| 24 | James Jennings | Using net in non-tidal wators without permit. | New River, Char. Co | $\$ 20.00$ and confiscated from him 1 small |
| 25 | Chas. Murray | Using not in non-tidal waters without permit | New River, Char. Co. | net and 1 salmon. <br> $\$ 20.00$ and confiscated from him 1 smal |
| 20 | Bibber Stuart. | Catching herring by means of seine within 3 miles of shore. | West Isles, Char. Co | \$20.00. |
| 27 | Chauncey Stuart | Catching herring by means of seine within 3 miles of shorc. | West Isles, Char. Co. | \$20.00. |
| 28 | Albert Jones. | Allowing buckwheat hulls to enter Petitcodiac River. | River Glode. | \$20.00. |
| 29 | Thomas Hamilton. | Using a net in non-tidal waters without a permit from the Minister. | Leamon Pool, Coverdale River. | $\$ 20.00$ and lad confiscated from him salmon net. |
| 30 | Bertram Forse. | Using a net in non-tidal waters without a permit from the Minister. | Lemmon Pool, Coverdale River. | \$30.00 and had costs \$4.85. |
| 31 | Kennetl Steeves. | Using a net in non-tidal waters without a pormit from the Minister. | Leamon Pool, Coverdale River. | \$20.00 and costs \$4.85. |



NEW BRUNSWICK-DISTRICT No. 2-Coneluded

| Pros. Nos. | Name of Offender | Nature of Offence | Place of Offence | Result of Prosecution |
| :---: | :---: | :---: | :---: | :---: |
| 19 | Harvey Morrison. | Fishing for salmon in close season. | Tabucintac River..... | \$50.00. |
| 20 | John B. Lagacey . . . . . . . . . . . . . . . | Violating Section 29 of the Fisheries Act-Lobsters in close season. | Green Point............ . | \$50.00. |
| 21 | Norman Lagacey . | Violating Section 29 of the Fisherics Act-Lobsters in close season. | Green Point. | \$10.00. |
| 22 | George Smith | Failing to have salmon net tagged. . . . . . . . . . . . . . . . . | Lower Neweastle. | \$1.00. |
| 23 | John Ginnish. | Fishing for oysters in close season.. | Bay du Vin....... | \$1.00. |
| 24 | Wm. Donnell. | Buying berried lobsters.......... | Cocagne Cape. | \$25.00. |
| 25 | Patrick Despres. | Bringing ashore berried lobsters. | Cocagne Cape. | \$50.00. |
| 26 | Wm. Martin. . . . | Fishing for oysters in close season. | Bay du Vin... | \$1.00. |
| 27 | Harry Heilman | Drifting for salmon without a license | East Coast. | Not guilty. |
| 28 | Dave Jenkins. . | Drifting for salmon without a license. | East Coast. | Not guilty. |
| 29 | Leslie Lewis. | Drifting for salmon without a license. | East Coast. | Case withd rawn. |
| 30 | Wm. Mills. | Drifting for salmon without a license. | East Coast. | Case withdrawn. |
| 31 | F. G. S. Richard | Failing to return to beds small oysters. | Buctouche. | \$10.00. |
| 32 | Cyril Myers. | Failing to return to bods small oysters. | Buctouche. | \$10.00. |
| 33 | Willie Jacob. | Taking seed lobstors to shore........... | Little Cape | \$25.00. |
| 34 | Theodore Gould | Taking seed lobsters to shore. | Cape Bald. | \$25.00. |
| 35 | Adelard Gould. | Taking seed lobsters to slrore... | Cape Bald | \$25.00. |
| 36 | Philippe B, LeBlanc.............. . | Taking soed lobsters to shore............ | Aboujagan.... | \$25.00. |
| 37 | Wm. Martin. | Failing to return to beds small oysters.... | Miramichi Bay. | \$5.00. |
| 38 | A. Nicholson. | Failing to return to beds small oysters.... | Miramichi Bay. | \$5.00. |
| 39 | Leonidas Doiron. | Failing to return to beds small oysters.... | Miramichi Bay . . . . . | \$5.00. |
| 40 | John Lambert. . . | Failing to return to beds small oysters. | Miramichi River Oak P | \$5.00. |
| 41 | James Jimmo... | Failing to return to beds small oysters.. | Miranichi Bay . . . . . . . | \$10.00. |
| 42 | John Surette. | Failing to return to beds small oysters. | Buctouche Bay. | \$10.00. |
| 43 | Edward Surette. | Failing to return to beds small oysters. . . . . . . | Buctouche Bay. | \$10.00. |
| 44 | Philias Cormier. | Fishing one smelt gill-net without a license........... . . | Little Rivor.... | $\$ 2.00$ and had confiscated from him 1 gill-net. |
| 45 | Frank Daigle. | Fishing for smelts without a license in close season.. . | Little Aldouane. | $\$ 20.00$ |
| 46 | Alfred Murray. | Having in possession without lawful excuse smolts in close season. | Richibucto.. | $\$ 50.00$ |
| 47 | Mr. Baby | Having lobsters in his possession illegally | Capo Tormentine. | $\$ 2.00$ |
| 48 | William Reid | Fishing for lobsters out of scason.......... | Cape Tormentine. | $\$ 5.00$ |
| 49 | Roy Allen... | Fishing for lobsters out of soason. | Cape Tormentine. | $\$ 5.00$ |
| 50 | Foster Allen. . . . . . . . . . . . . . . . . . | Fishing for lobsters out of season. | Cape Tormentine. | $\$ 5.00$ |
| 51 | Wm. Flaherty.... | Failing to return to public beds small oysters.... | Miramichi River. | $\$ 2.00$ |
| 52 | Francis McDonald | Failing to return to public beds small oysters....... | Miramichi Bay. | $\$ 10.00$ |
| 53 | Margerie Duplacey, Octave Duplacey, Henry Oullette, Vital Collette, Francis Collette, Alb. Collette. | Having in possession oysters in close scason......... | Buctouche...... | Not guilty. |
| 54 | John Russell | Failing to return to public beds undersized oysters. | Miramichi Bay... | Not guilty. |
| 55 | Wright Grogan . . . . . . . . . . . . . . . . . . | Fishing for smelts in close senson..................... . . | Miramichi Bay. | $\$ 25.00$ and costs $\$ 13.00$. $\$ 25.00$ and costs $\$ 13.00$. |
| 56 | Allen Gregan. . . . . . . . . . . . . . . . . | Fisluing for smelts in close season. . . . . . . . . . . . . . . . . | Miramichi Bay. | $\$ 25.00$ and costs $\$ 13.00$. |


| 1 | Chester Plant | Water pollution. | Little River, Victoria Co. | \$20.00. |
| :---: | :---: | :---: | :---: | :---: |
| 2 | C. V. Lewis. | Water pollution. | St. John River, Victoria Co. | \$20.00. |
| 3 | Alex. MeCartiy | Fishing for shad in weekly close time. | St, John River, York Co. | \$10.00. |
| 4 | Edward Payne. | Fishing for shad in weekly close time. | St, John River, York Co | \$10.00 and costs. |
| 5 | McTavish Duncan. | Using small mesh dip-nct for salmon. | N.W. Miramichi River. | $\$ 10.00$ and costs and had confiscated from him 1 small mesh dip-net. |
| 6 | Barney Baker. | Fishing for salmon with spear and torch. | St. John River | $\$ 10.00$ and had confiscated from him 1 boat, spear and torch. |
| 7 | Dan Beaumaster | Fishing for salmon with spear and torch | St. John River. | \$10.00. |
| 8 | Samuel Thibodeau | Water pollution. | Siegas River. | \$20.00. |
| 9 | Gordon Robinson. | Fishing salmon with wire net. | South West Miramichi River.. | $\$ 50.00$ and had confiscated from him 1 wire net. |
| 10 | Peter Harris. | Fishing salmon with wire net. | South West Miramichi River. . | 550.00. The article confiscated is the same article as in Pros. No. 9. |
| 11 | Edgar Robinson. | Using net without permit. | South West Miramichi River. . | $\$ 50.00$ and confiscated from him 1 wire net. |
| 12 | Donald A. McLean. | Fishing for salmon with net in close season.. | St. John River. | $\$ 10.00$ and had confiscated from him 1 salmon net. |
| 13 | James Whaten. | Fishing with nets in closed season period. | Renous River. | $\$ 50.00$ and had confiscated from him 1 net and 1 board canoc-Suspended sentence. |
| 14 | Bernard Fialahan. | Fishing with nets in closed season period. | Renous River. | $\$ 50.00$ and had confiscated from him 1 net and 1 board canoe. Suspended sentence. |
| 15 | Harold Lyons. | Fishing with net for salmon without license. | Southwest, Miramichi River.. | $\$ 50.00$ or 2 months in jail and had confiscated from him 1 wire net. Suspended sentence. |
| 16 | Alfred Jardine. | Fishing with net for salmon without licenso. | South west, Miramichi River.. | Sj0.00 or 2 months in jail. Had confiscated from him 1 canoe, 2 twine nets. |
| 17 | Alex. Dunphy | Fighing for salmon in closed season | St. John River. | $\$ 5.00$ and had confiscated from him 1 salmon net. |
| 18 | John Burpee. . . . . . . . . . . . . . . . . . . | Fishing for salmon in closed season................ | St. John River | 55.00 and had confiscated from him 1 salmon net. |
| 19 | George Richard | Having salmon in possession contrary to law (Sce. 29, $\mathrm{F}^{\mathrm{F}} . \mathrm{A}$.) | Blackville. | $\$ 25.00$ or 1 month in jail and had confiscated from him 1 salmon and salmon heads. |
| 20 | Freeman Stewart. | Fishing for and having one salmon in possession... | Southwest Miramichi River.. | $\$ 50.00$ or 2 months in jail. Suspended sentence and costs $\$ 11.00$ and had confiscated from him 1 salmon, 1 canoe and 1 twine net. |
| 21 | Wm. Stewart, Jr. | Fishing for and having one salmon in possession.... | Southwest Miramichi River... | $\$ 50.00$ or 2 months in jail and costs $\$ 11.00$. Suspended sentence. The confiscated articlos are the same articles as in Pro. 20. |
| 22 | Mathew Connick. | Fishing for salmon with net in closed season....... | Northwest Miramichi River.. | $\$ 50.00$ and costs or 2 months in jail. Suspended sentence. Had confiseated from him 1 twine net. |

Return showing the Details of Prosecution for Offences Against the Fisheries Act During Fiscal Year 1928-29-Continued
NEW BRUNSWICK-DISTRICT No. 3-Concluded

| Pros. Nos. | Name of Offender | Nature of Offence | Place of Offence | Result of Prosecution |
| :---: | :---: | :---: | :---: | :---: |
| 23 | Garnet Arbeau | Fishing for salmon with net in closed season....... | Cains River. . | $\$ 5.00$ or 2 months in jail, Suspended sentence. Had confiscated from him 1 salmon net and costs $\$ 2.00$. |
| 24 | Rheben Goodine................ | Killing fish by use of explosives..................... | Tobique River.. | \$100.00 and costs \$2.50. Suspended |
| 25 | Joseph Goodine. | Killing fish by use of explosives. | Tobique River. | $\$ 100.00$ and costs $\$ 2.50$. Suspended sentence. |

MANITOBA--Supervisor, J. B. Skaptason

| 1 | D. A. Grose.. | Violation of Sec. 2, Sub. sec, D. of the Fish. Act. | Westbourne | \$5.00. |
| :---: | :---: | :---: | :---: | :---: |
| 2 | Albert Vernon Warrian | Violation of Sec. 35, Spec. Fish. Regs | Crooked Creek Lake Dauphin | \$5.00 and costs. |
| 3 | Robert McEwan. | Violation of Sec. 35, Spec. Fish. Regs. | Crooked Creek, Lako Dauphin | $\$ 5.00$ and costs and had confiscated from him 2 spears. |
| 4 | Henry Chas. Snusher. | Using dip-ne | Near Fishway, St. Andrews Lock. | 85.00 and had confiscated from him 1 dip-net. |
| 5 | Joe Minkus. | Fishing without permit violating Sec. 2, sub-sec. 1. | GIadstone | \$5.00. . |
| 6 | J. Smith | Fishing with dip-net near fish way. | St. Andres Lock, Red River. | 85.00 and had confiscated from him 1 dip-net. |
| 7 | E. Dittloff. | Fishing with dip-ne | St. Andres Lock, Red River. | 85.00 and had confiscated from him 1 dip-nct. |
| 8 | J. Begrezz . ........... | Fishing with dip-net near fish way................. | St. Andres Lock, Red River. | 85.00 |
| 9 | Mrs. Matilda Strosden. | Fishing by means other than by angling withont a permit. | Winnipeg River near Lac du Bonnet. | Costs of court. |
| 10 | Mrs. Mina Kaln | Fishing by means other than by angling without a permit. | Winnipeg River near Lac du Bonnet. | Costs of court. |
| 11 | Hugh O'Grady | Fishing by means other than by angling without a permit. | Winnipog River near Lac du Bonnet. | Costs of court. |
| 12 | John G. Anderso | Violation of See. 30, sub-sec. 1 of the Fish. Act. | Lac du Bonnet. | No fine imposed. |
| 13 | C. F. Carlson. | Fishing by means other than by angling without a permit. | Winnipeg River, Lac du Bonnet. | Fined costs of court. |
| 14 | Hugh O'Grady | Using illegal mesh nets violating Sec. 8, sub-sec., D.F.R. | Near Lac du Bonnet. | \$5.00 and had confiscated from him 1 gill-net. |
| 15 | Edward Raven. | Fishing illegal mesh, viol. Sec. 4, sub. see. 1 (a) F.R. | Eagle Island, Lake Winnipeg. | Had confiscated from him 2 gill-nets and reprimanded. |
| 16 | Sam Kent | Fishing illegal mesh, viol. Sec. 4, sub.-sec. 1 (a) F.R | Eaglo Island, Lake Wimipeg. | Fad confiscated from him 4 gill-nets and reprimanded. |



Return showing the Details of Prosecution for Offences Against the Fisheries Act During Fiscal Year 1928-29-Continued
MANITOBA-Concluded

| Pros. Nos. | Name of Offender | Nature of Offence | Place of Offence | Result of Prosecution |
| :---: | :---: | :---: | :---: | :---: |
| 42 43 44 | Ralph Way <br> John Boonk. <br> Bill Davidson. | Fishing with illegal contrivance, viol. sec. 20 of the Fish. Rogs. <br> Fishing with illegal contrivance, viol. sec. 20 of the Fish Regs. <br> Fishing with illegal contrivance, viol. sec. 20 of the Fish. Regs. | Assinaboine River. $\qquad$ <br> Assinaboine River. $\qquad$ <br> Assinaboine River. $\qquad$ | Let off with warning. <br> Let off with warning. <br> Let off with warning. |

SASKATCHEWAN-Supervisor, G. C. McDonald


Return showing the Details of Prosecution for Offences Against the Fisheries Act During Fiscal Year 1928-29-Continued
SASKATCHEWAN一Continucd

| Pros Nos. | Name of Offender | Nature of Offence | Place of Offence | Result of Prosecution |
| :---: | :---: | :---: | :---: | :---: |
| 41 | Gea. Ring. | Using a net without license sub-sec. 1 of the See; 2, | Qu'Appelle River. | \$5.00 and had confiscated from him 3 |
| 42 | Frank Wolfe. | F.R. <br> Using a net without license sub-sec. 1 of the Sec. 2 , | Qu'Appeile River | dip-nets. |
| 43 | Karl Wolfe. | Ing a net without license sub-sec. 1 of the Sec. 2, F. G. | Qu'Appelle River | $\$ 5.00$ and had confiscated from him 2 dip-nets. |
| 43 | Karl | Using net without a license sub-sec. 1 of Sec. 2, of Fisli. Regs. | Qu'Appelle River | $\$ 5.00$ and had confiscated from him 2 dip-nets. |
| 44 | Wm. Sieber | Using net without a license sub-sec. 1 of Sec. 2, Fish. Regs. | Qu'Appelle River |  |
| 45 | Thorval Berven. | Fishing contrary to Sec. 14, Clause 3 of the Spec. Fish. Regs. | Sec. 36, Tp. 33, Rge. 12 W . of 2nd Mer. | \$1.00. |
| 46 | Thorval Berven. | Fishing contrary to Sec. 14, Clause 13 of the Spec. Fish. Regs. | Sec. 36, Tp. 33, Rge. 12, W. of of 2 nd Mer. | $\$ 1.00$ and had confiscated from him 1 spear. |
| 47 | Sven Bergman | Fishing contrary to Sec. 12 , Clause 2 of the Spec. Fish. Regs. | Sec. 36, Tp. 33, Rge. 12, W. of 2nd Mer. | $31.00$ |
| 48 | Sven Bergman | Fishing contrary to Sec. 14, Cl. 3 of the Spec. Fish. Regs. | Sec. 36, Tp. 33, Rge. 12, W. of 2nd Mer. | $\$ 1.00$ and had confiscated from him 1 fish spear. |
| 49 | Knit Elander. | Fishing contrary to Sec. 12, Clause 2 of the Spec. Tish. Regs. | Sec. 6 , Tp. 3.t, Rge. 11, W. of 2nd Mer. | \$1.00. . |
| 50 | Knit Elander | Fishing contrary to Sec. 14, Clause 3 of the Spec. Fish. Regs. | Sec. 6, Tp. 34, Rge. 11, W. of 2nd Mer. | 81.00 and had confiscated from him 1 spear. |
| 51 | Henry Selbee | Fishing with illegal apparatus contrary to Sec. 14, sub-sec. 1 of the Fish. Regs. | Little Arm River, Chamberlain. | $\$ 5.00$ and had confiscated from him 1 wire drag-net. |
| 52 | Henry Selbee. | Fishing in closed season, contrary to Sec. 12, sub-sec. 2 of the Fish. Regs. | Little Arm River, Chamberlain. | $\$ 5.00$ and had confiseated from him 200 lbs. mullet. |
| 53 | Lester Selbee. | Fishing in closed season, contrary to Sec. 12, sub-sec. 2 of the Fish. Regs. | Little Arm River, Chamberlain. | $\$ 5.00$ |
| 54 | Lester Selbee | Fishing with illegal apparatus contrary to Sec. 14, sub-see. I of the Fish. Regs. | Little Arm River, Chamberlain. | \$5.00. |
| 55 | Frank Wallace | Fishing in close season contrary to Sec. 12, sub-sec. 2 of the Fish. Regs. | Little Arm River, Chamber lain. | \$5.00. |
| 56 | Frank Wallace | Fishing with illegal apparatus contrary to Sec. 14, sub-sec. 1 of the Fish. Regs. | Little Arm River, Chamberlain. | \$5.00. |
| 57 | Paul Selbee. | Fishing in closed season contrary to Sec. 12, subsec. 2 of the Fish. Regs. | Little Arm River, Chamberlain. | \$5.00. |
| 58 | Paul Selbee. | Fishing with illegal apparatus contrary to Sec. 14, sub-sec. 1, of the Fish. Regs. | Little Arm River, Chamberlain. | $\$ 5.00 .$ |
| 50 | Wasel Poinoisuik. | Fishing contrary to Sec. 14 , Clause 3 of the Spee. Fish. Regs. | Sec. 32, Tp. 33, Rge. 11 W. of 2nd Mer. | 82.00 and had confiscated from him 1 spear. |
| 60 | Wasel Poinoisuik. | Fishing contrary to Sec. 12, Clause 2 of the Spec. Fish. Regs. | Sec. 32, Tp. 33, R.ge. 11 W. of and Mer. | $\$ 2.00$. |


|  | Fishing contrary to See. 14, Clause 3 of the Spee. |  | \$1.00 and |
| :---: | :---: | :---: | :---: |
| Harry Sovac | hing contrury to Sec. 12, Clause 2 of the Spee. | Soc. 33. Tp. 33, Rare. 11 W. of | $\begin{aligned} & \text { spe } \\ & \mathrm{f} \mid \$ \mathrm{I} .00 . \end{aligned}$ |
|  | Fish. Rers. | 2nd Mer. |  |
| Max Hershman | Having fish in his possession in closed season Contrary See. 29 of the Fish. Aet. | ima, | 00 and had confiscated from him 100 s. tullibee and 50 lbs . of pickerel. |
| Roderic E. Willia | Preparing to fish in elosed season contrary to siee. | Pasqua Dam, MooseJaw | ismissed. |
| Roderic E. William | Preparing to use illegal apparatus contrary to Sec. <br> 14, sub-sec. 1 of the Rers. | Pasqua Dam, Moose-Jaw | ismissed. |
| P | Preparing to use illegal apparatus contrary to Sec. <br> 14, Sub-sec. 1 of the Rers. | Pasqua Dam, Moose-Jaw Creek. | et. |
| P | Prepariug to fish in close soason contrary to See. 12, Sub-sec. 2 of Fish Regs. | Pasqua Dam, MooseJaw Creek. | Dismissed. |
| Chas. | Fishing with illegal apparatus contrary to Sec. 14, sub-sec. 1. | Craven Dam, Qu'Appelle River. | 35.00 and had confiscated froin him 1 wire dip-net. |
| W | Fishing with illegal apparatus contrary, sec. 14, sub-sec. 1. | Cruven Dan, Qu'Appelle River. | 35.00 and had eonfiscated from him 1 wire dip-net. |
| Ben | Having fish in possession in closed senson contrary to Sec. 29, of the Fish. Act. | Rerima, | $\$ 10.00$ and had confiseated from 150 lbs . mixed lish. |
| Ja | Having in possession piko during close season contrary to Sec. 29. |  | $\$ 1.00$ and had confiscated from him 10 pike. |
|  | Having in possession pike duing close season contrary to Sec. 29. | Little Red Deer Creek......... | $\$ 1.00$ and had eonfiseated from him 10 pike. |
| C | Having in possession pike during close season contrary to Sec. 29. | Little Red Deor Croek........ | $\$ 1.00$ and had confiseated from him 10 pike. |
| A | Fishing in closed season contrary to Sec. 12, subsec. 2, of the Regs. | Craven Dam, Qu'Appelle River. | Suspended sentence. |
|  | Fishing with illegal apparatus contrary to Sec. 14, sec-sub. 1 of tho Regs. | Craven Dam, Qu'Appelle River. | Suspended sentence. |
|  | Fishing in closed soason contrary to Sec. 12, subsec. 2 of the Regs. | Yalepo | Sis. 00 and had confiscated from him 1 short bamboo rod, 1 line and hook. |
| $\mathrm{Gr}$ | Fishing in closed season contrary to See. 12, subsec. 2 of the Regs. | V | Sis.00 and had confiscated from him 1 short bamboo rod, 1 line and hook. |
| $\|A\|$ | Fishing in closed season contrary to See. 12, subsec. 2 of the Regs. | Craver Dam, Qu'Lpuelle River. | \$5.00. |
|  | Fishing with illegal apparatus contrary to Sec. 14, sub-sec. 1 of the Regs. | Craven Dam, Qu'Appelle River. | $\$ 7.50$ and had confiscated from him 1 wire dip-net. |
|  | Fishing in closed season contrary to See. 12, sul)sec. 2 of the Rers. | Craven Dam, Qu'Appelle River. | $35.00$ |
|  | Fishing with illegal appacatus contrary to Sec. $1 \cdot 4$, Sub-see. I of the Regs. | Cravel Dam, Qu'dppelle River. | $\$ 7.50$ and hatd confiscated from him 1 wire dip-net. |
|  | Fishing durims close season, Sul-see. 2 of Sec. 12, of Tish . Reess. | Souris River, Estevan Dam. . | $\$ 2.00$ and had confiscated from hin 1 bamboo rod. line and hook. |
| G | Using net without a license, |  | $\$ 1.00$ and had confiscated from him 1 dip-met, 15 lbs. pilke. |
| Lo | Fishing by means of net without a license, S.S. 1 of Sec. 2. | S | $\$ 1.00$ and had conliseated net. |
|  | Fishing during close season S.S. 2 of See. 12, Fish. Regs. | Souris River, Estevan Dam. | \$2.00. |

Return showing the Detrils of Prosecution for Offences Against the Fisheries Act During Fiscal Year 1928-29-Continued
SASKATCHEWAN-Concluded


John Leade
Mike Bouga.
Edmond Chesncy
Tom Hudi.
Frank Zciesky
L. Muczk.

Volmor Muller
Volmor Muller.
A. Briere
E. Sookeroff.

Wasil Chendkoff
John Negeoff
Peter Sermuks $\qquad$
Peter Sermulks.
John Swannick

John Swannish $\qquad$
John Fortin
John Fortin
Hoe Hoem.
$\qquad$

Hoe Hoem.
Eric Vidal
Geo. Morton Stewart $\qquad$


Using net of illegal mesh, sub-sec. 1 of Sec. 11, of Pasqua Lake Fish. Regs.
Fishing with gill-net contrary to See. 2, Sub-sec. 11 Leach Lake, near Sec. 16, Tp. of the Spec. Fish Rers.
Fishing with gill-net contrary to Sce. 2, Sub-sec. 11 Leach Lake, near Sec. 16, Tp. of the Spec. Fish. Regs.

## Fishing with gill-net contra <br> Leach Lake, near Sec. 16 . Tp

 of the Spec. Fish. Regs. Fishing with gill-net eontrary to See. 2, Sub-sec. 11 Leach Lake, near Sec. 16, Tp of the Spee. Fish. Regs.Fishing with gill-net contrary to Sec. 2, Sub-sec. 11 Leach Lake, near Sec. 16 . Tp of the Spec. Fish. Regs.

## 24, Rge. 4, W. of 2nd. Mer.

Fish, Regs.
Fishing without a liecnse or permit, sub. sce. 1 Sec. 2, Fish. Regs
Having in possession fish in closed scason............
Fishing without a license............................... . .
Netting without license.............................. Barricr Lake, near Armstrong
Netting without license................................. . .

Fishing with nets during elose season contrary Sec 12, Fish. Regs.
Having in his possession whitefish during close
Faving in his possession whitefish dur
Tishing in closed season contrary See. 12, Sub. sec. 1 of the Regs.
Fishing without a license contriry to Sec. 2, Subsec. 1 of the Regs.
Fishing in close season contrary to Sec. 12, Sub-Peter Pond Lako soc. 1 of the Regs.
Fishing without a license contrary to Sec. 2, Sub-Peter Pond Lake.................

## sec. 1 of the Regs.

Fishing in elose sea
sec. 1 of the Regs
Fisling without a li
sec. 1 of the Rep
Using spear in killimg fish, Sec. 3 Fish. Regs
Fishing during close season contrary to Sce. 12 (1 1 ) Rers.
$\$ 2.00$ and costs and had confiscated from him 1 gill-net
$\$ 10.00$ and had confiscated from him gill-net.
S10.00 and had confiscated from him 1 gill-net.
$\$ 10.00$ and had confiscated from him 1 gill-net. gill-net.
Dismissed.
$\$ 2.50$.
$\$ 2.50$ and had confiscated from him 14 lbs. of fish.
$\$ 25.00$ and confiscated from him 307 lbs. of whitefish.
$\$ 1.00$ and costs $\$ 1.75$ and had confis-
cated from him 1 gill-net.
$\$ 1.00$ and costs $\$ 1.75$.
$\$ 1.00$ and costs $\$ 1.75$.
$\$ 20.00$ or two weeks in jail and had confiscated from him 3 gill-nets.
$\$ 20.00$ or two weeks in jail, and had con$\$ 20.00$ or two weeks in jail, and
fiscated from him 300 lbs . fish
$\$ 15.00$ or one month in jail and had confiscated from him 6500 lbs. whitefish and 1500 lbs of pike and 4 gill-nets.
$\$ 15.00$ or one month in jail.
$\$ 15.00$ or one month in jail.
$\$ 15.00$ or one month in jail.
$\$ 15.00$ or one month in jail.
$\$ 15.00$ or one month in jail.
$\$ 4.00 \mathrm{ancl}$ costs $\$ 1.75$ and had confiscated from him 60 lbs. pike.
$\$ 20.00$ and costs $\$ 4.50$ and had confiscated from him 51 whitefish.

Return showing the Details of Prosecution for Offences Against the Fisheries Act During Fiscal Year 1928-29—Continued
ALBERTA-Supervisor, R. T. Rody

| Pros. Nos. | Name of Offender | Nature of Offence | Place of Offence | Result of Prosecution |
| :---: | :---: | :---: | :---: | :---: |
| 1 | G. S. Funderburg. | Fishing with a small mesh net. | Lac La Biche. | Not guilty. Had confiscated from him |
| 2 | Samuel Beek | Angling for jackfish in the close season | Lake Newe | 1.00 and had confiscated from him 1 |
| 3 | A. Mont | Violation of Sec. 76 of the Fish | Muir Lake | fishing rod. $\$ 10.00 .$ |
| 4 | L. E. Holland | Angling for jackfish in the close season. | Chestermere Lake near Cai- | \$5.00. |
| 5 | M. Zimmerman | Violation of Sec. 12, Para. 2 of the Spec. Fish. Regs. | Near Magnatic. | 82.00 and had confiscated from him 1 spear. |
| 6 | Cecil Sharman | Violation of Sec. 76 Fish Act..................... | Chip Lake...... | \$10.00. |
| 7 | A. E. Cross. | Angling in close season contrary to Sec. 12, Para 2 of the Spec. Fish. Act. | Chin Lakes. . . . . . . . . . . . . . | $\$ 1.00$ and had confiscated from him rod, reel, line and spinner. |
| 8 | J. Chalmers. | Killing jackfish by means of a snare in the close season. | Highwood River, near High River. | \$1.00. . |
| 9 | J. Telfer. | Killing jackfish by means of a snare in the close season. | Highwood River, Near High River. | \$1.00. |
| 10 | Lawrence Gilmor | Fishing without license and fishing in close season... | Dor Pond River............ | \$5.00 and had confiscated from him 1 net. |
| 11 | Willis Ambrose. | Having trout in possession, contrary to Sec. 20 , Fish. Act. | Pincher Creek. | $\$ 10.00$ and had confiseated from him 3 steelhead, 2 cut-throat trout. |
| 12 | Wong Chong. | Infraction of Sec. 11, Para 3, Using net with smah mesh. | Oldman River nour Lethbridge. | $\$ 10.00$ and had confiscated from him 1 net and 40 suckers. |
| 13 | Wongr Chong | Infraction of See. 1, Para. E. Having erayline in close season. | Oldman River, near Lethbridge. | $\$ 2.00$ and had confiscated from him 4 grayline. |
| 14 | Wong Chong. | Infraction of Scc. 1 Para 2. Having grayline undersize. | Oldman River, near Lethbridge. | $\$ 2.00$ and had confiscated from him 4 grayline. |
| 15 | Man Foon. | Infraction of Sce. 1 Para. B. Having no permit to use net. | Oldman River, near Leth- bridge. | \$5.00. |
| 16 | Jim Wing. | Infraction of Sec. 1, Para. B. Having no permit to use net. | Oldman River, near Leth- bridge. | 85.00. |
| 17 | Roy Wing | Infraction of Sec. 1, Para. B. Having no permit to use net. | Oldmanl River, near Leth- bridge. | \$5.00. |
| 18 | Hoic 1 | Infraction of Sec. 1, Para. B. Having no permit to use net. | Oldman River, near Lethbridge. | \$5.00. |
| 19 | ivilliam Brown. | Having trout under $9^{\prime \prime}$ contrary to Sec. 1, Subsec. 2, Fish. Act. | Allison Crcek, near Coleman.. | $\$ 5.00$ and had confiscated from him 2 trout. |
| 20 | William Brown | Having trout in possession contrary to Sec. 1, Para. E. Fish. Act. | Allison Creek, near Coleman... | $\$ 10.00$ and had confiscated from him 1 willow stick gut line and hook. |
| 21 | Arthur Livingstone. | Obstructing a fishery guardian in the exceution of | Bragg Creek. | \$50.00. |
| 22 | D. F. McFadyen. | Pollution of the Bow River by manure from cattle corrals. | Bonnybrook, Calgary. | Suspended sontence. |


,

|  | E. Wade. |
| :---: | :---: |
|  | W. P. Fleming. |


| Pollution of the Bow River by corrals. |  |
| :---: | :---: |
| Pollution of the Bow River by manure from cattle | Bonnybrook, Calga |
| Pollution of the Bow River by manure from | $B$ |
| corrals. |  |
| Pollution of the Bow River by manure from cattle | Bonnybrook, Cal |
| lution of the Bow River by manure from cattle |  |
| corrals. |  |
| Pollution of the Bow River by manure from cattle | Bonnybrook, Calgary |
| Angling without permit contrary to Sec. 1, Para. B., | South Fork, |
| Fish, Act. | Sour Fork, |
| Angling without permit contrary to Sec. 1, Para. 2, | d Creek, near |
| F'ish |  |

C. Carlson............................ Pollution of $a$ stream by allowing sawdust to enter it.
A. Kinzie........................... Angling without permit contrary to Sec. 1, Para. B.
W. L. Grinley.
Leonard Snyder
Wilirid Snyder
William Coates.......................
Harry Fries. ..........................
Gerald McDonald.
R. Carl...
J. Brager.
J. Brager.
O. Lee.
M. Peterson. ......................... . .
Robert Sinton.......................
Alic Hulack
Norman Tilley
Norman Tilley
C. Hayes.
J. Champagne.......................
T. Parson.
B. Sewell.
V. Roberts..
T. H. Roper.
C. Carlson
Angling without permit contrary to Sec. 1, Para. B.
Spec. Fish. Act.
Tributary of Dogpond Creek
near Bottrel.
Spec. Fish. Act.
Angling without permit contrary to Scc. 1, Para. B.
Spec. Fish. Act.
Using dynamite to kill fish
Using dynamite to kill fish
Using dynamite to kill fash
Using dynamite to kill fish
Using dynamite to kill fish
Fishing with illegal nets. .
Fishing in close season.
Fishing in close season..................................
Fishing in close season.................................
Drywood Creek. .....................
Fallen Timber Creek.

| Frallen Timber Creek............ | So. |
| :--- | :--- |
| Not guilty. |  |
| Fallen Timber Creck.......... | Not guilty. |
| Fallen Timber Creek......... | Not |
| Fullen Timber Creck. |  |

Suspended sentence.
E. Wade.
Pollution of the Bow River by manure from cattle Bonnybrook, Calgary
Pollution of the Bow River by manure from cattle Bonnybrook, Calgary
Suspended sentence.
Suspended sentence.
Suspended sentence.
Suspended sentence.
Suspended sentence.
S1.00 and had confiseated from him rod,
line and reel, 1 rainbow trout.
$\$ 5.00$ and had confiscated from him 1
stick, line and hook.
$\$ 20.00$.
$\$ 5.00$ and had confiscated from him 1
pole string and hook.
$\$ 5.00$ and had confiscated from him 1
$\$ 5.00$ and had confisca
pole string and hook.
pole
$\$ 20.00$.
\$20.00.
Not guilty.

| Fallen Timber Creck............. | $\begin{array}{l}\text { Not guilty. } \\ \text { Fallen Timber Creck........ } \\ \text { Fal } \\ \text { Fallen Timber Creck. }\end{array}$ |
| :--- | :--- |
| Not guilty |  |

Harry Contes............................
Vallen Timber Creek.............
Not guilty
Lake.
$\$ 20.00$ and hind confisented from him few
fish and 5 gill-nets.
South Valley Creek; Tribu- $\$ 10.00$.
tary of Elbow River.
Assineau Point, Lesser Slave
Assineau Point, Lesser Slave
Lake.
Assineau Point, Lesser Slave
$\$ 20.00$ and had confiscated from him 7
gill-nets.
Lake.
Assineau Point, Lesser Slave
$\$ 20.00$ and confiscated from him 18 gill-

| Fishing with illegal gill-net Fishing with illegal gill-net | Liake. <br> Assineau Point, Lesser Slave Lake. Narrows in Lesser Slave Lake |
| :---: | :---: |

$\$ 20.00$. The nets confiscated are the
the same nets as in Pros. No. 41.
$\$ 35.00$ and had confiscated from him few fish and 4 gill-nets.
Fishing with illegal nets................................ Narrows in Lesser Slave Lake.
$\$ 35.00$ and confiscated from him 3 gill- nets.
\$1.00 and had confiscated from him rod, reel, line and 1 trout.

## $\$ 35.00$ and had confiscated from him 60

 lbs. whitefish, 40 lbs. jackfish and 6 gill-nets.520.00 and confiscated from him 5 gillnets. nets
$\$ 20.00$.
\$20.00. The confiscated nets are the same nots as in Pros. No. 47.
$\$ 20.00$ and confiscated from him 4 gillnets.

Remurn showing the Details of Prosecution for Offences Against the Fisheries Act During Fiscal Year 1928-29-Continued
ALBERTA-Concluded

| $\begin{aligned} & \text { Pros. } \\ & \text { Nos. } \end{aligned}$ | Name of Offender | Nature of Offence | Place of Offence | Result of Prosecution |
| :---: | :---: | :---: | :---: | :---: |
| 50 | C. Hayes. | Fishing with illegal gill-nets. | Lesser Slave Lake. | \$20.00. The confiscated nets are the |
| 51 | W: Mitchell... | Killing fish under the logal size. | Elbow River. | same nets as in Pros. 49. |
| 52 | Herman Harp. | Having in possession fish in close season. | Lake La Biche | $\$ 50.00$ and costs $\$ 4.57$ and had confiscated |
| 53 | Baptiste Pappin. | Hanging fish contrary to Sec. 2, Para. 3 of the Fish. Regs. | Near Big Island, Lake La Biche. | from him 250 tullibee. from him 700 hung tullibee and 80 hung whitefish. |
| 54 | Walter Anderso | Fishing in close season. | Big White fish Lake | \$20.00. |
| 55 56 | Wm. Muraveff. Bill Pojalin.... | Fishing in close season. | Wolf Lake. | $\$ 25.00$ and had confiscated from him 580 lbs. fish and 8 gill-nets. |
| 56 57 | Bill Pojalin. <br> A. Johnson. | Fishing in close season, .............. Fishing outside the restricted areas | Welf Lake.................... | $\$ 25.00$. <br> $\$ 20.00$ and had confiscated from him 1 |
| 58 | A. Johnson. | Fishing with an illegal gill-net..... | pow Point. <br> Lesser Slave Lake, near Wahpow Point. | gill-net. <br> $\$ 20.00$ and the confiscated net is the same net as in Pros. 57. |
| 59 | Jack Murray | Fishing outside the restrioted aresas. | Lesser Slave Lake, near Wahpow Point. | $\$ 20.00$ and the confiscated net is the same net as in Pros. 57. |
| 60 | Jack Murray | Fishing with illegal gill-net, 54/'mesh | Lesser Slave Lake, near Wahnow Point. | $\$ 20.00$ and the confiscated net is the same net as in Pros. 57. |
| 61 | Walter Chelinsky. | Fishing with snare and for fishing with net in closed waters. | Gull Lake...................... | $\$ 1.00$ on first charge and $\$ 5.00$ on 2nd. charge and costs $\$ 3.00$ and had confiscated from him 1 wire suare and 1 gill-net. |
| 62 | Ed. Scharte. | Fishing with wire snare and for fishing in closed water with gill-net. | Gull Lake. | $\$ 1.00$ on first charge and $\$ 5.00$ on 2nd charge and had confiscated from him 1 1 wire snare and 1 gill-net. |
| 83 | Henry Nagle..................... | Fishing with wire snare and for fishing in closed water with gill-net. | Gull Lake. | $\$ 1.00$ on first charge and $\$ 5.00$ on 2nd, charge and had confiscated from him 1 gill-net. |
| 64 85 | Wm. Nagel. | Fishing with wire snare and for fishing in closed water with gill-net. | Gull Lake. | $\$ 1.00$ on first charge and $\$ 5.00$ on 2nd charge and had confiscated from him 1 wire snare and 1 gill-net. |
| 65 | Carl Nagel........................ | Fishing with wire snare and for fishing in closed water with gill-net. | Gull Lake. | $\$ 1.00$ on first charge and $\$ 5.00$ on 2nd wire snare and 1 gill-net. |
| 66 | Collin Pringle. | Fishing with snare.. | Gull Lake. | $\$ 1.00$ and costs $\$ 1.00$ and had confiscated from him 1 wire snare. |
| 67 | Gilbert Stenerson....... . . . . . . . . | Fishing with nets of illegal mesh | Buffalo Lake. | Had confiscated from him 2 nets of illegal mesh. |
| 68 | Oley Stenerson. | Fishing with nets of illegal mesh. | Buffalo Lake..................... | Had confiscated from him 2 nets of illegal mesh. |



BRITLSH COLUMBLA-Chey Supervisor, Major J. A. Motherwell
district No. 1-Supervisor, A. P. Halliday


Return showing the Details of Prosecution for Offences Against the Fisheries Act During Fiscal Year 1928-29—Continued BRITISH COLUMBIA-DICTRICT No. 1-Concluded

| Pros. Nos | Name of Offender | Nature of Offence | Place of Offence | Result of Prosecution |
| :---: | :---: | :---: | :---: | :---: |
| 10 A | Charles Kaneles. | Buying undersized clams | Vancouver | Fined \$10.00. |
| 11 | M. Monk and Co. | Exposing for sale undersized clams. | New Westminster | Fined $\$ 5.00$ and 14 lbs. clams confis- |
| 11 A | Charles Kaneles. | Retaining undersized clams. | Vancouver. | Fined \$10.00. |
| 12 | M. Monk and Co. | Retaining undersized clams. | New Westminster | Case dismissed. |
| 12 A | Hudsons Bay Co., L | Buying undersized carbs... | Vancouver | Fined \$25.00. |
| 13 | Jas. Carr. | Exposing for sale undersized cr | New Westminst | Fined $\$ 5.00$ and 6 small crabs confiscated. |
| 13 A | Man Wo Chung | Buying undersized clams. | Vancouver. | Fined \$5.00. |
| 14 | Jas. Carr. . . . . | Retaining undersized clams | New Westminster | Fined \$2.50 and 14 lbs . clams confiscated. |
| 14 A | Tom Fraser. | Using salmon eggs for bait. | Seymour River. | Fined \$7.50. |
| 15 | H. S. Jerow. | Selling undersized crabs. | Crescent. | Case dismissed. |
| 16 | Geo, Wilson. | In possession undersized sturgeon. | New Westminster | Fined $\$ 1.00$ and 9 small sturgeon confiscated. |
| 17 | J. Teramura. | In possession undersized sturgeon. | Now Westminster. | Fined \$2.50. |
| 18 | L. Summartino. | In possession undersized trout.... | N. fork Salmon River | Fined $\$ 2.50$ and 513 lbs trout confiscated. |
| 19 | V. Summartino. | In possession undersized trout | N. fork Salmon River | Fined \$2.50. |
| 20 | W. Green. | Spearing salmon. | Salmon River. | Fined $\$ 2.009$ fish spears and 4 salmon confiscated. |
| 21 | A. McLeod. | Spearing salmon. | Salmon River | Fined $\$ 2.009$ fish spears and 4 salmon confiscated. |
| 22 | L. Mitchell. | Spearing salmon. | Salmon River | Fined $\$ 2.009$ fish spears and 4 salmon confiscated. |
| 23 | H. Brooks. | Spearing salmon | Salmon River | Fined $\$ 2,009$ fish spears and 4 salmon confiscated. |
| 24 | B. Donnely | Spearing salmon. | Salmon River. | Fined $\$ 2.009$ fish spears and 4 salmon confiscated. |
| 25 | A. Hopkins | Spearing salmon | Salmoń River | Fined $\$ 2.009$ fish spears and 4 salmon confiscated. |
| 26 | B. Iverson | Talking undersized trout | One Mile Creek | Fined $\$ 5.00$ and fishing pole conficated. |
| 27 | Owen Kelley | Taking undersized trout. | Mathew Creek | Fined $\$ 5.00$ and small trout confiscated. |
| 28 | W. Allerton. | Violation Sec. 26, s.s. 6, Regulations | Le Levre Lake | Fined \$5.00 and 2 small trout confiscated. |
| 29 | W. Allerton. | Violation Sec. 51, Chap. 73, Act. | Le Levre Lake. | Case dismissed. |
| 30 | F. R. Anderson. | Violation Sec. 26, s.s. 6, Regulations. | Le Levre Lake.......... | Case dismissed. |
| 31 | Emil Louie.. | Violation Sec. 26, s.s. 6, Regulations. | Bear and Denver Creeks | Fined $\$ 5.00$, line, hooks and small trout confiscated. |
| 32 | Nels Rymal. | Violation Sec. 26, s.s. 2, Regulations. | Fish Lakes. | Fined $\$ 3.00$ and line, spoons and small trout confiscated. |
| 33 | J. Tanthori. | Violation Sec. 24, Cl. 6, Regulations. | Fraser River |  |
| 34 | Chas. Inkman | Buying fish from Indians. | Agassiz | Fined $\$ 50.00$ and 30 lbs. sockeye and cohoe salmon confiscated. |



## DISTRICT No. 2-Supervisor, A. Mackie

| 1 | R. Edison. | Having crabs in posscssion during prohibited period. | Prince Rupert................... . . | Fined $\$ 1.00$ and 91 doz. crabs confiscated. |
| :---: | :---: | :---: | :---: | :---: |
| 2 | Minaichan | Acting as assistant on salmon gill-net boat without carrying license with him. | Chatham Sound | Fined \$25.00. |
| 3 | Moiche Kawamoto | Fishing with $53^{\prime \prime}$ mesh net during closed season... | Chatham Sound. | Fined \$150.00. |
| 4 | E. Hunnakko. | Fishing for salmon and not carrying license on boat. . | Chatham Sound. | Fined \$25.00. |
| 5 | Sam Johnson. | Fishing for salmon without a license................ . | Chatham Sound. | Fined \$25.00. |
| 6 | Dan West. | Fishing with set net. | Labouchere Channel | Fined \$25.00. not boat and peor confis. |
| 7 | Ogami.. | Fishing for salmon without a license. | Ecstahl River. . . . . . . . . . . . . | Fincd $\$ 25.00$, net, boat and gear confiscated. |
| 8 | J. B, Iversen. | Fishing for salmon with two nets | Chatham Sound | Fined \$10.00. |
| 9 | William Gramert. | Fishing for salmon without a license | Chatham Sound | Fined \$25.00 and 11 salm |
| 10 | Tsunetaro Murakam | Fishing during weekly closed time. | Skeena River | Fined \$50.00. |
| 11 | Dwyor Greon...... | Using anchored salmon net... | Chatham Sound | Fined \$25.00. |

BRITISH COLUMBIA-DISTRICT No. 2-Concluded

| Pros. Nos. | Name of Offender | Nature of Offence | Place of Offence | Result of Prosecution |
| :---: | :---: | :---: | :---: | :---: |
| 12 | Hiko Fujihada. | Fishing for salmon with set net. | Chatham Sound. | Fined \$25.00. |
| 13 | Robert Andy... | Fishing within fishery boundary | N. Bentinck Arm. | Fined \$35.00: |
| 14 | Fred Stewart. | Making "open set" with seino.. | Canoe Pass...... |  |
| 15. | Isaac Benson. | Fishing for salmon with anchored net | Skeena River | Fined \$25.00. |
| $16^{\circ}$ | Nat Lewis... | Carrying purse-seine less than 250 meshes | Steamer Pass. | Fined \$100.00. |
| 17 | I. Miyawake. | Fiehing with net within $\frac{1}{2}$ mile of mouth of creek... | Portland Inlet | Fined $\$ 100.00$, salmon net and 229 salmon confiscated. |
| 18 | T. Hamaguchi. | Fishing with net within $\frac{1}{2}$ mile of mouth of creek... | Portland Inlet. | Fined $\$ 100.00$, salmon net and 229 salmon confiscated. |
| 19 | Henry McKay | Fishing for salmon during closed season. | Mathieson Channel | Fined $\$ 200.00$. |
| 20 | Jacob White.. | Fishing with seine within $\frac{1}{2}$ mile of mouth of creek | Mathieson Channel | Fined \$100.00. |
| 21 | John Katnic.. | Anchoring purse-seine to shore.................... | Ellerslie Channel. | Fined \$100.00. |
| 22 | John Phillips. | Operating gill-net within fishery boundary. | N. Bentincls Arm. | Fined \$100.00. |
| $\stackrel{23}{24}$ | Henry Green. . | Fishing with seine within $\frac{1}{\frac{1}{2} \text { mile of mouth of creek }}$ Commencing to fish before area opened......... | Stacks Creek, Skidegate Inlot | Fined \$150.00. |
| 25 | N. Gunderson. | Fishing with seine inside boundary..... | Yakoun River | Fined $\$ 150.00$. |
| 26 | Olav Knutson. | Fishing with seine inside boundary. | Yakoun River. | Fined \$150.00. |
| 27 | James Martin. | Tishing with seine inside boundary | Yakoun River. | Case dismissed. |
| 28 | Alfred Skadeen | Fishing for salmon during weekly closed season. | Naas River. | Fined \$25.00. |
| 29 | Joe McKay . . | Bringing fresh salmon from above tidal boundary | Stream in Chatham Sound. | Case dismissed. |
| 30 | Robert Watson. | Bringing fresh salmon from above tidal boundary.. | Stream in Chatham Sound. | Case dismissed. |
| 31 | S. Kristensen. | Operating purse-seine less than 150 fathoms in length. | District No. 2 | Fined \$100.00. |
| 32 | Klaus Ostrom | Fishing for salmon within $\frac{1}{3}$ mile of mouth of stream. | District No. 2. | Fined $\$ 300.00,1124$ salmon confiscated. |
| 33 | R. Grant. | Fishing inside fishery boundary................... | N. Bentinck Arm | Fined $\$ 50.00$. |
| 34 | Thomas Marks. | Fishing for salmon within $\frac{1}{2}$ mile of mouth of stream. | Saltepring Bay. | Fined \$50.00. |
| 35 | Tom Colbourn | Fishing inside fishery boundary................... | Cumshewa Inlet | Fined \$200.00. |
| 36 | Wm. Oram.. | Bringing fresll salmon from above tidal boundary. | Carter Bay, Q.C.I | Fined \$50.00, 97 salmon confiscated. |
| 37 | Harold Liene | Fishing during weekly closed season............. | Larscombe Bay, Q.C.I | Fined \$70.00. |
| 38 | P. Adams. | Bringing fresh salmon from above tidal boundary. | Naas River. | Fined $\$ 150.00$, boat, gear and 370 salmon confiscated. |
| 39 | Ole Skog. | Carrying 2 additional pieces net on boat. | South Bay, Q.C.I | Fined \$125.00. |
| 40 | Ole Skog. | Refusing to show license when requested........... | South Bay, Q.C.I | Fined \$100.00. |
| 41 | Ole Skog. | Obstructing a fishery officer in the execution of his duties. | South Bay, Q.C.I | Case dismissed. |
| 42 | Edward Smith | Operating gill-net fastened at one end.. | Kildala Bay. | Fined \$20.00. |
| 43 | Y. Taketa. | Fishing with net inside fishery boundary | Hole-in-the-Wall, Creek | Fined \$200.00. |
| 44 | George Price. | Fishing for salmon in prohibited area.... | Dena River............ | Fined $\$ 50.00,123$ salmon confiscated. |


| 1 | Jin Asahina. | Contravention Sec. 15, s.s. la, Sec. 14, s.s. 2, and Sec. 21, s.s. 25, Regulations. | Deserted Bay | Fined $\$ 100.00$, sliff and herring net confiscated. |
| :---: | :---: | :---: | :---: | :---: |
| 2 | Jack Simpson | Contravention, Sec. 6, g.s. 2, Regulations. | Victoria | Fined $\$ 10.00,100 \mathrm{lbs}$. cod confiscated. |
| 3 | Philip Pelky. | Contravention Sec. 7, Regulations. | Victo | Fined $\$ 10.00,7$ doz. crabs and 100 lbs . eod confiscated. |
| 4 | Paul Avery | Contravention Sec. 18 Fisheries Act. | Medgin River | Fined $\$ 25.00$. |
| 5 | Fred Gillett. | Contravention Sec. 18 Fisheries Act. | Meclgin River. | Fined \$25.00. |
| 6 | Chief Attleo. | Contravention Sec. 18, Fisheries Act. | Medgin River. | Fined \$25.00. |
| 7 | Matthew Paul | Contravention Sec. 18 Fisheries Act. | Medgin River. | Tined \$25.00. |
| 8 | Herbert Campbel | Contravention Sec. 18 Fisheries Act. | Medgin River. | Fined \$85.00. |
| 9 | Alfred Keitlah.. | Contravention Sec. 18, Fisheries Act. | Wedgin River. | Fined \$25.00. |
| 10 | Thomson Fatty | Contravention Sec. 18, Fisheries Act. | Medgin River. | Fined \$25.00. |
| 11 | David Frank. | Contravention Scc. 18, Fisherics Act. | Medgin Rive | Fined $\$ 25.00$. |
| 12 | Luke Swan... | Contravention Sec. 18, Fisheries Act | Medgin Rive | Fined \$25.00. |
| 13 | George Shamroc | Contravention Sec. 18, Fisheries Act. Contravention Sec. 18, Fisheries Aet. | Medgin Rive | Fined \$25.00. |
| 15 | Jumbo Georg | Contravention Sec. 18, Fisheries Act. | Medgin River | Tined \$25.00. |
| 16 | Watty Sewish. | Contravention Sec. 21, s.s. 18, para. (b) Regulations. | Uchucklesit Harbour | Fined \$10.00, 7 sockeye confiscated. |
| 17 | Andrew Larsen | Contravention Sec. 21, s.s. 18, para. (b) Regulations. | Uchucklesit Harbour. | Fined \$10.00; 34 sockeye confiscated. |
| 18 | Itchiaro Uyede | Contravention Sec. 15, s.s. la, Regulations......... | Pachena Bay. | Fined $\$ 75.00,21$ cohoe, 39 lbs. red spring salmon confiscated. |
| 10 | Kinjiro Nishino. | Contravention Sec. 24, s.s. 7a, Regulations. | Deep Bay | Fined $\$ 100.00$, boat and gear confiscated. Later returned to owner. |
| 20 | Louis Smith. | Contravention Soc. 21, s.s. 18, Rerulations. | Mahata River. | Case dismissed. |
| 21 | Johnny Page. | Contravention Sec. 51, Fisheries Act. | Cowichan River. | Fined $\$ 100.00$. |
| 22 | Johnny Page. | Contravention Sec. 21, s.s. 12b, Regulations. | Cowichan River... | Fined $\$ 5.00$. |
| 23 | Harry H. Smith. | Contravention Sec. 21, s.s. 18b, Regulations. | Uchucklesit Harbour | Fined \$15.00. |
| 24 | Maynard Dubois. | Contravention Sec. 21, s.s. 2, Regulations Contravention Sec. 20, s.s. 1, Regulations | Agamemnon | Fined \$10.00. |
| 25 26 | Usabury Ots | Contravention Sec. 29, s.s. 1, Regulations. Contravention Sec. 15 , s.s. Ia, Regulations | Bute Inlet....... | Fined \$25.00. |
| 27 | V. Ferrario. | Contravention Sec. 20, s.s. 1, Regulations. | Robson Biglt. | Case dismissed. |
| 29 | Alexander Nelsoon | Contravention Sec. 21, sub. sec. 18a, Regulations.. | MeKenzie Sound | Fined \$200.00, seine boat "Greece. II" and gear confiscated. |
| 29 | Kaichi, Hamaura. | Contravention Sec. 21, s.s. 25, Regulations.. | Pender Harbour. | Case dismisscd. |
| 30 | Petron Sande. ${ }^{\text {a }}$ | Contravention Sec. 21, s.s. 18, Regulations. | Homalko River. | Fined $\$ 15.00$. |
| 31 | Victor Ferrario. | Contravention Sec. 21, s.s. 20r, ${ }^{\text {R Regulations. }}$ | French Creek. | Fined \$200.00. |
| 32 | James McPherson. | Contravention Sec. 21, s.s. 21, Regulations.. | Dcepwater Bay | Fined $\$ 225.00$. |
| 33 | Billy Matilby.. | Contravention Sec. 21, s.s. 18a, Regulations. | Ada | cated. Later returned to A.B.C. Packing Co. on payment additional \$500.00. |
| 34 | Billy Matilby. | Contravention Sec. 21, s.s. 27, Regulations. | Adams River. | Fined $\$ 100.00$. <br> Fined \$100.00. |
| 35 | Billy Matilby | Contravention Sec. 21, s.s. 21 , Regulations.. | Adams River... | Case dismissed. |
| 36 | Sam Jasich.. | Contravention Sec. 21, s.s. 18 b , Regulations | Marvins Bay... | Fined \$25.00. |
| 37 | Dan Ambrose. | Contravention Sec. 21, s.s. 18a, Regulations | Kendrick Arm | Fined \$10.00. |
| 38 | Pete Mitchell. | Contravention Sec. 21, s.s. 4d, Regulations. | Deopwater Bay | Fined \$200.00. |
| 39 | Billy Assu.. | Contravention Sec. 21, s.s. 21 , Regulations. | Deepwater Bay | Fined \$200.00. |

BRITISH COLUMBIA-DISTRICT No. 3-Concluded

| Pros. Nos. | Name of Offender | Nature of Offence | Place of Offence | Result of Prosecution |
| :---: | :---: | :---: | :---: | :---: |
| 41 | Vance Dulcich. | Contravention Sec. 21, s.s. 21, Regulations. | Deepwater Bay.....*. | Fined \$100.00. |
| 42 | James Martin. | Contravention Sec. 21, s.s. 29r, Regulations. | Fronch Creek......... | Fined $\$ 100.00$. |
| 43 | Frank Cvitanovich. | Contravention Sec. 21, s.s. 29r, Regulations. | French Creek. | Fined \$25.00. |
| 44 | V. Antonja........ | Contravention Sec. 21, s.s. 29r, Regulations. | French Creek. | Fined \$25.00. |
| 45 | T. Nicolich | Contravention Sec. 21, s.s. 29r, Regulations.. | French Creek. | Fined \$25.00. |
| 46 | F. Martin. | Contravention Sec. 21, s.s. 29r, Regulations.. | French Creek. | Fined \$25.00. |
| 47 | Louie Lewis | Contravention Sec. 21, s.s. 29r, Regulations. | French Creek | Case dismissed. |
| 48 | Thomas Julian | Contravention Sec. 21, s.s. 29r, Regulations. | French Creek. | Case dismissed. |
| 49 | Basil Joo.... | Contravention Sec. 21, s.s. 29r, Regulations. | French Creek. | Case dismissed. |
| 50 | J. J. Norton | Contravention Sec. 21, s.s. 29r, Regulations. | French Creek | Case dismissed. |
| 51 | T. Isogai.. | Contravention Sec. 6, s.s. 2, Regulations... | Pender Harbour | Charge withdrawn. |
| 52 | Y. Isogai. | Contravention Sec. 6, s.s. 2, Regulations. | Pender Harbour. | Case dismissed. |
| 53 | S. Wads. | Contravention Sec. 6, s.s. 2, Regulations. | Pender Harbour. | Case dismissed. |
| 54 | T. Kamori | Contravention See. 6, s.s. 2, Regulations. | Pender Harbour. | Fined \$5.00. |
| 55 | Kazuo Uyaoka. | Contravention Sec. 6, s.s. 2, Regulations. | Pender Harbour. | Fined \$5.00. |
| 56 | Dan Assu...... | Contravention Sec. 21, s.s. 18, Regulations. | Blinkinsop Bay. | Case dismissed. |
| 57 | Gilbert Cook. | Contravention Sec. 21, s.s. 18, Regulations. | Blinkinsop Bay. | Case dismissed. |
| 58 | John T. Bevis | Contravention Sec. 21, s.s. 18a, Regulations.. | Pender Harbour. | Fined \$10.00. |
| 59 | Peter Klein. . | Contravention Sec. 21, s.s. 18a, Regulations.. | Pender Harbour. | Fined \$10.00. |
| 60 | William Rouse. | Contravention Sec. 21, s.s. 2, Regulations... | Garden Bay.... | Fined \$2.50. |
| 61 | Fred Klein. | Contravention Sec. 21, s.s: 2, R.egulations... | Pender Harbour. | Fined \$1.50. |
| 62 | Fred Klein. . | Contravention Sec. 21, s.s. 6, Regulations... | Pender Harbour. | Fined \$1.00. |
| 63 | Harry Brown. | Contravention Sec. 36, Fisheries Act........ | Skutz Falls... | Case dismissed. |
| 64 | Johnny Wilson | Contravention Sec. 21, s.s. 18a, Regulations | Jervis Inlet. | Case dismissed. |
| 65 | Chief John..... | Contravention Sec. 21, s.s. 18a, Regulations. | Jervis Inlet. | Case dismissed. |
| 66 | Christopher Harmoller. | Contravention Sec. 15, s.s. la, Regulations.. | Victoria. | Fined \$20.00. |

# FISHERIES STATISTICS OF CANADA 

## 1928

(Prepared in collaboration with Dominion and Provincial Fisheries Departments)

Published by Authority of the Hon. James Malcolm, M.P.
Minister of Trade and Commerce


OTTAWA
F. A. ACLAND

## CONTENTS

Preface ..... 3
The Fisheries of Canada ..... 4
Introduction and Summary
Quantity and Yalue of Chief Commercial Fishes, 1924-1928 ..... 11
Review of the Fisberies of 1928 . ..... 12
Summary of Produetion, 1928. ..... 20
Agencies of Production, 1926-1928-
In Primary Operations- Capital.. ..... 25
Employees. ..... 25, 26
In Fish Canning and Curing Establishments-
Capital. ..... 25, 26
Employees. ..... 25,26
Employees and Wages ..... 27
Number of Wage-earners by Months. ..... 28
Fuel Used ..... 28
Power Equipment ..... 28
Value of Materials Used ..... 28, 20
Value of Production. ..... 29
Clasilication of Establishments According to Form of Organization; Time in Operation; Number of Employees; and Value of Production. ..... 30
Review by Provinces-
Total Value of Fisheries, 1924-1928. ..... 30
Quantity and Value of Chief Commercial Fishes, 1924-1928. ..... 31
Quantity and Value of All Fish Caught and Marketed, 1928 ..... 34
Total Value for Counties and Districts of All Sea Fish Caught and Landed and Marketed, 1928. ..... 41
Proportion of Catch of Sea Fish taken Offshore, 1928 ..... 42
Capital Equjpment, 1928. ..... 48, 50
Number of Employees, 1928 ..... 50
Fishing Bounty ..... 52
Imports and Exports ..... 52
Histcrical Review. ..... 53
General Tables
I. Fish Caught and Marketed, 1928 ..... 58
Prince Edward Island, 58; Nova Scotia, 62; New Brunswiek, 113: Quebec, 13); Ontario, 138; Manitoba, 138; Saskatchewan, 140; Alberta, 142; Yukon, 143; British Columbia, 144.
II. Agencies of Production, 1928-Capital Equipment, Employees, ctc. ..... 156
Part 1. In Primary Operations.
Prince Edward Island, 156; Nova Scotia, 160; New Brunswick, 184; Quebec, 193; Ontario, 200; Manitoba,202; Saskatchewan, 202; Alberta, 204; Yukon, 204; British Columbia, 203.
Part 2. In Fish Canning and Curing Establishments ..... 212
(a) General Summary of Statistics. ..... 212
(b) Capital Invested. ..... 218
(c) Employees and Salaries and Wages. ..... 220
(d) Number of Wage-earners by Months ..... 222
(c) Quantity and Value of Fuel Used ..... 224
(f) Power Equipment. ..... 226
(g) Classification of Establishments According to Time in Operation and Hours Workel. ..... 225
(1) Classification of Establishments According to Value of Product. ..... 228
(i) Classification of Establishments According to Number of Employees. ..... 229
(j) Classification of Establishments According to Form of Organization. ..... 230
III. (1) The Salmon Pack of British Columbja, 1918-1928, ..... 232
(2) Imports and Exports of Tish and Fish Products, 1927 and 1928. ..... 234
(3) Classification of Vessels and Boats, Used in the Sea Fisheries, According to Priacipal Kinds of Fish Taken, ..... 244
(4) Fishing Bo inties, 1928 ..... 2,4

## PREFACE

This Report is issued under an arrangement for statistical co-operation between the Dominion Bureau of Statistics and the Government branches having jurisdiction with regard to fisheries throughout Canada. These branches comprise: The Dominion Fisheries Branch of the Department of Marine and Fisheries, which exercises jurisdiction over the fisheries of the Maritime provinces, the Prairie provinces and British Columbia, and the Fisheries Branches of Ontario and Quebec, which have jurisdiction over the fisheries of their respective provinces, excepting in the case of Quebec, the fisheries of the Magdalen Islands, which are under the jurisdiction of the Dominion Fisheries Branch. The province of British Columbia has a Fisheries Branch, but it does not engage in independent statistical work.

Under the arrangement above referred to, the statistics of the catch, and of the products marketed in a fresh state or domestically prepared, are collected by the local officers of the Fisheries Branches, checked in the Department of Marine and Fisheries, and compiled in the Dominion Bureau of Statistics. In the case of manufactured fish products, schedules in conformity with those of other sections of the Census of Industry are sent by the Bureau to the operators of canneries, fish-curing establishments, etc., the fisheries officers assisting in securing an expeditious and accurate return. The grateful acknowledgements of the Bureau are tendered to the officers of the provincial governments who co-operate in these arrangements.

R. H. COATS,<br>Dominion Statistician.

> Dominion Bureau of Statistics, Ottawa, July 31, 1929.

## THE FISHERIES OF CANADA

The Early Fisheries-Fishing is one of the historic industries of Canada. From a date which precedes authentic record, the Normans, the Bretons and the Basques were on the cod-banks of Newfoundland. Cabot, in 1498, when he first sighted the mainland of North America, gave it the name of "Bacalaos," the Basque word for codfish, which he found already in use among those hardy seamen. Cape Breton, one of the oldest place-names in America, is another memorial of the early French fishermen,-and the Spaniards and the Portuguese were but little behind. Fernandez de Navarrete mentions all three as frequenters of the "Crand Bank" before 1502. The fishing was by hand lines over barrels made fast to the bulwarks to prevent fouling, the vessels remaining during fine weather, then returning to France with from 30,000 to 50,000 cod. Voyages along the coast soon showed the cod as plentiful inshore as on the outer banks, and it became common for a crew to anchor in a bay, erect a hut on shore, and make daily excursions to the fishing grounds-the product being salted and dried on land and at the end of the season shipped to France. Jacques Cartier, when he went up the St. Lawrence in 1534, found traces everywhere of these early "Captains Courageous" and of their rivalries in arms no less than in the capture of the teeming product which had tempted them so far from home. An establishment of the kind just mentioned was founded at Tadoussac by Chauvin in 1599. Soon the fishermen began to stay all winter and thus to erect permanent fishing settlements. The first grant of the fisheries of Canada was made by the King of France to de Monts in 1603. Fishing, therefore, may well be regarded as the first industry to be systematically prosecuted by Europeans in what is to-day the Canadian domain. It has never since ceased to yield a perennial harvest both to Europe and America.

By the Treaty of Utrecht in 1719, Britain became the owner of Newfoundland and excluded France from fishing and drying fish on certain sections of the coast, but France retained the Fisheries of Cape Breton and the Gulf. The Seven Years War (1756-1763) put a stop to continuous fishing. At its close, the Robin family of Jersey came to Canada, and gradually acquired the former French fishing stations. Until the arrival of the Loyalists all other fishing but cod was neglected. Inshore fisheries alone (including those of the Labrador coast) were developed during this phase; no deep-sea fishing vessel put out from Lunenburg, now the chief centre of the deep-sea fishery, until 1873.

The Canadian Fishing Grounds-Canada's fishing grounds are perhaps the most extensive in the world. : On the Atlantic, from Grand Manan to Labrador, the coast line, not including the lesser bays and indentations, measures over 5,000 miles. The bay of Fundy, 8,000 square miles in extent, the gulf of St. Lawrence, fully ten times that size, and other ocean waters comprise not less than 200,000 square miles, or over four-fifths of the area of the fishing grounds of the North Atlantic. In addition there are on the Atlantic seaboard 15,000 square miles of inshore waters controlled entirely by the Dominion. Large as are these areas they represent only a part of the fishing grounds of Canada. Hudson Bay, with a shore 6,000 miles in length, is greater in area than the Mediterranean Sea; the Pacific coast of the Dominion measures 7,180 miles in length and is exceptionally well sheltered, whilst throughout the interior is a series of lakes which together contain more than half of the fresh water on the planet, Canada's share of the Great Lakes alone amounting to over 34,000 square miles, a total which of course does not include lake Winnipeg ( 9,457 square miles), lake Manitoba, and others of even greater area.

Still more important than the extent of the Canadian fishing grounds is the quality of their product. It is an axiom among authorities that food fishes improve in proportion to the purity and coldness of the waters in which they are taken. Judged by this standard, the Canadian cod, halibut, herring, mackerel, whitefish and salmon are the peer of any in the world. It is possible, therefore, to state that by far the most valuable fisheries of the western hemisphere, if not of the globe, belong to Canada.

It will be seen from the above that it is impossible to deal with the Canadian fisheries in the aggregate; they are those of a continent rather than of a country. and are of corresponding diversity. Omitting the tremendous Hudson Bay and peri-Arctic region, which extends from Ungava to Alaska, and which is known to contain a number of valuable food fisheries in addition to its whaling grounds, there are roughly the following divisions of the Canadian fisheries:

1. Atlantic Fisheries.-These were the first Canadian fisheries in point of time and until 1918 they remained the most important for aggregate value of product. Cod, halibut, haddock, hake, herring, mackerel, lobster, oyster and hair seal fisheries are included. The estuarian and inland waters of the Maritime provinces and of Quebec are sometimes considered as distinct; if they are added, the list of products would embrace the salmon, the shad, the gaspereau' (alewife), the smelt, the striped bass, the tom cod, the trout and the maskinonge. Conditions are fairly uniform throughout these fisheries, which are commonly divided into the inshore and deep-sea fisheries. The inshore or coastal fishery is carried on in small boats usually motor driven, with crews of two or three men, and in a class of small vessels with crews of from four to seven men. The means of capture employed by boat fishermen are gill nets and hooks and lines, both hand lines and trawls; whilst from the shore are operated trap nets, haul seines and weirs. Haddock as well as cod is a staple product; during the spring and summer it is split and salted but the important season comes with the autumn, when the fish are shipped fresh or else smoked and sold as finnan haddie. The deep-sea fisheries are worked by vessels of from 40 to 100 tons, carrying from twelve to twenty men operating with trawl lines from dories. The fleets operate on the various fishing banks, such as Grand Bank, Middle Ground and Banquereau. The vessels, built by native hands, remain at sea, sometimes for months at a time, and in the hands of sailors who have no superior, seldom come to grief. When they return, the fish, which have been split and salted on board, are taken on shore and washed and dried. The West Indies are the chief market for this product; no cod fish in the world stands the tropical climate like that cured by Nova Scotia fishermen. Steam trauling as it is carried on in the North Sea, was introduced on the Atlantic coast of Canada a number of years ago. There are now 10 steam trawlers operating from Nova Scotia ports. They operate practically the whole year and their catches are utilized entirely for the fresh fish trade.

Lobstering is another distinctive industry. In 1870, there were three lobster canneries on the Atlantic coast of Canada; in 1928 the canneries numbered 976 and gave work to 5,800 people; $90,000,000$ lobsters is a normal catch. The diffculty of enforcing regulations as to the capture of undersized and spawning lobsters offers a constant problem in connection with the output, but a decline is now thought to have been arrested. Oysters, once plentiful everywhere, are now found in somewhat diminished quantities. The canning of sardines, which are young herrings and not a distinct type of fish, in New Brunswick equals in importance the lobster industry of that province.

The fishing population of the Maritime provinces is a specialized and stable industrial class. The coast-wise fisheries are operated from April to November, or to January in sheltered districts: and though the larger vessels work all winter, several thousand men are available for a time each year for other employment. This they find about the small plots of land which the most of them own or occupy, in the lumber camps of New Brunswick, or in the collieries of Nova Scotia. A few from Lunenburg and other centres engage in the West Indian trade. Apart from restrictions of weather and close seasons, the prevailing method of paying the men on shares has a further tendency in years of low catches or prices to drive them into secondary ovccupations.
2. Inland Fisheries.-The Great Lakes and tributary waters of the St. Lawrence are a second great division of the Canadian fisheries. Whitefish, trout, pickerel, and lake herring are the most important commercial fishes of Ontario,
though pike, sturgeon and coarse fish yield a fair return. The value of the inland fisheries of Quebec lies chiefly in the output of the eel and pickerel or doré fisheries. The season on the Great Lakes lasts from six to eight months, and though fishing through the ice is followed by many, a large number depend on miscellaneous employment between the seasons. Moving westward, lake Winnipeg, lake Winnipegosis, lake Manitoba and the smaller lakes to the north and east furnish most of the fish products of Manitoba. Whitefish and pickerel are the chief products, but pike, tullibee, goldeye and many other varieties abound. In Saskatchewan and Alberta commercial fishing is confined to the regions north of the Saskatchewan river, where whitefish in large quantities are taken. The problem of transportation is keenly felt; some of the greatest lakes of the continent-Reindeer, Athabaska, Great Slave, Great Bear-and hundreds of smaller bodies of water are still beyond reach from a marketing point of view. The lakes of the west, however, repeating the part which the St. Lawrence played in the days of the French regime, and the cod banks in the history of New England, have assisted greatly in the settlement of the country by providing a much needed food supply for early arrivals.
3. Pacific Fisheries.-In British Columbia there is an interior fishing region which corresponds in the main to the prairie section; in the early history of the province it is doubtful if the fur trade (which opened the door by way of the Rocky Mountains to later enterprise) could have established its footing but for these fisheries. The great wealth of British Columbia, however, in this respect-the source from which she produces approximately two-fifths of the fish products of Canada, and has built up a trade which reaches to the ends of the earth-is in the estuarian salmon fisheries of the Fraser, the Skeena, the Naas, and other rivers of the Pacific slope. Every species of this ling of food fishes known to the waters of the Pacific (which, however, is not the true salmon) is to be found on the British Columbia coast-the sockeye, the spring, the cohoe, the pink and the chum salmon. Of these, the sockeye is by far the most important, owing to its abundance and to its prevailing deep red colour and excellent texture, which have created so keen a demand for it in the British market. On the Fraser river, which used to be the chief source of supply, but which has now yielded place to the Skeena and other northern waters, the yield varies to a considerable extent from year to year. The run begins late in July and is at its height in the opening weeks of August, though the northern rivers have a somewhat earlier season. The spring or quinnat salmon is a much larger fish; it was the species first. used in the United States for canning The run begins early in the spring and continues until July. The cohoes are smaller, running like the sockeye in compact schools, during September and October on the Fraser and earlier on the northern streams. The chum salmon is salted for export to the Orient and a considerable quantity also is canned. The pink salmon again follows the sockeye. Many of the employees in this fishery are Chinese, Japanese and Indians, the Chinese preponderating in the canneries and the Indians and Japanese in the fishing operations.

Halibut abounds off Vancouver island and between the Queen Charlotte Islands and the mainland, and though the first endeavour to establish an industry was unsuccessful, by 1903 British Columbia supplied 10,000,000 pounds of $25,000,000$ taken on the whole Pacific coast north of California. The former figure has since trebled. The annual catch of herring in British Columbia represents about 65 per cent of the total catch of sea herring for the Dominion, and nearly the whole of it is dry-salted for export to China and Japan. The pilchard fishery has become of importance in recent years, the greater part of the catch being used in the manufacture of oil and meal, of which large quantities are produced annually. In 1928 the pilchard was third on the list of principal kinds of fish.in British Columbia in order of value. There is also the whale fishery which has now two stations on the Queen Charlotte islands. The yearly catch includes whales of many kinds-sulphur bottom, finback, and humpback with an occasional sperm whale. Whale hunting is carried on in fast boats with Svend Foyn harpoon guns-a method which
was introduced from Norway. Every scrap of the whale is used-oil, whalebone and meal are its more important products. Black and ling cod, oulachon, flounders, skate, soles, smelts, and sturgeon are also abundant in British Columbia waters.

A word might be added with regard to the Canadian fur-seal fisheries of the Pacific whose historic headquarters were the city of Victoria. The industry has disappeared, in part through the scarcity of the animals, and in part through the workings of the Pelagic sealing treaty of 1911. The hair-seal fleets of the north Atlantic make St. John's, Newfoundland, their headquarters.

Game Fish-The above is a purely industrial and conmercial survey. Fishing for sport, however, has its economic side in a country of such famous game fish as the salmon of the Restigouche, the black bass of the Quebec and Ontario highlands, and the trout of the Nipigon. A considerable public revenue is derived from the leasing of waters in sparsely settled districts to clubs and individuals for sporting purposes. Several hundreds of guides find employment here during the summer months.

The Government and the Fisheries-At Confederation, the administration of the Canadian fisheries and marine was placed in the charge of a department of the Dominion government which then excrcised complete jurisdiction over the fisheries, under the supervision of a Cabinet Minister, with a large staff of inspectors, overseers and guardians to enforce the fishery laws. The expenditure of the Dominion on the Fisheries in the fiscal year 1929 was S2,100,221 and its revenue $£ 206,154$. In 1882, 1898, 1913 and 1920 decisions in the courts considerably altered the status of jurisdiction as between the Dominion and the provinces. To-day the Dominion controls the tidal fisheries of the Maritime provinces and British Columbia, the fisheries of the three Prairie provinces and the fisheries of the Magdalen Islands in Quebec Province. The non-tidal fisheries of the Maritme provinces and Ontavio and both the tidal and non-tidal fisheries of Quebec (excepting the Magdalen Islands) are controlled by the respective provinces, but the right of fisheries legislation for all provinces rests with the Dominion government.

Conservation-River and lake fisheries certainly, and sea fisheries probably, if left to themselves, conform to the economic law of diminishing returns. The Canadian government, accordingly, has had for a main object the prevention of depletion, the enforcement of close seasons, the forbidding of obstructions and pcllutions, and the regulation of nets, gear and of fishing operations generally. In addition, an extensive system of fish culture has been organized, the Dominion operating 30 main hathcheries 10 subsidiary hatcheries and 4 salmon retaining ponds in 1923 at a cost of \$434,472, and distributing 440,802,880 eggs, fry and older fish, mostly British Columbia salmon, pickerel and whitefish. The young fish are disiributed gratis if the waters in which they are to be placed are suitable and are open to putlic fishing.

Scientific Research-Stations under the divection of the Biological Board of Canada for the conduct of biological research into the numerous complex problems furnished by the fisheries are established at Halifax, N.S., St. Andrews, N.B., and Nanaimo and Prince Rupert, B.C. Toronto, McGill, Queens, Manitoba, British Columbia and the chief Maritime province universities send workers to both stations, chiefly professors and trained specialists. The life-histories of edible fishes, the bacteriology of fresh and cured fish, improved methods of handling and preparing fish, and numerous other practical problems have been taken $u p$ and scientific memoirs and reports issued.

Direct Assistance-In the field of direct assistance, apart from the fishing bounty payments, which are referred to in another paragroph, the government has taken various steps from time to time. Beginning in 1927, fish collection services have been operated on several stretches of the Atlantic Coast by the Fisheries Branch of the Department of Marine and Fisheries. By the operation of these services
fishermen in the territories covered by the fish collection boats are enabled to sell their catches promptly and have them delivered to purchasers at central points at a small cost per hundredweight of fish. Thus the areas that have the facilities of the fresh fish markets available to them have been considerably extended at a time when the fish trade is of growing importance. The fishermen are able to obtain returns from their labor earlier than would otherwise be possible, and there is the further benefit to them that they can devote to the actual process of catching fish time which formerly they were compelled to employ in preparing their catches for the dried and cured fish markets. As another step to assist the fisherman a system has been established of broadcasting radio reports as to weather probabilities, bait and ice supplies, ice conditions along the coast, and prevailing local fish prices. During most of the 1928 season these radio reports were broadcast twice daily from Halifax and Louisburg, and the weather reports were also broadcast from Saint John. As most of the fishing vessels are now equipped with radio receiving sets this service proved of much value and it will be continued next year. Telegraphic information as to bait supplies on the coast is also made available daily by the Fisheries Branch in a number of fishing ports during spring and summer months. Statistical bulletins dealing with the sea fisheries are also prepared by the Fisheries Branch, monthly and quarterly, and are distributed throughout Canada for the benefit of the fishermen and fishing industry. Plans are in hand for the periodic preparation and distribution of reports as to fish market conditions in countries to which Canadian fish is exported. For several years past bounties have been paid for the destruction of harbour seals in certain areas. With a view of improving the quality of Canadian cured herring, an expert was employed for some time by the government to conduct demonstrations in the Scottish method of curing these fish. Uuder authority of the Fish Inspection Act, systems of instruction in improved methods of fish-curing and barrel-making and of the inspection of cured fish by specially appointed officials have been in operation for several years. To prevent poaching and to assist in the proper enforcement of fisheries regulations a fleet of vessels patrols the coastal and inland waters. Scientific research and experimentation on behalf of the fishing industry have been carried on for some years at government scientific stations. Some reference to this phase of effort on behalf of the industry is made elsewhere in this review under the heading "Scientific Research."

During the war it became desirable to increase as far as possible the consumption of fish, reserving the less perishable animal foods for export to our allies. The government therefore undertook to provide for the rapid transit of sea fish on its railway lines to the markets of the inland provinces, and to stimulate by a publicity campaign the consumption of fish. Much was accomplished in this direction, and the present annual per capita consumption of fish in Canada is estimated at upwards of 22 pounds.* The government has done much to improve the fast freight service for fish products from the Atlantic coast to Montreal and Toronto.

International Problems-So rich a fishing area as the North Atlantic could not fail to attract other countries, and old customs became elevated into rights, some of which have lasied until the present. The French shore is a Newfoundland question, now a sentimental one entirely. Very different is the question of the rights of the United States, whose fishermen in the colonial period provided the chief food supply for New England and who were granted by the Treaty of Versailles, 1783, a specific liberty to a share of the Canadian inshore fisheries. Losing this by the war of 1812, the United States after 1818 surrendered all but their liberty to call at Canadian ports for shelter, wood or water or to make repairs, and to fish around the Magdalen islands and on the north shore of the Gulf of St. Lawrence from Point Joli eastward, and to dry and cure their fish in any of the unsettled bays, harbours and creeks on this portion of the North shore. In the years 1854-1866, the Reciprocity Treaty set at rest for the time questions of interpretations to be placed on

[^9]certain parts of the Treaty of 1818 . The former Treaty provided for the admission into either country, duty free, of the fish and fish products of the other, and United States fishermen were allowed to fish in Canadian Atlantic territorial waters and Canadian fishermen in certain United States territorial waters on that coast, with the exception in either instance of rivers and mouths of rivers, and for shell fish. In 1871, the Treaty of Washington revived the fishery provisions of the Reciprocity Treaty of 1854, and provided for the appointment of a commission to determine the amount of compensation to be paid by the United States to Great Britain as the difference in the value of the concessions mutually granted. This commission sat in Halifax in 1877, and its findings have since been known as the "Halifax Award." The amount of the award was $\$ 5,500,000$, of which $\$ 1,000,000$ was apportioned to Newfoundland. In 1885, however, the United States terminated the fisheries articles of this Treaty, and a period of disagreement between the countries followed. A settlement was negotiated in 1888 when the plenipotentiaries appointed by the two nations agreed to what since has been known as the "Unratified Treaty of 1888," under the terms of which United States fishing vessels would be granted, without fee, annual licenses authorizing them to purchase in Canadian ports provisions and outfits, to tranship their catches and to ship crews. Out of this treaty grew the so-called modus vivendi licenses. The treaty makers recognized that the treaty could not receive the sanction of the governments of the countries concerned before the commencement of the fishing season and, as a temporary arrangement to last not longer than two years, it was agreed that United States fishing vessels on the payment of a fee of $\$ 1.50$ per registered ton, should receive annual licenses conveying the privileges covered by the treaty. The treaty was rejected by the United States Senate, but Canada continued to issue modus vivendi licenses up to 1918, when arrangements were made for reciprocal privileges in the ports of either courtry. This arrangement was discontinued in the United States when their special war legislation under which it was made, ceased to be effective on July 1st, 1921. The following year the modus vivendi licenses were revived in Canada; but the system was discontinued at the end of 1923, and United States fishing vessels are now limited. to the provisions of the Treaty of 1818.

On the Great Lakes, also, the more important fishery problems, such as restocking and marketing, are necessarily international in character, and are complicated by the number of state governments interested. Much the same situation has developed in British Columbia, where the sockeye of the Fraser are taken by the canners of Puget Sound in quantities that largely exceed the catch of the Canadian canners and by trap nets and other methods forbidden in Canadian waters. In 1906 an international commission first discussed the question, while in 1922, prohibition of sockeye fishing in the Fraser for five years, with a view to conservation, was recommended by a Parliamentary commission.

The Halibut Fishery on this side of the Pacific is engaged in only from Canadian and United States ports, but owing to the fact that it is largely carried on beyond territorial waters neither country alone can control it. At the same time it is in the interests of both countries that the fishery should be permanently maintained in a flourishing condition. The question of finding an adequate method of dealing with the matter was therefore one of those that was referred to the Canadian -American Fisheries Conference that was appointed in 1918 by the governments of the two countries to consider a settlement of out-standing fishery questions between Canada and the United States. In 1922 Canada proposed that the halibut question should be considered by itself. This was agreed to, and resulted in the Treaty of the 2nd of March, 1923, "For the Protection of The Pacific Halibut." Under this Treaty a close season is provided for halibut fishing from the 16 th of November in each year to the 15th of February following, both dates inclusive.

Fishing Bounties-An important though indirect aftermath of the Washington Treaty remains. By an Act of 1882 (45 Vict., c. 18) for the development of the sea fisheries and the encouragement of boat building, provision was made for the
distribution annually among fishermen and the owners of fishing boats of $\$ 150,000$ in bounties, representing the interest on the amount of the Halifax award. An Act of 1891 (54-55 Vict., c. 42) increased the amount to $\$ 160,000$, the details of the expenditure being settled each year by Order in Council.

The Modern Industry-The existing fishing industry of Canada is the growth of the past century. In 1844, the estimated value of the catch was only \$125,000. It doubled in the following decade, and by 1860 had well passed the million mark. Ten years later it was six millions, and this was again more than doubled in 1878. In the 90's it passed twenty millions, and in 1911, thirty-four millions. In 1928 it was fifty-five millions. The highest record was reached in 1918, with over sixty millions. It will be understood that these figures represent the total value of fish marketed, whether in a fresh, dried, canned or otherwise prepared state. Meanwhile the number of employees has mounted to 80,000, and the total capital invested to $\$ 50,000,000$ in certain years.

Among individual fish products, the cod and the salmon long disputed the primacy; if the record back to the beginning is taken the cod is the most valuable fishery; in the past thirty years, however, the salmon has defnitely taken the lead and the heavy pack and high price of lobsters have more than once sent cod down to third place. This has, of course, affected the relative standing of the provinces accordingly, British Columbia now occupying the leadership that in earlier times belonged to Nova Scotia. Halibut takes fourth place among the chief commercial fishes.

Trade-For reasons already noted, the domestic consumption of fish is relatively small in Canada, and the trade depends largely upon foreign markets. Perhaps 60 per cent of the annual capture is an average export, of which the United States takes approximately one-third and the United Kingdom one-sixth. In the calendar year 1928, total exports amounted to $\$ 38,096,245$ of which $\$ 16,654,589$ went to the United States and $\$ 4,160,391$ to the United Kingdom. The most important single export is canned salmon (to the United Kingdom and European markets ) followed closely by cod, dry salted (to the West Indies, South A merica, etc.) For fresh fish, especially whitefish and lobsters, the United States is the chief market. In brief, Canada's export trade in fish, falls below that of the United Kingdom and Norway alone; including Newfoundland it exceeds both. Canadian imports of fish in 1928, amounted to $\$ 4,068,074$.

## FISHERIES STATISTICS OF GANADA, 1928

The total value of production of the fisheries of Canada for the year 1928 was $\$ 55,050,973$, compared with $\$ 49,123,609$ in 1927 and $\$ 56,360,633$ in 1926. These totals represent the value of the product as marketed, whether fresh, domestically prepared or factory made. The following table shows the quantity caught and the value marketed of the chief commercial fishes (those valued at $\$ 100,000$ or upwards) for the past five years, with a statement in the final column of the increase or decrease for 1928 compared with 1927.

1. Quantity ${ }^{1}$ and Value ${ }^{2}$ of the Chief Commercial Fishes, 1924-1928

| Kind of Fish | 1924 | 1925 | 1926 | 1927 | 1928 |  | crease or decrease 1028 ompared with1927 + dec. - |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Salmon........................... ewt. | $\begin{array}{r} 2.024,675 \\ 13,784,920 \end{array}$ | $\begin{array}{r} 1,933,260 \\ 15,760,630 \end{array}$ | $\begin{array}{r} 2,180,470 \\ 19,607,082 \end{array}$ | $\begin{array}{r} 1,541,447 \\ 15,065,063 \end{array}$ | $\begin{array}{r} 2,286,151 \\ 17,867,053 \end{array}$ | $+$ | $\begin{array}{r} 744,704 \\ 2,801,990 \end{array}$ |
| Cod............................ ewt. | 1.888, 316 | $\begin{aligned} & 2,309.000 \\ & 6,232,821 \end{aligned}$ | $\begin{aligned} & 2,733,864 \\ & 6,095,283 \end{aligned}$ | $\begin{array}{r} 1,978,803 \\ 4,881,980 \end{array}$ | $\begin{aligned} & 2,150,078 \\ & 6,285,777 \end{aligned}$ |  | $\begin{array}{r} 171,275 \\ 1,403,797 \end{array}$ |
| Lobsters........................ crut. | $\left.\begin{array}{r} 272,213 \\ 4,169,171 \end{array} \right\rvert\,$ | $\begin{array}{r} 340,838 \\ 5,552,977 \end{array}$ | $\begin{array}{r} 339,583 \\ 5,883,672 \end{array}$ | $\begin{array}{r} 316,831 \\ 5,426,176 \end{array}$ | $\begin{array}{r} 322.437 \\ 5,183,988 \end{array}$ | $+$ | $\begin{array}{r} 5,606 \\ 242,188 \end{array}$ |
| Halibut........................................ | $\begin{array}{r} 359,647 \\ 5,878,870 \end{array}$ | $\begin{array}{r} 340,007 \\ 4,185,391 \end{array}$ | $\begin{array}{r} 339.918 \\ 4,935,472 \end{array}$ | $\begin{array}{r} 299,854 \\ 3,945,312 \end{array}$ | $\begin{array}{r} 329,923 \\ 3,812,321 \end{array}$ | $+$ | $\begin{array}{r} 30,069 \\ 132,991 \end{array}$ |
| Herring. ........................ avt. | $2,127,432$ $3,147,123$ | $\begin{aligned} & 2.413,973 \\ & 3,117,841 \end{aligned}$ | $\begin{aligned} & 2,423,457 \\ & 3,238,910 \end{aligned}$ | $\begin{array}{\|} 2,724,113 \\ 3,358,098 \end{array}$ | $\begin{aligned} & 2,396,054 \\ & 3,104,011 \end{aligned}$ | $=$ | $\begin{aligned} & 328,058 \\ & 253,187 \end{aligned}$ |
|  | 27,485 <br> 82,845 | $\begin{aligned} & 318,973 \\ & 182,911 \end{aligned}$ | $\begin{array}{r} 969,958 \\ 1,256,721 \end{array}$ | $\begin{aligned} & 1,368.582 \\ & 1,838,867 \end{aligned}$ | $\begin{aligned} & 1,610,252 \\ & \mathbf{2 , 6 6 3 , 1 3 7} \end{aligned}$ | $+$ | $\begin{array}{r} 241,670 \\ 724,270 \end{array}$ |
| Whitefigh....................... ewt. | $\begin{array}{r} 167,706 \\ 1,747,528 \end{array}$ | $\begin{array}{r} 186,648 \\ 1,890,108 \end{array}$ | $\begin{array}{r} 190,644 \\ 2,167,865 \end{array}$ | $\begin{array}{r} 185,664 \\ 2,192,738 \end{array}$ | $\begin{array}{r} 180.695 \\ 2,102,567 \end{array}$ | - | 4,969 171 |
| Haddock................................... | $\begin{array}{r} 337,860 \\ 1,013,253 \end{array}$ | $\begin{array}{r} 344,386 \\ 1,171,555 \end{array}$ | $\begin{array}{r} 496,802 \\ 1,754,816 \end{array}$ | $\begin{array}{r} 421,709 \\ 1,483,844 \end{array}$ | $\begin{array}{r} 481,708 \\ 1,733,781 \end{array}$ | $+$ | $\begin{array}{r} 59,998 \\ 249,937 \end{array}$ |
| Pickerel or doré. $\qquad$ cwt. § | $\begin{array}{r} 101.610 \\ 1,010,015 \end{array}$ | $\begin{array}{r} 86.877 \\ 1,050,169 \end{array}$ | $\begin{array}{r} 126,086 \\ 1,385,856 \end{array}$ | $\begin{array}{r} 140.019 \\ 1,3 \pm 7,589 \end{array}$ | $\begin{array}{r} 142,610 \\ 1,616,442 \end{array}$ | $+$ | $\begin{array}{r} 2,591 \\ 268,853 \end{array}$ |
| Trout $\qquad$ cwt. 5 | $\begin{array}{r} 76,858 \\ 990,321 \end{array}$ | $\begin{array}{r} 81,292 \\ 1,097,728 \end{array}$ | $\begin{array}{r} 78,710 \\ 1,051,196 \end{array}$ | $\begin{array}{r} 92.007 \\ 1,397,294 \end{array}$ | $\begin{aligned} & 91,964 \\ & 1,347,779 \end{aligned}$ | - | $\begin{array}{r} 313 \\ 49,515 \end{array}$ |
| Sardines $\qquad$ bbl. \$ | $\left.\begin{array}{r} 270,076 \\ 1,244,605 \end{array} \right\rvert\,$ | $\begin{array}{r} 158.533 \\ 1,017,206 \end{array}$ | $\begin{array}{r} 173.166 \\ 1,175,268 \end{array}$ | $\begin{array}{r} 174,695 \\ 1,046,575 \end{array}$ | $\begin{array}{r} 285.990 \\ 1,291,722 \end{array}$ | $+$ | $\begin{aligned} & 111.295 \\ & 245,147 \end{aligned}$ |
| Smelts $\qquad$ cwt. | $\begin{array}{r} 30,428 \\ 1,154,641 \end{array}$ | $\begin{array}{r} 76,795 \\ 1,035,504 \end{array}$ | $\begin{array}{r} 92,311 \\ 1,174,185 \end{array}$ | $\begin{array}{r} 82,762 \\ 1,117.330 \end{array}$ | $\begin{array}{r} 91,877 \\ 1,241,452 \end{array}$ | $+$ | $\begin{array}{r} 9,115 \\ 124,122 \end{array}$ |
| Perch $\qquad$ cwt. § | $\begin{array}{r} 29,387 \\ 185,350 \end{array}$ | $\begin{array}{r} 27,532 \\ 180,497 \end{array}$ | $\begin{array}{r} 30,498 \\ 230,155 \end{array}$ | $\begin{array}{r} 34,573 \\ 272,687 \end{array}$ | $\begin{array}{r} 53.176 \\ 763,315 \end{array}$ | $+$ | $\begin{array}{r} 18.603 \\ 490.628 \end{array}$ |
| Tullibee $\qquad$ cwt. § | $\begin{array}{r} 42,346 \\ 175,268 \end{array}$ | $\begin{array}{r} 61,804 \\ 290,754 \end{array}$ | $\begin{aligned} & 101,525 \\ & 645,945 \end{aligned}$ | $\begin{aligned} & 121,764 \\ & 633,150 \end{aligned}$ | $\begin{aligned} & 104,145 \\ & 612,931 \end{aligned}$ | - | $\begin{array}{r} \cdot 17,619 \\ 20,219 \end{array}$ |
| Mackerel $\qquad$ cwt. \$ | $\begin{array}{r} 215,590 \\ 1,021,242 \end{array}$ | $\begin{aligned} & 187,661 \\ & 663,628 \end{aligned}$ | $\begin{aligned} & 115,487 \\ & 443,155 \end{aligned}$ | $\begin{aligned} & 158,797 \\ & 582,705 \end{aligned}$ | $\begin{aligned} & 123,768 \\ & 528,267 \end{aligned}$ | - | $\begin{aligned} & 35,029 \\ & 54,438 \end{aligned}$ |
| Hake and cusk $\qquad$ cwt. $\delta$ | $\begin{aligned} & 192,811 \\ & 310,508 \end{aligned}$ | $\begin{aligned} & 174,136 \\ & 295,720 \end{aligned}$ | $\begin{aligned} & 151.051 \\ & 203,502 \end{aligned}$ | $\begin{aligned} & 177,370 \\ & 232,404 \end{aligned}$ | $\begin{aligned} & 253,244 \\ & 368,237 \end{aligned}$ | $+$ | $\begin{array}{r} 75,874 \\ 135,833 \end{array}$ |
| Jing Cods................................wst. 5 | - | - | - | $\begin{array}{r} 49,916 \\ 401,259 \end{array}$ | $\begin{array}{r} 50,772 \\ 366,101 \end{array}$ | $\pm$ | $\begin{array}{r} 856 \\ 35,158 \end{array}$ |
| Pike. cwt. | $\begin{array}{r} 53,985 \\ 230,261 \end{array}$ | $\begin{array}{r} 54,217 \\ 278,369 \end{array}$ | $\begin{array}{r} 72,520 \\ 407,181 \end{array}$ | $\begin{array}{r} 70,473 \\ 356,992 \end{array}$ | $\begin{array}{r} 62,701 \\ 362,922 \end{array}$ | $\ddagger$ | $\begin{array}{r} 7,772 \\ 5,930 \end{array}$ |
| Clams and qualtaugs $\qquad$ bbl. $s$ | $\begin{array}{r} 60.357 \\ 320,241 \end{array}$ | $\begin{array}{r} 54,986 \\ 290,063 \end{array}$ | $\begin{gathered} 54,230 \\ 268,887 \end{gathered}$ | $\begin{array}{r} 57,712 \\ 274,287 \end{array}$ | $\begin{array}{r} 63,320 \\ 322,874 \end{array}$ | $+$ | $\begin{array}{r} 5,608 \\ 48,587 \end{array}$ |
| Pickerel, blue................................. | $\begin{gathered} 30,601 \\ 168,306 \end{gathered}$ | $\begin{array}{r} 34,453 \\ 275,624 \end{array}$ | $\begin{array}{r} 30,385 \\ 182,310 \end{array}$ | $\begin{array}{r} 31,173 \\ 187,038 \end{array}$ | $\begin{array}{r} 21,496 \\ 257,852 \end{array}$ | $\square$ | $\begin{array}{r} 9.677 \\ 70,914 \end{array}$ |
| Eels.......................................... | $\begin{array}{r} 15,635 \\ 127,255 \end{array}$ | $\begin{array}{r} 15,675 \\ 146,062 \end{array}$ | $\begin{array}{r} 24,466 \\ 231,559 \end{array}$ | $\begin{array}{r} 15.926 \\ 139,932 \end{array}$ | $\begin{array}{r} 25,661 \\ 227,751 \end{array}$ | $+$ | $\begin{array}{r} 9,735 \\ 87,819 \end{array}$ |
| Oysters. $\qquad$ bbl. | $\begin{array}{r} 28,882 \\ 212,408 \end{array}$ | $\begin{array}{r} 21,428 \\ 185,353 \end{array}$ | $\begin{array}{r} 22,255 \\ 208,378 \end{array}$ | $\begin{array}{r} 21,650 \\ 197,783 \end{array}$ | $\begin{array}{r} 21,483 \\ 214,180 \end{array}$ | + | $\begin{array}{r} 157 \\ 16,399 \end{array}$ |
| Scallops. $\underset{\S}{\text { bbl. }}$ | $\begin{gathered} 10,350 \\ 70,655 \end{gathered}$ | $\begin{aligned} & 17.718 \\ & 97,751 \end{aligned}$ | $\begin{array}{r} 23.200 \\ 151,926 \end{array}$ | $\begin{array}{r} 38,635 \\ 217,932 \end{array}$ | $\begin{array}{r} 26,304 \\ 164,607 \end{array}$ | - | $\begin{aligned} & 12,331 \\ & 53,325 \end{aligned}$ |
| Sturgeon $\qquad$ cwt. \$ | $\begin{array}{r} 7.174 \\ 248,786 \end{array}$ | $\begin{gathered} 6,243 \\ 201,227 \end{gathered}$ | $\begin{array}{r} 5,198 \\ 159,438 \end{array}$ | $\begin{array}{r} 4.788 \\ 143,720 \end{array}$ | $\begin{array}{r} 4,866 \\ 141,009 \end{array}$ | $\pm$ | $\begin{array}{r} 78 \\ 2,711 \end{array}$ |
| Swordfish............................. cwis. | $\begin{array}{r} 5,575 \\ 96,157 \end{array}$ | 4,551 78,209 | $\begin{array}{r} 12.836 \\ 207,248 \end{array}$ | $\begin{array}{r} 7,298 \\ 120,682 \end{array}$ | $\begin{array}{r} 8,088 \\ 132,345 \end{array}$ | $+$ | $\begin{array}{r} 789 \\ 11,653 \end{array}$ |
| Goldeyes. $\qquad$ cwt. 8 | $\begin{array}{r} 6,57 \\ 36, ~ \end{array}$ | $\begin{array}{r} 7,263 \\ 70,776 \end{array}$ | $\begin{gathered} 11,685 \\ 85,791 \end{gathered}$ | $\begin{array}{r} 11,485 \\ 115,970 \end{array}$ | $\begin{gathered} 10,713 \\ 115,856 \end{gathered}$ | - | 772 14 |
| Pollock $\qquad$ cwt. \$ | $\begin{array}{r} 54,787 \\ 107,691 \end{array}$ | $\begin{array}{r} 76,396 \\ 127,415 \end{array}$ | $\begin{array}{r} 86,416 \\ 124,957 \end{array}$ | $\begin{aligned} & 35,050 \\ & 62,597 \end{aligned}$ | $\begin{array}{r} 64,691 \\ 107,871 \end{array}$ | $+$ | $\begin{aligned} & 29,641 \\ & 45,274 \end{aligned}$ |
| Black cod....................................... | $\begin{array}{r} 18,183 \\ 130,334 \end{array}$ | $\begin{array}{r} 14,956 \\ 114,315 \end{array}$ | $\begin{aligned} & 10,358 \\ & 89,371 \end{aligned}$ | $\begin{array}{r} 16,430 \\ 123,421 \end{array}$ | $\begin{gathered} 13,388 \\ 101,452 \end{gathered}$ | - | $\begin{array}{r} 3,042 \\ 21,969 \end{array}$ |

${ }^{\text {P Caught and landed. }}$ 2Marketed. Included with cod prior to 1927.

## Review of the Fisheries of 1928

Canada's fisheries production in the calendar year 1928 reached a total of $\$ 55,050,973$ in marketed value or $\$ 5,927,364$ above the total for 1927. Onky once before, save in 1918 and 1919 when the inflated prices of the war era prevailed, have the Dominion's fisheries yielded a larger sum than in 1928. That exception was in 1926 when unusually favorable weather conditions greatly aided the fishermen and the marketed value of the production amounted in all to $\$ 56,360,633$, or $\$ 1,309,660$ more than in 1928 .

During 1928 there were increased catches both on the Atlantic coast-that is, in the sea fisheries of the Maritime Provinces and Quebec-and on the Pacific coast. The catches in the inland waters showed a slight decrease, attributable to smaller landings in Ontario and Manitoba. The marketed value of the sea fisheries production was $\$ 46,669,222$, as compared with $\$ 41,547,697$ in the previous calendar year. In the case of the inland fisheries the marketed value of the production amounted to $\$ 8,381,751$, an increase of $\$ 805,839$ over the figures for 1927.

On the whole, prices were somewhat better in the fisheries trade in 1928 than they had been in the previous year and this condition, together with the increase in catch, made the year a more prosperous one for the fishermen than its predecessor had been. Export business showed substantial growth. Canadian fish and fish products were sold in some 100 foreign markets and the total exportation had a value of $\$ 38,096,245$ as against $\$ 34,814,448$ in 1927 . The 1928 balance of trade in Canada's favor on fisheries account was $\$ 34,028,171$.

The number of men employed in the catching and landing of fish-the primary operations of the fisheries-was 62,785 , as compared with 63,415 in the preceding year, and in the fish canning and curing establishments 15,434 persons were employed as against 16,697 the year previously-a total personnel of 78,219 directly engaged in the fishing industry or 1,893 fewer than in 1927. The interesting point will be noted that though there was a decrease in the number of persons engaged in the industry in 1928 as compared with 1927 the catch and marketed value for the Dominion as a whole were both larger in 1928 than they had been in the previous year. Increasing use of powered craft and mechanical equipment in the fisheries is enlarging the productive capacity of the individual worker in the industry. The widening application of power in the fisheries is a factor which must be taken into the reckoning in any analysis of the changes from year to year in the size of personnel engaged in the industry. Capital investment showed some increase: amounting to $\$ 58,072,371$, it was $\$ 1,765,910$ greater than in 1927.

It is also to be noted that while there was some increase in the capital investment in the industry in 1928, the indications are that there will be a further increase in the ensuing year. On the Atlantic coast, for instance, greater investment is being made in the facilities for primary operations. During the winter no less than 155 new fishing boats have been under construction at Maritime Province points, the greater number of them in Nova Scotia. There has been more activity in this regard in the Maritime Provinces during the past winter than for some years-a condition partly attributable to the greater success met with by the fishermen during 1928 and partly, it is indicated, to the establishment by the department of fish collection services-which, by widening the marketing opportunities of the fishermen, are encouraging them to increase their facilities for fishing.

Reckoning in terms of marketed value, forty-eight per cent of the Dominion's fisheries production for 1928 is to be credited to British Columbia. The Maritime Provinces accounted for thirty-two per cent, Ontario for seven per cent, the Prairic Provinces and the Yukon Territory, together, for seven per cent, and Quebec for six per cent. Only in the case of one of the provinces, Prince Edward Island, was there a decrease ( $\$ 171,126$ ) in marketed value as compared with 1927.

From the standpoint of marketed return, the salmon fishery was first in importance during the year and the total production from this fishery, increasing by some $\$ 3,000,000$ as compared with the year before, had a value of $\$ 17,867,053$. The cod fishery ranked next with a production valued on the markets at $\$ 6,285,777$. The lobster fishery was third in marketed value- $\$ 5,183,988$. In the case of both halibut and herring the year's production amounted to more than $\$ 3,000,000$. Pilchard production was above the $\$ 2,000,000$ mark and the marketed value of the catch of whitefish, most important among the inland fish from the standpoint of marketed return, was also more than $\$ 2,000,000$. The haddock, pickerel, sardine, smelt, and trout fisheries, respectively, yielded marketed values of over $\$ 1,000,000$.

Nova Scotia.-In Nova Scotia the year's production of $\$ 11,681,995$ was nearly $\$ 900,000$ above the total for 1927 and was. only $\$ 823,927$ under the figure for 1926, which, as has been noted, was a year of unusually favorable natural conditions. In the cod fishery there was an increase of almost 140,000 cwt. in catch and of nearly $\$ 950,000$ in marketed value. There were also increases in the catch and marketed value of haddock, pollock, hake and cusk, and swordfish among the other principal sea fish and an increase in the marketed value of mackerel, but decreases, on the other hand, in the case of halibut, herring, lobsters and salmon. The scallop catch fell off sharply as compared with 1927 but was substantially larger than it had been in any previous year. There was some gain in the landings and marketed value of clams and quahaugs. Favorable prices in the dried fish markets were an important factor in increasing the total value of the provincial production for the year. The total catch of the Lunenburg fleet, which operates chiefly for the dried fish trade, was 717,225 cwt. of green fish as compared with $682,770 \mathrm{cwt}$. in 1927, though the number of vessels operating, seventy-five, was eight less than in the previous year.

New Brunswick.-The year was a very successful one for the New Brunswick fishing industry and the total marketed value of the provincial catch, $\$ 5,001,641$, was nearly $\$ 600,000$ greater than the 1927 return. The sardine fishery, which is of steadily growing importance and in which there was a catch during the year of 279,349 barrels with a marketed value of $\$ 1,284,771$, accounted for more than $\$ 238,000$ of the 1928 gain in the value of the provincial fisheries as a whole. Similarly, smelt production was more valuable by over $\$ 225,000$ than it had been in the previous year when a catch of $46,184 \mathrm{cwt}$. had a marketed value of $\$ 686,163$ as compared with a marketed value of $\$ 912,055$ for a catch of $59,866 \mathrm{cwt}$. in the year under review. There was a very large increase relatively.in the catch of pollock and the marketed value of $\$ 55,297$ was $\$ 41,000$ above the 1927 total. Mackerel catch was double that of the previous year while there was substantial increase in catch and value in the cod fishery as well as in the lobster fishery. On the other hand, production fell off in the alewives, herring, and salmon fisheries.

Prince Edward Island.-In the case of Prince Edward Island the mackerel fishery was more successful in 1928 than it had been in the preceding year, both in point of size of catch and its value when put upon the market, and while the herring catch was smaller by some 4,000 cwt. than in 1927 it brought in a slightly larger amount in marketed value. The oyster landings increased by nearly 700 barrels but marketed value was not quite as large as in the year before. The catch of lobsters was $65,613 \mathrm{cwt}$. or $2,813 \mathrm{cwt}$. above the 1927 total. Smelt and cod landings fell off somewhat and in the case of each fishery there was a subtantial decline in marketed value.

Quebec.-Of the total gain of $\$ 260,164$ in the marketed value of the Quebec production, $\$ 132,001$ is to be credited to the sea fisheries and $\$ 128,163$ to the inland fisheries. On the sea fisheries' side the catch of haddock more than doubled while the lobster catch increased by some $1,840 \mathrm{cwt}$. The cod catch
was also heavier than in 1927, and there were increases in one or two other instances. Catches of herring and smelt both showed a falling off and the landings of mackerel were only a third as heavy as in 1927. In the inland fisheries there were increases both in catch and marketed value in the case of all save one or two of the commercial fishes. The largest single increase was in the production of eels and the marketed value of this catch rose from $\$ 110,778$ in 1927 to $\$ 189,905$.

Ontario:- The increase of $\$ 360,524$ in the marketed value of the Ontario production was chiefly due to larger returns from the pickerel and perch fisheries. The catch of pickerel was less than in 1927 but the marketed value was $\$ 420,252$ as compared with $\$ 300,529$, while the perch value was over three times the 1927 figure- $\$ 704,025$ as against $\$ 211,352$. Herring, trout, and whitefish fisheries were less successful than in the preceding year.

Manitoba.-In Manitoba there was a decrease in total catch but better market conditions resulted in an increase of $\$ 200,576$ in the value of the production. In the case of whitefish there was a slight increase in catch and a proportionately greater increase in marketed value. The tullibee catch dropped off over a million pounds but the marketed value of the catch was $\$ 65,000$ above the 1927 figure: Pickerel fishermen did better than in the preceding year both as regards catch and marketed value. A smaller quantity of pike was landed than in 1927 but yielded a larger sum on the market. The goldeye catch fell away slightly but the marketed value was only $\$ 66$ less than in 1927. The trout catch and value declined somewhat.

Saskatchewan.-The total catch in Saskatchewan was 4,131 cwt. more than in 1927 and on the marketed value side there was an increase of approximately $\$ 60,000$. The whitefish production in the province, $43,667 \mathrm{cwt}$., was 2,344 cwt. above the 1927 catch and was marketed for almost $\$ 50,000$ more. The pike and mullet catches increased while there were decreases in the case of trout, pickerel, and tullibee. The catch of goldeyes was practically the same as in 1927.

Alberta.-The greater production of trout in 1928 was chiefly responsible for the increase in the marketed value of the total provincial catch of fish. Trout landings of nearly $20,000 \mathrm{cwt}$. were not far short of being twice as large as the 1927 catch and their marketed value was $\$ 222,312$ as compared with $\$ 126,955$ in the previous year. There were gains of various size in the catches of perch, pickerel and tullibee, respectively, but decreases in the case of mullets, pike and whitefish. The whitefish catch was $5,335 \mathrm{cwt}$. under the 1927 total.

British Columbia.-A very large increase in the salmon catch and large increases in the catch of halibut and the catch of pilchards were features of the year in the British Columbia fisheries, and contributed the major part toward the rise of nearly $\$ 3,700,000$ in the marketed value of the provincial production. Only in the war year 1918 and in 1926 did the British Columbia fisheries have greater value than in 1928. The salmon catch for the year was $2,257,455 \mathrm{cwt}$. or about 767,000 cwt. more than the 1927 catch, and it had a marketed value of $\$ 17,345,670$ as compared with $\$ 14,253,803$ in the previous year. The landings of halibut at British Columbia ports during the year exceeded the 1927 landings by 31,466 cwt. but the marketed value in 1928 showed a drop of about $\$ 97,000$. The pilchard catch increased by 241,670 cwt. The herring catch was somewhat below the 1927 catch but the marketed value was slightly greater.

Yukon Territory.-A remarkable increase took place in the value of the fisheries of the territory during the year, the marketed value of the catch reaching $\$ 51,665$, which was $\$ 39,575$ greater than in 1927. An increase in the salmon value to $\$ 17,320$, as compared with $\$ 8,050$ in the year before, was recorded, as well as an increase of $\$ 13,000$ in trout value, and an increase of almost $\$ 12,000$ in whitefish value.

## ATLANTIC COAST FISHERIES

In the Atlantic Coast fisheries $5,219,716 \mathrm{cwt}$. of sea fish were landed during 1928, while the total marketed value of production was $\$ 20,106,495$.

Cod, Haddock, Hake and Cusk, and Pollock.-Taken together, the catches of these five varieties of fish on the Atlantic coast made up a quantity very considerably above the 1927 total and their combined marketed value showed an increase of $\$ 1,834,136$. In 1928 the catch of these fish reached $2,948,221$ cwt., with a marketed value of $\$ 8,493,938$, and in the year before the catch had been $2,612,743 \mathrm{cwt}$. and its marketed value was $\$ 6,659,802$. The production of smoked fish and smoked fillets from the 1928 catch of these fish was 111,327 cwt., or very slightly less than the production in the preceding year. The case was otherwise, however, as regards the production of fresh fish and fresh fillets and of dried and boneless fish from the catch in this group. The marketings of fresh fish and fesh fillets totalled $379,048 \mathrm{cwt}$, as against $334,175 \mathrm{cwt}$. in 1927 and the production of dried fish and boneless fish was $574,682 \mathrm{cwt}$. as compared with $523,794 \mathrm{cwt}$. in the earlier year. The improved showing in regard to the catch and marketed value in the case of this group of fish was due to large gains in Nova Scotia and New Brunswick and a substantial gain in Quebec. In Prince Edward Island the 1927 catch of $61,913 \mathrm{cwt}$. dropped to $49,773 \mathrm{cwt}$. and marketed value from $\$ 149,397$ to $\$ 125,444$. So far as catch alone is concerned, Prince Edward Island showed a slight gain in the case of hake and cusk, a small decline in haddock landings, and a larger decrease in cod catch. Pollock are not taken by Prince Edward Island or Quebec fishermen. Quebec's catch of cod was $469,924 \mathrm{cwt}$. or $8,152 \mathrm{cwt}$. above the 1927 total. The provincial haddock catch of 5,884 cwt. represented a gain of more than a hundred per cent. The hake and cusk catch increased nearly four-fold from 830 cwt . in 1927 to $3,804 \mathrm{cwt}$. in the year under review. In New Brunswick there was a smaller haddock catch than in the year previous- $-28,878 \mathrm{cwt}$. in 1928 as against $33,834 \mathrm{cwt}$ - but there was distinct improvement in the cod fishery and the hake and cusk fishery. The cod landings for the year were 172,874 cwt., compared with $136,773 \mathrm{cwt}$. in 1927, and landings of hake and cusk amounted to 78,726 cwt., an increase of over 32,000 cwt. The increase in pollock catch was relatively very large, 34,118 cwt. being landed as compared with only $7,693 \mathrm{cot}$. in the year before. Nova Scotia fishermen made larger catches of all of these fish than in 1927. The cod catch was $1,470,172 \mathrm{cwt}$. as compared with $1,331,873 \mathrm{cwt}$., the haddock catch $445,950 \mathrm{cwt}$. as compared with $384,207 \mathrm{cwt}$., the catch of hake and cusk $158,744 \mathrm{cwt}$. as compared with $119,431 \mathrm{cwt}$., and the catch of pollock 30,573 as against 27,357 cwt.

Mackerel, Herring and Sardines.-Combined landings of herring, mackerel, and sardines were larger by 51,832 cwt. than in 1927 but this was due to an increase of over $222,000 \mathrm{cwt}$. in the sardine catch, for there was a $135,729 \mathrm{cwt}$. decrease in herring landings and the mackerel catch was $35,029 \mathrm{cwt}$. under the figures for the earlier year. The smaller total for mackerel landings-123,768 cwt. as compared with $158,797 \mathrm{cwt}$.-was due to the poorer success of the Quebec men engaged in this fishery. The Nova Scotia mackerel catch of 71,440 cwt. was very little under the 1927 catch while the New Brunswick catch of 18,611 cwt. more than doubled the landings for the previous year, and in Prince Edward Island the catch was 10,197 cwt. as compared with only 6,455 cwt. in 1927. In Quebec the mackerel fishermen landed only $23,520 \mathrm{cwt}$ while in 1927 their catch had amounted to $70,765 \mathrm{cwt}$. Herring catches were considerably below the 1927 figures in all four provinces. In New Brunswick the decrease was $77,000 \mathrm{cwt}$, in Nova Scotia 48,162 cwt., in Quebec $6,178 \mathrm{cwt}$. and in Prince Edward Island 4,383 cwt. The year was a very successful one for the sardine fishery of New Brunswick and the catch was 558,698 cwt. as against $349,280 \mathrm{cwt}$. in the year preceding. The increase in marketed value of the catch was $\$ 238,521$. The pack of sardines in the province was 257,881 cases. In 1927 the pack was 240,091 cases.

Other Sea Fish.-In 1928 the catch of halibut, which had been greater by $3,670 \mathrm{cwt}$. on the Atlantic coast in 1927 than in the year previous, dropped 1,397 cwt. below the 1927 total. The 1928 landings in Nova Scotia, New Brunswick and Quebec (the New Brunswick catch is small) totalled 27,103 cwt. Quebec's catch was $1,269 \mathrm{cwt}$. as compared with only 848 cwt . in 1927, but the Nova Scotia catch decreased by $1,783 \mathrm{cwt}$. and there was also a decrease in the case of the New Brunswick catch. Swordfish, taken by Nova Scotia fishermen only, made up a catch of over $8,080 \mathrm{cwt}$., as compared with 7,299 cwt. in the previous year. The catch of tomcods, which are taken chiefly in New Brunswick fell to $19,601 \mathrm{cwt}$. or some $3,140 \mathrm{cwt}$. less than in 1927. There was a large decrease also in the landings of flounders in Nova Scotia and New Brunswick, the total catch standing at $3,474 \mathrm{cwt}$. as against $9,383 \mathrm{cwt}$. in the year before. The Nova Scotia flounder catch, which had been 8,195 cwt. in 1927, was only $2,488 \mathrm{cwt}$. in the year under review.

Lobsters.- In the four Atlantic provinces, together, the lobster catch increased by more than $5,000 \mathrm{cwt}$, reaching a total of $322,437 \mathrm{cwt}$. Prices, however, were not as good as in 1927 and the marketed value of the catch, $\$ 5,183,988$ was $\$ 242,188$ under the figure for the previous year.

Other Shellfish.-The production of clams and quahaugs increased in all of the provinces, except New Brunswick, and totalled 46,486 barrels, or a gain of 3,193 barrels. The greatest production is in New Brunswick which accounted for 30,058 barrels. The scallop production, 12,331 barrels less than in 1927, was 26,304 barrels. The oyster catch showed a slight decrease in Nova Scotia, New Brunswick, and Prince Edward Island, taken together, for while the Nova Scotia catch and the Prince Edward Island catch, at 1,944 barrels and 4,756 barrels, respectively, were larger than the 1927 figures, the New Brunswick catch of 12,383 barrels was 1,191 barrels less than the year before.

River Spawning Fish.-There was a large decrease, taking the catch in the four provinces as a whole, in the landings of river spawning fish-alewives, salmon and smelt-although the smelt figures were larger than for the preceding year. The catch of alewives in Nova Scotia dropped from $14,680 \mathrm{cwt}$. to 11,954 cwt. and in New Brunswick from 39,434 cwt. to 23,600 cwt. In Prince Edward Island, where no alewives were reported as landed in 1927, there was a small catch of 150 cwt. in 1928. Market conditions in the alewives trade, chiefly a trade in the salted fish, continued unsatisfactory, as in the previous year. The total decrease in the salmon catch was 22,398 cwt., the combined landings in the four provinces amounting to only $26,715 \mathrm{cwt}$. as against $49,113 \mathrm{cwt}$. in 1927. There was a decrease in the catch in each of the four provinces. In the smelt fishery, New Brunswick, the chief producer, showed an increase of $13,682 \mathrm{cwt}$., the total landings in the province being $59,866 \mathrm{cwt}$., but the other three provinces all showed decreases.

## INLAND FISHERIES GENERALLY

The inland fisheries are prosecuted in New Brunswick, where they are relatively unimportant as compared with the sea fisheries, and in Quebec, Ontario, the Prairie Provinces, and the Yukon Territory. Compared with 1927, the year under review brought a gain in inland production value of slightly more than $\$ 800,000$, the figures covering marketed value for the two years standing at $\$ 7,575,912$ (1927) and $\$ 8,381,751$ (1928). There were increases in the respective catches of bass, catfish, salmon, saugers, shad, sturgeon, and mixed fish. The catches of alewives, maskinonge and smelts were under the 1927 figures. The largest catch of whitefish was in Ontario, 58,235 cwit., but this total was smaller by some 3,420 cwt. than the 1927 catch. The catches in Manitoba and Saskatchewan, respectively, were somewhat larger than in 1927, but Alberta landings fell off. Quebec showed some gain. Manitoba, the principal pickerel producer, had a larger catch than in 1927 and 101,870 cwt.
were landed as against 99,813 cwt. in the previous year. Ontario's catch of 20,012 cwt. was not quite as large as the 1927 total. Saskatchewan's catch, $3,054 \mathrm{cwt}$., was slightly less than the catch for the year before, but Alberta, with 8,499 cwt. to its credit, did better by over $1,750 \mathrm{cwt}$. than in the previous year. All the blue pickerel landed were taken in Ontario. The catch in 1928 showed a decrease, but the marketed value an increase. Manitoba continued the chief producer of pike but its catch was about $3,800 \mathrm{cwt}$. less than in 1927 when $40,166 \mathrm{cwt}$. were brought ashore. There were larger catches in Quebec and Saskatchewan than in 1927 but smaller catches in Ontario and Alberta.

## THE PRAIRIE PROVINCE FISHERY

On the whole, conditions in the fishing industry in the Prairie Provinces were better in 1928 than they had been in 1927, notwithstanding that unfavourable weather interfered with the winter fishing. In Manitoba, for instance, while commercial production showed a decrease, there was an increase in the marketed value of the catch. In Saskatchewan there was an increase of over $4,000 \mathrm{cwt}$. in the commercial production. The winter fishery in Alberta showed a considerable drop in catch but the summer fishery a much greater increase so that there was a net gain of more than 4,500 cwt., and prices, taken as a whole, were satisfactory; summer fishery prices ran from fair to average and winter prices were good. There was an increase in the number of men engaged in the industry in the three provinces, and it is noteworthy that the trend was distinctly toward expansion, as indicated by increased equipment. In Saskatchewan the equipment in use was valued at $\$ 26,660$ more than in 1927 , the number of gill-nets, for instance, increasing by 2,926 . In Alberta the value of equipment advanced to $\$ 416,185$. Manitoba fishermen, unfortunately, met with heavy loss in equipment during the year as a result of adverse weather conditions; in several cases gangs lost their entire outfits and it is estimated that the total loss in nets reached $\$ 42,600$. Increased angling featured the year in all three provinces. In Alberta the number of angling permits reached a new high level. The amount of fish taken by anglers in Alberta in 1928 was almost twice as great as in the preceding year. Anglers in Saskatchewan numbered more than in 1927 but their total catch was smaller. In Manitoba, where the number of anglers reached 6,113 and the total catch was estimated at 2,935 cwt. an outstanding feature was that the number of non-residents taking out licenses was more than double the 1927 total, reaching 1,113. Improvement in angling in the Prairie Provinces was the result, in large part, of the action of the department in stocking various waters with trout and other fish in recent years. Good catches were reported in streams which had previously been stocked with trout. Thousands of perch were taken from Mayatan lake, Alberta, where, in 1922, the department placed only 42 adult fish. Great numbers of young perch were to be seen in other Alberta lakes which were stocked with adult perch as recently as 1925 while perch fingerlings which were placed in Whitewood lake in that year had grown by 1928 to more than half a pound in weight. Similar results were seen in 1928 from the placing of pickerel in other waters. In Saskatchewan a number of waters which had been stocked some years ago afforded good angling, and, generally, in all three provinces the results of this policy of stocking waters from the Government hatcheries have been satisfactory, leading to better angling year by year. Further development of the fishery in lake Athabaska, in the extreme north of the Prairie Provinces, was a noteworthy advance of 1928 , indicative of the possibilities of the future in the Dominion's northern areas. The fish taken from lake Athabaska are being marketed in increasing quantities as the fishery is developed by energetic and progressive methods. During 1928 improved equipment was put in operation in the Athabaska fishery with resultant improvement in the attractiveness of the product sent to market. Trout carefully sliced by machinery, frozen, and packed in attractively-branded wax paper
were sent to distant urban markets with satisfactory results. Addition of two new steam tugs and two refrigerator barges to the fishing equipment evidenced the expansion of the fishery on the lake. Establishment of a co-operative "Fish Pool" in Manitoba was an important step in the Prairie Province fishery during 1928. Establishment of the pool, which is known officially as the Manitotoba Co-operative Fisheries and is incorporated under the Manitoba Co-operative Societies Act, was the culmination of discussion which had been going on for several years among Manitoba fishermen and independent dealers. Organization was completed in the mid-summer of 1928 and up to January 28th, 1929, the pool had handled $3,326,255$ pounds of fresh and frozen fish from the winter production. At the end of last January the pool membership was 515 which was estimated to represent from 1,000 to 1,200 men out of a total of some 4,100 men engaged in the Manitoba fishery. An interesting development in connection with the fishing industry in these provinces is the effect of mining progress and railway extension in making for the expansion of the fishery in some of the more remote waters already under operation and in opening up new waters. For example, the completion of the railway to the Flin-Flon mine in Northern Manitoba has made it possible for fishermen operating in the area of the Churchill waters between Pelican narrows and Island falls, the centre of the main sturgeon fishery of the Churchill, to put their catch at rail-head in one day, with the shipments reaching The Pas on the following day, whereas, formerly, a 20-day round trip with teams was necessary. Similarly, an extension of that railway northward from Cranberry portage to the location of the Sherritt-Gorden mining properties at Cold lake, which is now under way, will bring virtually all the waters along the western part of these northern areas of Manitoba within comparatively easy reach of railway transportation. In Saskatchewan a railway survey line projecting from Nipiwan has already established a trail for fishermen to Big Bear, Ballantyne, and Deschambault lakes. This new railway will open up a number of important fishing lakes and with other proposed railways will bring valuable fisheries with a reasonable distance of rail transportation.

## PACIFIC COAST FISHERIES

The major feature of the British Columbia fishery is export business in canned salmon, which, in 1928, was done with more than 25 different countries. The largest trade was with France which took about 333,670 cases out of the total pack of $2,035,637$ cases. Australasian purchases reached some 269,000 cases and the United Kingdom was third among the customers in point of quantity purchased, taking approximately 258,000 cases. Shipments to Continental Europe apart from those to France, amounted to almost 150,000 cases, with Belgian buying accounting for more than one-third of the quantity. Consignments to the Atlantic Coast of the United States totalled slightly more than 14,500 cases. Exports to South Africa and West Africa made up a total of more than 63,000 cases while other countries to which shipments were made included Central and South American states, Ceylon, China, the Dutch East Indies, Egypt, Fiji, India, Japan, the Philippines, the Straits Settlements, and the West Indies. The drop in the sockeye production in 1928 to 203,541 cases,-more than 100,000 cases below the average pack for the five-year period, 1924-1928,-prevented the record salmon pack of 1926 from keing exceeded. As it was, however, the total pack was less than 30,000 cases under the 1926 figure. Both in pinks and chums the former records (1926) were broken in 1928. The pack of pinks was 792,362 cases, or 19,369 cases above the former record, and the pack of chums mounted to 161,294 cases above the old record and reached 863,256 cases. The 1928 pack of cohoes was 150,684 cases and the pack of springs 18,856 cases but an increasing quantity both of springs and cohoes is being used each year in the fresh and frozen fish trade. The runs of pinks and chums were exceptionally large, taking the province as a whole, and, at the same time fishery officers reported that in the course of the season they
saw both these varieties of salmon in streams in which the fish had not been known to be seen before. The decline in the sockeye pack was chiefly due to the falling off in production of the Fraser and Skeena rivers. In both the two preceding years very late runs of sockeye helped to swell the total pack on the Fraser but in 1928 there was no such late run. In the Skeena area the small pack was partly attributable to the establishment, during the sockeye season on these waters, of a weekly closed period of sixty hours-a step taken with a view to greater conservation, and taken, the evidence indicates, with excellent results. Operations in the Barclay sound area during the year indicated that the fish cultural programme and restriction of fishing in this area in recent years have had beneficial effect, as evidenced by an excellent run of sockeye. Improved standard of pack was noted during the year and a continuance of this improvement should result in an increasing and more satisfactory market. The improvement in standard is regarded as traceable, in large part, to two causes. First, there was the reduction in the number of purse seines in use, a reduction flowing from the action of the department in influencing those concerned to bring about an agreement to this effect. Following on this agreement, purse seine fishing was confined, for the most part, to waters within reasonable distance of the canneries supplied by the seines and the salmon thus were brought to the canning plants fresher and in better condition than would otherwise have been the case. The second factor making for the improvement in the standard of pack was the enactment of regulations requiring that fish that were to be transported over open water areas, where delays in navigation were liable to occur, must be gutted and packed in ice immediately after being caught. Two other developments of interest and importance in the Pacific Coast fishery during 1928 were the increase in the production of dry-salted herring and the increase in the production of fish meal and oil. Practically all of the yearly production of dry-salted herring is exported to China and in 1928 the output reached a new high level- $1,072,188$ cwt.--though disturbed Chinese conditions brought some difficulties to the marketing problem. The production last year was 23,998 cwt. greater than the output in 1927. In 1928 the fish oil manufactured in British Columbia totalled $5,047,339$ gallons as compared with $3,657,627$ gallons in 1927. The production of fish meal and fertilizer (including also some whalebone) was 20,119 tons as against 17,655 tons in the year previous. The great increase was in the production from pilchards, oil manufacture rising from $2,673,876$ gallons to $3,995,806$ gallons and the procluction of meal and fertilizer increasing to 14,500 tons as compared with 12,169 tons in 1927. Canning of pilchards also reached high figures during 1928 when 65,097 cases were produced, the largest total for any year since 1920. Some increase in the proportion of Canadian landings at Prince Rupert was apparent in the halibut fishery in 1928, although the quantity of fish landed at that port by American vessels was still much greater than the catch brought ashore there by Canadian schooners. The total quantity of halibut landed at British Columbia ports during the year was 302,820 cwt. This was more than 31,460 cwt. greater than the total of the 1927 landings but was below the average for the 1923-1926 period. A large increase in the number of fur seals taken off the British Columbia coast by Indians was shown in 1928, and there was - also an increase in the catch of whales. The Indians, who have the right under the Pelagic Sealing Treaty to take seals, landed 2,090 skins as compared with only 1,476 in 1927 . The catch of whales made by six steamers operating from the two stations maintained during the year was 305 as against 258 in 1927 and 269 in 1926. Continuing the Departmental programme of endeavouring to improve the sport fishery of the province, 201 plantings of eggs and fry were made in the course of 1928 and careful inspection of lakes and streams was carried on by the fishery officers. Useful results are believed to be flowing from these activities.

## SUMMARY OF PRODUCTION, 1928

The following table gives a statement for the whole of Canada of all fish caught and marketed during 1928. For each kind the total caught and the value at the vessel's or boat's side is first given, this being followed by statements showing the form in which each kind was marketed and the value.

## 2. Quantity and Value of Fish Gaught and Marketed, Canada, during the year 1928



## 2. Quantity and Value of Fish Caught and Marketed, Canada, during the year 1928-con.



## 2. Quantity and Value of Fish Caught and Marketed, Canada, during the year 1928-con.



1 Used in the manufacture of fisb oil and fertilizer.

## 2. Quantity and Value of Fish Caught and Marketed, Canada, during the year 1928-con.



## 2. Quantity and Value of Fish Caught and Marketed, Canada, during the year 1928-concluded



## Agencies of Production: Capital Equipment, Employees, Etc.

(1) Primary Operations-

Capital.-The total value of the vessels, boats and fishing gear (nets, seines traps, trawls, etc.) used in the primary operations of catching and landing the fish in 1928 was $\$ 31,131,088$, compared with $\$ 31,851,979$ in 1927 and $\$ 29,038,613$ in 1926. Table 3 shows the number and value of the different kinds of vessels, boats and gear for each of the three years. It will be noted that the statistics of gear for 1928 are given in greater detail than those for the preceding years.

Employees.-The number of men employed on vessels and boats and in fishing without boats in 1928 was 62,785 , compared with 63,415 in 1927 and 61,371 in 1926. Table 4.

## (2) Fish Canning and Curing Establishments-

Capital.-The capital investment of the fish canning and curing establishments had a total value in 1928 of $\$ 26,941,283$, compared with $\$ 24,454,482$ in 1927 and $\$ 28,868,071$ in 1926 . These totals comprise the value of land, buildings and machinery; products and supplies on hand; and cash and operating accounts. Table 5.

Employees.-The number of persons employed in the establishments in 1928 was 15,434 , compared with 16,697 in 1927 and 17,408 in 1926 . The lobster canneries gave employment to the largest number of persons in 1928, with a total of 5,811 , followed by the salmon canneries with a total of 5,179 . Table 6 .
3. Capital Equipment--Primary Operations. Value of Fishing Vessels, Boats, Nets, Traps, Piers and Wharves, etc., employed in the Canadian Fisheries, 1926, 1927 and 1928

| Equipment | Sea Fisheries |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1920 |  | 1927 |  | 1928 |  |
|  | Number | Value | Number | Value | Number | Value |
|  |  | \$ |  | s |  | \$ |
| Steam trawlers. | 14 | 990.000 | 17 | 1,240.000 | 11 | 743,000 |
| Steam fisling vessels. |  | 159,500 | 11 | 178,000 |  | 164,500 |
| Sairing and gasoline vessels | 1,398 | 6.454,422 | 1,561 | 8,017.679 | 1,422 | 7,30. 251 |
| Boats (sail and row) | 14, 138 | -615,936 | 14,569 | -679,949 | 14,87 | 587,482 |
| Boats (gasoline)..... | 15.622 | 5,328.186 | 15,944 | 5.434 .057 | 15,136 | 6,004, 311 |
| Garry nets 1 macks and seows | 125, 899 | 4,507, 399 | 124, 590 | -5,188, 239 | 6ī. 139 | 579,515 |
| Salmon drift nets ${ }^{2}$ | 10, |  | 12, ${ }^{\text {a }}$ | - 168, 23 | 11,349 | 1, 1444,019 |
| Salmon drag nets? | - | - | - | - | 21 | 5,500 |
| Salmon trap nets:. | - | - | - | - | 136 | 39,500 |
| Trap nets, other ${ }^{2}$ | - | - | - | - | 855 | 449.495 |
| Dip nets:. | - | - | - | - | 602 | 1,861 |
| Smelt nets: | - | - | - | - | 13, 294 | 591,458 |
| Pound nets. | - | - | - | - | 65 | 13.000 |
| Weirs...... | - 470 | 604,750 | 455 | 586, 515 | 446 | 429,155 |
| Weir seines? |  |  | - | - | 19 | 3,800 |
| Salmon purse seines ${ }^{\text {a }}$ | - | - | - | - | 354 | 512.244 |
| Seines, other ${ }^{2}$. | - | - | - | - | 1.913 | 449,242 |
| Weir drivers: |  | - |  |  | 82 | 17,100 |
| Tubs of trawl. | 18, 207 | 300,374 | 18.129 | 307,217 | 18,557 | 326. 691 |
| Haad lines.. | 69,434 | 120.321, | 67.57 | 132.710 | 65.303 | 155,693 |
| Crab traps.. | 4,215 | 15,445 | 6, 045 | 22,735 | 6,551 | - 21.583 |
| Eel traps..... |  |  | 100 | 400 | 418 | 1,032 |
| Lobster traps.... | 1,613,974 | 1,926.793 | 1,859,784 | 1,995,920 | 1,586,576 | 2,050, 207 |
| Lobster pounds ${ }^{\text {2 }}$ |  | - | - | - | 44 1,365 | 39.570 |
| - ${ }^{\text {gster rakes'. }}$ | $\overline{-}$ | - | 319 | 8.780 | 1,365 | 5,207 10,130 |
| Qualinug rakest | 180 | ${ }^{3,420}$ | 312 | 8,170 | 418 | 10, 138 |
| Oyster plant and equipment | 1 | 26,000 | 1 | 26,000 | ${ }^{3}$ | 26,000 |
| Fishing piers and wharves. | 2,623, | 977.820 | 2.511 | 954,820 | 2,060 | 825.365 |
| Freezers and ice houses. | 567 | 448,401 | 573 | 450,901 | 494 | 342,275 |
| Small 6ish and smoke houses | 7,331 | 1,026,824 | 7.313 | 1.005,825 | 6,049 | 920,539 |
| Total Yalue. | - | 24,022,374 | - | 26,785,430 | - | 25,698,928 |

[^10]2 Not shown separately prior to 1928.
3. Capital Equipment-Primary Operations. Value of Fishing Vessels, Boats, Nets, Traps. Piers and Wharves, etc., employed in the Canadian Fisheries, 1926, 1927 and 1928 -concluded

| Equipment | Inland Fisheries |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1926 |  | 1927 |  | 1928 |  |
|  | Number | Value | Number | Value | Number | Value |
| Steam vessels or tugs. |  | $\stackrel{\text { 1,038,674 }}{\text { S }}$ | 138 | 1,037,353 |  | 037,684 |
| Boats (sail and row).. | 3,828 | 1,189,616 | 4,020 | 1. 180, 480 | 3,860 | 1,176,471 |
| Boats (gasoline). | 1,444 | 778, 170 | 1,504 | 847.425 | 1,557 | 906,516 |
| Scows. | 3 | 2,500 | 2 | 5,000 | 7 | 23,500 |
| Gill nets. | - | 1,491,831 |  | 1,584,005 |  | 1,606, 105 |
| Seines..... | 131 | 25,018 | 144 | 21,925 | 160 | 22,851 |
| Pound nets. | 1,322 | 624,820 | 1,240 | 531,622 | 1,225 | 672,780 |
| Hoop nets.. | 1,185 | 34, 598 | 996 | 34, 154 | 921 | 29,602 |
| Dip or roll nets. | 52 | 605 | 57 | 691 | 80 | 978 |
| Lines..... | 3,033 | 59,697 | 2,668 | 20,112 | 2,573 | 43,800 |
| Weirs. | 1,308 | 83,222 | 1,442 | 124,487 | 1,624 | 129,789 |
| Eel traps.... | 25 | 100 |  |  | 110 | 320 |
| Fish wheels. | 3 | 450 | 7 | 1,050 | ${ }^{6}$ | 900 |
| Spears...... | 140 | 990 | 123 | ${ }_{167} 910$ | $\stackrel{88}{ }$ | 183, ${ }^{1.760}$ |
| Fishing piers and wharves. | 462 | 195, 698 | 469 | 167, 273 | 1.467 | 183,760 |
| Freezers and ice bouses...... | ${ }_{292}^{945}$ | 451,170 39,082 | 955 356 | 464,592 45.470 | 1,005 | 545,058 50,912 |
| Total Value |  | 5,016,239 |  | 5,066,549 |  | 5,432,160 |

4. Employees in Primary Operations, 1926, 1927 and 1928

| Employees | Sea Fisteries |  |  | Inland Fisheries |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1926 | 1927 | 1929 | 1926 | 1927 | 1928 |
| Men employed- | по. | по. | no. | no. | no. | no. |
| On steam trawlers. | 249 | 311 | 226 | - | - |  |
| On vessels.. | 7,660 | 7.808 | 7,567 | ${ }^{729}$ | 732 | 767 |
| On boats. | 40, 122 | 39,672 | 38,061 | 8,193 | 8,320 | 8,166 |
| On carrying smacks and soo | 737 1 |  | + $\begin{array}{r}536 \\ 2972 \\ \hline 9\end{array}$ |  | 4, 024 | 21 4.469 |
| Fishing not in boats. | $\frac{1}{48}$ | 1,743 | 2,972 | 3,675 | 4,021 | 4.469 |
| Total. | 48,768 | 50,338 | 49,362 | 12,603 | 13,077 | 13,423 |

${ }^{3}$ Not available.
5. Capital Equipment ${ }^{1}$-Fish Canning and Curing Establishments, 1926, 1927 and 1928

| Establishments | 1926 |  | 1927 |  | 1928 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Value | Number | Value | Number | Value |
| Lobster canneries. | 455 | $\underset{1,477,374}{\text { ¢ }}$ | 438 | 1,419,604 | 375 | $\stackrel{\stackrel{5}{5}}{1.358,269}$ |
| Salmon canneries. | 79 | 16,367,870 | 81 | 11,595,454 | 67 | 12,477, 218 |
| Clam canneries... | 19 | 1226,012 | 15 | 1,99,417 | 22 | 271,831 |
| Sardine and other fish cannerie | 4 | 1,253,424 | 6 | 1,365,674 | 5 | 1,262,229 |
| Fish curing establishments. | 251 | 7,438,396 | 199 | 7,009, 883 | 204 | 7.520, 353 |
| Reduction plants... | 23 | 2,104,995 | 34 | 2.964,350 | 40 | 4,051,383 |
| Total | 831 | 28,868,071 | 773 | 24,451,482 | 713 | 26,941,283 |

${ }^{1}$ Comprises value of land, buildings and machinery, products and supplies on hand, and cash and operating accounts.
6. Employees in Fish Canning and Curing Establishments, 1926, 1927 and 1928

| Employees | 1926 |  |  | 1927 |  |  | 1928 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Male | Female | Total | Male | Female | Total | Male | Female | Total |
|  |  |  |  |  |  |  |  |  |  |
| Lobster canneries. | 2,887 4,439 | 3,614 2,355 | 6,501 6,794 | 2,790 4,288 | 3,390 2,438 | 6,180 6,726 | 2,614 <br> 3,307 | 3,197 1,872 | 5,811 5,179 |
| Clam canneries... | 4,482 88 | 2, 201 | ${ }^{283}$ | +100 | -127 | ${ }^{227}$ | 103 | 326 | 429 |
| Sardine and other fish | 340 | 142 | 482 | 293 | 153 | 446 | 275 | 143 | 418 |
| Fish curing establishment | 2,511 | 321 | 2,832 | 2,257 | 244 | 2,501 | 2,566 | 229 | 2,795 |
| Reduction plants. | 503 | 13 | 516 | 602 | 15 | 617 | 765 | 37 | 802 |
| Total | 10,762 | 6,646 | 17,408 | 10,330 | 6,367 | 16,697 | 9,630 | 5,804 | 15,434 |

## Details of Fish Canning and Curing Establishments

Number-of Establishments.-The number of fish canning and curing establishments in operation in Canada in 1928 was 713, classified as follows: 375 lobster canneries, 67 salmon canneries, 22 clam canneries, 5 sardine and other fish canneries, 204 fish curing establishments, and 40 reduction plants. Compared with the preceding year the number of lobster canneries shows a decrease of 63 , the number of salmon canneries a decrease of 14 , and the number of sardine and other fish canneries a decrease of 1 , while the number of clam canneries shows an increase of 7 , the number of fish curing establishments an increase of 5 , and the number of reduction plants an increase of 6 . The canneries are classified according to the kind of canned products, but in a number of these plants fish curing operations are carried on as well as canning, the returns showing fish dried, smoked, etc., in addition to the canned product. In 1928 the number of canneries which also engaged in fish curing was 38 , including 26 lobster canneries, 7 salmon canneries, 2 clam canneries, and 3 sardine and other fish canneries. Plants classified as fish curing establishments are those which prepare fish in other ways than canning, while reduction plants are those engaged in the manufacture of fish oil and meal. The fish canning and curing industry is confined to the Maritime provinces, Quebec and British Columbia.

Employees and Wages.-There were 15,434 persons employed in the industry in 1928, comprising 630 salaried employees, 10,579 wage-earners, and 4,225 contract workers or piece workers. The last classification includes chiefly contract workers who are employed in the salmon canneries of British Columbia, where a large part of the work is done under contract, the contractor engaging and paying his own workers and being himself paid by the cannery operator according to the quantity of fish packed. More than half of the workers in British Columbia salmon canneries are employed under this arrangement. Compared with the preceding year the total number of employees shows a decrease of 1,263 . An arrangement of the returns of establishments has been made to show the number of establishments employing (1) less than 5 persons, (2) five persons and over, and (3) having no employees, the work in the plants under classification 3 being performed by the operators themselves. The first group (less than 5 persons) contains 174 establishments, the second group ( 5 persons and over) 503 establishments, and the third group (no employees) 36 establishments. The amount paid to employees in 1928 was $\$ 5,261,096$, divided as follows: to salaried employees, $\$ 853,000$; to wage-earners, $\$ 3,539,070$; and to contract workers and piece workers, $\$ 868,226$. The total amount shows a decrease of $\$ 112,855$ from the preceding year. The following table gives statistics of employees and salaries and wages for the years 1926 to 1928.
7. Employees in Fish Canning and Curing Establishments in 1926, 1927 and 1928Number and Salaries and Wages

| Year | Employees on Salarics |  | Employecs on Wages |  | Contract and PieceWorkers |  | Total of <br> Employees and of Salaries and Wages |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | no. | \$ | по. | \$ | no. | \$ | no. | \$ |
| 1920.. | 546 | 733,760 | 11,579 | 3,807,533 | 5,283 | 1,081,544 | 17.408 | 5,622,837 |
| 1927. | 639 | 871,211 | 11,343 | 3,769, 791 | 4,715 | 732,949 | 16,697 | 5,373,951 |
| 1928. | 630 | 853,800 | 10,579 | 3,539, 070 | 4.225 | 868,226 | 15,434 | 5.261,096 |

Wage-earners by Months.-The months of highest employment in the industry as a whole were June, when 9,418 wage-earners were employed, and May, 8,942; while the months of lowest employment were February, with 1,468 wage-earners, and January with 1,719 . These figures are exclusive of contract workers and piece workers, for which no statistics of monthly employment are available. In the lobster canneries the months of highest employment are May and June; in the salmon canneries, June, July and August; in the fish curing establishments, September, October, November and December; and in the reduction plants, July, August and September. In clam canneries and in sardine and other fish canneries, the number of employees does not vary much from month to month. The following table gives statistics for the past three years.

## 8. Wage-earners ${ }^{1}$ in Fish Canning and Curing Establishments-Number on Pay Roll on 15th of each month, 1926, 1927 and 1928

| Month | 1926 |  |  | 1927 |  |  | 1928 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Male | Female | Total | Male | Female | Total | Male | Fermale | Total |
|  | no. | nо. | no. | по. | no. | nо. | no. | по. | no. |
| January | 1,458 | 95 | 1,553 | 1,566 | 112 | 1,768 | 1,608 | 111 | 1,719 |
| February. | 1,322 | 119 | 1,441 | 1,528 | 97 | 1,625 | 1,387 | 81 | 1,468 |
| March. | 2,086 | 272 | 2,358 | 2,109 | 314 | 2,423 | 1,634 | 213 | 1,847 |
| April. | 4,041 | 1,078 | 5,119 | 4,058 | 831 | 4,889 | 3,769 | 1,090 | 4,859 |
| May. | 6,341 | 3,822 | 10,163 | 6,109 | 3,545 | 9,654 | 5,629 | 3,313 | 8,942 |
| June. | 6,933 | 3,924 | 10,857 | 6,812 | 3,535 | 10,347 | 6,270 | 3,148 | 9,418 |
| July.. | 5,848 | 2,183 | 8,031 | 4,893 | 1,036 | 5,929 | 4,766 | 910 | 5,676 |
| August. | 4,572 | 759 | 5,331 | 4,441 | 676 | 5,117 | 4,414 | 560 | 4,974 |
| September | 4,230 | 632 | 4,862 | 3,889 | 573 | 4,462 | 4,194 | 496 | 4,690 |
| October. | 3,895 | 598 | 4,493 | 3,512 | 4401 | 3,952 | 3,850 | 369 | 4,219 |
| November | 3,064 | 281 | 3,345 | 2,722 | 186 | 2,908 | 3,100 | 210 | 3,310 |
| December. | 2,127 | 199 | 2,326 | 2,163 | 162 | 2,325 | 2,585 | 184 | 2,769 |

${ }^{1}$ Exclusive of contract and piece-workers.
Fuel Used.-The fuel used in the establishments in 1928, including electricity used for power, had a total value of $\$ 494,887$, compared with $\$ 465,230$ in 1927. The principal items in 1928 were coal, $\$ 249,089$; fuel oil, $\$ 125,392$; wood, $\$ 48,151$; and electricity, $\$ 43,347$. In the lobster and clam canneries, coal, wood and gasoline were the principal kinds of fuel used; in the salmon canneries, coal, fuel oil and wood; in the sardine and other fish canneries, coal and fuel oil; in the fish curing establishments, coal, wood and electricity; and in the reduction plants, coal, fuel oil and electricity.

Power Equipment.-The principal item of power equipment, according to the total quantity of rated horse power in 1928, comprised steam engines and steam turbines, which numbered 238 with a total capacity of $5,090 \mathrm{~h} . \mathrm{p}$. The item of gas, gasoline and oil engines is second with 597 and a capacity of 3,664 h.p., electric motors, third, with 155 and a capacity of $2,808 \mathrm{~h} . \mathrm{p}$., and hydraulic turbines or water wheels, fourth, with 65 and a capacity of $1,153 \mathrm{~h} . \mathrm{p}$. The number of boilers employed was 335 with a capacity of 17,749 b.h.p. In the canneries and reduction plants, the item of steam engines and steam turbines is first in order of total capacity, while in the fish curing establishments, electric motors occupy first place.

Materials Used.-The total cost value of the fish purchased by the establishments to be used in the preparation of the fish products, or for re-sale for consumption fresh, was $\$ 15,617,194$, and the cost of salt, containers and miscellaneous materials, $\$ 4,961,573$, making a total cost value of materials used in 1928 of $\$ 20,578,767$, compared with $\$ 18,364,846$ in 1927 . The total quantity of fish used by the establishments in 1928 was $8,230,443$ cwt., or 73 per cent of the total catch of sea fish in that year, the remaining 27 per cent being marketed by the fishermen. The following table gives value of materials used in each of the past three years.
9. Value of Materials Used in Fish Canning and Curing Establishments, 1926, 1927 and 1928


Value of Production.-The product of the establishments in 1928 had a total value of $\$ 36,267,732$, comprising $\$ 27,992,063$, the value of fish canned, cured or otherwise prepared, and $\$ 8,275,669$, the value of fish marketed for consumption fresh. To the total value, the salmon canneries contributed $\$ 15,269,249$, or 42 per cent; the fish curing establishments, $\$ 11,331,890$, or 31 per cent; the lobster canneries, $\$ 4,522,434$, or 12 per cent; the reduction plants, $\$ 3,089,059$, or 9 per cent; the sardine and other fish canneries, $\$ 1,759,246$, or 5 per cent; and the clam canneries, $\$ 295,854$, or 1 per cent. The arrangement of the returns of establishments in groups, according to the value of production, shows that 235 establishments had a product in 1928 of less than $\$ 5,000 ; 121$ had a product of from $\$ 5,000$ to under $\$ 10,000 ; 126$, a product of from $\$ 10,000$ to under $\$ 20,000 ; 91$, a product of from $\$ 20,000$ to under $\$ 50,000$; and 140 establishments a product valued at over $\$ 50,000$. Included in the last mentioned group are 60 salmon canneries, 39 fish curing establishments, 22 reduction plants, 15 lobster canneries, 2 clam canneries, and 2 sardine and other fish canneries. The following table gives statistics of the value of production, by kinds of establishments, for the years 1926 to 1928.
10. Value of Production of Fish Canning and Curing Establishments, 1926, 1927 and 1928


Other Data.-Other particulars covered by the annual census of fish canning and curing establishments include the form of organization, the time in operation, and the hours worked by wage-earners. A classification of the returns of 1928 according to form of organization shows that 329 establishments were operated by individuals, 126 by partnerships, 250 by joint stock companies, and 8 by co-operative associations. Nearly all of the salmon canneries and reduction plants are operated by joint stock companies, while the lobster, clam and sardine and other fish canneries and the fish curing establishments show the largest numbers under the classifications of individual ownership or partnership. The total number of days in operation in 1928 by all establishments was 72,941 , or an average of 102 days per establishment. A classification of the establishments according to number of days in operation shows 293 in operation for periods of less than 60 days; 192 for periods of 60 to 119 days; 114 for periods of 120 to 179 days; 47 for periods of 180 to 239 days; and 67 for periods of 240 days and over. Included in the group of establishments operating 240 days and over are 41 fish curing establishments, 10 lobster canneries, 6 salmon canneries, 6 reduction plants, 3 clam canneries, and 1 sardine cannery. The average working day for wage-earners in 1928 consisted of $8 \cdot 6$ hours, and the average week of 50.8 hours. A classification of wageearners according to the number of hours worked in month of highest employment shows 4,536 employees working 8 hours per day or less; 3,045 working 9 hours, 5,072 working 10 hours, and 284 working over 10 hours. Statistics in detail are included in the general tables of the report.

## Review by Provinces

The following tables (11-17) show by provinces: the total value of the fisheries; the quantity caught and landed and the value marketed of the chief commercial fishes; the quantity and value of all fish caught and landed and marketed; the total values for counties or districts of sea fish caught and landed and marketed; the quantity of sea fish taken offshore; the capital equipment; and the number of employees.
11. Value of Fisheries by Provinces, 1924-1928, in order of Value, 1928

| Province | 1924 | 1925 | 1926 | 1927 | 1928 | Increase or decrease 1928 compared with 1927 Inc. + De. - |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | 8 | S | \$ | \$ |
| British Columbia. | 21,257,567 | 22,414,618 | 27,367, 109 | 22,890,913 | 26, 562, $72 \overline{7}$ | $+3,671,814$ |
| Nova Scotia. | 8,777, 251 | 10,213, 779 | 12,505, 922 | 10,783, 631 | 11, 681, 995 | $+898,304$ |
| New Brunswick. | 5,383,809 | 4,798,589 | 5,325,478 | 4,406,673 | 5,001, G41 | $+\quad 594,968$ |
| Ontario. | 3,557,587 | 3,436,412 | 3,152, 193 | 3,670, 229 | 4,030, 753 | $+300,524$ |
| Quebec. | 2, 283,314 | 3,044,919 | 3,110, 964 | 2,730,450 | 2,996, 014 | + 260,104 |
| Manitoba. | 1,232,563 | 1,466, 939 | 2,328,803 | 2,039,738 | 2, 240,314 | $+\quad 200.576$ |
| Prince Edward Island | 1,201,772 | 1,598,119 | 1,358, 934 | 1,367,807 | 1,190,081 | - 171,126 |
| Alberta. | 339,107 | 458,504 | 749,076 | 712,469 | 725,050 | + 12,581 |
| Saskatchewan.. | 482,492 | 494,882 | 444,288 | 503,609 | 563, 533 | + 59,924 |
| Yukon Territory. | 18,773 | 15.370 | 17,866 | 12,090 | 51,665 | $+\quad 39,575$ |
| Total | 44,534,235 | 47,942,131 | 56,360,633 | 49,123,609 | 55,050,973 | + 5,927,364 |

12. Quantity and Value of Chief Commercial Fishes by Provinces, 1924-1928

Prince Edward Island


Nora Scotla

| Cod. . . . . . . . . . . . . . ewt. | 1,129,801 | $1,408,238$ $3,760,833$ | $\begin{aligned} & 1,858,944 \\ & 4,652,858 \end{aligned}$ | $1,331,873$ <br> $3,455,722$ | $1,470,172$ $4,398,019$ | $+$ | $\begin{aligned} & 138,299 \\ & 942,247 \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Jobsters $\qquad$ ewt. \$ | $\begin{array}{r} 115,275 \\ 1,904,407 \end{array}$ | $\begin{array}{r} 170,698 \\ 3,014.963 \end{array}$ | $\begin{array}{r} 184.316 \\ 3,386.416 \end{array}$ | $\begin{array}{r} 179,673 \\ 3,255,624 \end{array}$ | $\begin{array}{r} 172,409 \\ 3,048,255 \end{array}$ | - | $\begin{array}{r} 7.264 \\ 207,372 \end{array}$ |
| Haddcok $\qquad$ ent. | 320,804 975,600 | 323,718 $1,134,327$ | - $\begin{array}{r}4588,292 \\ \hline 1,981\end{array}$ | 384,207 $1,402,135$ | $\begin{array}{r} 445,950 \\ 1,654,977 \end{array}$ | $\pm$ | $\begin{array}{r} 61,743 \\ 252,842 \end{array}$ |
| Halibut...................... cwt. | $\begin{array}{r} 27,407 \\ 441,113 \end{array}$ | $\begin{array}{r} 20,250 \\ 282,118 \end{array}$ | 381, $\begin{array}{r}23,725 \\ \hline\end{array}$ | $\begin{array}{r} 27,551 \\ 468,679 \end{array}$ | $\begin{array}{r} 25,768 \\ 434,110 \end{array}$ | 二 | $\begin{array}{r} 1,783 \\ 34,569 \end{array}$ |
| Mackerel $\qquad$ cwt. | $\begin{aligned} & 114,662 \\ & 688,350 \end{aligned}$ | $\begin{aligned} & 117.599 \\ & 445.185 \end{aligned}$ | $\begin{array}{r} 67,580 \\ 285,961 \end{array}$ | $\begin{array}{r} 72,306 \\ 338,851 \end{array}$ | $\begin{array}{r} 71,440 \\ 369,752 \end{array}$ | + | $\begin{array}{r} 866 \\ 30,901 \end{array}$ |
| Herring.......................nt. | $\begin{array}{r} 267,413 \\ 542,658 \end{array}$ | $\begin{array}{r} 206,863 \\ 434,130 \end{array}$ | $\begin{aligned} & 264,823 \\ & 547,548 \end{aligned}$ | 214.560 482,388 | $\begin{aligned} & 166,39 \mathrm{~S} \\ & 3 \mathrm{GS}, 221 \end{aligned}$ | - | $\begin{gathered} 48,163 \\ 114,157 \end{gathered}$ |
| Hake and cusk............ cwt. | 119,988 203,352 | 91,027 183,465 | $\begin{array}{r} 91,946 \\ 135.517 \end{array}$ | $\begin{aligned} & 119.431 \\ & 153,840 \end{aligned}$ | $\begin{aligned} & 158,744 \\ & 268,574 \end{aligned}$ | $\pm$ | $\begin{array}{r} 39,313 \\ 114,737 \end{array}$ |
| Scallops.................... bbl. | $\begin{array}{r} 7.504 \\ 51,793 \end{array}$ | $\begin{aligned} & 12,404 \\ & 86,025 \end{aligned}$ | $\begin{array}{r} 19,918 \\ 138,472 \end{array}$ | $\begin{array}{r} 37,607 \\ 212,838 \end{array}$ | $\begin{array}{r} 24,533 \\ 156,188 \end{array}$ | - | $\begin{aligned} & 13,074 \\ & 56.650 \end{aligned}$ |
| Salmon cwt. § | $\begin{gathered} 10,127 \\ 181,956 \end{gathered}$ | $\begin{array}{r} 8,422 \\ 157,124 \end{array}$ | $\begin{array}{r} 13,428 \\ 253,272 \end{array}$ | $\begin{array}{r} 12,819 \\ 233,189 \end{array}$ | $138,651$ | 三 | $\begin{array}{r} 5,760 \\ 94,505 \end{array}$ |
| Swordfish cwt. \$ | $\begin{array}{r} 5,575 \\ 96,157 \end{array}$ | $\begin{gathered} 4.551 \\ 78.209 \end{gathered}$ | $\begin{array}{r} 12,936 \\ 207,248 \end{array}$ | $\begin{array}{r} 7,299 \\ 120,692 \end{array}$ | $\begin{array}{r} 8,088 \\ 132,345 \end{array}$ | $+$ | $\begin{array}{r} 789 \\ 11,653 \end{array}$ |
| Smelts. $\qquad$ ewt. \$ | $\begin{array}{r} 8,186 \\ 131,523 \end{array}$ | $\begin{array}{r} 8,328 \\ 130,182 \end{array}$ | $\begin{array}{r} 10,981 \\ 165,030 \end{array}$ | $\begin{array}{r} 7,110 \\ 124,653 \end{array}$ | $\begin{array}{r} 6,089 \\ 103,535 \end{array}$ | - | 1,021 21,118 |

New Brunswick

| Sardines............... bbl. | $\begin{array}{r} 269,643 \\ 1,241,505 \end{array}$ | $\begin{array}{r} 158,259 \\ 1,016,325 \end{array}$ | $\left.\begin{array}{r} 171,637 \\ 1,172,490 \end{array} \right\rvert\,$ | $\begin{array}{r} 174,640 \\ 1,046,250 \end{array}$ | $\begin{array}{r} 279,349 \\ 1,284,7 \pi 1 \end{array}$ | $+$ | $\begin{aligned} & 104,709 \\ & 238,521 \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lobsters $\qquad$ cwt. s | $\begin{array}{r} 68,303 \\ 1,203,564 \end{array}$ | $\left.\begin{array}{r} 65,894 \\ 1,069,722 \end{array} \right\rvert\,$ | $\begin{array}{r} 59,611 \\ 1,135,664 \end{array}$ | $\begin{gathered} 49,752 \\ 955,053 \end{gathered}$ | $\begin{array}{r} 57,970 \\ 1,037,195 \end{array}$ | $\pm$ | $\begin{array}{r} 8,218 \\ 82,142 \end{array}$ |
| Smelts....................... $\mathrm{crit}_{\mathrm{S}}$ | $\begin{array}{r} 63,975 \\ 844,730 \end{array}$ | $\begin{array}{r} 4 \mathrm{C}, 692 \\ 718,149 \end{array}$ | $\begin{array}{r} 59.400 \\ 850.913 \end{array}$ | $\begin{array}{r} 46,184 \\ 686,163 \end{array}$ | $\begin{array}{r} 59,866 \\ 912,055 \end{array}$ | + | $\begin{array}{r} 13,682 \\ 225,692 \end{array}$ |
| Cod............................wt. | $\begin{gathered} 259,166 \\ 64 \end{gathered}$ | $\begin{aligned} & 205,544 \\ & 512,013 \end{aligned}$ | $\begin{aligned} & 201,425 \\ & 478.7 \pi 0 \end{aligned}$ | $\begin{gathered} 136,773 \\ 284,662 \end{gathered}$ | $\begin{aligned} & 172,874 \\ & 436,736 \end{aligned}$ | + | $\begin{array}{r} 36,101 \\ 152,074 \end{array}$ |
| Herring $\qquad$ cwt. s | $\begin{aligned} & 333.530 \\ & 367,037 \end{aligned}$ | $\begin{aligned} & 372,710 \\ & 385,354 \end{aligned}$ | $\begin{aligned} & 422,897 \\ & 529,195 \end{aligned}$ | $\begin{array}{r} 412,833 \\ 379,610 \end{array}$ | $\begin{aligned} & 335,833 \\ & 377,966 \end{aligned}$ | - | $\begin{array}{r} 77,000 \\ 1,650 \end{array}$ |
| Salmon..................... cwt. | $\begin{array}{r} 33,563 \\ 425,800 \end{array}$ | $\begin{array}{r} 30,073 \\ 428,558 \end{array}$ | $\begin{array}{r} 25,131 \\ 408,397 \end{array}$ | $\begin{array}{r} 22,464 \\ 414,280 \end{array}$ | $\begin{array}{r} 12,557 \\ 264,000 \end{array}$ | - | $\begin{array}{r} 9,907 \\ 150,280 \end{array}$ |
| Clams and quahnugs...... bbl. § | $\begin{array}{r} 33,444 \\ 137,099 \end{array}$ | $\begin{gathered} 19,496 \\ 88,426 \end{gathered}$ | $\begin{array}{r} 27.278 \\ 111,362 \end{array}$ | $\begin{array}{r} 33,197 \\ 130,698 \end{array}$ | $\begin{array}{r} 30,058 \\ 131,679 \end{array}$ | + | 3.139 981 |

12. Quantity and Value of Chief Commercial Fishes by Provinces, 1924-1928-con.

New Brunswick-concluded

| Kind of Fish | 1924 | 1925 | 1926 | 1927 | 1928 | Increase or decrease 1928 compared with 1927 <br> Inc. + Dec. - |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Oysters................ bbl. |  | 12,038 | 12,383 | 13,574 | 12,383 | - | 1,191 |
| Oysters.................. ${ }_{\text {S }}$ | 103,040 | 88,693 | 92,535 | 100,576 | 107,808 | $+$ | 7,232 |
| Hake and cusk........... cwt. | 56,978 | 66,892 | 43,818 | 45,759 | 78,726 | $+$ | $\begin{array}{r} 32,967 \\ 9,621 \end{array}$ |
| Hake and cusk............ | 85,360 | 87,146 | 45, 104 | 60,302 | 69,923 | $+$ | $9,621$ |
|  | 7.082 | 7,724 | 5,253 | 3,403 | 8,126 |  | $\begin{array}{r} 4,723 \\ 37,113 \end{array}$ |
| Shad...................... ${ }_{\text {s }}$ | 65,888 | 71,264 | 48,816 | 30,238 | 67,351 | $+$ | 37,113 |
|  | 16,638 | 18,186 | 35,038 | 33,834 | 28,878 | - | 4,956 |
| Haddock.................. ${ }_{\text {c }}$ | 37,039 | 32,546 | 76,480 | 72,924 | 64,800 | - | 8,124 |
| Tom cod.................. cut. | 13,375 | 13, 056 | 17,079 | 20,246 | 17,266 | - | 2,980 |
| Tom cod................. cint. | 50,209 | 41,517 | 61,242 | 91,979 | 63,774 | - | 28,205 |

Quebec

| Cod..................... cwick | 417,783 $1,120,570$ | $\begin{array}{r} 602,099 \\ 1,545,804 \end{array}$ | $\begin{array}{r} 584,507 \\ \mathbf{1 , 4 0 8 , 5 1 6} \end{array}$ | $\begin{array}{r} 460,573 \\ 1,011,795 \end{array}$ | $\begin{array}{r} 469,924 \\ 1,351,501 \end{array}$ | $\pm$ | $\begin{array}{r} 9,351 \\ 339,706 \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lobsters.................. cwi ${ }_{\$}^{\text {cwi }}$ | 22,742 283,899 | $\begin{array}{r} 25,676 \\ 379,580 \end{array}$ | $\begin{array}{r} 29,358 \\ 434,874 \end{array}$ | 24,606 359,579 | $\begin{array}{r} 26,445 \\ 346,415 \end{array}$ | $+$ | $\begin{array}{r} 1,839 \\ 13,16 \wedge \end{array}$ |
| Herring................... ${ }_{\text {crit }}^{\text {crit }}$ | 206,135 161,119 | 286,028 246,115 | $\begin{aligned} & 326,416 \\ & 278,795 \end{aligned}$ | $\begin{aligned} & 262,521 \\ & 238,093 \end{aligned}$ | $\begin{aligned} & 258,245 \\ & 256,015 \end{aligned}$ | $+$ | $\begin{array}{r} 4,276 \\ 17,922 \end{array}$ |
| Eels...................... ent. | 11,918 86,756 | 11,816 104,463 | 21,172 1951,608 | 13,570 113,148 | 21,871 192,075 | $\pm$ | $\begin{array}{r} 8,301 \\ 78,927 \end{array}$ |
| Pickerel or dore........... ${ }_{\text {cwit }}^{\text {cont }}$ | 1,226 16,883 | 2,016 40,211 | $\begin{array}{r}2,104 \\ 39,214 \\ \hline\end{array}$ | 137, 165 | 8,725 149,655 | $\pm$ | 661 12,490 |
| Smelts................... ${ }_{\text {cwit }}^{\text {ewt }}$ | 2,854 32,468 | 3,400 37,243 | 5,259 41,811 | 13,428 110,823 | $\begin{array}{r} 12,018 \\ 101,820 \end{array}$ | - | 1,410 9,003 |
| Salmon.................... ${ }_{\text {cwi }}^{\text {cwi }}$ | 15,080 136,725 | 20,714 189,318 | 15,536 159,303 | 14,840 152,710 | $\begin{array}{r} 8,159 \\ 100,007 \end{array}$ | 二 | $\begin{array}{r} 6,681 \\ 52,703 \end{array}$ |
| Mackerel................. ${ }_{\text {cwit }}^{\text {cw }}$ | 79,437 246,278 | 47,135 131,229 | $\begin{gathered} 22,765 \\ 71,353 \end{gathered}$ | $\begin{array}{r} 70,765 \\ 185,296 \end{array}$ | $\begin{aligned} & 23,520 \\ & 78,548 \end{aligned}$ | - | $\begin{array}{r} 47,245 \\ 106,748 \end{array}$ |
| Carp...................... cwrt. | 3,224 25,472 | 2,563 18,216 | 4,868 60,825 | 5,032 63,298 | 6,242 51,051 | + | 1,210 12,247 |

Ontario

12. Quantity and Value of Chief Commercial Fishes by Provinces, 1924-1928-conc. Manitoba

\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline Kind of Fish \& 1924 \& 1925 \& 1926 \& 1927 \& 1928 \& \& rease
or
rease
pared
1927
Dec. - <br>
\hline Pickerel................. ${ }_{\text {cowt }}^{\text {owt. }}$ \& 62,486
528,426 \& 48,953
562,881 \& 87,251
900,608 \& 99,813
804,854 \& $$
\begin{aligned}
& 101,870 \\
& 921,010
\end{aligned}
$$ \& $+$ \& $$
\begin{array}{r}
2,057 \\
116,156
\end{array}
$$ <br>
\hline Tullibee. $\qquad$ errt. $\delta$ \& $$
\begin{array}{r}
34,363 \\
125,258
\end{array}
$$ \& $$
\begin{array}{r}
49,539 \\
207,622
\end{array}
$$ \& $$
\begin{array}{r}
85,267 \\
501,814
\end{array}
$$ \& $$
\begin{array}{r}
102,451 \\
419,103
\end{array}
$$ \& $$
\begin{array}{r}
89,068 \\
484,129
\end{array}
$$ \& 耳 \& $$
\begin{aligned}
& 13,383 \\
& 65,026
\end{aligned}
$$ <br>
\hline Whitefish $\qquad$ ewt. $\delta$ \& 27,904 \& $$
\begin{array}{r}
38,078 \\
361,849
\end{array}
$$ \& $$
\begin{array}{r}
54,122 \\
490,625
\end{array}
$$ \& 49.114
418.461 \& $$
\begin{array}{r}
49,899 \\
473,232
\end{array}
$$ \& $+$ \& $$
\begin{array}{r}
785 \\
54,771
\end{array}
$$ <br>
\hline Pike $\qquad$ cut. \& $$
\begin{array}{r}
30,314 \\
104,973
\end{array}
$$ \& $$
\begin{array}{r}
27,305 \\
110,222
\end{array}
$$ \& $$
\begin{array}{r}
43,467 \\
176,425
\end{array}
$$ \& $$
\begin{array}{r}
40,166 \\
149,658
\end{array}
$$ \& $$
\begin{array}{r}
36,366 \\
154,550
\end{array}
$$ \& + \& $$
\begin{aligned}
& 3,800 \\
& 4,892
\end{aligned}
$$ <br>
\hline  \& 6,533
35.495 \& $$
\begin{array}{r}
7,205 \\
70.080 \\
\hline
\end{array}
$$ \& $$
\begin{gathered}
11,625 \\
85,099
\end{gathered}
$$ \& $$
\begin{array}{r}
11.420 \\
115.190 \\
\hline
\end{array}
$$ \& $$
\begin{array}{r}
10.642 \\
115.124 \\
\hline
\end{array}
$$ \& $+$ \& 778

6 <br>
\hline \multicolumn{8}{|c|}{Saskatchewan} <br>
\hline Whitefish............... owt. \& 42,393
363,532 \& 44,978
384,700 \& 37,667

326,058 \& $$
\begin{array}{r}
41,323 \\
389,185
\end{array}
$$ \& $\begin{array}{r}43,667 \\ 439,075 \\ \hline\end{array}$ \& $\pm$ \& \[

$$
\begin{array}{r}
2,344 \\
49,890
\end{array}
$$
\] <br>

\hline Pike $\qquad$ cut. \$ \& 5,393

35,920 \& | 4,153 |
| :---: |
| 28,285 | \& 4,354

26, 606 \& 3,731
24,215 \& 4,875
27,960 \& $+$ \& 1, $\mathbf{3 , 7 4 5}$ <br>
\hline Pickerel. $\qquad$ cirt. § \& 3,556
28,576 \& r $\begin{array}{r}2,896 \\ 25,738\end{array}$ \& 2,918
25.520 \& 3,753

34,224 \& $$
\begin{gathered}
3,054 \\
27,248
\end{gathered}
$$ \& - \& 699

6,976 <br>

\hline Trout....................... crit. \& $$
\begin{array}{r}
2,839 \\
28,891
\end{array}
$$ \& 3.146

30.980 \& $$
\begin{array}{r}
3,106 \\
33,483
\end{array}
$$ \& 2,700

29,784 \& $$
\begin{array}{r}
2,408 \\
26,908
\end{array}
$$ \& \& \[

$$
\begin{array}{r}
292 \\
2.876
\end{array}
$$
\] <br>

\hline Sturgeon. . . . . . . . . . . . . cwt. \& $$
\begin{array}{r}
23 \\
1,0,10 \\
\hline
\end{array}
$$ \& 15

600 \& $$
\begin{array}{r}
30 \\
1.203 \\
\hline
\end{array}
$$ \& - \& \[

$$
\begin{gathered}
342 \\
20.520
\end{gathered}
$$

\] \& $+$ \& \[

$$
\begin{array}{r}
342 \\
20,520 \\
\hline
\end{array}
$$
\] <br>

\hline
\end{tabular}

| Alberta |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Whitefish................ cwit. | $\begin{array}{r} 29,931 \\ 241,696 \end{array}$ | $\begin{array}{r} 32,349 \\ 310,665 \end{array}$ | $\begin{array}{r} 34,132 \\ 478,660 \end{array}$ | 32,355 434,449 | $\begin{array}{r} 27,020 \\ 340,407 \end{array}$ | - | $\begin{array}{r} 5,335 \\ 94,042 \end{array}$ |
| Trout................... cw. ${ }_{\$}$ | $\begin{array}{r} 3,602 \\ 36,102 \end{array}$ | 2,746 31,930 | 3,907 46,418 | 10,882 126,955 | r $\begin{array}{r}19,371 \\ 22,312\end{array}$ | $+$ | $\begin{array}{r} 8,489 \\ 95,357 \end{array}$ |
| Pickerel................. cwwt. | $\left.\begin{array}{r} 3,921 \\ 28,159 \end{array} \right\rvert\,$ | -6,943 | 10.374 116.175 | $\begin{array}{r}6,746 \\ 65,257 \\ \hline\end{array}$ | 8,499 82,427 | $+$ | 1,753 27,170 |
| Pike..................... cut. | $\begin{gathered} 4.311 \\ 17.275 \end{gathered}$ | $\begin{array}{r} 7.438 \\ 42.889 \end{array}$ | $\begin{array}{r} 9,780 \\ 83.559 \end{array}$ | $\begin{aligned} & 10.473 \\ & 63.516 \end{aligned}$ | $\begin{array}{r} 6,657 \\ 32.056 \end{array}$ | - | $\begin{array}{r}3,816 \\ 31.460 \\ \hline\end{array}$ |

British Columbla

| Salmon............................. | $\begin{array}{r} 1,965,159 \\ 13,025,251 \end{array}$ | $\begin{gathered} 1,873,376 \\ 14,973,88 j \end{gathered}$ | $\begin{array}{r} 2,125,555 \\ 18,769,605 \end{array}$ | $\begin{array}{r} 1,490,395 \\ 14,253,803 \end{array}$ | $\begin{array}{r} 2,257,455 \\ 17,345,670 \end{array}$ | $+$ | $\begin{array}{r} 767,060 \\ 3,091,867 \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Halibut....................... ewt. | $\begin{array}{r} 331,382 \\ 5,427,542 \end{array}$ | $\begin{array}{r} 318,240 \\ 3,891, \dot{1} 19 \end{array}$ | $\begin{array}{r} 315,095 \\ 4,543,720 \end{array}$ | $\begin{array}{r} 271,354 \\ 3,467,904 \end{array}$ | $\begin{array}{r} 302,820 \\ 3,370,670 \end{array}$ | $+$ | $\begin{aligned} & 31.466 \\ & 97,234 \end{aligned}$ |
| Pilchards...................w. cwt. | $\left.\begin{aligned} & 27,485 \\ & 32,881 \end{aligned} \right\rvert\,$ | $\begin{gathered} 318.973 \\ 182,911 \end{gathered}$ | $\begin{array}{r} 969,958 \\ 1,256,721 \end{array}$ | 1,368,58? <br> 1,838,867 | $\begin{aligned} & 1,610,252 \\ & 2,563,137 \end{aligned}$ | $+$ | $\begin{array}{r} 241,670 \\ 724,270 \end{array}$ |
| Herring $\qquad$ cwt. $\delta$ | $1.157,625$ $1,392,580$ | 1,437, 1,7775 | $\begin{aligned} & 1,301,269 \\ & 1,528,734 \end{aligned}$ | $\left.\begin{array}{\|l\|} 1,724,246 \\ 1,867,429 \end{array} \right\rvert\,$ | $\begin{aligned} & 1,535,118 \\ & 1,808.944 \end{aligned}$ | - | $\begin{array}{r} 189,128 \\ 58,485 \end{array}$ |
| Ling codl..................... cwt. | - |  | - | $\begin{array}{r} 49,912 \\ 401,259 \end{array}$ | $\begin{array}{r} 50,772 \\ 366,101 \end{array}$ | $+$ | $\begin{array}{r} 860 \\ 35,158 \end{array}$ |
| Clams and quahaugs...... bbl. | $\begin{array}{r} 20,030 \\ 153,472 \end{array}$ | $\begin{array}{r} 26,527 \\ 161,764 \end{array}$ | $\begin{array}{r} 12,813 \\ 105,409 \end{array}$ | $\begin{gathered} 14,419 \\ 96,182 \end{gathered}$ | $\begin{array}{r} 16.834 \\ 130.015 \end{array}$ | $\pm$ | $\begin{array}{r} 2,415 \\ 33,833 \end{array}$ |
| Black cad................ cwit. | $\begin{array}{r} 18,183 \\ 130.334 \end{array}$ | $\begin{gathered} 14,956 \\ 114.315 \end{gathered}$ | $\begin{aligned} & 10,358 \\ & 89,371 \end{aligned}$ | $\begin{array}{r} 16,430 \\ 123.421 \end{array}$ | $\begin{array}{r} 13.388 \\ 101,452 \end{array}$ | - | $\begin{array}{r} 3,042 \\ 21.969 \end{array}$ |

## Yukon Territory

| Salmon.................. curt. | 684 11.628 | 585 9,945 | 656 12,490 | 805 8,050 | 866 17,320 | $\pm$ | 9, ${ }^{670}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Trout................... ewt. | $\begin{array}{r} 115 \\ 2,875 \end{array}$ | $\begin{array}{r} 82 \\ 2,050 \end{array}$ | $\begin{array}{r} 91 \\ 2,548 \end{array}$ | 1,000 | 562 14,050 | $+$ | $\begin{array}{r} 512 \\ 13,050 \end{array}$ |
| Whitefish................ cwt. | $\begin{array}{r} 150 \\ 3,750 \end{array}$ | $\begin{array}{r} 115 \\ 2,875 \end{array}$ |  | $\begin{array}{r} 70 \\ 1.400 \\ \hline \end{array}$ | $\begin{array}{r} 535 \\ 13.375 \\ \hline \end{array}$ | $+$ | $\begin{array}{r} 465 \\ \\ \hline 11,975 \\ \hline \end{array}$ |

[^11]13. Quantities and Values by Provinces of All Fish Caught and Marketed during the year 1928

${ }^{1}$ See also Inland Fisheries.
13. Quantities and Values by Provinces of All Fish Caught and Marketed during the year 1928-con.

iSee also Inland Fisheries 90209-31
13. Quantities and Values by Provinces of All Fish Caught and Marketed during the year 1928 -con.

13. Quantities and Values by Provinces of All Fish Caught and Marketed during the year 1928-con.

13. Quantities and Values by Provinces of All Fish Caught and Marketed during the year 1928-con.

| Kind of Fish | Sea Fisheries |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Prince Edward IsIand |  | Nova Scotia |  | New Brunswick ${ }^{1}$ |  | Quebec ${ }^{1}$ |  | British Columbia |  |
|  | $\underset{\text { Qity }}{\text { Quan- }}$ | Value | $\begin{aligned} & \text { Quan- } \\ & \text { tity } \end{aligned}$ | Value | $\begin{aligned} & \text { Quan- } \\ & \text { tity } \end{aligned}$ | Value | $\begin{gathered} \text { Quan- } \\ \text { tity } \end{gathered}$ | Value | Quantity | Value |
|  |  | § |  | \$ |  | \$ |  | $\$$ |  | \$ |
| Oysters, caught and landed | 4,756 | 39,721 | 1,914 | 11,231 | 12,383 | 81,822 | - | - | 2,410 | 40,334 |
| Marketed fresh.... bbl. | 4,756 | 47,619 | 1,944 | 15,935 | 12,383 | 107,808 | - | - | 2,410 | 42,818 |
| Scallops, caught and landed............ bbl. | 320 | 1,395 | 24,533 | 134,688 | 50 | 250 | 1,401 | 4,505 | - | - |
| Marketed- |  |  |  |  |  |  |  |  |  |  |
| Shelled. .......... gal. | 640 | 1,395 | 48,597 119 | 154,998 1,190 | 100 | 250 | 2,802 | 6,774 | - | - |
| Total value marketed. | - | 1,395 |  | 156,188 | - | 250 | - | 6,774 | - | - |
| Shrlmps, caught and <br> landed............. cwt. <br> Marketed fresh...... cwt. | - | - | - | - | - | - | - | - | 1,202 | 10,303 14,280 |
| Tongues and Sounds, pickled or dried. ewt. | - | - | 786 | 3,188 | 288 | 1,166 | 37 | 394 | - | - |
| Winkles, caught and landed. cort. Marketed fresh....... cwt. | - | - | 930 930 | 1,405 | 368 368 | 891 891 | - | - | - | - |
| Duise, green. ......... . cwt. Marketed dried. . ... cwt. | - | - | 76 38 | 380 950 | 2,450 $\mathbf{3 5 0}$ | 3,629 3,629 | - | - | - | - |
| Fur Seals, caught and landed....... no. Skins marketed..... no. | - | - | - | - | - | - | - | - | 2,090 2,090 | 18,812 23,092 |
| Hair Seals, caught and landed....... no. Marketed- | 415 | 1,463 | 2,669 | 6,308 | 758 | 2,490 | 4,416 | 20,916 | - | - |
| Skins............. no. | 415 | 1,488 | 2,669 | 6,538 | 758 | 2,990 | 4,416 | 21,946 | - | - |
| Oil................... gal. Total value marketed. | -- | 1,488 | 1,099 | 483 7,021 | - | 2,990 | 6,916 | 2,613 24,559 | - | - |
| Porpoises, caught and <br> Ianded. | - | - | - | - | - | - | 3 | 90 | - | - |
| Marketed- |  |  |  |  |  |  |  |  |  |  |
| Skins............. no. | - | - | - | - | - | - | 142 | 36 <br> 57 | - | - |
| Total value marketed. | - | - | - | - | - | - | 1 | 93 | - | - |
| Whales, caught and landed $\qquad$ | - | - | - | - | - | - | - | - | 305 | 318,616 |
| Marketed- |  |  |  |  |  |  |  |  |  |  |
| Whalebone and meal.:........... ton | - | - | - | - | - | - | - | - | ${ }^{376}$ | 12,784 |
| Whale oil......... gal. | - | - | - | - | - | - | - |  | 571,914 | 260,592 |
| Whale fertilizer... ton | - | - | - | - | - | - | - | - | 754 | 45,240 |
| Total value marketed. | - |  | - | - | - | - | - | - | - | 318,616 |
| Miscellaneous Produrcts- |  |  |  |  |  |  |  |  |  |  |
| Fish oil, n.e.s....... . gal. | - | - | 33,267 | 21,469 | 21,005 | 11,780 | 21 | 13 | 411,208 | 119,120 |
| Fish glue............ gai. | - | - | 15,348 | 11,584 | $\cdots$ |  | $-$ |  |  |  |
| Fish meal, n.e.s.... ton | - | - | 3,620 | 204,353 | $\overline{98}$ | 1, $\overline{-180}$ | 40 | 2,000 | 3,198 | 173,920 |
| Fish fertilizer, n.e.s. ton | - | - | 12.273 | 5,085, | 988 | 1,180 | 50 | 1,000 | 460 | 20,856 |
| Fishskins and bones. ewt. | - | - | 12,849 | 22,558 | 138 | 296 | 100 | 275 | - | - |
| Fish offal........... ton Other products | - | - | 11,975 | 45,124 4,905 | -65 | 325 3,806 | $\stackrel{200}{-}$ | 200 | - | 4, 000 |
| Total Value Sea FisheriesCaught and Ianded Marketed $\qquad$ | - | $\begin{array}{r} 849,038 \\ 1,196,681 \end{array}$ | - | $\begin{gathered} 7,395,966 \\ 11,681,995 \end{gathered}$ | - | $\begin{aligned} & 2,590,258 \\ & 4,973,592 \end{aligned}$ | - | $\begin{aligned} & 1,577,264 \\ & 2,254,257 \end{aligned}$ | - | $\begin{aligned} & 14,633,627 \\ & 26,562,727 \end{aligned}$ |

1 See also Inland Fisheries.
13. Quantities and Values by Provinces of All Fish Caught and Marketed during the year 1928-con.


[^12]13. Quantities and Values by Provinces of All Fish Caught and Marketed during the year 1928-concluded


## 14. Total Values for Counties and Districts of Sea Fish Caught and Landed and Marketed, 1928

| County or District | Total Value of Sea Fish Caught and Landed | Total Value of Sea Fish and Fish Products Marketed |
| :---: | :---: | :---: |
|  | $s$ | \$ |
| Prince Edward Island-Totals. | 849,038 | 1,196,681 |
| Kings.. | 259,151 | 371,261 |
| Queens. | ${ }_{366,586}^{223,501}$ | ${ }_{496,153}$ |
| Nova Scotia-Totals. | 7,395,966 | 11,681, 995 |
| Richmond.. | 176,583 | 140,285 |
| Cape Breton. | 333, 229 | 444,968 |
| Inverness. | 242,315 | 602,688 |
| Cumberiand. | 81,599 | 125,969 |
| Colchester. | 18,299 | 25,110 |
| Pictou.. | 138,454 | 333,160 |
| Antigonish. | 123,803 | 192,979 |
| Halifax.... | 1,022,597 | ${ }_{2,229,657}^{1,320}$ |
| Hants.. | 8,062 | 11,681 |
| Lunenburg. | 1.875,322 | 2,450,336 |
| Quens... | 222, 630 | ${ }^{261,716}$ |
| Yarmouth. | 837, 54 | 1,077,418 |
| Digby. | 604,698 | 1,100, 823 |
| Annapolis. | 125,844 | 169,297 |
| Kings. | 10,245 | 10,258 |
| New Brunswick-Totals. | 2,590,258 | 4,973,562 |
| Charlotte. | 674,623 | 1,898,825 |
| St. John. | 187,346 ${ }^{200}$ | $\begin{array}{r}236,779 \\ \hline 200\end{array}$ |
| Westmorland. | 245,332 | G40,642 |
| Irent....... | 298.183 | 310,724 |
| Northumberland | 570,283 | 1,052,081 |
| Gloucester... | 502.398 111,893 | 716,197 118,114 |
| Quebec-Totals. | 1,5\%7,264 | 2,254,257 |
| Bonaventure. | 270,073 | 326,482 |
| Maspdalen Islands. | 684,618 378,592 | 997, 6850 |
| Saguenay.. | 167,108 | 207, 146 |
| Matane. | 3,39t | 4,914 |
| Rimouski. | 73.479 | 73,479 |
| British Columbia-Totals. | 14,633,627 | 26,562,727 |
| District No. 1. | 3,002,332 | 3,485,300 |
| District No. $2 .$. | 6,587,075 | 14.302,773 |
|  |  | 8,74,654 |

15. Proportion of Catch of Sea Fish taken Offshore (by steam trawlers and vessels of 40 tons or over, fishing on offshore grounds), 1928

16. Proportion of Catch of Sea Fish taken Offshore (by steam-trawlers and vessels of 40 tons and over, fishing on offshore grounds), 1928-con.

17. Proportion of Catch of Sea Fish taken Offshore (by steam trawlers and vessels of 40 tons and over, fishing on offshore grounds), 1928-con.

18. Proportion of Catch of Sea Fish taken Offshore (by steam trawlers and vessels of 40 tons or over, fishing on offshore grounds), 1928 -con.

19. Proportion of Catch of Sea Fish taken Offshore (by steam-trawlers and vessels of 40 tons and over, fishing on offshore grounds), 1928-con.

20. Proportion of Catch of Sea Fish taken Offshore (by steam trawlers and vessels of 40 tons and over, fishing on offshore grounds), 1928-concluded


1 Exclusive of fur seals and whales.
16. Summary by Provinces of Capital Equipment, 1928

| In Primary Operations |  | Prince Edward Island |  | Neva Scotia |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | No. | Value | No. | Value |
|  |  |  | \$ |  | \$ |
|  | 1 Steam trawlers. | - | - | 10 | 680,000 |
|  | 2 Steam vessels and tugs., | 8 | O | ${ }^{3}$ | 14,500 |
|  | 3 Sailing and gasoline vessels. | 8 | 5,900 | 870 | 1,405,301 |
|  | 4 ¢ ${ }^{4}$ Sasoline boats.......... | 1,236 | 299,605 | 5,223 | 1,454,321 |
|  | 6 Carrying smacks and scows. | 14 | 6,900 | 188 | 204,115 |
|  | 7 Gill nets. | 2,659 | 21,048 | 42,348 | 604,760 |
|  | 8 Salmon drift nets. | 11. | 1,760 | 476 | 22,155 |
|  | 9 Salmon trap nets. | - |  | 136 | 39,500 |
|  | 0 Trap nets, other. | 3 | 1,540 | 470 | 221,650 |
|  | 1 Smelt nets....... | 4, 594 | 35,212 | 3,804 | 37,683 |
|  | Pound nets........ |  |  |  |  |
|  | Weirs...... | - | - | 91 | 19,800 |
|  | Weir seines.. | - | - | - |  |
|  | Salmon purseseines. | - | - | 1 | 500 |
|  | 7 Seines, other. | - | - | 438 | 46,250 |
|  | Tubs of trawi. | 573 |  |  |  |
|  | Hand lines..... | 1,387 | 2,974 | 20,321 | 22,641 |
|  | 1 Crab traps... | 25 | 25 | 100 | 100 |
|  | Eel traps..... |  | - | 418 | 1,032 |
|  | Lobster traps. | 283,045 | 283,045 | 856,178 | 1,166,001 |
|  | Lobster pounds. |  |  | 32 | 11,770 |
|  | Oyster rakes. . | 228 | 666 | 217 | ${ }^{631}$ |
|  | Scallop drass... | ${ }^{4}$ | ${ }_{60}^{60}$ | 308 | 9,200 |
|  | Quahaug rakes.............. | 31 |  | 1.345 |  |
|  | Freezers and ice houses.... | 16 | 11,100 | 1,271 | 612,510 |
| 30 | Small fish and smoke houses. | 318 | 16,540 | 3,838 | 384,614 |
| 31 | 1 Total ralue | - | 750,654 | - | 7,355,052 |
| In Primary Operations |  | Ontario |  | Manitoba |  |
|  |  | No. | Value | No. | Value |
|  |  |  | § |  | \$ |
|  | Steam trawlers. | ${ }_{12}^{-14}$ | 766, 125 | $\overline{17}$ | 228,559 |
|  | Steam vessels and tugs........ |  |  |  |  |
|  | Sailing and grasoline vessels.. | $\begin{array}{r}\text { 1,018 } \\ \hline 959 \\ \hline 17,269,528\end{array}$ | $\begin{array}{r} 58,374 \\ 616,848 \end{array}$ | 938 | $53,845$ |
|  | Sail and row boats.......... |  |  |  |  |
|  | Gasoline boats.............. |  | 616,818 | 117 | 78.950 5,500 |
|  | Gill nets.................... |  | 844,442 | 52,378 |  |
|  | Salmon drift nets... | - | - |  | - |
|  | Salmon drag nets.. |  |  | - |  |
|  | Trap nets, other... | 58 | 890 | $\stackrel{-}{2}$ |  |
|  | Dip and roll nets. |  | 890 | 22 |  |
|  | Smeit nets...... |  | 672,780 |  | 88 |
|  | Pound nets... | 1,225 | 29,172 | 13 | 150 |
| 4 | Hoop nets. | 880 |  |  |  |
|  | Salmon purseseines. | $\stackrel{-}{10}$ | 22,851 | $-$ |  |
|  | Seines, other.. | 160 |  |  |  |
|  | Spears....... | 88 | 1,134 | - |  |
|  | Hand lines..... | 524 | 5,728 | - | - |
|  | Crab traps. |  |  | - |  |
| 52 | Fish wheels. | - | - | - | - |
|  | Oyster plant and equipment. |  |  |  | 56,993107,730 |
| 54 55 5 | Fishing piers and wbarves... Freezers and ice houses...... | 350 502 | 112,227 |  |  |
|  | Freezers and ice houses...... | 502 | 301,957 | 86 <br> 81 |  |
| 57 | Total val | - | 3,432,528 | - | 1,054,889 |

${ }^{1}$ For Ontario gill nets are shown in yards.
16. Summary by Provinces of Capital Equipment, 1928-con.

*Includes gill nets, seines, trap nets and smelt nets.
16. Summary by Provinces of Capital Equipment, 1928-concluded

|  |  |
| :--- | :--- |

17. Summary by Provinces of Number of Employees, 1928

|  | - - | $\underset{\substack{\text { Prince } \\ \text { Edward } \\ \text { Island }}}{\text {. }}$ | Nova Scotia | New Brunswick |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Sea | Inland |
|  |  | no. | no. | no. | по. |
|  | Men employed on vessels, boats, etc Persons employed in fish canning and curing establishments. | $\begin{aligned} & 2,396 \\ & 1,211 \end{aligned}$ | $\begin{gathered} 15,877 \\ 3,738 \end{gathered}$ | $\begin{aligned} & 10,596 \\ & 2,035 \end{aligned}$ | ${ }^{44}$ |
| 10 | Total. | 3,607 | 19,595 | 12,631 | 44 |

16. Summary by Provinces of Capital Equipment, 1928-concluded

17. Summary by Provinces of Number of Employees, 1928

| Quebee |  | Ontario | Manitoba | Saskatcherwan | Alberta | British | Yukon |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sea | Inland | no. ${ }^{4,128}$ | по. ${ }_{\text {4, } 172}$ | no. ${ }^{1,084}$ | по. | по. | no. $\begin{array}{r} \\ \\ \\ -42\end{array}$ |  |
| по. | no. |  |  |  |  |  |  |  |
| $\begin{aligned} & 8,695 \\ & 1,274 \end{aligned}$ | 2,152 |  |  |  | 1.401 | $\begin{array}{r} 11,818 \\ 7,176 \end{array}$ |  |  |
| 9,969 | 2,152 | 4,128 | 4,172 | 1,084 | 1,401 | 13,994 |  | 4210 |

## Fishing Bounty

Under the authority of "An Act to encourage the Development of the Sea Fisheries and the Building of Fishing Vessels", the sum of $\$ 160,000$ is appropriated annually by the Governor in Council. It is distributed under the name of Fishing Bounty by the Department of Marine and Fisheries amongst fishermen and fishing vessel and boat owners on the Atlantic Coast, under regulations made from time to time by the Governor in Council.

For the year 1928, payment was made on the following basis:-
To owners of vessels entitled to receive bounty- $\$ 1$ per registered ton; payment to the owner of any one vessel not to exceed $\$ 80$.

To vessel fishermen entitled to receive bounty- $\$ 7.50$ each.
To owners of boats measuring not less than 12 feet keel- $\$ 1$ per boat.
To boat fishermen entitled to receive bounty- $\$ 6.50$ each.
There were 9,390 bounty claims paid. In the preceding year there were 9,609 bounty claims paid.

The total amount paid in 1928 was $\$ 151,411.20$ allocated as follows:To 553 vessels and their crews............... $\$$ 41,099.50 To 8,837 boats and their crews. \$ 110,311.70

## Imports and Exports

The value of fish and fish products imported into Canada during the calendar year 1928 was $\$ 4,068,074$, an increase over the preceding year of $\$ 299,173$, or 8 p.c., while the value of the exports amounted to $\$ 38,096,245$, an increase of $\$ 3,281,797$ or 9 p.c. The chief items of export in 1928 were canned salmon with a value of $\$ 9,227,442$; dried cod, $\$ 4,953,119$; canned lobster, $\$ 3,107,292$; and dry-salted herring, $\$ 2,023,664$.

## Historical Review

The five tables following will afford a review of the fishing industry of Canada for the past several years. In the case of production, returns are given by provinces year by year back to 1870 . In the case of the number and value of vessels, boats, etc., the review extends to 1880 , and in the case of the number of employees to 1895 .
18. Historical Review-(a) Total Value of the Fisheries in the Respective Provinces of Canada, from 1870 to 1928

| Year | Prince <br> Edward Island | Nopa Scotia | New Erunswick | Quebec | Ontario | $\xrightarrow{\text { British }}$ | Manitoba, Ssakatcheman. Alberta. and Yukon | $\begin{gathered} \text { Total } \\ \text { for } \\ \text { Canada } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| 1870 | Not know | 4,019, 425 | 1,131,433 | 1,167,551 | 264,982 | Not known | Not known | 6, 577, 391 |
| 1871 | Not known | 5,101,030 | 1,185,033 | 1, 093, 612 | 193,524 | Not known | Not known | 7,573,199 |
| 1872 | Not known | 6,016,835 | 1,965,459 | 1,320, 189 | 267, 633 | Not known | Not known | 9,570,116 |
| 1873. | 207,595 | 6,577,085 | 2,285, 662 | 1,391,564 | ${ }_{446}^{293,} \mathbf{0 9 7}$ | Not known | Not known | $10,754,997$ $11,681,886$ |
| 1874. | 288, 863 | 6,652,302 | 2,685,794 | 1,608, 660 | 446, 267 | Not known | Not known | 11,681,886 |
| 1875. | 298,927 | 5,573,851 | 2,427,654 | 1,596,759 | 453,194 | Not known | Not known | 10,350,385 |
| 1876. | ${ }_{763,036}$ | 6,029,050 | 1,953,389 | 2, ${ }^{2}, 597,668$ | 437,229 438,223 | 583,433 | Not known | ${ }_{12}^{11,117,000}$ |
| 1878. | 840,344 | 6,131, 600 | 2,305,790 | 2,664,055 | 348, 122 | 925,767 | Not known | 13,215,678 |
| 1879. | 1,402,301 | 5,752,937 | 2,554,722 | 2,820,395 | 367,133 | 631,766 | Not known | 13,529, 254 |
| 1880 |  |  |  |  |  |  | t known | 14,499,979 |
|  |  | , |  | 2 |  | 矿 | Not known |  |
| 188 |  | $6,214,78$ | ${ }_{3}^{2}, 192,339$ | 1,976, 516 | 825,457 | 1,84, 375 | Not known | 16,824, 1092 |
| 1883 | -1, $1,272,468$ | 7,689,374 | 3,185, 674 | 2, 138, 997 | 1,027, 033 | 1, 644,646 | Not known | 16,958, 192 |
| 1884. | 1,085, 619 | 8,763,779 | 3,730,454 | 1,694,561 | 1,133,724 | 1,358,267 | Not known | 17,766,404 |
| 1885 | 1,293,430 | 8,283,922 | 4,005,431 | 1,719,460 | 1,342,692 | 1,078,038 | Not known | 17,722,973 |
|  | 1,141,991 | 8,415,362 | 4.180, | 1,741,382 | 1,435,998 | 1,577,348 | 186,980 | 18, 679,288 |
| 1887 | 1,037,426 | 8,379,782 | 3,559,507 | 1,773,567 | 1,531,850 | 1,974,887 | 129,084 | 18,386, 103 |
| 1888. | 876,862 | 7,817,030 | 2,941,863 | 1,860,012 | 1,839,869 | 1,902, 195 | 180,677 | 17,418,508 |
| 1889. | 886,430 | 6,346,722 | 3,067,039 | 1,876,194 | 1,963,123 | 3,348,067 | 167,679 | 17,655,254 |
| 1890. | 1,041,109 | 6,636, 444 | 2,699,055 | 1,615,119 | 2,009,637 | 3,481,432 | 232,10t | 17,714.900 |
| 1891. | 1,238,733 | 7,011,300 | 3, 571,050 | 2,008, 678 | 1,806,389 | 3,008,755 | 332, 969 | 18,977, 874 |
| 1892. | 1,179,856 | 6,340, 224 | 3, 203, 922 | 2,236,732 | 2,042, 198 | 2, 849, 483 | 1.088,254 | 18,941,169 |
| 1893. | 1,133,368 | 6,407,279 | $3,746,121$ | 2,218,905 | 1,694,930 | 4,443, 963 | 1, 042,093 | 20,686,659 |
| 1894. | 1,119,738 | 6,547,387 | 4,351,526 | 2,303,386 | 1,659,968 | 3,950, 478 | 787,087 | 20,719,570 |
| 1895. | 976,836 | 6, 213, 131 | 4, 403,158 | 1,867,020 | 1,584,473 | 4,401,354 | 752,466 | 20, 199,338 |
| 1896 | 976,126 | 6,070,895 | 4,799,433 | 2,025,754 | 1,605,674 | 4,183, 999 | 745, 543 | 20,407,424 |
| 1897. | 954, 949 | $8,090,346$ | 3.934, 135 | 1,737,011 | 1,289,822 | 6, 138,865 | 638,416 | 22,783,544 |
| 1898. | 1,070,202 | 7,226,034 | 3,849,357 | 1,761.440 | 1,433,632 | 3.713,101 | 613,355 | 19,667,121 |
| 1899. | 1,043,645 | 7,347,604 | 4,119,891 | 1,953,134 | 1,590,447 | 5,214,074 | 622,911 | 21,891,706 |
| 1900. | 1,059,193 | 7,809,152 | 3,769,742 | 1,989,279 | 1,333,294 | 4,878,820 | 718,159 | 21, 557, 639 |
| 1901. | 1,050,623 | 7,989, 548 | 4,193,264 | 2, 174,459 | 1,428,078 | 7,942,731 | 958,410 | 25, 737,153 |
| 1902 | 887,024 | 7,351,753 | 3, 912,514 | 2,059, 175 | 1,265.706 | 5,284, 824 | 1,198,437 | 21,959,433 |
| 1903. | 1,099,510 | 7,841,602 | 4,186,800 | 2,211,792 | 1, 535,144 | 4,747,365 | 1,478,665 | 23, 100,878 |
| 1904. | 1,077,546 | 7,287,099 | 4, 671,084 | 1,751,397 | 1,793,229 | 5, 219, 107 | 1,716, 977 | 23, 516,439 |
| 1905. | 998,922 | 8,259,085 | 4,847,090 | 2,003,716 | 1,708,963 | 9,850,216 | 1,811,570 | 29,479,562 |
| 1906. | 1,168,939 | 7,799,160 | 4.905,225 | 2, 175, 035 | 1,734,856 | 7,003,347 | 1,492,923 | 26, 279,485 |
| 1907 | 1,492,695 | 7,632,330 | 5, 300,564 | 2,047,390 | 1,935,025 | 6,122,923 | 968.422 | 25, 499,349 |
| 1908. | 1,378,624 | 8,009,838 | 4,754,298 | 1,881, 817 | 2, 100,078 | 6,465,038 | 861,392 | 25,451, 085 |
| 1909 | 1,197,557 | 8,081,111 | 4, 676,315 | 1,808, 437 | 2, 177,813 | 10,314, 755 | 1,373,181 | 29,629,169 |
| 1910. | 1,153,708 | 10,119, 243 | 4,134,144 | 1,692,475 | 2,026,121 | 9,163,235 | 1,676,216 | 29.965.142 |
| 1911 | 1,196,396 | 9,367,530 | 4, 886, 157 | 1, 868,136 | 2,205,436 | 13,677,125 | 1,467,072 | 34,667,872 |
| 1912. | 1,379,905 | 7,384, 055 | 4, 264, 054 | 1,988,241 | 2,842,878 | 14,455,488 | 1,074, 343 | 33, 389,464 |
| 1913. | 1,280,447 | 8,297, 626 | 4,308,707 | 1,850,427 | 2,674,685 | 13,891,398 | 904,458 | 33,207,748 |
| 1914. | 1,261, 666 | 7,730,191 | 4,940,083 | 1,924,430 | 2,755,291 | 11,515,086 | 1,137,884 | 31,264, 631 |
| 1915. | 933,682 | 9,166, 851 | 4,737,145 | 2,076.851 | 3,341,182 | 14,538,320 | 1,066,677 | 35,360,708 |
| 1916 | 1,344,179 | 10,092,902 | 5,656,859 | 2,991,624 | 2,658,993 | 14,637,346 | 1,826,475 | 39, 208,378 |
| 1917. | 1,786,310 | 14,468,319 | 6,143,088 | 3,414,378 | 2, 866,419 | 21,518,595 | 2,114,935 | 52,312.044 |
| 1918. | 1,148,201 | 15,143,066 | 6. 298.990 | 4,577,973 | 3,175,111 | 27,282,223 | 2,634,180 | 60,259,744 |
| 1919.. | 1,536,844 | 15, 171, 929 | 4,979,574 | 4,258,731 | 3,410,750 | 25,301,607 | 1, 849,044 | 56,508, 479 |
| 1920. | 1,708,723 | 12,742,659 | 4,423,745 | 2,592,382 | 3,336,412 | 22,329,161 | 2,108,257 | 49,241,339 |
| 1921. | 924,529 | 9,778,623 | 3,690,726 | 1,815,284 | 3,065,042 | 13,953,670 | 1.704,061 | 34,931,935 |
| 1922. | 1,612,599 | 10,209, 258 | 4,685,660 | 2,089,414 | 2, 858,122 | 18,849,658 | 1,495,499 | 41, 800, 210 |
| 1923. | 1,754,930 | 8,448,385 | 4,548,535 | 2, 100,412 | 3,159,427 | 20,795,914 | 1,757,892 | 42,565,545 |
| 1924. | 1,201,772 | 8,777,251 | 5,383,809 | 2,283,314 | 3,557,587 | 21, 257, 567 | 2,072,935 | 44, 534, 235 |
| 1925. | 1,598,119 | 10,213,779 | 4,798,589 | 3,044,919 | 3,436,412 | 22,414,618 | 2,435,695 | 47,942,131 |
| 1926. | 1,358, 934 | 12, 505, 922 | 5,325,478 | 3,110,964 | 3,152,193 | 27,367,109 | 3,540,033 | 56, 360.633 |
| 1927 | 1,367,807 | 10,783,631 | 4,406,673 | 2,736.450 | 3,670, 229 | 22,890,913 | 3,267,906 | 49, 123,609 |
|  | 1,196,681 | 11, 681,995 | 5,001,641 | 2,996,614 | 4,030,753 |  | 3,580,562 | 55,050,973 |

18. Historical Review-(b) Number and Value of Vessels and Boats engaged in the Fisheries of Canada, together with the Value of Fishing Material used, for the Years 1880, 1885, 1890, 1900, and 1905 to 1928

| Year | Vessels |  | Boats |  | Value ofNetsandSeines | Value of other Fishing Material ${ }^{1}$ | Total Capital Invested |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Value | Number | Value |  |  |  |
| 1880 |  | ${ }^{8}$ |  | ${ }^{\text {s }}$ |  |  | 8 |
|  | 1,181 | 1,814,688 | 25,266 | 70,352 |  |  |  |
| 1885. | 1,177 1,069 | 2,021,633 | 28,472 29,803 | 852,257 924,346 | $1,219,284$ $1,695,358$ | 2, ${ }_{2}$ | 6,697,459 |
| 1895. | 1,121 | 2,318,290 | 34,268 | 1,014,057 | 1,713,190 | 4,208,311 | 9,253,848 |
| 1900. | 1,212 | 1,940,329 | 38,930 | 1,248,171 | 2,405,860 | 5,395,765 | 10,990,125 |
| 1905. | 1,384 | 2,813,834 | 41,463 | 1,373,337 | 2,310,508 | 6,383,218 | 12,880,897 |
| 1906 | 1,439 | 2,841,875 | 39,634 | 1,462,374 | 2,426,341 | 7,824,975 | 14,555,565 |
| 1907. | 1,390 | 2,748.234 | 38,711 | 1,437,196 | 2,266,722 | 8,374,440 | 14,826,592 |
| 1908. | 1,441 | 3,571,871 | 39,965 | 1,696,856 | 2,283,127 | 7,956,420 | 15,509,354 |
| 1909. | 1,750 | 3,303,121 | 41,170 | 1,855,629 | 2,572,820 | 9, 626,362 | 17,357,932 |
| 1910. | 1,680 | 3, 028,625 | 38,977 | 2,483,996 | 2,786,548 | 10,720,701 | 19,019, 870 |
| 1911. | 1,648 | 3,502,928 | 36,761 | 2,695,650 | 2,453,191 | 12,281,135 | 20,932,904 |
| 1912 | 1,669 | 4,671,923 | 34,501 | 3,072,115 | 4,154,880 | 12,489,541 | 24,388,459 |
| 1913. | 1,992 | 4,445,259 | 37,686 | 3,834,178 | 3,423,110 | 15,761,486 | 27,464,033 |
| 1914. | 1,892 | 4,390,660 | 39,144 | 3,957,912 | 3,313,581 | 13,071,009 | 24,733,162 |
| 1915. | 1,984 | 4,594,504 | 38,536 | 4,345,954 | 3,544,087 | 13,371,030 | 25,855,575 |
| 1916 | 1,965 | 5,267,724 | 40,105 | 4,829,793 | 4,485,269 | 14,146,176 | 28,728,962 |
| 1917. | 1,533 | 6,268,946 | 42, 689 | 5,770, 464 | 5,347,497 | 29,756,218 | 47, 143, 125 |
| 1918. | 1,417 | 6,790,888 | 38,726 | 7,059,638 | 6,174,967 | 40, 196,370 | 60,221,863 |
| 1919. | 1,373 | 7,768, 160 | 36,434 | 7,470,095 | 6,312,245 | 33,026,526 | 54, 577,026 |
| 1920. | 1,228 | 8,316,071 | 30,522 | 7,859,999 | 6,697,214 | 27,532,194 | 50,405,478 |
| 1921. | 1,145 | 6,326,803 | 31,747 | 7,379,606 | 6,112,142 | 25,850,926 | 45, 669,477 |
| 1922. | 1,251 | 6,704,986 | 35,166 | 6,896,512 | 5,876,309 | 28, 287, 181 | 47,764,988 |
| 1923. | 1,162 | 6,249,971 | 32,360 | 5,813,421 | 5,656, 712 | 29,952,846 | 47,672,950 |
| 1924. | 1,211 | 5,612,448 | 34,110 | 6,232,613 | 5,530,550 | 26,481,733 | 43,857,350 |
| 1925. | 1,399 | 6,702, 074 | 34,835 | 6, 809, 445 | 6,203,876 | 27,157,235 | 46,872,630 |
| 1926. | 1,560 | 8,642,596 | 35,564 | 7,431,191 | 6,684,269 | 35, 148, 628 | 57, 906,684 |
| 1927. | 1,727 | 10, 473,032 | 36,703 | 7,713,204 | 7,350,636 | 30,769,589 | 56,306,461 |
| 1928 | 1,577 | 9,652,435 | 35,843 | 8,277,605 | 7,074,146 | 33,068, 185 | 58,072,371 |

${ }^{1}$ Comprises fish canning and curing establishments, small fish and smoke houses, ice-houses, fishing piers and whar ves lobster and crab traps, weirs, trawls, and all other fishing material except "vessels" "boats," and "nets and seines."
18. Historical Review-(c) Number of Persons employed in the Fisheries Industry of Canada for the years 1895, 1900 and 1905 to 1928

${ }^{1}$ Not separately classified previous to 1917.
18. (d) Total Capital Investment of the Fisheries Industry by Provinces, for the Years 1880, 1885, 1890, 1895 and 1900 to 1928

| Year | Prince Edward Island | Nova Scotla | New Branswick | Quebec | Ontario | British Columbla | Manitoba Saskatchewan, Alberta and Yukon | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | S | \$ | \$ | \$ | \$ |
| 1880 |  |  |  | 756,796 | 177,543 | 182,025 | Not vailable | 3,938,582 |
| 1885. | 493,143 | 3,010,000 | 1,075,879 | 930,358 | 378,274 | 809,805 |  | 6,697,459 |
| 1890 | 348,320 | 3,243,310 | 1,184,745 | 521,544 | 563,443 | - 1,511, 27 C | " | 7,372,641 |
| 1895. | 479,639 | 3,139,968 | 1,710,347 | 804,703 | 831,505 | 2,085,435 | 202,251 | 9,253,848 |
| 1900. | 442,120. | 3,278,623 | 2,361.087 | 830,869 | 789,042 | 2,987,104 | 301.280 | 10,990,125 |
| 1901. | 425,589 | 3,319,334 | 2,233,825 | 954,661 | 750,921 | 3,360,082 | 446,888 | 11,491,300 |
| 1902. | 395,648 | 3,485,489 | 1,943,654 | 1,014,168 | 816,392 | 3,160,683 | 489, 925 | 11,305,959 |
| 1903. | 464,792 | 3,937,428 | 2,005,391 | 1,124,848 | 846,368 | 3,256,102 | 606.525 | 12,241,454 |
| 1904. | 444,868 | 4,016,661 | 2,113,377 | 1,243,085 | 931,097 | 2,935, 416 | 672,438 | 12,356,942 |
| 1905. | 417,951 | 4,361,897 | 2,182,059 | 1,138,875 | 960,700 | 3,158,145 | 661.270 | 12,880, 897 |
| 1906. | 460,694 | $4,529,301$ | 2,171,083 | 1, 207,515 | 922,910 | 4,591,560 | 652,502 | 14,555,565 |
| 1907. | 488,905 | 4,469,041 | 2,332,455 | 1,134,315 | 1,099,403 | 4,767, 863 | 534,610 | 14,826,592 |
| 1908. | 547,714 | 5,052,148 | 2,365,563 | 1,101,746 | 1,125, 884 | 4,898,854 | 417,445 | 15,509,354 |
| 1909. | 568,828 | 5,014,909 | 2,346,467 | 1,097,767 | 1,147,075 | 6,823,852 | 359,034 | 17,357,932 |
| 1910 | 601.753 | 5,334, 083 | 2,576, 795 | 1,031, 813 | 1,165, 229 | 7,830,976 | 479, 221 | 19,019,870 |
| 1911. | 641,731 | 5, 645.276 | 2,894,795 | 1,215,532 | 1,170,365 | 8,903,000 | 462,203 | 20,932, 904 |
| 1912. | 851,070 | 6,531,590 | 3,508,899 | 1,440,114 | 1,808,404 | 9,941, 049 | 307,333 | 24,388,459 |
| 1913. | 948,667 | 7,110,210 | 3,600,547 | 1,445,871 | 1,506,581 | 12,489,613 | 362,544 | 27,464,033 |
| 1914. | 1,030,464 | 7,568,821 | 3,765,020 | 1,392,039 | 1,752,339 | 8,829, 740 | 394,739 | 24.733, 162 |
| 1915. | 1,024,268 | 7,899,112 | 3,958,714 | 1,464,373 | 1,860,732 | 9,141, 915 | 506,461 | 25,855,575 |
| 1916. | 1, 178, 148 | 8,661, 643 | 4,487,601 | 1,479,593 | 2.027,018 | 10, 371, 303 | 523,656 | 28,728, 962 |
| 1917. | 1,770,949 | 11.702,311 | 5,733,071 | 3,283,218 | 2,331,182 | 21,696,345 | 626,049 | 47,143, 125 |
| 1918. | 1,529, 184 | 13,084,412 | 6,960, 327 | 4,469,164 | 2,694,102 | 30, 478,437 | 1,006,237 | 60,291,863 |
| 1919. | 1,528,541 | 13,971,628 | 5,878,652 | 3,767,293 | 3,039,682 | 25,373,497 | 1,017,733 | 54,577,026 |
| 1920. | 1,309,179 | 13.347,270 | 4,931,856 | 3,246,442 | 3,269,971 | 23,290,359 | 1,010,401 | 50,405,478 |
| 1921. | 1,970,798 | 12,265, 465 | 4,436,076 | 2,735,617 | 3,151,715 | 21,135,723 | 974,083 | 45, 669,477 |
| 1922. | 1,161,325 | 12,860,960 | 4,614,008 | 2, 142,572 | 3,352,410 | 22,763, 363 | 870,350 | 47,764,988 |
| 1923. | 1.278,481 | 12,188,808 | 4,574,617 | 2,267,511 | 2,807,368 | 23,577,988 | 978,177 | 47,672,950 |
| 1924. | 1,211,858 | 10,990, 472 | 5,357,891 | 2,328,671 | 2,995,362 | 19,905,883 | 1,067,213 | 43,857,350 |
| 1925. | 1,237,972 | 11,674,790 | 5,247,448 | 2,708,239 | 3,235,510 | 21,674, 584 | 1,094,087 | 46,872,630 |
| 1926 | 1,166,620 | 12,094,428 | 5,369,112 | 2,766,536 | 3,337, 737 | 31,862,753 | 1,309,498 | 57,906,684 |
| 1927. | 1,117,473 | 11,469,249 | 5,526,988 | 2,408,274 | 3,257,190 | 31, 117,986 | 1,409,301 | 56,306,461 |
| 1928. | 940,944 | 11,079,262 | 5,655,548 | 2,434,693 | 3,432,528 | 32,926,325 | 1,603,071 | 58,072,371 |

18. (e) Total Number of Persons Employed in the Fisheries Industry of Canada, by Provinces, 1895 and 1900 to 1928


## GENERAL TABLES

I. FISH CAUGHT AND MARKETED, 1928 - QUANTITIES AND VALUES.
II. AGENCIES OF PRODUCTION, 1928 - CAPITAL EQUIPMENT, EMPLOYEES, ETC.

## Part I. IN PRIMARY OPERATIONS.

Part II. IN .FISH CANNING AND CURING ESTABLISHMENTS.
(a) General Summary of Statistics.
(b) Capital Invested.
(c) Employees, and Salaries and Wages.
(d) Number of Wage-earners by Months.
(e) Quantity and Value of Fuel Used.
(f) Power Equipment.
(g) Classification of Establishments According to Time in Operation and Hours Worked.
(h) Classification of Establishments According to Value of Product.
(i) Classification of Establishments According to Number of Employees.
(j) Classification of Establishments According to Form of Organization.

## III. SPECIAL TABLES.

(1) The Salmon Pack of British Columbia, 1918-1928.
(2) Imports and Exports of Fish and Fish Products, calendar years, 1926, 1927 and 1928.
(3) Fishing Bounties, 1928.
(4) Classification of Vessels and Boats used in the Sea Fisheries, according to the Principal Kinds of Fish Taken, 1928.

## I. Fish Caught and Marketed, 1928


I. Fish Gaught and Marketed, 1928-con.

| Hake and Cusk |  |  |  | Herring |  |  |  |  | Mackerel |  |  |  | Alewives |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} \text { Caught } \\ \text { and } \\ \text { landed } \end{gathered}$ | Marketed |  |  | $\begin{array}{\|l\|} \text { Caught } \\ \text { and } \\ \text { landed } \end{array}$ | Marketed |  |  |  | $\begin{aligned} & \text { Caught } \\ & \text { and } \\ & \text { landed } \end{aligned}$ | Marketed |  |  | Caught and landed | Marketed |  |
|  | $\begin{aligned} & \text { Used } \\ & \text { fresh } \end{aligned}$ | Greensalted | Dried |  | $\begin{aligned} & \text { Used } \\ & \text { fresh } \end{aligned}$ | Smoked | Pickled | Used as bait |  | Used fresh | Canned | Salted |  | Used fresh |  |
| cwt. | cwt. | cwt. | crut. | cwt. | cwt. | cwiv. | bbl. | bbl. | cwist. | cwt. | cases | bbl. | cwt. | cwt. |  |
| 11,925 | 243 | 4,382 | 1,058 | 47,451 | 9,288 | 70 | 215 | 18,603 | 10,197 | 3,761 | 336 | 2,016 | 150 | 150 | 1 |
| 9,981 | 406 | 16,998 | 5,758 | 67,384 | 26,643 | 420 | 1,969 | 65,907 | 24,33t | 14,811 | 1,955 | 25,302 | 150 | 450 | 2 |
| - | - | - | - | 2,378 | - | - | - | 1,189 | 110 | 56 | - | 18 | - | - | 3 |
| - | - | - | - | 3,100 | - | - | - | 1,550 | 543 | - |  | 181 | - | - | 4 |
| 4,000 | - | 600 | 1,019 | 2,650 | 2,000 | - | - | -275 | 123 | 60 | - | 21 | - | - | . 5 |
| $\cdot 117$ | - | 366 | 39 | 4,211 | 1,500 | - | - | 1,355 | - | - | - | - | - | - | $\frac{6}{7}$ |
| 4,850 | - | 966 | 1, 058 | 16,124 | 4,549 | - | - | 5,737 | 776 | 116 | - | 220 | - | - | 8 |
| - | - | - | - | 1,600 | 250 | - | - | 675 | 470 | 148 | 32 | 100 | - | - | 10 |
| 800 | $\cdots$ | 400 | - | 2,864 | 1,000 | - | 42 | 869 | 2,823 | 1.440 | - | 461 | - | - | 11 |
| 535 | 83 | 226 | - | 2,000 | 1,000. | - | - | 500 | 1,400 | 680 | - | 240 | - | - | 12 |
| - | - | - | - | 300 |  | - | - | 150 |  | - | - |  | - | - | 13 |
| - | - | - | - | 100 | - | - | - | 50 | - | - | - | - | $\stackrel{\rightharpoonup}{5}$ | - | 14 |
| - | - | - | - | 500 | - | - | - | 250 | - | - | - | - | 150 | 150 | 15 |
| 1,335 | -83 | 626 | - | 7,364 | 2,250 | - | 42 | 2,494 | 4,963 | 2,268 | 32 | 801 | 150 | 150 | 16 |
| 1,335 | 166 | 2,174 | - | 7,693 | 4,500 | - | 420 | 9,976 | 11,334 | 9,072 | 160 | 13,418 | 150 | 450 | 17 |
| - | - | - | - | 1,252 | - | - | - | 626 | - | - | - | - | - | - | 18 |
| - | - | - | - | 1,801 | - | 70 | - | 795 | - | - | - | - | - | - | 19 |
| 1,800 | 70 | 865 | - | 5,224 | 400 | - | 100 | 2,262 | 679 | 370 | $\bar{\square}$ | 103 | - | - | 20 |
| 3,540 | 90 | 1,725 | - | 8,706 | 500 | - | 50 | 4,028 | 1,086 | 204 | 84 | 286 | - | - | 21 |
| 400 | - | 200 | - | 4,000 | 325 | - | 15 | 1,815 | 854 | 289 | 50 | 165 | - | - | 22 |
| - | - | - | - | 2,980 | 1,264 | - | 8 | 846 | 2,109 | 514 | 170 | 441 | - | - | 23 |
| 5,740 | 160 | 2,790 | - | 23,963 | 2,489 | 70 | 173 | 10,372 | 4,728 | 1,377 | 304 | 995 | - | - | 24 |
| 2,870 | 240 | 11,160 | - | 30,739 | 7,506 | 420 | 1,549 | 33,383 | 9,272 | 5,159 | 1,795 | 7,960 | - | - | 25 |

I. Fish Gaught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

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I. Fish Caught and Marketed, 1928-con.


## I. Fish Caught and Marketed, 1928-con.


I. Fish Gaught and Marketed, 1928-con.

| Tongues and Sounds | Winkles |  | Dulse |  | Hair Seals |  |  | Miscellaneous |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} \text { Pickled } \\ \text { or } \\ \text { dried } \end{gathered}$ | $\begin{aligned} & \text { Caught } \\ & \text { and } \\ & \text { landed } \end{aligned}$ | $\left\|\begin{array}{c} \text { Mar- } \\ \text { keted } \end{array}\right\| \begin{gathered} \text { Used } \\ \text { fresh } \end{gathered}$ | Green | $\left\lvert\, \begin{aligned} & \text { Mar- } \\ & \text { keted } \\ & \text { Dried } \end{aligned}\right.$ | $\begin{gathered} \text { Caught } \\ \text { and } \\ \text { landed } \end{gathered}$ | Skins | Oil | $\begin{aligned} & \text { Fish } \\ & \text { oil, } \\ & \text { n.e.s. } \end{aligned}$ | Fish glue | Fish skins and bones | Fish meal | Fish fertilizer | Fish offa! | $\left\|\begin{array}{l} \text { Other } \\ \text { pro- } \end{array}\right\|$ |  |
| cwt. | cwt. | cwt. | cwt. | cwt. | по. | no. | gal. | gal. | gal. | cwt. | ton | ton | ton | \$ |  |
| 786 3,188 | 930 1,405 | 230 2,810 | 76 380 | 38 950 | 2,669 6,308 | 2,669 6,538 | 1,099 483 | 33,252 | 15,348 | 12,843 22,558 | 3,620 204,353 | 273 5,085 | 11,975 45,124 | 4,905 | 1 |
| - | - | - | - | - | - | - | - | - | - | - | - | - |  |  | 3 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 4 |
|  | - | - | - | - | 280 | 280 | 245 | - | - | - | - | - | - | - | 5 |
|  | - |  | - | - | - | - | - | 2,2- | - | - | - | - | - |  | 6 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| - | - | - | - | - | - | - | - | - | - | - | - | $\cdots$ | - | - | 10 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 11 |
| - | - | - | - | - | - | - | - | $\sim$ | - | - | - | - | - | - | 12 |
| . - | - | - | - | - | 280 280 | $\begin{aligned} & 280 \\ & 350 \end{aligned}$ | $\begin{array}{r} 245 \\ 98 \end{array}$ | 2,280 912 | - | - | - | - | - | - | 13 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 5 |
| - | - | - | $\cdots$ | - | - | - | - | - | - | - | - | - | - | - | 16 |
| - | - - | - | - | - | - | - | - | - | - | - | - | - | - | - | 18 |
| - | - | - | - | - | - | - | - | - | - | - | - | $\cdots$ | - |  | 19 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | 20 |
| - | , - | - | - | - | - | - | - | - | - | - | - | - | - | - | 22 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 23 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 25 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 26 |
| - | - | - | - | - | - | - |  |  | - |  | - | - | - | - | 28 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $\underline{29}$ |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | -- | 31 |
| - | - | - | $\cdots$ | - | - | - | - | - | - | - | - |  | - | - | 32 |
|  | - | - | - | - | - | - | - | - | - | - | - | - |  |  | 1 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 35 |
| - | - | - | - | - | $\cdots$ | - | - | - | - | - | $-$ | - | - | - | 36 |
| - | - | - | - | - | $-$ | - | _ | - | - | - | - | - | - | - | 38 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 39 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 40 |
| - | $\cdot$ | - | - | - | - | - | - | - | - | - | - | - | - | - - | 41 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 42 |
|  | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 44 |
|  | - | - | - | - | - | - | - | $\stackrel{-}{15}$ | - | - | - | - | - | - | 45 |
| - | - | - | - | - | - | - | - | 165 | - | - | - | - | - | - | 47 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 48 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - |  | 49 |
| - | - |  |  |  | - |  | - | - | - | - | - | - | - | - - |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## I. Fish Caught and Marketed, 1928-con.


I. Fish Caught and Marketed, 1928-con.


## I. Fish Caught and Marketed, 1928-con.


I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Gaught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

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I. Fish Gaught and Marketed, 1928-con.

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I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

| Salmon |  |  |  | Shad |  |  | Smelts |  | Sturgeon |  | Trout |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { Caught } \\ & \text { and } \\ & \text { landed } \end{aligned}$ | Marketed |  |  | $\begin{aligned} & \text { Caught } \\ & \text { and } \\ & \text { landed } \end{aligned}$ | Marketed |  | $\begin{aligned} & \text { Caught } \\ & \text { and } \\ & \text { landed } \end{aligned}$ | Mar- <br> keted <br> Used <br> fresh <br> ens. | Caught and landed | Mar- <br> keted <br> Used <br> Iresh <br> 居 | $\left\lvert\, \begin{gathered} \text { Caught } \\ \text { and } \\ \text { landed } \end{gathered}\right.$ | Mar- <br> keted |  |
|  | Used fresh | Canned | Smoked |  | Used fresh | Salted |  |  |  |  |  | Used fresh |  |
| cwet. | cwt. | cases | cwt. | cwt. | cwt. | bbl. | cwt. | cwt. | cwt. | cwt. | crit. | cw't. |  |
| 52 | 52 | - | - | - | - | - | 53 | 53 | - | - | 18 | 18 | 1 |
| 15 | 15 | - | - | - | - | - | - | - | - | - | 13 | 13 | 2 |
| 110 | 85 | - | 15 | - | - | - | 15 | 15 |  | - | 15 | 15 | 3 |
| 15 10 | 15 10 | - | - | - | - | - | -8 | -8 | - | - | 136 | 6 13 | $\frac{4}{5}$ |
| 20 | 20 | - | - | - | - | - | 3 | 3 | - | - | 12 | 12 | 6 |
| 20 | 20 | - | - | - | - | - | 10 | 10 | - | - | 12 | 12 | 7 |
| 125 | 125 | - | - | 3 | 3 | - | 90 | 90 | - | - | 18 | 18 | 8 |
| 17 | 17 | - | - | - | - | - | 95 | 95 | - | - | 16 | 16 | 9 |
| - | - | - | - | - | - | - | 37 | 34 | - | - | - | - | 10 |
| - | 423 | - | - | - | - | - | - | 3 | 2 | 2 | - | - | 11 |
| 56 70 | - | - | - | - | - | - | - | - | - | - | - | - | 12 |
| 48 | - | - | - | - | - | - | - | - | - | - | - | - | 14 |
| 46 | 46 | - | - | - | - | - | - | - | - | - | - | - | 15 |
| - 604 | ${ }^{8} 8{ }^{828}$ | - | 15 | 3 | 3 | - | 311 |  | 2 | 2 | 123 | 123 | 16 |
| 8,328 | 16,225 | - | 300 | 12 | 12 | - | 3,032 | 4,093 | 24 | 50 | 1,830 | 2,560 | 17 |
| 149 | 149 | - | - | 55 | 55 | - | - | - | - | - | 90 | 90 | 18 |
| 2,980 | 3,925 | - | - | 960 | 1,275 | - | - | - | - | - | 1,865 | 2,450 | 19 |
| - | - | - | - | - | - | - | - | - | - | - | 4 |  | 20 |
| - | - | - | - | - | - | - | $\cdots$ | - | - | - | - | - | 21 |
| - | - - | - | - | - | - | - | - | - | - | - | - | - | 22 |
| 133 | 74 | - | 35 | - | - | - | 71 | . 71 | - | - - | 5 | 5 | 24 |
| 13 | 13 | - | - | - | - | - | 117 | 117 | - | - | 3 | 3 | 25 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | 26 |
| 40 | 40 | - | - | - | - | - | 175 | 175 | - | - | 3 | 3 | 27 |
| 20 | 20 | - | - | - | - | - | 12 | 12 | - | - | 2 | 6 | 29 |
| 206 | 147 | - | 35 | - | - | - | 485 | 485 | $\square$ | - | 23 | 23 |  |
| 3,365 | 2,940 | - | 1,225 | - | - | - | 5,880 | 7,275 | - | - | 410 | 485 | 31 |
| 224 | 224 | - | - | 3 | 3 | - | 31 | 31 | - | - | 110 | 110 | 32 |
| 18 | 18 | - |  | - | - | - | - | - | - | - | - | - | 33 |
| 19 | 19 | - |  | - | - | - | - | - | - | - | - | - | 34 |
| 153 | 153 | - | - | - | - | - | - | - | - | - | 160 | 160 | 35 |
| $\cdots$ | - | $\cdots$ | - | - | - | - | - | - | - | - | - | - | 36 |
| - | - | - | - | - | - | - | - |  | - | - | 5 | 5 | 37 |
| 9, $\mathrm{H}^{414}$ |  | - | - | -3 | 3 30 | - | 31 310 | 31 310 | - | - | 275 3,300 | 3, 2700 | 338 |
| 9,542 | 9,542 | - | - | 30 |  | - | 310 | 310 | - | - | 3,300 | 3,300 | 39 |
| - | - | - | - | - | - | - | 15 | 15 | - | - | 10. | 10 | 40 |
| -2 | -2 | - | - | - | - | - | - | - | $0^{-}$ | - | $\overline{25}$ | - 25 | 41 |
| - | - | - | - | - | - | - |  |  |  |  |  |  |  |
| - | - | - | - | - | - | - | - | - | - | - | 10 | 10 | 44 |
| - | - | - | - | - | - | - | 58 | 58 | - | - | - | - | 45 |
| . 2 | 2 | - | - | - | - | - | - | - | - | - | 20 | 20 | 46 |
| 1 | - | - | - | - | - | - | - | - | - | - | - | - | 47 |
| - | 1 | - | - | - | - | - | - | - | - | - | - | - |  |
| 1 | 1 | - | - | - | - | - | - | - | - | - | 4 | 5 | 49 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | 50 |
| - | - | - | - | - | - | - | - | - | - | - | 3 | 2 | 51 |
| $\begin{array}{r} 6 \\ 125 \end{array}$ | 125 | - | $-1$ | - | - | - | 73 815 | 73 815 | - | - | 72 793 | 79 793 | 5 |

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Gaught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

| Tongues and Sounds | Winkles |  | Dulse |  | Hair Seale |  |  | Miscellaneous |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} \text { Pickled } \\ \text { or } \\ \text { dried } \end{gathered}$ | $\begin{aligned} & \text { Caught } \\ & \text { and } \\ & \text { landed } \end{aligned}$ | $\frac{\begin{array}{c} \text { Mar- } \\ \text { keted } \end{array}}{\begin{array}{c} \text { Used } \\ \text { fresh } \end{array}}$ | Green | $\underset{\text { Mar- }}{\text { keted }}$ <br> Dried | Caught and landed | Marke | cted | $\begin{gathered} \text { Fish } \\ \text { oil } \\ \text { o.e.s. } \end{gathered}$ | Fish glue | Fish skins and banes | $\begin{aligned} & \text { Fish } \\ & \text { meal } \end{aligned}$ | Fish fertilizer | Fish offal | Other <br> pro. |  |
| cwt. $\begin{array}{r} \\ - \\ = \\ = \\ - \\ - \\ = \\ = \\ = \\ =\end{array}$ | cwt. | cmt. <br> - - - - - - - - - |  | cwt. <br> - - - - - - - - - - | по. <br>  <br> 100 <br> 5 <br> 6 <br> 2 <br> 80 <br> 60 <br> 5 <br> -5 <br> - <br>  <br>  <br>  | no. <br>  <br> 100 <br> 5 <br> 6 <br> 2 <br> 80 <br> 60 <br> 5 <br> -5 <br> - <br> - <br>  <br>  <br> - | gal. |  | gal. <br>  | cwt. <br> - - - - - - - - 154 - - - |  | ton |  |  |  |
| 23 |  |  |  |  | $\begin{gathered} 263 \\ 327 \\ - \\ - \\ \\ - \\ \hline 49 \\ \hline 94 \\ -3 \\ 243 \\ 11 \\ - \end{gathered}$ |  | $\begin{aligned} & 258 \\ & 128 \\ & = \\ & - \\ & \\ & - \\ & - \\ & = \\ & = \\ & = \\ & - \\ & = \\ & = \end{aligned}$ | $\begin{array}{r} 12,515 \\ 7,257 \\ \\ - \\ \\ \\ - \\ - \\ 820 \\ - \\ 584 \\ = \\ = \end{array}$ |  | $\begin{array}{r} 168 \\ 422 \\ - \\ - \\ \\ = \\ = \\ = \\ = \\ 1.315 \\ = \\ = \end{array}$ |  | $\begin{array}{r} 60 \\ 3,000 \\ \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \end{array}$ | $\begin{array}{r} 11,512 \\ - \\ - \\ \\ - \\ - \\ - \\ - \\ - \\ \hline- \\ 412 \\ - \end{array}$ |  |  |
| $\begin{array}{r}23 \\ 184 \\ \\ - \\ = \\ - \\ \hline\end{array}$ |  | - - - - - | - - - - - | - - - - - - | $\begin{array}{r} 400 \\ 1,398 \\ \\ \\ 51 \\ 1 \\ 4 \\ 2 \\ 39 \\ 97 \end{array}$ | 400 <br> 1,398 <br>  <br>  <br> 51 <br> 1 <br> 4 <br> 2 <br> 39 <br> 97 <br> 9 | $100$ | $\begin{array}{\|c\|} \hline 1,404 \\ 560 \\ \\ 150 \\ = \\ - \\ - \end{array}$ | - <br> - <br> - <br> - | $\begin{array}{r} 1,315 \\ 3,330 \\ - \\ - \\ 130 \\ - \end{array}$ | - <br> - <br> - <br> - | - $=$ - | $\begin{array}{r} 412 \\ 1,624 \end{array}$ |  |  |
| $=$ <br> - |  | - - - - - - - - |  | - - - - - - - $=$ - - | $\begin{array}{r} 194 \\ 679 \\ \\ \\ 56 \\ 155 \\ -2 \\ - \\ \hline \\ \hline 34 \\ - \\ 128 \\ 17 \\ 19 \\ 19 \\ 217 \\ 217 \end{array}$ | $\begin{array}{r} 194 \\ 654 \\ \\ \\ 56 \\ 165 \\ \hline- \\ \hline \\ 34 \\ - \\ 33 \\ 141 \\ 19 \\ 58 \\ 287 \end{array}$ | 100 40 <br> - - - - - - - - - - $=$ | $\begin{array}{r} 150 \\ 90 \\ \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \\ - \end{array}$ |  | 130 <br> 260 <br>  <br>  <br> 521 <br> - <br> - <br> 40 <br> - <br> - <br> 360 <br>  <br> 1.400 <br> 287 | - <br> - <br> - <br> - <br> - <br> - <br> - <br> - <br> - <br> 110 | - - - - - - - - |  |  |  |
|  | - | - |  | - | $\begin{array}{r} 683 \\ 2,388 \end{array}$ | 683 <br> 2,389 | - |  |  | 2,608 $\mathbf{5}, 902$ |  | - | 30 |  |  |

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

| Cod-concluded |  |  |  |  | Haddock |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Marketed |  |  |  |  | $\begin{gathered} \\ \text { Caught } \\ \text { and } \\ \text { landed } \end{gathered}$ | Marketed |  |  |  |  |  |  |  |  |
| Smoked fillets | Dried | $\begin{gathered} \text { Bone- } \\ \text { less } \end{gathered}$ | $\left\{\left.\begin{array}{c} \text { Cod } \\ \text { liver oil } \\ \text { medj- } \\ \text { cinal } \end{array} \right\rvert\,\right.$ | $\begin{gathered} \text { Cod } \\ \text { oil } \end{gathered}$ |  | Used fresh | Fresh fillets | Canned | Smoked | Smoked fillets | Greensalted | Dried | $\begin{gathered} \text { Bone- } \\ \text { less } \end{gathered}$ |  |
| cwt. | crit. | cwt. | gal. | gal. | cwt. | cwt. | cwt. | cases | cwt. | cwt. | cwt. | crrt. | cwt. |  |
| - | - | 1,330 | - | - | 59 | - | - | - |  | - | - | 108 | 3 | 1 |
| - | - | 2,504 | 1885 | . 680 | 694 | - | - | - | - | - | - | 132 | 75 | 2 |
| - | - | - |  | - | - | - | - | - | - | - | - |  | - | 4 |
| 695 | 165 | 6,233 | - | 90 | 6,799 | 3,900 | 2 | 77 | 1,057 | - | 165 | 422 | 30 | 6 |
| $\stackrel{-}{-}$ | - | 450 | - | - | 100 | - | - | - | - | - | - | - | 21 | 7 |
| - | - | 1,100 | - | - | 1,500 | - | - | - | - | - | - | - | 100 | 8 |
| 695 | 165 | 11,660 | 1,885 | 2,358 | 9,370 | 3,900 | 2 | $7 \overline{7}$ | 1,057 | - | 165 | 734 | 229 | , |
| 6,973 | 1,289 | 137,739 | 1,885 | 1,338 | 17,015 | 15,742 | 28 | 414 | 8,709 | - | 412 | 3,207 | 2,257 | 10 |
| - | 182 | 90 | - | - | 313 | 20 | - | - | -- | - | - | - | 9 | 11 |
| - | 69 | 68 | - | 120 | 2,269 | 20 | - | 1,365 | - | - | - | - | 11 | 12 |
| - | 206 | 6 | - | - | 210 | 60 | - | -- | - | - | - | 50 | - | 13 |
| - | 39 | - | - | - | 1,949 | 800 | - | 903 | - | - | - | - | - | 14 |
| - | - | - | - | - | 1,310 | 1.310 | - | - | - | - | - | - | - |  |
| - | 350 | 249 | 41,954 | 9,489 | 2,921 | 2,767 | - | - | - | - | - | 30 | 16 | 16 |
| - | - | 1,150 | - | , | 10,363 | 5,666 | 15 | 1,403 | $\stackrel{\rightharpoonup}{\square}$ | - | - | 135 | 460 | 17 |
| - | 74 | 196 | 3,583 | 1,668 | 11.371 | 8,413 | 65 | - | 83 | 11 | 885 | 182 | 62 | 18 |
| - | 160 | - | 1,215 | 237 | 5,749 | 1,600 | - | 2,593 | - | - | - | - | - | 19 |
| - | - | - | - | - | 460 | - | - |  | - | - | 230 | - | - |  |
| - | 60 | - | - | 520 | 12,338 | 10,748 | 370 | 75 | 120 | - | - | - | - | 21 |
| - | - | - | - | - | 760 | . 760 | - | - | 6, | - | - | , | - |  |
| 2,999 | 197 | 10 | - | 330 | 14,496 | 4,840 | 750 | - | 6,127 | 1,799 | - | 2,031 | - | 23 |
| 2,899 | 1,337 | - 1.769 | 46.752 | 12,370 | 64.509 | 37, 004 | 1.200 | 6,339 | 6,330 | 1,810 | 1,115 | 2,428 | 598 | 24 |
| 38,942 | 8,071 | 18,539 | 42,374 | 6,303 | 95,801 | 84,907 | 12,867 | 41,818 | 50,302 | 21,696 | 2,392 | 11,890 | 5,831 | 25 |
| $\rightarrow$ | 3 | - | - | - | 67 | 01 | - | - | - | - | - | 2 | - |  |
| - | 172 | - | 5.400 | 900 | 1,896 | 335 | - | - | 4 | 13 | - | 504 | - | 27 |
| - | 657 | - | 5. | - | 3,913 | 2,234 | 17 | - | 121 | 10 | - | 452 | - |  |
| - | 164 | - | - | - | 300 | 189 | - | - | 2 | - | - | 36 | - |  |
| - | 42 | - | - | - | 122 | 93 | - | - | 7 | - | - | 5 | - | 30 |
| - | 1,038 | - | 5,400 | 900 | 6,298 | 2,912 | 17 | - | 134 | 23 | - | -999 | - |  |
| - | 6,228 | - | 4,860 | 405 | 11,718 | 7,074 | 255 | - | 1,608 | 345 | - | 5,225 | - | 32 |
| -' | 6 | - | - | - | 54 | 54 | - | - | - | - | - | - | - |  |
| - | 106 | - | - | - | 397 | 292 |  | - | - | - | - | 35 | - | 34 |
| - |  | - |  | - | 151 | 88 | - | - | - | - | - | 21 | - | 36 |
| - | 159 | - | - | - | 602 | 434 | - | - | - | - | - | 56 |  |  |
| - | 954 |  |  | - | 1,204 | 868 |  | - | - | - | - | 336 |  |  |

I. Fish Caught and Marketed, 1928--con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Gaught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.


1. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Gaught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.


[^13]I. Fish Caught and Marketed, 1928-con.


90209-8
I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con,

I. Fish Gaught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928 con.

I. Fish Caught and Marketed, 1928-con.

| Haddock |  |  |  |  |  |  | Hake and Cusk |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { Caught } \\ & \text { and } \\ & \text { landed } \end{aligned}$ | Marketed |  |  |  |  |  | $\begin{aligned} & \text { Caught } \\ & \text { and } \\ & \text { landed } \end{aligned}$ | Marketed |  |  |  |  |  |
|  | Used fresh | Fresh <br> Gillets | Smoked | Smaked fillets | Greensalted | Dried |  | Used fresh | Greensalted | Sroked fillets | Dried | Bone- |  |
| cwt. | cwt. | cwt. | cwt. | ewt. | cwt. | cwt. | cwt. | cwt. | cwt. | cwt. | cwt. | ewt. |  |
|  | - | - | - | - | - | - | - | - | - | - | - | - |  |
|  | - | - |  | - | - |  |  | - |  |  | - | - |  |
|  | - | - | - | - | - | - | - | - | - | - | - | - | 5 |
|  | - | - | - | - | - | - | - | - | - | - | - | - | 7 |
|  | - | - | - | - | - | - | 10 | - | - | - | 3 | - | 8 |
| - | - | $=$ | - | - |  | - | [ $\begin{aligned} & 10 \\ & 30\end{aligned}$ | - - | - | - | 20 ${ }^{3}$ | $\overline{-}=10$ |  |
|  |  | - | - |  | - | - | - | - |  | - | - |  |  |
| $-$ | $\overline{70}$ | - | - | $-1$ | - 2 | $\overline{12}$ | $\stackrel{-75}{175}$ | $-15$ | 50 | - | $\overline{20}$ |  |  |
| 190 | 10 | - | - | - | - | 60 | 780 | 10 | 10 | , | 250 |  |  |
| 2 | ${ }^{2}$ | - | - | - | - | - | 215 | 10 | - 50 | - - | 35 |  |  |
| 150 | $\stackrel{23}{-}$ | - | - | $-1$ | $-$ | 50 | 4,500 | ${ }_{-}^{45}$ | 3 | - | 1,500 |  | -17 |
| - | - | - | - | - | - | - | - | - | - | - | - |  |  |
| - | - | - | - | - | - | - | - | - | - | - | - |  | ${ }_{20}^{19}$ |
| $\begin{aligned} & 480 \\ & 556 \end{aligned}$ | $\begin{aligned} & 105 \\ & 158 \end{aligned}$ | - | - | - | [ ${ }^{5}$ | $\overline{122}$ | $\begin{aligned} & \hline 5,797 \\ & 7.297 \end{aligned}$ | 80121 | - $\begin{array}{r}145 \\ 580\end{array}$ | - | $\begin{aligned} & 1.809 \\ & 7.854 \end{aligned}$ | - |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 98 | 30 |  |  | - | 34 | - | 22 |  | - | - | - |  |  |
| 20 116 | 10 60 | - | - |  | $\begin{array}{r}5 \\ \hline 28 \\ \hline\end{array}$ | - | 52 30 |  | - | - | - |  |  |
| . 234 | $\begin{aligned} & 100 \\ & 400 \end{aligned}$ | - | - |  |  |  | 104 | 104 |  | - | - |  |  |
| 936 |  |  |  | - | 380 | .- | 312 | 312 | - | - | - |  | - 28 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |

I. Fish Caught and Marketed, 1928-con.

I. Fish Gaught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928 -con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.



The values given for the counties are the marketed values.
I. Fish Gaught and Marketed, 1928-cion.


| Bass | Eels | Mullets | Perch | Pickerel | Salmon | Shad | Sturgeon | Sturgean caviar | Whitefish |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| cwt. | cwt. | cort. | cwt. | cwt. | cwt. | cwt. | cwt. | 13. | ewt. |
| 11 | 380 | 365 | 3 | 450 | 348 | 975 | 62 | 300 | 31 |
| 198 | 1,520 | 1,095 | 12 | 5,850 | 8.811 | 5,976 | 2,345 | - | 328 |
| 198 | 1,520 | 1,095 | 12 | 5,850 | 8,811 | 5,976 | 2,345 | 300 | 388 |
| - | - | - | - | - | 3 90 | 26 264 | - | - | 9 108 |
| - | - | - | - | - | 32 | - | - | - | - |
| - | - | - | - | - | 896 | $\overline{17}$ | - | - | - |
| - | $-$ | 45 | - | - | + 148 | 136 | - | $-$ | - |
| - | 60 | - | - | 100 | 14 | 7 | - | - |  |
| $-$ | 240 | - | - | 1.300 | 350 | ${ }_{76}$ | $T_{2}$ | - | - |
| 2 | 200 | 300 | 3 | 200 | 7 | 769 | 2 | - | - |
| 36 | 800 | 900 | 12 | 2,600 | 175 | 4.614 | 70 | - | $-$ |
| [981 | 120 | - 50 | - | 2. 150 | 144 | 156 | ${ }^{65}$ | 300 | 22 |
| 162 | 480 | - 150 | - | 1,950 | 3,600 | 936 | 2,275 | 300 | 220 |

[^14]I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.


[^15] as marketed.
I. Fish Caught and Marketed, 1928-con.

| Mixed Fish | Perch | Pickerel or Dore | Pike | Salmon | Shad | Smelts | Sturgeon | Trout | Whitefish |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| cwit. | cwt. | cwt. | cut. | cwt. | cwt. | cwt. | cwt. | cwt. | cwt. |  |
| 10,285 | - 2,475 | 8,725 | 2,336 | 767 | 660 | 8,774 | 2,753 | 203 | 1,308 | 1 |
| 65,857 | 18,894 | 149,655 | 23,686 | 11,655 | 7,938 | 68,704 | 50,728 | 2,575 | 14,192 | 2 |
| - | - | 70 | - | - | 137 | 196 | 593 | - | 112 | 3 |
|  | - | 700 | - | - | 1,370 | 980 | 2,975 | - | 1,120 | 4 |
| 1,330 | - | - | $\square$ | ${ }_{7}^{752}$ | - | 180 | - | 15 | - | 5 |
| 3, 010 | - | - | - | 11,280 | - | 540 | - | 300 | - | 6 |
| 1.170 | - | - | - | 5 | 6 30 | - | 18181 | - | - | 7 |
| - | - | 11 | - | - | 15 | - | 105 | - | 12 | 9 |
|  | - | 132 | - | - | 180 | - | 735 | - | 180 | 10 |
| 4.508 22,540 | 3 30 | - | - | 12 | 55 | 8.39.8 | 325 | 142 | 6 | 11 |
|  |  | - | - | 300 | 440 | 67,184 | 3,250 | 1,420 | 60 | 12 |
| 6.072 | 3 | 81 | - | 766 | 213 | 8.774 | 1,04! | 157 | 130 | 13 |
| 26,750 | 30 | 832 | - | 11,030 | 2,020 | 68.704 | 7.284 | 1,720 | 1,360 | 14 |
| - | 602 | 12 | 180 | - | 10 | - | 11 | - | - | 15 |
| - | 2,408 | 144 | 1,080 | - | 80 | - | 132 | - | - | 16 |
| - | 68 544 | 45 765 | 30 600 | - | - | - | 290 | - | - | 17 |
| $\overline{4} 4$ | $\begin{array}{r}34 \\ 49 \\ \hline\end{array}$ | 765 16 | 600 46 | - | 8 | - | 2,250 | - | - | 18 |
| 308 | 432 | 240 | 414 | - | 128 |  | 336 |  | - | 19 |
| 625 | 105 | 52 | 105 | - | - | - | 13 | - | - | 21 |
| 3,750 | 945 | 1,404 | 1,050 | - | - | - | 390 | - | - | 22 |
| - | - | , 325 | 151 | - | - | - | - | - | 453 | 23 |
| - | - | 3,250 | 906 | - | - | - | - | - | 4,530 | 24 |
| 1,203 | 333 | , 96 | 246 | - | - | - | 264 | - | - | 95 |
| 10,230 | 2,664 | 1,920 | 2,460 | - | - | - | 5,280 | - | - | 26 |
|  | - | 9 ${ }^{9}$ | 22. | - | - | - | 5 | - | - | 27 |
| - | - | 108 | 264 | - | - | - | 84 | - | - | 28 |
| - | - | - | - | - | - | - | 12,600 | - | - | 30 |
| - | - 53 | - | - | - | - | - | - | - | - | 31 |
| - | 530 | - | - | - | - | - | - | $\cdots$ | - | 32 |
| - | 41 | 16 | 23 | - | - | - | 32 | 1 |  | 3.3 |
| - | 410 | 240 | 230 | - | - | - | 570 | 30 | 15 | 34 |
| - | ${ }^{95}$ | - | - | - | 13 | - | - | - | - | 35 |
| - | 760 | 50 | 77 | - | 130 | - | - | - | - | 36 |
| - | - 156 | 29 | 77 | - | 50 | - | 19 | - | - | 37 |
| - | 1.560 | 435 | 770 | - | 600 | - | 361 | - | - | 38 |
| 135 | - | 50 | 10 | 1 | 20 | - | 58 | 2 | 109 | 39 |
| 810 | - | 350 | 50 | 25 | 500 | - | 696 | 50 | 1,635 | 40 |
| 9000 | - | - | - | - | - | - | - | - | - | 41 |
| 10,800 | - | - | - | - | - | - | - | - | - | 42 |
| 735 | - | 400 | - | - | - | - | - | - | - | 43 |
| 6,615 | - | 9,200 | - | - | - | - | - | - | - | 44 |
| - | - | ${ }^{6}$ | 55 | - | - | - | 11 | - | - | 45 |
| - | - | 240 | 550 | - | - | - | 495 | - | - | 46 |
| -180 | ${ }^{93}$ | 255 | 108 | - | 71 | - | 369 | - | - | 47 |
| $\cdot 1,260$ | 1,488 | 5,610 | 1,728 | - | 355 | - | 7,380 | - | - | 48 |
| - |  |  | 6 | * | - | - | 1 | - | 14 | 49 |
| - | 70 | 60 | 60 | - | - | - | 20 | - | 84 | 50 |
| 99 | 211 | 21 | 108 | - | 215 | - | 12 | - | - | 51 |
| 495 | 1,266 | 315 | S6t | - | 3.225 | - | 240 | - | - | 52 |
| - | 3 | 1 | 2 | - | - | - | - | - | - | 53 |
| - | 30 | 10 | 20 | - | - | - | - | - | - | 54 |
| 119 | 92 | 12 | 32 | - | - | - | - | - | - | 55 |
| 1,309 | 920 | 180 | 320 | - | - | - | - | - | - | 56 |
| - | 25 | 5 | 8 | - | - | - | 60 | - | - | 57 |
| $\stackrel{-}{\square}$ | 250 | 90 | 120 | - | - | - | 2,100 | - | - | 58 |
| 353 | 31 | 7,051 | 751 | - | - | - | 162 | 43 | 471 | 59 |
| 3,530 | 310 | 119,867 | 9.012 | - |  | - | 4,050 | 1,075 | 4,710 | 60 |
| - | 54 | 35 | 45 | - | 60 | - | 69 | - | 5 | 61 |
| - | 540 | 875 | 270 | - | 900 | - | 2,760 | - | 30 | 62 |
| - | 43 | . 59 | 108 | - | - | - | 53 | - | - | 63 |
| - | 860 | 1,180 | 1,080 | - | - | - | 954 | - | - | 64 |
| - | 98 |  |  | - | - | - | 20 | - | 112 | 65 |
| - | 686 | 580 | 588 | - | - | - | 240 | - | 1,568 | 56 |
| - | 313 |  | 125 | - | - | - | 125 | - | 13 | 67 |
| - | 2,191 | 1,760 | 1,250 | - | - | - | 2,500 | - | 260 | 68 |
| 4,213 | 2,472 | 8,644 | 2,336 | 1. | 447 | - | 1,712 | 46 | 1,178 | 69 |
| 39,107 | 18,804 | 148,823 | 23,686 | 25 | 5,918 | - | 43,444 | 1,155 | 12,832 | 70 |

I. Fish Caught and Marketed, 1928-con.

|  | Fishing Districts | Carp | Catfish | Eels | Herring | $\underset{\text { Mixed }}{\text { Mish }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \mathbf{1} \\ & 2 \\ & 3 \end{aligned}$ | Ontario ${ }^{1}$ | cwt. | cwt. | cwt. | cwt. | cwt. |
|  | Totais for Province- |  |  |  |  |  |
|  | Quantity.......i. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 7,240 | 4,347 30,429 | 1,228 | $\begin{array}{r}53,006 \\ 132,515 \\ \hline\end{array}$ | $\begin{array}{r} 30,515 \\ 122,060 \end{array}$ |
|  | Value marketed. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 41,628 | 34,776 | 8,596 | 198,772 | 122,060 |
| Lake of the Woods and inland waters of Kenora and Rainy River Districts. $\qquad$ quantity |  | 63 | 1,291 |  | - | 2,243 |
| 5 |  | 362 | 10,328 |  | - ${ }^{-}$ | 8,972 |
|  | Lake Superior. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . quantity | 10 | - | - | 29, 700 | 657 |
| 7 |  | 57 | - | - | 111,375 | 2,628 |
| 8 | North Channel (Lake Huron). . . . . . . . . . . . . . . . . . . . . . . . . quantity | 2 | - | - | -92 | 3,907 |
| 9 |  | 11 | - | - | 345 | 15,628 |
| 10 | Georgian Bay (Lake Huron) . . . . . . . . . . . . . . . . . . . . . . . . . quantity | 548 | 47 | - | 165 | 1,903 |
| 11 | (eorg | 3,151 | 376 | - | 619 | 7,612 |
| 12 | Lake Huron (proper) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . quantity | 18 | 11 | - | 3,140 | 1,103 |
| 13 | Lake value \% | 92 | 88 | $\overline{8}$ | 11,775 | 4,412 |
| 14 | Lake St. Clair, river St. Clair and Detroit river. . . . . . . quantity | 1,356 | 562 | 85 |  | 1,861 |
| $15$ | , value $\%$ | 7,797 | 4,496 | 595 | ${ }^{3}$ | 7,444 |
| 16 | Lake Erie and Upper Niagara river.................... . . . quantity | 2,149 | 533 | - | 12,733 | 10,908 |
| 17 | ( St. Law value 8 | 12,357 | 4,264 | 2 | 47,749 | 43,624 |
| 18 | Lake Ontario, Lower Niagara and St. Lawrence rivers. .quantity | 1,206 | 1,125 | 924 | 7,058 | 3,344 |
| 19 | Trland Waters-Iake Nipigon Lake Nipiscing Lake value 8 | 6,934 | 9,000 | 6,468 | 26,467 | 13,376 |
| 2021 | Inland Waters-Lake Nipigon, Lake Nipissing, Lake Simcoe, etc., including Ottawa river...................quantity | 1,890 | 778 | 219 | 117 | 4,591 |
|  | ( value \$ | 10,867 | 6,224 | 1,533 | 439 | 18,364 |



1 For the districts the values as marketed are given. Nore. - In addition to the quantities shown in the above table, there were taken in the province of Manitoba under settlers permits $41,460 \mathrm{cwt}$. of fish valued at $\$ 213$, 852 and by anglers $2,935 \mathrm{cwt}$. valued at \$22,565.
I. Fish Caught and Marketed, 1928-con.

| Perch | Pickerel or Dore | Pickerel (blue) | Pike | Sturgeon | Sturgeon caviar | Trout | Tullibee | Whitefish |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| crit. | cwt. | cwt. | cwt. | cwt. | 16. | cwt. | cwt. | cwt. |  |
| 46,935 | 20,012 | 21,496 | 12,467 | 1,393 | 4,411 | 66,596 | 10,304 | 58,235 | 1 |
| 598,421 | 350,210 | 257,952 | 99,736 | 48,755 | , | 932,344 | 85,832 | 786,172 | 2 |
| 704,035 | 420,252 | 257,952 | 124,670 | 55,720 | 4,411 | 1,042,893 | 103,040 | 911,958 | 3 |
| 208 | 10,182 | - 260 | 8,669 | 197 | 820 | 857 | 2,623 | 4,785 | 4 |
| 3,120 | 213,822 | 3,120 | 86,690 | 7,880 | 820 | 13,421 | 26,230 | 74,933 | 5 |
| 1 | 1,087 | - | 88 | 12 | - | 19,142 | 37 | 3,270 | 6 |
| 15 | 22,827 | - | 880 | 480 | - | 299,764 | 370 | 51,208 | 7 |
| 134 | 1,078 | 1 | 488 | 97 | 59 | 6,374 | - | 2,105 | 8 |
| 2,010 | 22,638 | 12 | 4,880 | 3,880 | 59 | 99,817 | - | 32,964 | 9 |
| 50 | 824 | - | . 567 | 23 | 15 | 15,832 | 1,768 | 13,577 |  |
| 750 | 17,304 | - | 5,670 | 920 | 15 | 247,929, | 17,680 | 212,616 | 11 |
| 650 | 1,841 | 9 | 8 | ${ }^{95}$ | 806 | 14,602 | 4,669 | 2,243 | 12 |
| 9,750 | 38,661 | 108 | 80 | 3,800 | 806 | 228,667 | 46,690 | 35, 125 |  |
| 720 | ${ }^{511} 53$ | 48 | 233 | 120 | 438 | - | - | 5 | 14 |
| 10,800 | 11,193 | 576 | 2,330 | 4,800 | 438 | 1 | - | 78 |  |
| 43,304 | 1,820 | 21,038 | 150 | 424 | 1,734 | 1 | - | 9,879 |  |
| 649,560 | 38,220 | 252,456 | 1,500 | 16,960 | 1,734 | 15 | - | 154,705 |  |
| 1,634 | 7334 | 140 | 1,320 | ${ }^{58}$ | - 20 | 8,060 | - | 10,684 |  |
| 24,510 | 7,014 | 1,680 | 13,200 | 2,320 | 20 | 126,220 | - | 167,311 | 19 |
| 234 | 2,313 | - | 944 | 367 | 519 | 1,728 | 1,207 | 11,687 | 20 |
| 3,510 | 48,5731 | - | 9.440 | 14,680 | 519 | 27,060 | 12,070 | 183,0181 |  |


| Perch | Pickerel | Pike | Saugers | Sturgeon | Trout | Tullibee |  |  | Whitefish |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | $\begin{aligned} & \text { Caught } \\ & \text { and } \\ & \text { landed } \end{aligned}$ | Marketed |  |  |  |
|  |  |  |  |  |  |  | Used fresh | Smoked |  |  |
| cut. | cut. | cwt. | cwt. | cwt. | cwt. | crst. | cwt. | cwt. | cwt. |  |
| 1,521 | 101,870 | 36,366 | 4,104 | 6 | 935 | 89,068 | 88,638 | 268 | 49,899 | 1 |
| 14,429 | 712,819 | 111,668 | 22,731 | 240 | 7,250 | 347,710 | ,88, | - | 324,014 | 2 |
| 17,326 | 921,010 | 154,550 | 2S,795 | 345 | 10,112 |  | 480,159 | 3,970 | 473,232 | 3 |
| 27 | 334 | . 70 | 29 | 1 | - | - | 60 | - | 3 | 4 |
| 216 | 4,676 | 350 | 290 | 45 | - | - | 240 | - | 45 | 5 |
| - | 382 | 215 | - | - | 325 | - | 50 | - | 1,420 | 6 |
| - | 2,755 | 1,125 | - | - | 3,250 | - | 250 | - | 11,710 | 7 |
| - | 8,668 | 1, 124 | - | - | - |  | - | - | 1,323 | 8 |
| - | 78,012 | 5,136 | - | - | - | - | - | - | 10, 022 | 9 |
| 82 | 32,407 | 3,154 | 1,081 | - | - | - | 30,739 | - | 26,538 | 10 |
| 597 | 249,541 | 16,858 | 5,965 | - | - | - | 173,324 | - | 246,819 | 11 |
| 109 | 41,791 | 4,563 | 1,110 | 1 | 325 | - | 30,849 | - | 29,284 | 12 |
| 813 | 354,984 | 23,469 | 6,255 | 45 | 3,250 | - | 173,814 | - | 268,596 | 13 |
| 498 | 16,772 | 3,397 | 2,552 | - | - | - | 40,938 | 268 | 4,355 | 14 |
| 5,628 | 101,090 | 15,994 | 19,004 | - | - | - | 223,980 | 3,970 | 53,890 | 15 |
| 49 | 16,204 | 11,894 | - | - | - | - | 1,086 | - | 5,422 | 16 |
| 485 | 176,048 | 48,730 | - | - | - | - | 3,936 | - | 48,958 | 17 |
| - - |  | 12 | - | - | - | - | - | - | 155 | 18 |
| - | 144 | 43 | - | - | - | - | - | - | 2,450 | 19 |
| - | - | - | - | - | 60 | - | - | - | 225 | 20 |
| - | - | - | - | - | 660 | - | - | - | 1,800 | 21 |
| - | 286 | - | - | - | 120 | - | - | - | 428 | 22 |
| - | 1,716 | - | - | - | 1,320 | - | - | - | 3,424 | 23 |
| - | 782 | 272 | - | - | 252 | - | 10 | - | 3,984 | 24 |
| - | 5,726 | 1,088 | - | - | 2,924 | - | 40 | - | 35,757 | 25 |
| - | 589 | 460 | - | - | 178 | - | 309 | - | 3,197 | 26 |
| - | 3,534 | 1,840 | - | - | 1,958 | - | 1,236 | - | 25,576 | 27 |
| - | - | - | - | 5 | - | - | 80 | - | , 225 | 28 |
| - | - | - | - | 300 | - | - | 320 | - | 1,800 | 29 |
| 794 | 22,488 | 14,234 | 442 | - | - | - | 14,512 | - | 1.798 | 30 |
| 9,528 | 269,856 | 57, 096 | 3,536 | - | - | - | 72,560 | - | 21,576 | 31 |
| 47 | 720 | 881 | - | - | - | - | 96 | - | 626 | 32 |
| 564 | 8,600 | 3,524 | - | - | - | - | 480 | - | 7,512 | 33 |
| 2 | 180 | 330 | - | - | - | - | 2 | - | 200 | 34 |
| 32 | 2.031 | 1,532 | - | - | - | - | 11 | - | 1,893 | 35 |
| 22 | 2,044 | , 283 | - | - | - | - | $\begin{array}{r}756 \\ 3.782 \\ \hline\end{array}$ | - | - | 36 |
| 276 | 17,281 | 1,234 | - | - | - | - | 3,782 | - | - | 37 |
| 1,412 | 60,079 | 31,803 | 2,894 | 5 | 610 | - | 57,789 | 268 | 20,615 | 38 |
| 16,513 | 586,026 | 131,081 | 22,540 | 300 | 6,862 | - | 306,345 | 3,970 | 204,636 | 39 |

## I. Fish Caught and Marketed, 1928-con.



[^16]
## I. Fish Caught and Marketed, 1928-con.



1For the districts the values as marketed are given.
Nore.-In addition to the quantities shown in the above table, there were taken in the province of Saskatchewan $15,449 \mathrm{ewt}$. of fish valued at $\$ 82,695$, under domestic license and $22,292 \mathrm{cwt}$, valued at $\$ 185,209$, under anglers' permits.

## I. Fish Caught and Marketed, 1928-con.


${ }^{1}$ For the districts the values as marketed are given.
I. Fish Caught and Marketed, 1928-con.


[^17]I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

| Whiting |  | Halibut |  |  | Flounders, Brill, Plaice, etc. |  | Skate |  | Soles |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Caughtand landed | Marketed | $\begin{aligned} & \text { Caught } \\ & \text { and } \end{aligned}$landed | Marketed |  | $\begin{gathered} \text { Caught } \\ \text { land } \\ \text { landed } \end{gathered}$ | Marketed | Caught and laaded | $\xrightarrow[\substack{\text { Used } \\ \text { fresh }}]{\text { Marketed }}$ |  | $\xrightarrow[\substack{\text { Used } \\ \text { iresh }}]{ }$ |  |
|  | $\xrightarrow[\substack{\text { Used } \\ \text { iresh }}]{\text {. }}$ |  | Used fresh | Smoked |  | Used fresh |  |  |  |  |  |
| cwt. | cwt. | cowt. | cwit. | cwt. | ewt. | cwt. | civt. | cwt. | cwt. | cwt. |  |
|  |  | 302,820 | 302,810 |  | 4,132 | 4,132 | 1,134 | 1,134 | 5,673 | 5,673 | 1 |
| 72 | 128 | 2,961,319 | 3,370,330 | 131 | 11,915 | 19,832 | 2,571 | 4,332 | 22,232 | 36,276 | 2 |
| 18 | 18 | 10,437 | 10,427 | 6 | 790 | 790 | 959 | 959 | 4,274 | 4,274 | 3 |
| $\begin{aligned} & 18 \\ & 72 \end{aligned}$ | $\begin{array}{r} 18 \\ 128 \end{array}$ | $\begin{array}{r} 10,444 \\ 114,905 \end{array}$ | $\begin{array}{r} 10,434 \\ 135,851 \end{array}$ | 131 | 1, $\begin{array}{r}790 \\ \hline\end{array}$ | $\begin{array}{r}790 \\ 3,280 \\ \hline\end{array}$ | 959 1,918 | 959 $\mathbf{3 , 3 6 9}$ | 16,132 | 4,280 28,241 | 5 |
| $=$ | - | 284,629 | 281, 629 | - | 2,954 | 2,954 | - | - | $-3$ | $-3$ | 8 |
| - | - | 1,290 | 1,290 | - | - | - | - | - | - | - | 9 |
| - | - | 2,211 | 2,211 | - | 11 | 11 | - | - | 666 | 666 |  |
| - | - | 3) | - | - | - | - | - | - | - | - | 12 |
| - | - |  |  |  | - |  | - | - | - |  | 4 |
| - | - |  | - |  |  | - | - | - | - |  | 5 |
| - | - | - | - | - | - | - | - | - | - | - - | 17 |
| - | - | - | - | - | - | - | - | - | - | - | 18 |
| - | - | $\begin{array}{r} 288,133 \\ 2,814,510 \end{array}$ | $\begin{array}{r} 288,133 \\ 3,189,322 \end{array}$ | - | $\begin{aligned} & 2,965 \\ & 8,885 \end{aligned}$ | $\begin{array}{r} 2,965 \\ 14,513 \end{array}$ | - | I- | $\begin{gathered} 669 \\ 2,016 \end{gathered}$ | 669 3,348 | 22 |
| - | - |  | ${ }^{37}$ | - | - | - | - | - | - | - | 23 |
|  |  | 1 | , |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | , |  |  |  |  |
| - | - | 1,438 | 1,438 | - | 23 | $\overline{23}$ | -6 | -6 | 53 |  | ${ }^{27}$ |
| - | - | $\stackrel{-7}{709}$ |  | $\underline{-}$ |  |  | $\overline{131}$ | 131 | - |  | ${ }_{29}^{28}$ |
| - | - | 169 | 169 | - | 10 | 10 | 3 | 3 | - |  | 30 |
| - | - | - | - | - | - | - | - | - | 275 |  | 51 |
| - | - | $7 \mid$ | ${ }_{2}$ | - | $321$ | 32 | $-6$ | - ${ }^{-6}$ | $\stackrel{72}{-}$ |  | 33 |
| - | - | 30 | 30 | - | - | - | - | - | 6 |  | 6.34 |
| - | - |  |  | - | - | - | - | - | - |  | 35 |
| - | - | 322 | 322 | - | - | - | - | - | - |  | 36 |
| - | - | - | $-4$ | - | $-8$ | $-8$ | $-9$ |  | 50 |  | 37 <br> 38 |
| - | - |  |  | - | 32 | 32 | 20 | 20 | 268 | 268 | 39 |
| - |  |  |  |  |  |  |  |  | 724 |  |  |
|  |  | 30,90! | 44,806 | - | 1,450 | 2,039 | 653 | ${ }^{963}$ | 3.581 | 4,687 |  |

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

| Herring-con. |  |  | Pilchards |  |  |  |  |  |  | Bass |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Marketed |  |  | Caught and landed | Marketed |  |  |  |  |  | $\begin{gathered} \text { Caughit } \\ \text { and } \\ \text { landed } \end{gathered}$ | Mar-ksted-Used <br> fresh |  |
| Used as bait | Oi] | Meal |  | Used fresh | Canned | Smoked | Used | Oil | Meal |  |  |  |
| bbl. | gal. | ton | ewt. | cwt. | cases | cwt. | bbl. | gal. | ton | cwt. | cwt. |  |
| 47,971 | 68,411 | 831 | 1,610,252 | 118 | 65,097 | 126 | 2,149 | 3,995,805 | 14,500 | 12 | 12 | 1 |
| 120,336 | 24,137 | 43,917 | 1,075,407 | 1,062 | 314,457 | 882 | 5,175 | 1,474,51\% | 263,040 | 81 | 84 | 2 |
| - | $\sim$ | - | 118 | 118 | - | - | - | - | - | - | - | 3 |
| - | - | - | 118 708 | 118 1,062 | - | - | - | - | - | - | - | 5 6 |
| 15, 060 | - | - | - | - | - | - | - | - | - | - | - | 7 |
| 27,610 | 20,772 | 403 | - | - | - | - | - | - | - | - | - | 9 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2,125 | 2,250 | 73 | - | - | - | - | - | - | - | - | - | 11 |
| - | - | - | - | $\cdots$ | - | - | - | - | $\sim$ | - | - | 13 |
|  |  | - | - | $-$ | - | - | - | - | - | - | - | 4 |
| - | - | - | - | - | - | - | - | - | - | - | - | 16 |
| - | - | - | - | - | - | - | - | - | - | - | - | 7 |
| - | - | - | - | - | - | - | - | - | - | - | - | 19 |
| - | - | - | - - | - | - | - | - | - | - | - | - | 20 |
| $\begin{array}{r} 44,804 \\ 112,965 \end{array}$ | $\begin{array}{r} 23,022 \\ 7,658 \end{array}$ | $\begin{array}{r} 476 \\ 24,079 \end{array}$ | - | - | - | - | - | - | - | $-$ | - | 21 |
| - | 24-548 | - 180 | 40,560 307 | - | 1,434 | - | - -1 | 133,367 | - 579 | - | - | 23 |
| - | 20,841 | 175 | 732,270 | - | 55,415 | - | 800 | i, 769,964 | 6.472 | - | - | 25 |
|  |  |  | 183890 |  |  |  |  | -1511 | 1.671 |  |  |  |
| - - | - | -- | 183,820 346.256 | - | 8,248 | 126 |  | 㐌1,511 | 1,671 | - | - | 20 |
| 967 | - | - | 346,256 | - | 8,248 | 126 | 1,155 | 944,333 | 3,051 | - |  | $\underline{27}$ |
| - | - | - |  | - |  | - | - |  | - | 12 | 12 | 29 |
| - | - | - | - | - | - | - | - |  | - | - |  |  |
| 2,200 | - | - | - | - | - | - | - | - | - | - |  | 32 |
| - | $-$ | - | - | - | - | - | - | - | - | - | - | 33 |
| - | - | - | - | - | - | - | - | - | - | - | - | 34 |
| - | - | - | - | - | - | - | - | - | - | - | - |  |
| - | - | - | $\cdots$ | - | - | - | - | - | - | - | - |  |
| - | - | - | - | - | - | - | - | - | - | - |  | 37 |
| - | - |  |  |  | - | - | - | - | - | - | - | 39 |
| 3,167 | 45,389 | 355 | 1,610,134 | - | 65,097 | 126 | 2,149 | 3,995,806 | 14,500 | 12 | 12 | 40 |
| 7.370 | 16,479 | 19,838 | 1,074,609 | - | 314,457 | 882 | 5.175 | [1,474,512 | 767,048 | 84 | 8 | 41 |

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

| Salmon-con. |  |  |  |  |  | Smelts |  | Sturgeon |  | Trout |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Marketed |  |  |  |  |  | Caught and landed | Marketed | $\begin{gathered} \text { Caught } \\ \text { and } \\ \text { landed } \end{gathered}$ | Mar- <br> keted | $\left\|\begin{array}{c} \text { Caught } \\ \text { and } \\ \text { landed } \end{array}\right\|$ | $\left(\begin{array}{c}\text { Mar- } \\ \text { keted }\end{array}\right]$Used <br> fresh |  |
| Smoked | $\begin{aligned} & \text { Dry- } \\ & \text { salted } \end{aligned}$ | Mild cured | Picliled | Roe | Used as bait |  | Used fresh |  | Used fresh |  |  |  |
| cwt. | cwt. | cwt. | cwt. | cwt. | cwt. | cwt. | ewt. | cwt. | cwt. | crwt. | cwt. |  |
| 536 | 170,253 | 21, 167 | 10,520 | 3,061 | 158 |  |  | 279 | 279 | 55 | 55 | 1 |
| 7,294 | 674,759 | 505,301 | 153,265 | 10,425 | 801 | 9,635 | 11,223 | 4,870 | 6,338 | 660 | 832 | 2 |
| 536 | 19,678 | 1,536 | - | 535 | - | 667 | 667 - | 217 | 217 | 55 | 55 | 3 |
| $\begin{array}{r} 536 \\ 7,294 \end{array}$ | 19,678 109,923 | 3,420 69,425 | - | $\begin{array}{r} 535 \\ 1,505 \end{array}$ | - | 667 8,671 | 667 10,190 | 252 4,606 | 5,995 | 55 660 | 55 832 | 5 |
| - | - | $\stackrel{-}{1,500}$ | -236 | - | - | $\overline{30}$ | $\overline{30}$ | - | - | - | - | 7 8 |
| - | - | 10,015 | - | - | - | - | - | - | - | - | - | 9 |
| - |  | 84 | - |  | - |  |  |  |  |  |  |  |
| - | - | - | - | - | - | - | - | - | - | - | - | 2 |
| - | - | - | - | - | - | - | - | - | - | - |  | 13 |
|  |  |  |  |  |  |  |  |  |  |  |  | 14 |
| - | - | - | - | - | - | - |  |  | - |  |  |  |
| - | - | - | - | - | - | - | - | - | - | - | - | 17 |
| - | 6,912 | - | - | 160 | - | - | - | - | $-$ | - | - | 18 |
| - | 37,667 | - | - |  | - | - | - | - | - | - | - | 20 |
| - | $\begin{array}{r} 44,579 \\ 142708 \end{array}$ | 12,373 336,189 | - $\begin{array}{r}236 \\ 3.540\end{array}$ | 160 | - | 30 | 30 | - | - | - | - | 21 |
| - | - | - | - | - | - | - | - | - | - | - | - | 23 |
| - | 11,044 | - | - | - | - | - | - | - | - | - | - | 24 |
| - | 8,840 | - | - | - | - | - | - | - | - | - | - | 25 |
| - |  | - | - | -- | - | - | - | 2 | 2 | - | - | 26 |
| - | 62,748 | 5, -7 $^{\text {a }}$ | 3,784 | 1,781 | 158 | - | - | 3 | 3 | - | - | 27 |
| - | - | 5,675 |  | - | - | - | - | 12 | 12 | - | - | 28 |
| - | - |  | - | - | - | 66 | 66 | - | - | - | - | 30 |
| - | - | - | - | - | - | 13 | 13 | - | - | - | - | 31 |
| - | - | - | 3,170 3,330 | - | - | - 6 | - 6 | - | - | - | - | 32 |
| .- | - |  | - | - | - | - | - | - | - | - | - | 34 |
| - | 7,524 | - | - | 585 | - | - | - | - | - | - | - | 35 |
| - | 6,900 | - | - | - | - | - | - | - | - | - | - | 36 |
| - | - | - | - | - | - | - | - | - | - | - | - | 37 |
|  | 8,040 |  |  |  |  |  |  | - | - | - | - | 39 |
| - | 105,996 | 5,674 | 10,284 | 2,366 | 158 | 85 | 85 | 27 | 27 | - | - | 40 |
| - | 422,108 | 99,687 | 149,725 | 8,280 | 801 | 724 | 1,053 | 264 | 343 | - | - | 41 |

I. Fish Caught and Marketed, 1928-con.

I. Fish Caught and Marketed, 1928-con.

| Ling Cod |  |  |  | Red Cod |  |  | Grey- | Octopus |  | Oulachons |  | Tom Cod |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Caught and landed | Marketed |  |  | $\begin{gathered} \text { Caught } \\ \text { and } \\ \text { landed } \end{gathered}$ | Marketed |  | $\begin{gathered} \text { Caught } \\ \text { and } \\ \text { landed } \end{gathered}$ | Caught and landed | Marketed | $\left.\begin{gathered} \text { Caught } \\ \text { and } \\ \text { landed } \end{gathered} \right\rvert\,$ | Mar- <br> Lated <br> Used <br> fresh | $\begin{aligned} & \text { Caught } \\ & \text { and } \\ & \text { landed } \end{aligned}$ | Mar-keted$U_{\text {sed }}$ <br> fresh |  |
|  | Used fresh | Greensalted | Smoked |  | Used fresh | Smoked |  |  | Used fresh |  |  |  |  |  |
| cwt. | $\begin{gathered} \text { cwt. } \\ \\ 50,268 \\ 363,992 \end{gathered}$ | cwt. | $\begin{array}{r} \text { cwt. } \\ 178 \\ 1,420 \end{array}$ | cwt. | cwt. | cwt. | cwt. | ewt. | cwt. | cwt. | crwt. | cwt. | cwt. |  |
| $\begin{array}{r} 50,772 \\ 327,424 \end{array}$ |  | $\begin{array}{r} 78 \\ 689 \end{array}$ |  | $\begin{array}{r} 4,225 \\ 16,230 \end{array}$ | 4,129 20,960 | $\begin{array}{r} 48 \\ 46 \end{array}$ | $\left\|\begin{array}{r} 230,557 \\ 80,694 \end{array}\right\|$ | $\begin{array}{r} 553 \\ 1,801 \end{array}$ | $\begin{array}{r} 553 \\ 2,921 \end{array}$ | $\begin{array}{r} 413 \\ 1,945 \end{array}$ | $\left.\begin{array}{r} 413 \\ 2,399 \end{array} \right\rvert\,$ | 12 36 | 12 60 | 1 |
| $\begin{array}{r} 21,764 \\ 102 \end{array}$ | $\begin{array}{r} 21,758 \\ 102 \end{array}$ | - | 3 | 1,403 10 | $\left.\begin{array}{r} 1,343 \\ 10 \end{array} \right\rvert\,$ | 30 | - | 194 | 194 | 347 66 | $\begin{array}{r} 347 \\ 60 \end{array}$ | $\underline{12}$ | 12 | 3 4 |
| $\begin{array}{r} 21,866 \\ 131,604 \end{array}$ | $\begin{array}{r} 21,860 \\ 143,891 \end{array}$ | - | $\begin{gathered} 3 \\ 45 \end{gathered}$ | $\begin{array}{\|l\|} \hline 1,413 \\ 7,095 \end{array}$ | $\begin{aligned} & 1,353 \\ & 7,972 \end{aligned}$ | $\begin{array}{r} 30 \\ 310 \end{array}$ | $=$ | $\begin{aligned} & 194 \\ & 970 \end{aligned}$ | $\begin{array}{r} 194 \\ 1,618 \end{array}$ | $\begin{array}{r} 413 \\ 1,945 \end{array}$ | $\begin{array}{r} 413 \\ 2,349 \end{array}$ | - 12 | 12 | 5 6 |
| 420 | 420 | - | - | 600 | 600 | - | - | - | - | - | - | - | - | 7 |
| 8 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | 9 |
| - | - | - | - | 40 |  |  |  |  |  |  |  |  |  |  |
| - | - | - | - | $-$ | $-$ | - | $-$ | - | - | - | - | - | - | 12 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | 13 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | 15 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | 17 |
| - | = | - | - | - | - | - | - | - | - | - | - | - | - | 18 |
| - | - | - |  |  | - |  |  |  |  | - |  |  |  | 20 |
| 1,334 | 1, $\begin{array}{r}\text { 428 } \\ \\ \hline\end{array}$ | - | - | $\begin{array}{r} 640 \\ 1,361 \end{array}$ | $\begin{array}{r} 640 \\ 2,121 \end{array}$ | - | $\begin{array}{r}137 \\ 47 \\ \hline\end{array}$ | - | - | - | - | - | - | ${ }_{22}^{21}$ |
| $-$ | $-$ | - | - | - | - | - | - | - | - | - | - | - | - | 23 |
| 905 | 905 | - | - | 17 | 17 | - | - | - | - | - | - | - | - | 24 |
| 120 | 120 | - | - | - | - | - | - | - | - | - | - | - |  | 25 |
|  | 448 | - | - | - | - | - | - | - | - | - | - | - | - | 26 |
| 3,659 | 3,411 | 3 | 125 | 36 | - | 18 | - | - | - | - | - | - | - | 27 |
| 2,815 | 2,565 | 75 | $\overline{50}$ | - 2 | -2 | - | - | - | - | - | - | - | - | ${ }^{28}$ |
| 1,920 | 1,920 | - |  | 74 | 74 | - |  | - | - | - | - | - |  | 30 |
| 2,880 | 2,880 | - | - | 980 | 980 | - |  | 246 | 246 | - | - | - | - | 31 |
| 4,432 | 4,432 | - | - | 163 | 163 | - | 137,460 | - | - | - | - | - | - | 32 |
| 267 | 267 | - | - | - | - | - |  | - | - | - | - | - |  | 33 |
| 2,855 | 2,855 | - | - | 12 | 12 | - | - | - | - | - | - | - | - | 34 |
| - |  |  | - | - | - | - |  | - | - | - | - |  | - | 35 |
| 4 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | 36 |
| - | - |  |  | - | - |  |  |  | - | - | - |  |  |  |
| 5,103 | 5,103 | - |  | 240 | 240 | - | - | 51 | 51 | - | - | - | - | 38 |
| 3,020 | 3,020 | - | - | 648 | 648 | - | - | 62 | 62 | - | - | - |  |  |
| 28,478 | 27,980 | 78689 | $\begin{array}{r} 175 \\ 1,375 \end{array}$ | $\begin{aligned} & 2,172 \\ & 7,774 \end{aligned}$ | $\begin{array}{r} 2,136 \\ 10,867 \end{array}$ |  | $\begin{array}{r} 230,420 \\ 80,647 \end{array}$ | 359351 | $\begin{array}{r} 359 \\ 1,303 \end{array}$ | - | - |  | - |  |
| 194,486 | 218,751 |  |  |  |  |  |  |  |  |  |  |  |  | 41 |

I. Fish Caught and Marketed, 1928-con.

I. Fish Gaught and Marketed, 1928-con.

I. Fish Gaught and Marketed, 1928-concluded.


Nore.-The following quantities were landed by United States vessels and are included with caught and landed and used fresh-District 2: Halibut, 202,424 cwt.: herring, 1,982 cwt.: salmon, 5,893 cwt.: black cod, 2,256 ewt.: red and rock cod, 17 cwt .

Note.-The following is in addition to the quantities in the main table:-estimated home consumption of all varicties including salmon, trout, cod, oulachons, bottom fish, shell fish, ete.

District No, 1: By Whites, Indians and Orientals, $31,328 \mathrm{crt}$.
District No. 2: By Indians, $37,384 \mathrm{cwt}$.

## II. AGENGIES OF PRODUGTION

II. Agencies of Production, 1928.-Part I. In Primary Operations

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928--Part I. In Primary Operations-con.

| Fishing Gear |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Salmon Trap Nets |  | Seines |  | Trap Nets, Other |  | Smelt Nets |  | Weirs |  | Tubs of Trawl |  | Hand Lines |  |  |
| No. | Value | No. | Value | No. | Value | No. | Value | No. | Value | No. | Value | No. | Value |  |
|  | \$ |  | \$ |  | \$ |  | \$ |  | \$ |  | $\$$ |  | § |  |
| 136 | 39,500 | 438 | 46,250 | 470 | 221,650 | 3,804 | 37,683 | 91 | 19,800 | 12,432 | 197,868 | 20,321 | 22,641 | 1 |
|  | - | - | . _ | - | - | 474 | 3,094 | - | - | - | - | 30 | 38 | 2 |
| - | - | $-$ | - | - | - | 120 | -720 | - | - | 14 | 240 | 85 | 106 | 3 |
| - | - | - | - | - | - | 262 | 1,572 | $-$ | - | 94 | 1,680 | 281 | 329 | 4 |
| - | - | - | - | 1 | 3,000 | - | - | - | - | 167 | 3,000 | 380 | 475 | 5 |
| - | - | - | - | - | - | 142 | 852 | - | - | 27 | 480 | 80 | 100 | 6 |
| - | - | - | - | 4 | 4,800 | 26 | 130 | - | - | 9 | 90 | 453 | 453 | 7 |
| - | - | - | - | 3 | 3,600 | - | $\stackrel{\rightharpoonup}{30}$ | $-$ | - | 30 | 300 <br> - | 355 133 | 355 133 | 8 9 |
| - | - | -- | - | - |  | ${ }_{20}^{6}$ | 30 100 | - | - | - | - | 150 | 130 | 10 |
| - | - | - | - | - | - | - | - | - | - | - | - | 8 | 8 | 11 |
| - | - | - | - | 8 | 11,400 | 1,050 | 6,498 | - | - | 341 | 5,790 | 1,855 | 2,047 | 12 |
| - | . | - | - | - | - | 100 | 500 | - | - | - | - | 106 | 106 | 13 |
| - | - | - | - | - | - | - | - | - | - | - | - | 26 | 26 | 14 |
| - | - | - | - | - | - | - | - | - | - | 20 | 180 | 90 | 90 | 15 |
| 31 | 3,100 | - | - | - | - | - | - | - | - | 34 | 308. | 113 | 113 | 16 |
| - | - | - | - | - | - | $-$ | - | - | - | 6 16 | 5t | 42 | 42 |  |
| $-4$ | - 400 | - | - | - | - | $\overline{30}$ | 300 | - | - | 32 | 288 | 130 | 130 | 19 |
| - | - | - | - | - | - | - | - | - | - | 40 | 360 | 95 | 95 | 20 |
| - | - | - | - | - | - | - | - | - | - | 6 | 159 | 70 | 105 | 21 |
| - | - | - | - | $-$ | 9, 0. | $4^{4}$ | 60 | - | - | 3 180 | 5, 900 | 501 | 75 408 | 23 |
| $-6$ | 3,000 | - | - | ${ }_{-}^{7}$ | 9,000 | - | - | - | - | 180 4 | 5,400 117 | 201 41 4 | 62 | 24 |
| - | 3,000 | - | - | - | - | - | - | - | - | 5 | 156 | 89 | 119 | 25 |
| - | - | - | - | 1 | 500 | - | - | - | - | 1 | 30 | 26 | 333 | 26 |
| 41 | 6,500 | - | - | 8 | 9,500 | 134 | 860 | - | - | 347 | 7,284 | 1,134 | 1,756 | 27 |
| - |  | - | - | 5 |  | - | - | - | - | 14 | 120 | 40 | 40 | 28 |
| - | - | - | - | 7 |  | 5 | 25 | - | - | 7 | 35. | 20 | 20 | 29 |
| - | - | - | - | 1 |  | 2 | 20 | - | - | 26 | 20 | 40 | 40 | 30 |
| - | - | - | - | 12 | 1,360 | 12 | 310 | - | - | 17 | 170 | 35 | 35 | 31 |
| - | - | - | - | 3 | 210 | 2 | 90 | - | - | 28 | $\underline{3} 0$ | 70 | 70 | 32 |
| - | - | - | - | 4 | 280 | - |  | - | - | 14 | 140 | 48 | 48 | 33 |
| - |  | - | - | 12 | 11,700 | 4 | 80 | - | - | 110 | 880 | 500 | 500 |  |
| - | - | - | - | 3 | 3,000 | - | $-$ | - | - | 30 | 240 | 165 | 165 |  |
| - | - | - | - | 1 | 1,000 | - | - | - | - | 35 | 280 | 200 | 200 |  |
| - | - | - | - | - | - - | 2 | $\pm$ | - | - | 10 20 | 80 160 | 160 240 | 160 240 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| - | - | - | - | 48 | 18,250 | 27 | 495 | - | - | 311 | 2,645 | 1,518 | 1,518 | 39 |
|  |  |  |  |  |  | - | - | - | - | 20 | 200 | - 70 | 70 | 40 |
| 14 | 5,600 | - | - | - | - | - | - | - | - | 20 | 200 | 60 | 60 | 41 |
| 14 | 5,600 | - | - | - | - | 8 | 40 | - | - | 250 | 2,500 | 320 | 320 |  |
| 7 | 2,800 | - | - | - | - | 5 | 25 | - | - | 110 | 1,100 | 200 | 200 |  |
| 38 |  | - | - | - | - | 4 | 20 | - | - | 108 | 925 | 200 | 200 | 44 |
| 7 | 2,800 | - | - | - | - | - | - | - | - | 18 | 105 | 45 |  | 45 |
| 1. | 400 | - | - | - | - | 25 | 100 | $\cdots$ | - | 7 | - $\begin{aligned} & 126 \\ & 216\end{aligned}$ | $\stackrel{69}{37}$ | 103 | 47 |
| 14 | 4,200 | - | - | - | - | 120 | 1,480 | - | - | 12 | 216 | 3 r |  | 2 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part I. In Primary Operations-con

II. Agencies. of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

| Vessels |  |  |  |  | Boats |  |  |  |  | Carrying Smacks |  |  | Number of men fishing without boats |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sailing and Grsoline |  |  |  |  | Sail and Row |  | Gasoline |  | Total men |  |  |  |  |
| 40 tons and over | $\begin{aligned} & 20-40 \\ & \text { tons } \end{aligned}$ | $\begin{gathered} 10-20 \\ \text { tons } \end{gathered}$ | Total value | Total men | No. | Value | No. | Value |  | No. | Yalue | Men |  |  |
| no. | no. | 刀о. | 8 | по. |  | $\$$ |  | S | no. |  | \$ | no. |  | no. |  |
| - | - | $\cdots$ | - | - | 33 | 350 | 14 | 3,272 | 112 | 4 | 668 | 6 | - | 1 |
| - | - | - | - | - | 9 | 135 | 5 | 1,170 | 28 | 1 | 167 | 2 | - | 2 |
| - | - | 4 | 5,092 | 12 | 21 | 147 | 8 | 1,872 | 81 | - | - | - | - | 3 |
| - | - | 5 | 6,365 | 15 | 14 | 180 | 14 | 3,275 | 66 | - | - | - | - | 4 |
| - | 1 | $\frac{1}{5}$ | 1,000 | 4 | 20 | 300 | 23 | 5,382 | 85 | - | - | - | - | 5 |
| - | 1 | 5 | 8,800 | 20 | 28 | 168 | 30 | 4,920 | 60 | - | - | - | - | 6 |
| 1 | - | - | 2,000 | 8 | 12 | 72 | 24 | 3,936 | 45 | 1 | 200 | 2 | - | 7 |
| - | - | - | - | - | 15 | 60 | 20 | 3,280 | 45 | - | - | - | - | 8 |
| - | - | - | - | - | 50 | 300 | 55 | 5,904 | 124 | 2 | 300 | 2 | - | 9 |
| - | - | - | - | - | 17 | 255 | 30 | 9,000 | 50 | - | - | - | - | 10 |
| 1 | - | - | 9,000 | 12 | 11 | 165 | 8 | 2,400 | 21 | 3 | 12,000 | 9 | - | 11 |
| - | - | 12 | 10,100 | 41 | 53 | 2,650 | 81 | 28,350 | 150 | 2 | 8,000 | 6 | - | 12 |
| - | . 3 | 14 | 21,600 | 76 | 137 | 6,850 | 79 | 27, 650 | 227 | - | - | - | - |  |
| 1 | 1 | 20 | 21,000 | 90 | 140 | 7,000 | 95 | 33,250 | 260 | - | - | - | - | 14 |
| , | , | 2 | 21,00 |  | 80 | 2,000 | 15 | 3,000 | 109 | 1 | 4,000 | 3 | - | 15 |
| 3 | 5 | 61 | 84,957 | 278 | 640 | 20,632 | 501 | 136,661 | 1,463 | 14 | 25,335 | 30 | - | 16 |
| - | - | - | - | - | 35 | 500 | 8 | 1,500 | 57 | - | - | - | 8 | 17 |
| - | - | 1 | 400 | 4 | 80 | 1,600 | 12 | 1,300 | 51 | - | - | - | 10 | 18 |
| - | - | - | 0 | - | 30 | 900 | 11 | 1,650 | 30 | - | - | - |  | 19 |
| - | - | - | $\cdots$ | $\square$ | 23 | 690 | 8 | 1,400 | 22 | 1 | 200 | 1 |  | 20 |
| - | - | 11 | 7,700 | 30 | 40 | 800 | 47 | 11,750 | 60 | - | , | - | - | 21 |
| - | - | - | - | - | 60 | 1,200 | 10 | 2,000 | 50 | 1 | 250 | 1 | - | 22 |
| 2 | - | - | 16,000 | 38 | 20 | 1.200 | 12 | 2,400 | 29 | - | - | - |  | 23 |
| - | 1 | 16 | 14, 200 | 58 | 50 | 1,000 | 83 | 20,750 | 67 | 1 | 400 | 2 | 10 | 24 |
| 54 | 1 | 15 | 877,500 | 1,136 | 6 | 120 | 55 | 16,500 | 61 | - | - | - | 25 | 25 |
| 26 | - | 2 | 43,200 | 524 | 15 | 300 | 126 | 37,800 | 141 | 2 | 600 | 2 | 42 | 26 |
| - | - | - | , | - | 4 | 80 | 33 | 9,900 | 37 | - | - | - | 10 | 27 |
| 82 | 2 | 45 | 959,000 | 1,790 | 328 | 7,090 | 307 | 105,450 | 548 | 5 | 1,450 | 6 | 107 | 28 |
| - | - | 1 | 300 | 2 | 115 | 1,150 | 41 | 8,000 | 181 | - | - | - | - | 29 |
| - | - | 1 | 300 | 3 | 13 | 325 | 15 | 2,250 | 46 | - | - | - |  | 30 |
| - | - | - | - | - | 14 | 350 | 15 | 3,300 | 55 | - | - | - | - | -31 |
| - | 3 | 8 | 28,500 | 79 | 25 | 625 | 90 | 20,000 | 138 | - | - | - | - | 32 |
| - | - | 3 | 4,250 | 12 | - | - | 58 | 10,450 | 105 | - | - | - | - | 33 |
| - | - | - | - | - | - | - | 36 | 6,600 | 36 | - | - | - | - | 34 |
| - | 3 | 14 | 33,350 | 96 | 167 | 2,450 | 255 | 50,600 | 561 | - | - | - | - | 35 |
| - | - | - | - | - | 28 | 380 | 18 | 3,500 | 26 | - | - -7 | - | - | 36 |
| 5 | 1 | 3 | 94,500 | 100 | 152 | 1,825 | 58 | 10,500 | 95 | 2 | 3,500 | 6 | 6 - | 37 38 |
| - | - | - |  |  | 76 | 760 | 58 | 9,500 | 97 |  |  | - | - | 38 |
| - | 1 | - | 6,000 | 13 | 53 | 600 | 38 | 6,500 | 61 | - | - | - | - | 39 |
| - | - | - |  | - | 3 | 45 | $\stackrel{2}{2}$ | . 400 | 0 | - | - | - | - | 40 |
| - | - | - | - | - | 40 | 675 | 50 | 9,500 | 65 | - | - | - | - | 41 |
| - | - | - | - | - | 25 | 250 | 32 | 5,300 | 44 | - | - | - | - | 42 |
| - | - | - |  | - | 11 | 300 | 20 | 6,000 | 38 | - | - | - |  | 43 |
| - | - | 2 | 1,750 | 8 | 35 | 1,000 | 48 | 14,400 | 110 | 1 | 500 | 2 | 2 - | 44 |
| - | - | - | 10. 650 | $-$ | -2 |  | ${ }^{12} 5$ | 3.650 102.800 | 16 460 | - 6 | 3,000 | $\overline{12}$ | 2 - |  |
| - | 1 | 13 | 10,650 | 65 | 62 | 1,860 | 257 | 102,800 | 460 | ${ }^{6}$ | 3,000 | 12 | - |  |
| - | - | - | - | - | 24 | 720 | 105 | 41,000 | 183 | - | - | - | - | 47 |
| 5 |  | 18 | 112,900 | 186 | 511 | 8,465 | 698 | 213,050 | 1,201 | 9 | 7,000 | 20 |  | ${ }^{48}$ |

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

| Fishing Gear |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Salr Tr Ner | mon | Seines |  | $\begin{aligned} & \text { Trap Nets, } \\ & \text { Other } \end{aligned}$ |  | Smelt Nets |  | Weirs |  | Tubs of Trawl |  | Hand Lines |  |  |
| No. | Value | No. | Value | No. | Value | No. | Value | No. | Value | No. | Value | No. | Value |  |
|  | $\varepsilon$ |  | \$ |  | § |  | s |  | \$ |  | § |  | \$ |  |
| - | - | - | - | 1. | 100 | 15 | 55 | - | - | 2 | 2. | 162 | 162 | 1 |
| - | - | - | - | - | - | $\frac{2}{6}$ | 206 | - | - | -10 | 100 | 208 | 20 | $\frac{2}{3}$ |
|  | - | - | - | $-$ | - | - | $-$ | - | - | 20 | 200 | 340 | 340 | 4 |
| - | - | -2 | 200 | - | - | ${ }_{4}$ | 76 | - | - | 20 | $\begin{array}{r}96 \\ 340 \\ \hline\end{array}$ | 320 300 | 320 300 | ${ }^{5}$ |
| - | - | - | - | - | - | 4 | 20 | - | - | 10 | 17. | 200 | 200 | 7 |
| - | - | - | - | 8 | 800 | 6 | 30 | - | - | 5 | 85 | 100 | 100 | 8 |
| - | - | - | - | - | - | 10 | 30 | - | - | - | - | 600 | 600 | 9 |
| - | - | - | - | 4 | 800 | 10 | $\stackrel{5}{5}$ | - | - | 12 80 | 240 1,600 | $\begin{array}{r}154 \\ 30 \\ \hline\end{array}$ | 7 | 11 |
| - | - | 50 | 5,000 | 3 | 1,200 | - | - | - | - | 132 | 2. 640 | 250 | 135 | 12 |
| - | - | 300 | 30,000 600 | ${ }_{2}^{8}$ | 1,600 6,000 | - | - | - | - | 228 280 | 4,560 $\mathbf{5}, 600$ | 325 380 | 162 | 13 |
| - | - | $\stackrel{6}{2}$ | 200 | 41 | 14,000 | - | - | - | - | 28. | . 6 | ${ }^{60}$ | 30 |  |
| - | - | 360 | 30,000 | 87 | 24,500 | 57 | 227 | - | - | 807 | 15,651 | 3,818 | 3,209 | 10 |
| - | - | - | - | - | - | - | - | 3 | 400 | - | - | - | - | 17 |
| - | - | 24 | 2,400 | 40 | 10, 000 | - | - | - | - | 50 | 100 | 100 | 50 | 18 |
| - | - | 12 | 1,200 | 31 | 6,200 2800 | - | - | - | - | 30 | 60 10 | 125 60 | 75 30 | 19 |
| - | - | ${ }_{6}^{6}$ | 500 600 | 17 | 2,800 3,400 | - | - | - | - | 75 | 150 | 200 | 100 | ${ }^{2}$ |
| - | - | $-2$ | 200 | - | - | 150 175 | 600 | - | - | 56 | 294 | -90 |  | ${ }^{23}$ |
| - | - | $-3$ | 300 | - |  | 175 | 700 | - | - | 886 | 154 | 160, | 125 |  |
| - | - | 3 | 450 | 16 | 8,000 | 150 | 1,200 | - | - | 1,460 | 26.280 | 520 |  | ${ }^{25}$ |
| - | - | $\stackrel{5}{3}$ | 750 <br> 450 | 3 | 1,500 500 | $\begin{gathered} 70 \\ 12 \end{gathered}$ | 560 <br> 96 | - | - | 670 | 12, 0600 | 980 | 1,470 | ${ }^{26}$ |
| - | - | 63 | 6,850 | 128 | 33, 000 | 557 | 3,156 | - | - | 2,482 | 39,968 | 2,585 | 3,055 | 25 |
| - | - | - | - | 2 | 900 | s | 240 | - | - | $-$ | - | 200 | 200 | 29 |
| - | - | - | - | $-5$ | 3.000 | - | - | - | - | ${ }_{25}^{8}$ | 160 500 | 60 80 | 60 80 |  |
| - | - | - |  | 23 | 13,800 | - | - | - | 175 | 518 | 11.524 | 460 | 460 |  |
| - | - | 3 | 1,350 | 1 | 600 | - | - | - | - | 76 | 1,688 | 320 | 320 |  |
| - | - |  | 900 |  | 600 |  | - | - |  | 23 | 506 | 14. | 140 |  |
| - | - | 5 | 2,250 | 32 | 18, 900 | 8 | 240 | 7 | 175 | 658 | 14,372 | 1,2ic | 1,260 |  |
|  |  | - | - | - |  | 1 | 15. | - | - | 76 | 1.500 | 2 C | 25 | 36 |
| - | = | - | - | - | - | $-$ | $-$ | - | - | 990 | 19,800 | 105 | 155 | 33 |
| - | - | - | - | - | - | - | - | ${ }^{1}$ | 100 | 115 | 3,935 2,500 | 70 50 | 100 |  |
| - | - | - | - | - | - | -5 | 75 | - | - | 12 | ${ }_{240}$ | 3 |  | 40 |
| - | - | $\sim$ | - | - | - | 15 | 225 | 2 | 300 | 210 | ${ }^{4}, 200$ | 50 30 | 60 45 | ${ }_{42}^{41}$ |
| - | - | - | - | - | - | 5 | 75 | - | - | 108 | 2,000 | 30 |  | ${ }^{4}$ |
| - |  | - | - | - | - | - | - | - | - | ${ }_{3}^{28} 5$ | - 604 | 44 <br> 110 | ${ }_{165}^{66}$ |  |
| $\overline{-}$ | - | - | - | - | - | - |  | - | - | - | $\bigcirc$ | 16 | ${ }_{25}$ | 45 |
| - | - | - | - | - | - | - | - | - | - | 520 | 9,560 | 375 | 563 | ${ }_{46}^{46}$ |
| - |  |  |  |  |  |  |  |  |  |  |  |  |  | 4 |
| $-$ |  |  |  | - | $-1$ | 26 | 390 | 3 | 400 | 2,680 | 51,319 | 923 | 1,360 | 18 |

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

| Vessels |  |  |  |  | Boats |  |  |  |  | Carrying Smacks |  |  | Number of men fishing without boats |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sailing and Gasoline |  |  |  |  | Sail and Row |  | Gasoline |  | Total Men |  |  |  |  |  |
| 40 tons and over | $\begin{gathered} 20-40 \\ \text { tons } \end{gathered}$ | $\left\|\begin{array}{l} 10-20 \\ \text { tons } \end{array}\right\|$ | Total <br> Value | Total Men | No. | Value | No. | Value |  | No. | Value | Men |  |  |
| no. | no. | no. | \$ | no. |  | \$ |  | \$ | Ho. |  | \$ | no. | no. |  |
| $\overline{-}$ | - | - | $-$ | - | 4 | 60 | 35 | 7,500 | 58 | 2 | 500 | 3 | 6 |  |
| 1 | - | - | 3,000 | 10 | 15 | 225 | . 45 | 13,500 | 107 | 3 | 800 | 5 |  | 2 |
| - | - | - |  | - | 40 | 600 | - 20 | 6,000 | 77 | - | - | - |  | 3 |
| - | - | - | - | - | 30 | 450 | 99 | 29,700 | 213 | 7 | 2,100 | 9 | 6 | 4 |
| - | - | - | - | $\overline{8}$ | 8 | 120 | 17 | 5,100 | 50 | 4 | 1,600 | 7 |  | 5 |
| - | $-1$ | - | 56,500 | 84 | 56 | 1,000 | 98 | 29,500 | 201 | 2 | -600 | 4 | - | . 6 |
| - | - | - |  |  | 5 <br> 8 | 2000 | 48 | 14,500 16,000 | 112 | - | - | - | - | 7 8 |
| 6 | 1. | - | 59,500 | 94 | 166 | 2,855 | 405 | 121,800 | 932 | 18 | 5,600 | 28 | 23 | 9 |
| - | - | - | - | - | 2 | 40 | 34 | 10,200 | 70 | - | - | - | 20 |  |
| - | - | - | - | - | 9 | 180 | 32 | 9,600 | 82 | 3 | 1,150 | 6 | 10 | 11 |
| - | - | - | - | - | 5 | 100 | 31 | 9,300 | 72 | - | - | - | 5 | 12 |
| - | - | 1 | 800 | 4 | 6 | 120 | 25 | 7,500 | 62 | - | - | - |  | 13 |
| - | - | - | - | - | 18 | 180 | 6 | 1,200 | 23 | - | - - | $\cdots$ | - | 14 |
| - | - | - | - | $=$ | 23 | 500 | 67 | 23.900 | 120 | 5 | 15,000 | 9 | - | 15 |
| - | - | - | - | - | 30 | 600 | 59 | 17,700 | 113 | 5 | 26,500 | 11 | - | 16 |
| $\cdots$ | - | - | - | - | 30 | 600 | 53 | 18,100 | 102 | 6 | 19,200 | 12 | - | 17 |
| - | - | - | $\stackrel{-}{-}$ | - | 5 | 100 | 15 | 8,900 | 42 | - | - | - | - | 18 |
| - | - | - | - | - | 10 | 100 | 26 | 7,500 | 63 | - | - | - | - | 19 |
| - | - | - | . | - | 35 | 650 | 36 | 13,600 | 79 | - | - | - | - | 20 |
| - | - | - | . | - | 10 | 200 | 9 | 1,800 | 27 | - | 5. | - | - | 21 |
| - | - | - | - | - | 27 | 540 | 27 | 45,060 | 89 | 1 | 3,500 | 2 | - |  |
| - | - | 1 | 800 | 4 | 212 | 3,910 | 420 | 174,360 | 943 | 20 | 65,350 | 40 |  | 23 |
| - | - | 1 | 885 | 2 | 45 | 900 | 15 | 3,750 | 45 | - | - | - |  | 24 |
| - | - | 10 | 13,450 | 40 | 45 | 900 | 46 | 10,600 | $6:$ | - | - | - |  | 25 |
| - | - | 7 | 11,895 | 24 | 54 | 1,080 | 31 | 7,525 | 84 | - | - | - |  | 26 |
| - | - | - |  | , | 49 | -980 | 22 | 3,750 | 70 | - | - | - |  | 27 |
| - | - | - | - | - | 19 | 410 | 8 | 1,650 | 19 | - | - | - |  | 28 |
| - | - | 18 | 26,330 | 66 | 212 | 4,270 | 122 | 27,275 | 291 | - | - | - | 38 | 29 |
| - | - | - | - | - | 3 | 125 | 5 | 500 | 11 | - | - | - |  | 30 |
| $\cdots$ | - | - | - | - | 19 | 950 | 5 | 500 | 30 | $\cdots$ | - -- | - |  | 31 |
| - | - | - | - | - | 7 | 350 | $\stackrel{2}{2}$ | 200 | 12 | - | - | - |  | 33 |
| - | - | - | - | - | 31 | 1,525 | 14 | 1,400 | 59 | - | - | - |  | 34 |
|  |  |  |  |  |  |  |  |  |  |  |  |  | 1 |  |

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

| Fishing Gear |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lobster Pounds |  | OysterRakes |  | Scallop Drags |  | Quahaug Rakes |  | Fishing Piers and Wharves |  | Iee Houses |  | Small Fish and Smoke Houses |  |  |
| No. | Value | No. | Value | No. | Value | No. | Value | No. | Value | No. | Value | No. | Value |  |
|  | \$ |  | \$ |  | \$ |  | \$ |  | \$ |  | \$ |  | $\checkmark$ |  |
|  | 150 |  | - |  | - |  |  |  | - |  | 350 |  | 500 |  |
|  | 2,500 | - | - | - | - | - | - | 3 | 10,400. | 1 | 400 | 12 | 1,000 |  |
|  | - | - | - | - | - | - | - | 1 | 300 | - | $-$ | 15 | 1,500 |  |
|  | 1,900 | - | - | - | - | - | - | 16 | 1,500 | $2^{2}$ | 100 | 10 | 4.500 | $\frac{4}{5}$ |
|  | 1,400 | - | - | - | - | - | - | 8 | 130, 000 | - 3 | 6,700 | 17 | 1,500 | 6 |
|  | 100 | - | - | - | - | - | - | - | - - | 2 | 200 | 20 | 3,100 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 | 5,250 | - | - | - | - | - | - | 30 | 172,300 | 13 | 7,900 | 160 | 17,300 | 9 |
|  | - | - | - | - | - | - | - | - | - | - | - | 41 | 3,100 | 10 |
|  | 800 | - | - | - | - | - | - | 2 | 300 |  | 50 | 25 | 1,800 |  |
|  | - | - | - | - | - | - | - | - | - - | $\stackrel{2}{1}$ | 100 50 | ${ }_{17}^{32}$ | 3,200 380 |  |
|  | - | - | - | - | - | - | - | - | - |  | $\bigcirc$ | 4 | 200 |  |
|  | 1,200 | - | - | 3 | 450 | - | - | $\overline{-}$ | - | 1 | 500 | 50 | 2,500 |  |
|  | 1,000 | - | - | -1 | 150 | - | - | 10 | 5,000 5,000 |  | 1,500 | 45 40 | 2,250 2,000 |  |
|  | - | - | - | $\stackrel{1}{2}$ | 300 | - | - | 6 | 1,200 | - |  | 20 | 1,000 |  |
|  | - | - | - | $\begin{aligned} & 1 \\ & 4 \end{aligned}$ | 150 | - | - | - | - | 1 3 | 500 600 | 15 | 450 |  |
|  | - | - | - | $-$ | - | - | - | - | - | - | $-$ | 10 | 200 |  |
|  | - |  |  |  | 3.750 |  |  |  |  |  |  | 10 | 300 |  |
| $\begin{array}{r}7 \\ = \\ = \\ \hline\end{array}$ | 4,000 |  |  |  |  |  | - |  |  |  | 3,300 | 339 | 17,980 | 23 |
|  | - | - | - | 1 | 115 | - | - | 4 | 2,000 | - | - | 8 | 1,600 |  |
|  | - | - | - | 10 7 | 1,150 | - | - | $\begin{aligned} & 3 \\ & 3 \end{aligned}$ | 4,500 3,000 | -2 | 100 | 54 44 | 1,932 4,700 |  |
|  | - | - | - | $\cdots$ |  | - | - | $-$ | - | 8 | 550 | 44 | 2.585 |  |
|  | - | - | - | - | - | - | - | - |  | 6 | 450 | 19 | 1,403 |  |
| --$=$ | - | - | - | 18 | 2,070 | - | - | 10 | 9,500 | 16 | 1,100 | 169 | 14,237 |  |
|  | - | - | - | - |  | - | - | - | - |  | 250 | 6 |  |  |
|  | - | - | - | - | - | - | - | - | - | 8 | 450 <br> 250 <br> 150 | ${ }^{10} 8$ |  | 32 |
|  | - | - | - |  |  |  |  |  |  |  | 150 | 2 | 100 |  |
| - | - | - | - | - | - |  | - | - | - | 21 | 1,100 | 26 | 1,300 |  |

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

| Boats |  |  |  |  | Carrying Smacks |  |  | Number of men fishing without boats |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sail and Row |  | Gasoline |  | Total men |  |  |  |  |  |
| No. | Value | No. | Value |  | No. | Value | Men |  |  |
|  | \$ | 2,174 | \$ | no. | 66 | \$ | no. | no. |  |
| 4,932 | 112,805 |  | 764,800 | 7,316 |  | 190,400 | 140 | 2,060 | 1 |
| 105 | 4,200 | $\begin{aligned} & 19 \\ & 15 \end{aligned}$ | 3,800 | 95 | 7 | 3,500 | 14 | - | 2 |
| 137 | 2,740 | 74 | 22,200 | 277 | 12 | 120,500 | 23 | $\mathrm{F}_{6}$ | ${ }_{4}^{3}$ |
| ${ }^{62}$ | 1,240 | $\left.\begin{array}{c} 32 \\ 345 \end{array}\right]$ | 9,600 | 122 | $-$ |  | - | 20 | 5 |
| 461 | $\mathbf{1 4 , 9 7 5}$ $\mathbf{9}, \mathbf{0 5 0}$ | $\begin{aligned} & 345 \\ & 128 \end{aligned}$ | 172,500 64,000 | 600 233 | $\stackrel{2}{2}$ | 9,000 8,000 | 4 5 | ${ }^{75}$ | ${ }_{7}^{6}$ |
| 336 | 16,800 | 161 | 107,500 | 267 |  |  |  | - | 8 |
| 1,321 | 50,565 | 774 | 382,600 | 1,685 | 26 | 142,500 | 52 | 155 | 9 |
| 35 | 700 |  | 18,000 | 68 | 2 | 2,000 | 4 | - | 10 |
| 160 | 1,300 8,000 | 70 | 28,000 | ${ }_{205}^{125}$ | $-$ | - | - | - | ${ }_{12}^{11}$ |
| 16 | ${ }^{1} 400$ | -60 | re,000 |  |  | - | - | - | 13 |
| 256 | 10,400 | 202 | 74,500 | - 427 | 2 | 2,000 | 4 | - 14 |  |
| 1 | 60 | - | - | 3 | - | - | - | - | 15 |
| 10 <br> 25 <br> 75 | 750 | -27 | 5,400 | 17 <br> 61 | $-2$ | $\begin{aligned} & 4,000 \\ & 2,000 \end{aligned}$ | $-4$ | - 16 |  |
|  | 250 |  |  |  |  |  |  |  |  |
| 125 | 1,250 | 48 | 9,600 | 132 | 1 | 2,000 | ${ }^{1}$ | - 18 |  |
| 160 | 1,600 | 60 97 | 12, 1900 | 268, | 5 | 18,000 | 10 | - 21 |  |
| 15 | 150 | 18 | 3,600 | 34 |  |  |  |  |  |
| 410 | 4,750 | 250 | 50,000 | 691 | 8 | 24,000 | 15 | - - 22 |  |
| 20 | 750 | 16 | 4,800 | 52 | 2 | 1,000 | 4 | 26 | 23 |
| 90 | 1,600 | 18 | 5,400 | 126 | $\frac{2}{3}$ | 1,000 | 4 | ${ }_{50} 8$ | 24 |
| 70 | 1,750 | 30 | 9,000 | 130 | 3 | 1,500 | 6 |  | 25 |
| 160 | 3,500 | 24 | 7 7,200 | - 108 | $\stackrel{3}{2}$ | 1,000 | 4 | . 50 | 27 |
| 20 | 1,000 | 69 | 20,700 | 149 | 1 | 1,600 | 2 | - | 28 |
| 8 | 1,400 | 49 | 15,050 | 106 | 1 | 600 | 1 | - | 29 |
| 10 | 500 | 21 18 | 6,500 5,400 | 52 41 | $-1$ | $\stackrel{-}{500}$ | $-2$ | - | 30 |
| 40 | 1,000 | 120 | 5,400 25,000 | 305 | $\stackrel{1}{2}$ | 500 1,200 | 4 | -60 |  |
| 663 | 15,750 | 385 | 105,050 | 1,349 | 17 | 9,400 | 34 | 5693 |  |
|  |  |  |  |  |  |  |  |  |  |

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

| Fishing Gear |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Trap Nets |  | Smelt Nets |  | Pound Nets |  | Dip Nets |  | Weirs |  | Weir Seines |  | Weir Drivers |  |  |
|  |  | No. | Value | No. | Value | No. | Value | No. | Value | No. | Value | No. | Value |  |
|  | \$ |  | \$ |  | s |  | \$ |  | \$ |  | s |  | \$ |  |
| 377 | 201, 305 | 6,821 | 513,378 | 65 | 13,000 | 602 | 1,861 | 355 | 409,355 | 19 | 3,800 | 82 | 17,100 |  |
| - | - | 6 | 180 | - | - | - | - | 63 | ${ }^{63,000}$ | - | - | - | - |  |
| - | - | $\overline{21}$ | 126 | - | - | - | - | 17 | 11,000 | $\overline{-}$ | - | - | - |  |
| - | - | 7 | 42 | - | - | - | - | 24 | 26,400 | - | - | - | - | 5 |
| = | - | -4 | $\stackrel{-}{100}$ | - | - | $\overline{140}$ |  | 48 23 | 84,000 23,000 | - | - | $\overline{25}$ |  |  |
|  |  |  |  | - | - | 462 | 1,386 | 77 | 77,000 | - | - | 57 | 15,000 | 8 |
| - | - | 38 | 448 | - | - | 602 | 1,861 | 319 | 364,700 | - | - | 82 | 17,100 | 9 |
| - | - | - | - | - | - | - | - | 10 | 12,000 | 10 | 2,000 | - | - | 10 |
| - | = | - | - | - |  | $\underline{-}$ | - | 22 | 1,400 | 1 <br> 8 | 200 1,600 | - | - | 11 |
| - | - |  | - | - |  |  |  |  |  |  |  | - | - |  |
| - | - | - | - | - | - | - | - | 33 | 44,400 | 19 | 3,800 | - | - | 14 |
| - | - | - | - | - | - | - | - | 2 | 90 | - | - | - | - | 15 |
| - | - | - | - | - | - | - | - | 1 | 165 | - | - | -- |  |  |
| - | - | 48 | 3,600 | - | - | - | - | - | - | - | - | - |  | 17 |
| - | - | 80 | 6,000 | - | - | - | - | - | - | - | - | - |  | 19 |
| - | - | 89 65 | 6,675 4,875 |  | - | - | - | - |  | - | - | - |  |  |
| - | - | 352 | 26,400 | - | - | - | - | 1 | 165 | - | - | - | - |  |
| - | - | 26 | 2,600 | - | - | - | - | - | - | - | - | - |  | 23 |
| - | - | 83 50 | [ $\begin{aligned} & 8,300 \\ & \mathbf{2 , 5 0 0}\end{aligned}$ | - | - | - | - | - | - | - | - | - |  | 25 |
| - | - | 450 | 31,250 | - | - | - | - | - | - | - | - | - |  | 27 |
| - | - | 120 | 2,500 | - | - | - | - | - | - | - | - | - |  | 28 |
| - | - | 323 | 32,300 | - | - | - | - | - | - | - | - | - |  | 29 |
| 15 | -450 | 281 | 28,100 | - | - | - | - | - | - | - | - | - |  | d |
|  |  |  | 4,000 | - | - | - |  |  |  |  |  |  |  |  |
| 6 | 1,200 | 50 | 4,000 |  |  |  |  |  |  |  |  |  |  |  |
| 30 | 3,890 | 1,475 | 127,150 |  | - - | - | 1 - | - | 1 - | - | - - | - |  | - ${ }^{33}$ |

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

| Fishing Gear |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Lobster Pounds |  | Oyster Rakes |  | Scallop Drags |  | Quahaug Rakes |  | Fishing Piers and Wharves |  | Freezers and Ice Houses |  | Small Fish and Smoke Houses |  |  |
| No. | Value | No. | Value | No. | Value | No. | Value | No. | Value | No. | Value | No. | Value |  |
|  | S |  | \$ |  | \$ |  | \$ |  | S |  | \$ |  | $\$$ |  |
| 12 | 27,800 | 920 | 3,910 | 105 | 420 | 278 | 569 | 396 | 113,230 | 72 | 211,700 | 923 | 433,400 | 1 |
| 2 | 300 | - | - | - | - | - | - | $-{ }_{4}$ | ${ }_{750}$ | - | 400 | $\stackrel{2}{2}$ | 3,300 200 | 2 |
| - | -- | -- | - | - 65 | 260 | $\overline{80}$ | $\overline{60}$ | 4 4 4 | 750 3,800 | -1 | 3,000 | $\stackrel{2}{8}$ | 200 7.300 | 3 |
| - | - | - | - | 40 | 160 | 65 | 45 | 1 | 500 | $-$ |  | 2 | 800 | 5 |
| 3 | 15,000 | - | - | - | - | - | - | 177 | 51,600 | 3 | 700 | 466 | 367,700 | 6 |
| - |  | - | - | - | - | - | - | 44 | . 400 | - | - | 97 | 13,192 | 7 |
| - | - | - | $-$ | - | - | - | - | 76 | 7,600 | - | - | 53 | 7,208 | 8 |
| 5 | 15,300 | - | - | 105 | 420 | 145 | 105 | 306 | 68,650 | 5 | 4,100 | 630 | 399,700 | 9 |
| - | - | - | - | - | - | - | - | 10 | 1,500 | - | - | 14 | 2,500 | 10 |
| - | - | - | - | - | - | - | - | 6 | -600 | - | - - | 11 | 1, 400 | 11 |
| - | -- | - | - | - | - | - | - | 45 3 | 27,000 400 | 4 | 90,000 | 51 | 20,000 1,000 | 12 |
| - | - | - | - | - | - | - | - | 64 | 29,500 | 4 | 90,000 | 84 | 24,900 | 14 |
| $\cdots$ - | - | - | - | - | - | - | - | - | - | - | - | - | - | 15 |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | 16 |
| 2 | 2,550 | - | - | - | - | - | -- | - | - | -- | - | - | - | 17 |
| - |  | 20 | 80 | - | - | 15 | 30 | - | - | - | - | - | - | 18 |
| - 3 | 3,750 | - | - | - | - | - | - | - | - | 2 | 15,000 | - | - | 20 |
|  |  | 40 | 160 | $\cdots$ - | -- | 52 | 104 | - | - | - | - | - | - | 21 |
| 5 | 6,300 | 60 | 240 | - | - | 67 | 134 | - | - | 2 | 15,000 | - | - | 22 |
| - | - | - | - | -- | - | 18 | 90 | - | - | - | - | - | - | 23 |
| - | - | 72 | 360 | - | - | 10 | 50 | - | - | - | - | - | - | 24 |
| - | 200 | 175 | 875 | - | - | $\overline{38}$ | $\overline{-70}$ | $\overline{15}$ | 550 | - 3 | 2,000 | - | - | 20 |
| - | - | 21 | 10.5 | - | - | - | - | - | - |  | - | - | - | 27 |
| - | - | $\overline{5} 0$ | 100 | - | - | - | - | 1 | 10,000 | 3 | 6,000 | 1 | 300 | 29 |
| - | - | 16 | 32 | - | - | - | - | - | - | - | 50 | - | - | 31 |
| - |  | $-$ | - |  | - | - | $-$ |  | - | 3 | 4,500 | 1 | 1,500 | 32 |
| - | - | 40 | 200 |  |  |  |  |  |  |  |  |  |  |  |
| 1 | 200 | 374 | 1,672 |  |  |  | 330 | 16 | 10,550 | 10 | 13,000 | 2 | 1,800 | 33 |

II. Agencies of Production, 1928-Part 1. In Primary Operations-con.

|  | Fishing Districts | Vessels |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Sailing and Gasoline |  |  |  |  |
|  |  | 40 tons and over | $\begin{gathered} 20-40 \\ \text { tons } \end{gathered}$ | $\begin{gathered} 10-20 \\ \text { tons } \end{gathered}$ | Total value | Total men |
|  |  | no. | no. | no. | S | nо. |
|  | Northumberland County- |  |  |  |  |  |
| 1 | From Kent county line to Escuminac included. | - | - | 30 | 18,000 | 90 |
|  | From Escuminac to Point au Car included.... | - | - | 45 | 27,000 | 135 |
| 3 | From Point au Car to Loggieville included..................... | - | - |  | - | - |
| 4 | From Loggievile to Bartibog included, including the tidal waters of the Miramichi River. | - | - | - | - | - |
| 5 | From Bartibog to Burnt Church included........................ | - | - | 1 | - | - |
|  | From Burnt Church to Tabusintac Gully included.............. | - | - | 1 | 1,000 | 4 |
| 8 | From Tabusintac Gully to Gloucester county line............... | - | - | - | - | - |
| 8 | Northwest and Southwest Miramichi River...................... | - | - | - | - | $\cdots$ |
| 9 | Totals for County. | - | - | 76 | 46,000 | 229 |
|  | Gloucester County- |  |  |  |  |  |
| 10 | From Northumberland county line to Tracadie included....... | - | - | 4 | 3.500 2.500 | 14 |
| 11 | From Tracadie to Inkerman included ............................ | - | - | 2 | 2,500 | 69 |
| 12 | From Inkerman to Shippegan included. ......................... | , | 3 | 15 | 7,800 | 69 |
| 13 | From Shjppegan to Upper Caraquet included... ................ | 1 | 36 | 66 | 50,000 | 422 |
| 14 15 | From Upper Caraquet to Mizonette Point included............ | - | - | 2 | 800 | 8 |
| 15 16 | From Mizonette Point to Glen Anglin included.................. | - | $-$ | - |  | 250 |
| 16 | Islands of Shippegan and Mriscou........................... | - | 10 | 40 | 56,000 | 250 |
| 17 | From Glen Anglin to Bathurst included, including Nepisiguit River. | - | - |  | 5,00 |  |
| 18 | From Bathurst to Beresford included. ............................ | - | - | - | - | - |
| 19 | From Beresford to Petit Rocher included......................... | - | - | - | - | - |
| 20 | From Petit Rocher to Restigouche county line.................. | - | - | - | - | - |
| 21 | Totals for County. | 1 | 49 | 135 | 120, 600 | 770 |
|  | Restigouche County- |  |  |  |  |  |
| 22 | From Gloucester county line to New Mills included............. | - | - | 1 | 600 | 3 |
| 23 | From New Mills to Daihousie included.......................... | - |  | , | 60 | - |
| 24 | From Dalhousie to Restigouche River included................. | - | - | - | - | - |
| 25 | Totals for County. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | - | - | 1 | 600 | 3 |

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part 1. In Primary Operations-con.

II. Agencies of Production, 1928-Part 1. In Primary Operations-con.

II. Agencies of Production, 1928-Part 1. In Primary Operations-con.


|  | Fishing Districts | Boats |  |
| :---: | :---: | :---: | :---: |
|  |  | Sail and Row |  |
|  |  | No. | Value |
| $\begin{aligned} & 1 \\ & 1 \\ & 2 \\ & 3 \\ & 4 \\ & 5 \\ & 6 \\ & 7 \end{aligned}$ | New Brunswick-Inland Fisheries | 311 | 2,272 |
|  | Total Inland Fisheries for Province.. |  |  |
|  | Victoria County.. | 16 | 120 |
|  | Carleton County......... | 50 | 200 |
|  | Surkury County.......... | 40 | 320 |
|  | Queens County...... | 64 | 640 300 |
|  | Kings County............. | 50 | 300 |

II. Agencies of Production, 1928-Part 1. In Primary Operations-con.



Note.-In addition to the above, there were used by anglers in Inland New Brunswick, 270 canoes, valued at $\$ 5,275$, and 2,021 rods and lines, valued at $\$ 15,545$.
II. Agencies of Production, 1928-Part 1. In Pimary Operations-con.

II. Agencies of Production, 1928-Part 1. In Primary Operations-con.

| Boats |  |  |  |  | Carrying Smacks |  |  | Number of men fishing without boats |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sail and Row |  | Gasoline |  | Total Men |  |  |  |  |
| No. | Value | No. | Value |  | No. | Value | Men |  |  |
|  | \$ |  | $s$ | no. |  | \$ | no. |  | no. |  |
| 1,424 | 52,460 | 2,439 | 660,130 | 7,956 | 7 | 3,100 | 14 | 339 | 1 |
| 15 | ${ }_{1}^{600}$ | 10 | 2,000 | ${ }^{28}$ | - | - | - | 75 |  |
| 529 | 14,350 | 19 | 5,700 5,700 | - $\begin{array}{r}95 \\ \hline 144\end{array}$ | - | - | - |  | ${ }^{3}$ |
| 175 | 6,500 | 22 | 2,400 | 1,194 | - | - | - |  | 5 |
| 759 | 22,850 | 66 | 15,350 | 1,661 | - | - | - | 160 | 6 |
| 60 | 2,060 | 50 | 15,000 | 280 | - | - | - | 63 |  |
| 10 52 | $\begin{array}{r}500 \\ 5,200 \\ \hline\end{array}$ | 276 156 | 79,800 46,800 | 625 416 | - | - | - |  |  |
| 26 | 1,170 | 354 | 97, 350 | 709 | - | - | - | - | 10 |
| - |  | 321 | 64,200 | 493 | - | - | - |  |  |
| 148 | 8,930 | 1,157 | 303, 150 | 2,523 | - | - | - |  | 12 |
| $\begin{array}{r}35 \\ \hline 6\end{array}$ | 120 2,600 | 166 | 7,200 49,800 | 78 528 | -4 | 2,000 | -8 |  | 113 |
| 112 | 4.480 600 | 225 <br> 140 | 67,500 42,000 | 899 450 | 1 | 500 | ${ }^{2}$ |  |  |
| 17 | 660 | 150 | 45,000 47 | ${ }_{429}$ | -2 | 600 | -4 |  |  |
| 5 | 200 | 24 | 7, 200 | 82 | - |  | , |  |  |
| 217 | 8,680 | 728 | 218,700 | 2,466 | 7 | 3,100 | 14 | - |  |
| 7 | 280 | 19 | 5,700 | 37 | - | - | - |  |  |
| 60 20 | 1,500 <br> 2,000 | 50 58 | 6,000 17.400 | 135 | - | - | - |  |  |
| 1 | ${ }^{2} 200$ | 73 | 13,600 | 199 | - | - | - |  | 23 |
| 7 | ${ }^{560}$ | 103 | 41.200 | 175 | - | - | - |  | 24 |
| 23 | 1.280 | ${ }_{6}^{94}$ | 24,030 9,000 | $\underline{155}$ | - | - | - |  |  |
| 150 | 6,050 | 457 | 116,930 | 1,080 | - | - | - |  | 27 |
| 140 | 4,200 | 30 | 6,000 | 200 | - | - | - |  | 28 |
| 10 | 1,750 | - | - | 26 | - | - | - |  | 29 |
|  |  |  |  |  |  |  |  |  |  |

II. Agencies of Production, 1928-Part 1. In Primary Operations-con.

II. Agencies of Production, 1928-Part 1. In Primary Operations-con.

II. Agencies of Production, 1928-Part 1. In Primary Operations-con.


|  | Fishing Districts | Steam Tugs |  |  |  | Boats |  |  |  | Fishing Gear |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | Sail and Row |  | Gasoline |  | $\begin{array}{\|c\|} \hline \text { Total } \\ \text { Men } \end{array}$ | Gill Nets |  |
|  |  | No. | Tonnage | Value | Men | No. | Value | No. | Value | No. | Yards | Value |
|  |  | 114 | 2,997 | 766,125 | No. <br> 591 | 1,018 | 58,374 | 959 | 616,848 | 3,534 | 7,269,528 | § |
|  | Totals for Province. |  |  |  |  |  |  |  |  |  |  | 84,452 |
| 2 | Lake of the Woods and Inland waters of Kenora and Rainy River Districts. | 1 | 10 |  |  | 107 | 4,332 | 144 | 77,500 | 309 | 356,235 | 52,974 |
| 3 | Lake Superior................ | 15 | 474 | 66,300 | 100 | 75 | 6,245 | 65 | 32,423 | 301 | 1,091,542 | 94, 529 |
| 4 | North Channel (Lake Huron). | ${ }_{27}^{11}$ | 303 677 | 76,000 213,825 | 50 130 130 | 55 | 4,350 5 5 | $\begin{array}{r}31 \\ 138 \\ \hline 1\end{array}$ | 22,075 98,570 | ${ }_{464} 12$ | 1,453, ${ }^{3980}$ | 51,581 157,896 |
| 5 | Georgian Bay (Lake Huron). | 15 | 678 407 | -96,000 | 130 55 | 114 40 | 2,480 2,48 | 138 80 | 65,625 | 247 | 1, 001 , 888 | 127,584 |
| 7 | Lake St. Clair, River St. Clair and Detroit River | - | - | - | - | 69 | 3,710 | 40 | 13,725 | $12:$ | - | - |
| 8 | Lake Erie and Upper Niagara River. | 36 | 921 | 286,000 | 200 | 151 | 0,235 | 145 | 165,290 | 608 | 1,463,655 | 207,186 |
| 9 | Lake Ontario, Lower Niagara and St. Lawrence Rivers. | - |  | , |  | 227 | 13,421 | 256 | 117,330 | 776 | 1,257,010 | 127,141 |
| 10 | Inland waters-Lake Nipizon. Lake Nipissing, Lake Simcoe, etc., including Ottawa River. | 9 | 202 | 25,500 | 55 | 180 | 8,901 | 57 | 24,310 | 579 | 345,750 | 25,551 |

II. Agencies of Production, 1928-Part 1. In Primary Operations-con.

| Fishing Gear |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Weirs |  | Lines |  | Freezers and Ice Houses |  | Small Fish and Smoke Houses |  |  |
| No. | Value | No. | Value | No. | Value | No. | Value |  |
|  | \$ |  | \$ |  | \$ |  | \$ |  |
| 1,624 | 129,789 | 1,967 | 37,962 | 275 | 35,346 | 215 | 11,442 | 1 |
| 62 | 61,350 | - | - | 38 | 1,525 | - | - | 2 |
| 62 | 5,500 | 4 | 90 | 87 | 9,000 | 82 | 4,200 | 3 |
| 127 | 38, 100 | - | - | 1 | 50 | 3 | 42 | 4 |
| 250 | , 375 | 350 | 350 | 5 | 50 | 50 | 5,000 | 6 |
| 501 | 105.325 | 351 | 440 | 131 | 11,075 | 135 | 9,242 | 7 |
| - | - | 9 | 29 | 4 | 125 | - | - | 8 |
| - | - 230 | 39 800 | . 156 | 2 | 100 | 35 | 175 | 9 |
| 46 | 230 | 800 48 | 3,200 | - | - | - | - | 10 |
| 2 | 820 | - | - | 3 | 2,500 | - | - | 12 |
| - |  | 69 | 40 | - | $\bigcirc$ | - | - | 13 |
| 2 | 8. | 31 138 | 92 | 1 | 80 | - | - | 14 |
| - | - | 138 | 276 | 2 | 375 | - | - | 15 |
| - | - | 11 | 100 | - | $\stackrel{\rightharpoonup}{4}$ | - | - | 16 |
| -7 | $\overline{1 s}$ | [31 | 15 30 | 4 | 425 | $-$ | - | 17 |
| 46 | 960 | 11 | 90 | - 15 | 315 | -2 | 109 | 18 |
| - | - | 41 | 31,585 | - | - | - | - |  |
| 156 | 1,872 | 12 | 25 | - | - | - | - | 21 |
| $-5$ |  | - | - | - | - | 8 | 1,000 | 22 |
| 164 | $\stackrel{28}{28}$ | ${ }^{6} 4$ | 320 305 | - | - | 1. |  | 23 |
| ${ }^{-16}$ | 1,00: | 135 | 335 | 38 | 196 | 17 | 295 | 24 |
| 180 | 7,040 | 20 20 | 200 200 | 1 <br> 8 | 400 2,400 | 4 | -100 | 25 |
| - | - | 10 | 100 | - | 2,400 | - | 100 | 27 |
| - | - | - | - | 41 | 1,280 | - | - |  |
| - | 515 | 11 | 120 | 6 | 175 | 1 | 500 | 29 |
| ${ }_{126}^{63}$ | 5,190 | - | - | 12 | 14,500 | - | - | 30 |
| 126 | 1,00s | 21 | 42 | - | - | 2 | 10 | 31 |
| - | - | 8 | 27 | - | - | 11 | 20 | 32 |
| 17 309 | 150 6,180 | -100 | - 300 | - 7 | 1,400 | - | - | \|33 |
| 1,123 | 24,46! | 1,613 | 37,522 | 144 | 24,271 | 80 | 2,200 | 35 |
|  |  |  |  |  |  | 8 |  |  |


| Fishing Gear |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Seines |  | Pound Nets |  | Hoop Nets |  | Dip and Roll Nets |  | Lines |  | Spears |  | Piers and Wharves |  | Freezers and Ice Houses |  |  |
| Yards | Value | No. | Value | No. | Value | No. | Value | No. | Value | No. | Falue | No. | Value | No. | Value |  |
|  | \$ |  | \$ |  | \$ |  | \$ |  | \$ |  | \$ |  | S |  | S |  |
| 28,788 | 22,851 | 1,225 | 672,788 | 880 | 23,172 | 58 | 890 | 524 | 5,728 | 88 | 1,134 | 35 e | 112,22i | 502 | 301,957 | 1 |
| - | - | 42 | 12,075 | 37 | 1,720 | - | - | - | - | - | - | 93 | 16,480 | 127 | 41,030 | 2 |
| - | - | 52 | 22,950 | - | - | - | - | - | - | - | - | 31 | 8.140 | 21 | 10.455 | 3 |
| - | - | 130 | 62,900 | - | - | - | - | $\bar{\square}$ | - | - | - | 23 | 25,300 | 30 | 15.500 | 4 |
| 1,100 | 1,093 | 86 | 150,000 | 27 | 500 | - | - | 274 | 4,712 | 15 | 564 | 52 | 23,410 | 48 | 31,722 | 5 |
| 1,100 | 1,003 | 123 | 69,350 | , | - | - | - |  | - |  | - | 20 | 6,550 | 45 | 20,150 | 6 |
| 5,895 | 3,482 | 206 | 25,455 | 2 | 300 | - | - | 35 | 172 | - | - | 20 | 3,930 | 33 | 13,275 | 7 |
| 12,900 | 9,896 | 549 | 317,300 | 29 | 510 | 3 | 11 | 34 | 124 | - | - | 61 | 22,010 | 94 | 148,200 | 8 |
| 2,315 | 1,965 | - | - | 560 | 18,510 | 5 | 505 | 128 | 525 | - | - | 31 | - 3,602 | 53 | 10,695 | 9 |
| 6,578 | 6,415 | 37 | 12,750 | 225 | 7,63* | 50 | 374 | 53 | 195 | 73 | 570 | 19 | 2,805 | 51 | 10,930 | 10 |

II. Agencies of Production, 1928-Part 1. In Primary Operations-con.


Note.-In addition to the above, there was equipment used, valued as follows:

|  | a | Saskatchewa |
| :---: | :---: | :---: |
| Under Do | $25,200$ | ,772 |
| By Anglers. | 10,783 | 90,770 |

II. Agencies of Production, 1928-Part 1. In Primary Operations-con.

II. Agencies of Production, 1928-Part 1. In Primary Operations-com.


Note.-In addition to the ahove, there was equipment used in Alberta under domestic license valued at $\$ 133,000$, and under anglers' permits, valued at $\$ 167,000$.
11. Agencies of Production, 1928-Part 1. In Primary Operations-con.

II. Agencies of Production, 1928-Part 1. In Primary Operations-con.

*The province totals show the actual aggregate of the agencies of production in use. Figures for fishing districts show the agencies of production employed in each, and as such agencies in some cases were engnged in several districts, the total number shown in this table exceeds the provincial aggregate.
II. Agencies of Production, 1928-Part I. In Primary Operations-con.

II. Agencies of Production, 1928-Part I. In Primary Operations-con.

*The province totals show the actual aggregate of the agencies of production in use. Figures for fishing districts ahow the agencies of production employed in each and as such agencies in some cases were engaged in several districts, the total number shown in this table exceeds the provincial aggregate.
II. Agencies of Production, 1928-Part 1. In Primary Operations-con.

II. Agencies of Production, 1928-Part 1. In Primary Operations-concluded


* Tbe province totals show the actual aggregate of the agencies of production in use. Figures for fishing districts show the agencies of production employed in each, and as such agencies in some cases were engaged in several distrjcts, the total number shown in this table exceeds the provincial aggregate.
II. Agencies of Production, 1928-Part 1. In Primary Operations-concluded



## II. Agencies of Production, 1928-Part 2. In Fish Canning and Curing (a) General Summary of Statistics


II. Agencies of Production, 1928-Part 2. In Fish Cainning and Curing (a) General Summary of Statistics-con.

| Fuel and Electricity Usad | Value of Materials Used |  |  |  |  | Valua of Products |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Fish | Containers | Salt | Other <br> Materials | Total | Fish Marketad Fresh | Fish, Canned, Cured or otharwise Prepared | Total |  |
| \$ | S | s | S | S | S | 5 | S | 8 |  |
| 494,883 | 15,617, 194 | 4,144,12: | 444, 371 | 322,63\% | 23,3i8, 76 : | 8,275,66 | 27, 992,063 | 36,257,732 | 1 |
| 58,209 | 2,953,754 | 270,375 | 17,316 | 10,301 | 3,254,750 | 1,963.50̆ | 3,258, 875 | 4,523, 434 | 2 |
| 127,389 | 4, 600,771 | 2,898,395 | 50,954 | 123,41! | 7,176,531 | - $339,90^{-}$ | 14, 930,315 | 15,269,249 | 3 |
| 8,109 59,510 | 109,161 | 68, $303.15^{\text {c }}$ | $1{ }_{1}^{1,097}$ | 2,519 131.358 | 181,615 | 3,92 012 | -291,927 | 295,85 | 4 |
| 86,27\% | $0,753,395$ | $53.4,450$ | 335,02f | 121,358 $\mathbf{9 0}$,350 | 7, ${ }^{\mathbf{9} 15,859}$ |  | $4.518,006$ | 1,759,24f | 5 |
| 155,30S | 690,499 | 6S,905 | 23,500 | 14,705 | - 797 , 609 | ,-ト-3,03. | 3,039,05r | 11,089,059 | 7 |
| 13,936 | 451,239 | 62,531 | 2,117 | 562 | 525,468 | 80,2If | 6is, 964 | 725,216 | 8 |
| 13.508 | 447,186 | 61,300 | 1,262 | 472 | 510,22e | 72,615 | 649,81: | 722,43: | 9 |
| 431 | 14,052, | 1,251 | 855 | 9 | 16,249 | 7,630. | 26,145 | 33,7\% | 10 |
| 5,373 | 195,028 | 26,175 | 1,722 | 351 | 223,27i | 24,91* | 306,450 | 331,37! | 11 |
| 2,156 | 72,282 | 9,000 | 114 | - | 81,39\% | 5,616 | 110,64C | 116,28C | 12 |
| 50 | 5,917 | 172 | 105 | - | 6,19i | - | 14,035 | 14,095 | 13 |
| 5.857 | 188,012 | 25,201 | 176 | 211 | 215,603 | 49,69: | 24, 766 | 204,461 | 14 |
| 130,191 | 4,535,158 | 383,174 | 81,748 | 62,918 | 5,069,031 | 3,292,208 | 4,638,191 | 7,939, 705 | 15 |
| 26,983 | 1,733,462 | 129.240 | 12, 1.89 | 4,73 | 1,879,328 | 829,643 | 1,758,283 | 2,587,92- | 16 |
| 1, $\mathrm{S8S}$ | -21,950 | 12, 1297 | 1,073 | 450 | 1,35,079 | 8-9,04- | 1,60,515 | 60,515 | 17 |
| 28,258 | 358,640 | 1,481 | 2,378 | 1,509 | $363,009$ | 2+1,23: | 425,61. | $666,88 \mathrm{I}$ | 18 |
| 42.279 | 2,345,107 | 230,629 | 68,408 | 45,516 | 2,689,66e | 2,221,82? | 2,034,9\%5 | 4,305, ¢04 | 19 |
| 30,802 | 79,990 | - 0,230 | $\rightarrow$ | 10,745 | 2,93,935 | 2,2-1,82, | 303, ${ }^{\text {a }}$ | 303,774 | 20 |
| 801 | 53,221 | 6,501 | 02 | - | 59,81: | 5,7心! | 70,668 | 82,434 | 21 |
| 2,146 | 104, 943 | 11,740 | 20 | 250 | 116,083 | - | 166,416 | 166,410 | 22 |
| 868 | 154,007 | 1,120 | 2.040 | 550 | 157,717 | 1;8,19\% | 82,530 | 230,724 | 23 |
| 1,273 | $50,078$ | 6,55¢ | 908 | - | 57,5t: | 6,193 | 101,04t | 107,237 | 24 |
| 86 | $51,401$ | 100 | 2,907 | - | 54,40s | 40, 105 | 27,508 | 69,613 | 25 |
| 2,865 | 141,400 | 13,221 | 1,793 | 1,140 | 157,55! | 32,166 | 159,188 | 221,35: | 26 |
| 13,862 | 190,329 | 26,130 | 3,931 | 1,386 | 221,726 | 177,60S | 216,752 | 394,360 | 27 |
| 1,62? | 41,688 | 6,298 | 61 | - | 48,047 | 7,400 | 63,466 | 70,866 | 28 |
| 524 | 2,730 | 1,340 | 335 | - | 4,405 | - | 8,700 | 8,700 | 29 |
| 111 | 2,706 | 426 | - | - | 3,132 | 500 | 3,53? | 4,032 | 30 |
| 2,393 | 238,691 | 10,328 | 1,099 | 100 | 250,218 | 141,888 | 181,140 | 323,02S | 31 |
| 2,433 | 98,320 | 5,213 | 154 | - | 103,687 | 4,690 | 135,33i | 140,035 | 32 |
| 34,209 | 624,854 | 24,615 | 4,319 | 2,283 | 656,071 | 350,313 | 716,069 | 1,096,382 | 33 |
| 12,880 | 140,019 | 9,393 | 3,956 | 1,275 | 151,643 | 119,622 | 126,939 | 248,561 | 34 |

## II. Agencies of Production, 1928-Part 2. In Fish Canning and Curing (a) General Summary of Statistics-con.



[^18]
## II. Agencies of Production, 1928-Part 2. In Fish Canning and Curing

 (a) General Summary of Statistics-con.
II. Agencies of Production, 1928-Part 2. In Fish Canning and Curing (a) General Summary of Statistics-concluded

|  | Province and County or District | Jstablishments | Capital | Total of E and Salaries a | oyees <br> ages | Proprietors who regularly perform manual labour in establishments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | . | no. | \$ | no. | 8 | nо. |
| 1 | Quebec-Totals. | 98 | 442,683 | 1,274 | 14],125 | 63 |
| 2 | Lobster canneries. | 61 | 102,295 | 759 | 47,820 | 50 |
| 3 | Salmon canneries.. | ${ }^{6}$ | 675 <br> 838 | 12 | 82 195 | 6 |
| 4 | Fish curing establishments. | 31 | 339,713 | 503 | 92,110 | 7 |
|  | Bonaventure County- |  |  |  | - 1.59 |  |
| 5 | Lobster canneries.... | 4 | 4,000 | 31 | 1.593 | - |
| 6 | Fish curing establishments. | 5 | 85,216 | 18 | 3,550 | 1 |
|  | Gaspe Gounty- |  |  |  |  |  |
|  | Lobster canneries.... | 6 | 23,070 | 140 | 4,868 | 1 |
| 8 | Fish curing establishments............... | 16 | 171,997 | 261 | 57,693 | 4 |
|  | Magdalen Islands- |  |  |  |  |  |
| $1{ }^{9}$ | Lobster canneries........... | 16 9 | 67. 64,400 | 537 179 | 49,347 25,864 | 3 |
| 11 | Saguenay CountyLobster canneries. | 35 | 7,525 | 51 | 1,012 | 46 |
| 12 | Salmon canneries............ | ${ }_{6}^{6}$, |  |  |  |  |
|  | . Fish curing establishments. | 1. | 18.735 | 57 | 5,195 | 8 |
| 13 | Britlsh Columbia-Totals. | 136 | 23,96it 338 | 7,176 | 3,485,356 | 14 |
| 14 | Salmon canmeries. | 61 | 12,476,543 | 5,167 | 2,032,928 | - |
| 15 | Clam canneries. | $2)$ |  |  |  |  |
|  | Fish curing establishments. | 46 | 4,671,102 | 1,277 | 764, 282 | 14 |
| 16 | Reduction plants......... | 27 | 3,813,693 | 732 | 691, 176 | - |
|  | District No.1- |  |  |  |  |  |
| 17 | Salmon canneries...... | 7 | 1,163,544 | 366 | 169,065 | 8 |
| 18 | Fish curing establishments............... | $\cdot 12$ | 1,678,590 | 243 | 231,582 | S |
|  | District No. 2- |  |  |  |  |  |
| 19 | Salmon canneries. ....... . . . . . . . . . . . . . . . . | 39 $1)$ | 8,188,571 | 3,732 | 1,199,180 | - |
| 20 | Fish curing establishments................. | 7 | 3,620,996 | 454 | 431,943 | - |
|  | District No. 3- |  |  |  |  |  |
| 21 | Salmon canneries. | 15 | 3,184,428 | 1,069 | 664.683 | - |
|  | Clam canneries.............................. | $1)$ |  |  |  |  |
| 22 | Fish curing establishments.... . . . . . . . . . . | 27 | $621,756$ | 711 | $281,859$ | -- |
| 23 | Reduction plants........................... | 24 | 2,563,453 | 601 | 510,074 | - |

II. Agencies of Production, 1928-Part 2. In Fish Canning and Curing.
(a) General Summary of Statistics-concluded


## II. Agencies of Production, 1928-Part 2. In Fish Canning and Guring (b) Capital Invested



## II. Agencies of Production, 1928-Part 2. In Fish Canning and Curing (b) Capital Invested-concluded



[^19]
## II. Agencies of Production, 1928-Part 2. In Fish Canning and Curing (c) Employees and Salaries and Wages


II. Agencies of Production, 1928-Part 2. In Fish Canning and Curing (c) Employees and Salaries and Wages

| Employees on Wages |  |  | Contract Labour and Piece Workers |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Male | Female | Total Wages | Male | Female | Total Wages |  |
| no. | no. | \$ | no. | по. | \$ |  |
| 6,836 | 3,743 | 3,539,000 | 2,212 | 2,908 | 869,220 | 1 |
| 2,505 | 3,186 | 469,983 | 23 | 3 | 2,796 | 2 |
| 1,233 | ${ }^{234}$ | 1,063, 775 | 1,911 | 1,63\% | 696,679 | 3 |
| - ${ }_{29}$ | 136 13 | ${ }^{264,498}$ | $1{ }^{5}$ | 189 126 | 16.869 <br> 63,834 | 4 |
| 2,103 | 168 | 1,180,097 | 248 | 28 | 72,280 | 6 |
| 662 | 6 | 593, 767 | 20 | 25 | 15,768 | 7 |
| 552, | 63 | 72,782 | 6 | 6. | 1,106 | 8 |
| 541 | 632 | 73,600 | 5 | 3 | 884 | 9 |
| 11 | 2 | 4,182 | 1 | 3 | 222 | 10 |
| 2,298 | 1,265 | 998,760 | 11 | - | 2,220 | 11 |
| 1,214 | 1,151 | 271,826 | - | - | - | 12 |
| $\begin{array}{r}28 \\ 161 \\ \hline\end{array}$ | 62 13 | 12,765 | - | - | - | 14 |
| 846 | 39 | 556,419 | 11 | - | 2,770 | 15 16 |
| 693 | 990 | 215, 575 | 32 | 269 | 20,349 | 17 |
| $4 \div 0$ | 955 | 77,037 | 18 | - | 1,912 | 18 |
| 125 | 21 | 95, 227 | 12 | 254 | 73,991 | 19 |
| 121 9 | 14 | 39,897 3,690 | $\overbrace{}^{7}$ | $\stackrel{15}{-}$ | 846 | 20 |
| gas | 520 | 123,616 | 44 | - | 1,178 | 22 |
| 310 | 448 | 47,520 | - | - | - | ${ }_{24}^{23}$ |
| 352 | 66 | 73,901 | 44 | - | 1,178 | 25 |
| 2,683 | 334 | 2,123,055 | 2,119 | 1,733 | 7SE, 423 | 26 |
| 1,227 | 228 | 1,063,580 | 1,911 | 1,637 | 696, 679 | 27 |
| 792 604 | 100 6 | $\begin{aligned} & 509,125 \\ & 550,350 \end{aligned}$ | 188 20 | 71 25 | 73,976 | 28 |

II. Agencies of Production, 1928-Part 2. In Fish Canning and Curing (d) Number of Wage-earners by Months

II. Agencies of Production, 1928-Part 2. In Fish Canning and Curing (d) Number of Wage-earners by Months

| May |  | June |  | July |  | August |  | September |  | October |  | November |  | December |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Mrale | Female | Male | $\underset{\mathrm{Fe}}{\mathrm{Fe}}$ | Male | $\mathrm{Fe}-$ male | Male | Femasle | Male | Fe male | Male | $\left\lvert\, \begin{gathered} \mathrm{Fe}- \\ \text { male } \end{gathered}\right.$ | Male | $\mathrm{Fe}-$ male | Male | Female |  |
| no. | по. | no. | по. | по. | no. | $n \mathrm{n}$. | no. | no. | no. | по. | no. | no. | no. | no. | no. |  |
| 5,629 | 3,313 | 6,270 | 3,148 | 4,766 | 910 | 4,414 | 560 | 4,109 | 496 | 3,850 | 369 | 3,100 | 210 | 2,58i | 184 | 1 |
| 2,490 | 3,092 | 2,422 | 2,956 | 689 | 585 | 289 | 249 | 275 | 215 | 253 | 99 | 141 | 13 | 115 | 16 | 2 |
| 1,178 | 74 | 1,320 | 70 | 1,367 | 173 | 1,431 | 201 | 925 | 125 | 678 | 94 | 391 | 18 | 234 | 24 | 3 |
| 62 | 66 | 58 | 60 | 44 | 26 | 31 | 14 | 36 | 27 | 35 | 27 | 45 | 85 | 25 | 60 | 4 |
| 244 | 12 | 212 | 12 | 276 | 14 | 273 | 11 | 299 | 12 | 285 | 13 | 270 | 11 | 284 | 21 | 5 |
| 1,138 | 64 | 1,503 | 45 | 1,578 | 106 | 1,498 | 79 | 1,747 | 111 | 1,919 | 130 | 1,836 | 83 | 1,646 | 63 | 6 |
| 517 | 5 | 755 | 5 | 812 | 6 | 892 | 6 | 912 | 6 | 680 | 6 | 417 | - | 281 | - | 7 |
| 558 | 629 | 548 | 608 | 23 | - | 32 | 20 | 32 | 22 | 26 | 22 | 6 | - | 4 | -- | 8 |
| 556 | 629 | 542 | 608 | 10 | - | 19 | 20 | 19 | 20 | 14 | 20 | - | - | - | - | 9 |
| 2 | - | 6 | - | 13 | - | 13 | - | 13 | 2 | 12 | 2 | 6 | - | 4 | - | 10 |
| 2,148 | 1,200 | 2,322 | 1,198 | 1,579 | 281 | 1,140 | 91 | 1,213 | 104 | 1,196 | 102 | 1,268 | 117 | 1,319 | 101 | 11 |
| 1,312 | 1,154 | 1,271 | 1,140 | 434 | 223 | 161 | 44 | 157 | 34 | 164 | 26 | 139 | 11 | 115 | 16 | 12 |
| 23 | 30 | 23 | 30 | 17 | 15 | 8 | 4 | 13 | 22 | 13 | 17 | 20 | 47 | 8 | 23 | 13 |
| 128 | 12 | 121 | 12 | 185 | 14 | 145 | 11 | 172 | 12 | 168 | 13 | 172 | 11 | 209 | 21 | 14 |
| 646 | 4 | 865 | 16 | 891 | 29. | 778 | 32 | 816 | 36 | 806 | 46 | 900 | 48 | 946 | 41 | 15 |
| 39 | - | 42 | - | 52 | - | 48 | - | 55 | - | 45 | - | 37 | - | 41 |  | 16 |
| 573 | 885 | 530 | 837 | 274 | 17) | 358 | 199 | 345 | 169 | 282 | 61 | 144 | 2 | 106 | 1 | 17 |
| 337 | 862 | 328 | 817 | 57 | 103 | 109 | 185 | 99 | 161 | 75 | 53 | - | - | - | - | 18 |
| 142 | 13 | 116 | 10 | 118 | 11. | 151 | 10 | 148 | 3 | 135 | 4 | 115 | 2 | 84 |  | 119 |
| 94 | 10 | 78 | 10 | 91 | 3 | 89 | 4 | 90 | 5 | 64 | 4 | 26 | - | 22 | - | 20 |
| 502 | 480 | 660 | 409 | 592 | 328 | 335 | 22 | 290 | 29 | 192 | 27 | 90 | 9 | - | - | 22 |
| 285 | 447 | 280 | 391 | 188 | 259 | - | - | $\cdots$ | - | - | - | 2 | 2 | - | - | 23 |
| 217 | $\stackrel{7}{4}$ | ${ }^{6} 4$ | ${ }_{12}^{6}$ | [68989 | ${ }_{6}^{6}$ | - | $\overline{2}$ | -290 | $\overline{-7}$ | $\overline{192}$ | $\overline{27}$ | $-88$ | 7 | - | - | $\left\lvert\, \begin{aligned} & 24 \\ & 25\end{aligned}\right.$ |
| 1,818 | 108 | 2,210 | 96 | 2,298 | 184 | 2,549 | 228 | 2,314 | 172 | 2,154 | $15 \%$ | 1,592 | 82 | 1,156 | 82 | 26 |
| 1,178 | 74 | 1,314 | 64 | 1,301 | 164 | 1,431 | 201 | 925 | 125 | 678 | 94 | 391 | 18 | 234 | 24 | 27 |
| 182 | 30 | 190 | 27 | 185 | 11 | 283 | 21 | 540 | 41 | 849 | 57 | 824 | 6.4 | 682 | 58 | 28 |
| 478 | 5 | 806 | 5 | 75. | 6 | 85 | - | 84 | 6 |  |  |  |  |  | - | 29 |

## II. Agencies of Production, 1928-Part 2. In Fish Canning and Curing (e) Quantity and Value of Fuel Used


II. Agencies of Production, 1928-Part 2. In Fish Canning and Curing (e) Quantity and Value of Fuel Used-concluded

| Gasoline |  | Petroleum Distillate |  | Fuel Oil |  | Wood |  | $\begin{aligned} & \text { Elec- } \\ & \text { tricity } \end{aligned}$ | Other Fuel | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Qunntity | Value | Quantity | Value | Quantity | Value | Quantity | Value | Value | Value | Value |  |
| gal. | S | gal. | \$ | gal. | S | cord | S | S | \$ | S |  |
| 74,034 | 20,66s | 8,56.t | 1,837 | 2,014,395 | 125,382 | 8,062 | 4, 151 | 43,347 | 6,407 | 491,88\% | 1 |
| 24,515 | 7,608 | - - | - | 214 | 72 | 3,637 | 19,11? | 19 | 40 | 58,299 | 2 |
| 16,080 | 4,278 | 5,491 | 1,20¢ | 439,236 | 28,392 | 2,434 | 14,170 | 1,195 | 611 | 127,389 | 3 |
| 7, 297 | 1,755 <br> 88 | - | - | 27,400 | 10,75t | 284 8 | 1,069 <br> 69 | 170 <br> - | 300 130 | 8,109 59,510 | 4 |
| 13,403 | 4,353 | 2,893 | 595 | 89,149 | 7,785 | 1,687 | 13,642 | 27,466 | 4,561 | 86,272 | 6 |
| 11,622 | 2,582 | 180 | 36 | 1,458,396 | 78,389 | , 12 | 89 | 14,497 | 765 | 155,308 | 7 |
| 1,881 | 650 | - | - | 1,923 | 230 | 1,286 | 6, 250 | 10 | - | 13,939 | 8 |
| 1.851 | 639 | - | - | - - | - | 1,268 | 6,470 | - | - | 13,50S | 9 |
| 30 | 11 | - | - | 1.923 | 290 | 18 | 90 | 10 | - | 431 | 10 |
| 22,501 | 6, 525 | - | - | 32,162 | 4,533 | 1,619 | 10,484 | 11, 119 | 3,7\%0 | 130,191 | 11 |
| 17,684 | 5,360 | - | - | 214 | T2 | 733 | 3,857 | 19 | 25 | 26,963 | 12 |
| 886 | 244 | - | - | -- | - | 8 | 46 | 60 | 300 | 1,888 28,259 | 13 |
| 4,091 | 1,180 | - | - | 31,948 | 4,461 | 863 | 6,453 | 4,489 | 3,445 | 42,279 | 15 |
| 140 | , 35 | - | - | - |  | 7 | 59 | 6,851 |  | 30,802 | 16 |
| 7,291 | 1,772 | - | - | 27,400 | 10,754 | 1,645 | 9,555 | 51 | 258 | 49,476 | 17 |
| 2,931 | 898 | - | - | - | - | 1,358 | 7,407 | - | - | 10,798 | 18 |
| 833 | 233 | - | - | 27,400 | 10,754 | 62 | 284 | $\overline{5}$ | 130 | 35.297 | 19 |
| 1,621 | 455 | - | - |  | - | 225 | 1, 866 | 51 | 128 | 3,055 396 | 20 |
| 1,708 | 191 | - | - | - | - | - | - |  |  | 35 | 2 |
| 5,316 | 2,351 | - | - | - | - | 747 | 5,531 | - | 228 | 14,505 | 22 |
| 2,0:20 | 711 | - | - | - | - | 278 | 1,378 | - | 15 | 7,030 | 33 |
| - | - | - | - | . - | - | 33 | \% 172 | - | -213 | 7,303 | 25 |
| 36,745 | 9,061 | 8,361 | 1,837 | 1,952,910 | 109,815 | 2,765 | 16,019 | 31,86i | 2,151 | 286,776 | 26 |
| 16,980 | 4,278 | 5,491 | 1,206 | 439,236 | 28,392 | 2,396 | 13,998 | 1,195 | 611 | 127,217 | $2 i$ |
| 10,186 | 2,427 | 2,893 | 595 | 55,278 | 3,034 | 364 | 1,991 | 23,023 | 775 | 35,449 | 28 |
| 9,579 | 2,356 | 180 | 36 | 1,458,396 | 78,389 | 5 | 30 | 7,646 | 765 | 124,110 | 29 |

## II. Agencies of Production, 1928-Part 2. In Fish Canning and Curing (f) Power Equipment



## II. Agencies of Production, 1928-Part 2. In Fish Canning and Guring (g) Time in Operation and Hours Worked

| Province | Total Number ot Establishments | Number of Establishments operating during the year |  |  |  |  | Number of wage-earners working in month of highest employment |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{gathered} \text { Less } \\ \text { than } \\ 60 \text { days } \end{gathered}$ | $\left\|\begin{array}{c} \text { From } \\ 60 \text { to } \\ 119 \text { days } \end{array}\right\|$ | $\left\|\begin{array}{c} \text { From } \\ 120 \text { to } \\ 179 \text { days } \end{array}\right\|$ | $\left\{\begin{array}{c} \text { From } \\ 180 \text { to } \\ 239 \text { days } \end{array}\right.$ | $\begin{gathered} 240 \text { days } \\ \text { and } \\ \text { over } \end{gathered}$ | 8 hours per day or less | $\begin{gathered} 9 \\ \text { hours } \end{gathered}$ | $\begin{gathered} 10 \\ \text { hours } \end{gathered}$ | Over <br> 10 <br> hours |
|  |  | no. | no. | no. | по. | no. | no. | no. | $n 0$. | no. |
| Canada-Totals. | 713 | 293 | 192 | 114 |  | 67 | 329 | 121 | 251 | 10 |
| Lobster canneries. | 375 | 243 | 108 | 5 | 9 | 10 | 193 | 42 | 136 | 4 |
| Salmon canneries. | 67 | 19 | 15 | 18 | 9 | 6 | 24 | 39 | 4 | - |
| Clam canneries... | 22 | 8 | 6 | 3 | 2 | 3 | 10 | 4 | 8 | - |
| Sardine and other fish canneries. | 5 | - | - | 1 | 3 | 1 | 3 | $\overline{28}$ | $8{ }^{2}$ | 4 |
| Fish curing establishments. | 204 | 20 3 | 53 | 70 | 20 | 41 6 | 84 15 | 28 8 | 86 | 2 |
| Reduction plants. | 40 | 3 | 10 | 17 |  | 6 | 15 | 8 | 15 | 2 |
| Prince Edward Island-Totals. | 108 | 66 | 39 | 3 | - | - | 59 | 5 | 44 | - |
| Lobster canneries. | 103 | 63 | 39 | 1 |  | - | 56 | 5 | 42 | - |
| Clam canneries.......... | 3) |  |  |  |  |  |  |  |  |  |
| Fish curing establisbments. | 2) | . | - | 2 | -- | - | 3 | - | 2 | - |
| Nova Scotia-Totals. | 219 | 69 | 47 | 36 | 25 | 42 | 67 | 54 | 96 | 2 |
| Lobster canneries. | 112 | 60 | 30 | 4 | 8 | 10 | 30 | 32 | 50 | - |
| Clam canneries.. | 8 | 2 | 1 | 1 | 2 | 2 | 1 | 3 | 4 | - |
| Other fish canneries. | 8 | - | $-$ | - | $\stackrel{2}{13}$ | 1 | $\stackrel{1}{2}$ | $-18$ | 1 | - |
| Fisb curing establishments | 88 | 6 | 15 | 28 | 13 | 26 3 | 30 4 | 18 | 38 3 | - |
| Reduction plants... | 8 | 1 | 1 | 3 |  | 3 | 4 | 1 | 3 | - |

## II. Agencies of Production, 1928-Part 2. In Fish Canning and Curing

(f) Power Equipment

| $\begin{aligned} & \text { Total } \\ & \text { Primary } \\ & \text { Power } \end{aligned}$ |  | Electric Motons operated by purchased power |  | Total <br> Power Equipment |  | Electric operated b generat primary | tors <br> power <br> by <br> wer | Total Electric Motors |  | Boilers |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| no. | h.p. | no. | h.p. | no. | h.p. | no. | h.p. | no. | h.p. | no. | h.p. |  |
| 900 | 9,907 | 88 | 1,959 | 988 | 11,866 | 67 | 849 | 155 | 2,808 | 335 | 17,749 | 1 |
| 350 | 1,023 | 3 | 9 | 353 | 1,032 | 1 | 10 | 4. | 19 | 167 | 3,385 | 2 |
| 280 | 4,180 | 8 | 267 | 288 | 4,447 | 16 | 255 | 24 | 522 | 72 | 6,866 | 3 |
| 20 | 197 | 10 | 30 | 30 | 227 | - | $-$ | 10 | 30 | 12 | 305 | 4 |
| 18 | 494 | $-$ | - | .18 | 494 | 19 | 105 | 19 | 105 | 10 | 767 | 5 |
| 140 | 1,587 | 52 | 1,383 | 192 | 2,970 | 18 | 129 | 70 | 1,512 | 15 | 898 | 8 |
| 92 | 2,426 | 15 | 270 | 107 | 2,696 | 13 | 350 | 28 | 620 | 59 | 5,528 | 7 |
| 99 | 277 | 1 | 1 | 100 | 278 | - | - | 1. | 1 | - 57 | 938 | 8 |
| 97 | 250 | - | - | 97 | 250 | - | - | - | - | 56 | 923 | 9 |
| 2 | 27 | 1 | 1 | 3 | '28 | - | - | 1 | 1 | 1 | 15 | 10 |
| 212 | 1,763 | 26 | 295 | 238 | 2,058 | 22 | 157 | 48 | 452 | 100 | 2,882 | 11 |
| 139 | 431 | 3 | 9 | 142 | 440 | - | - | 3 | 9 | 72 | 1,396 | 12 |
| 6 | 37 | 1 | 5 | 7 | 42 | - | - | 1 | 5 | 5 | 1,86 | 13 |
| $\checkmark 3$ | 165 | - | - | 3 | 165 | ${ }^{6}$ | 36 | 6 | 36 | 3 | 310 | 14 |
| 57 | 1,047 | 15 | 191 | 72 | 1,238 | 16 | 121 | 31 | 312 | 11 | 768 | 15 |
| 7 | 83 | 7 | 90 | 14 | 173 | - | - | 7 | 90 | 9 | 322 | 16 |
| 129 | 792 | 1 | 3 | 130 | 795 | 14 | 79 | 15 | 82 | 38 | 1,273 | 17 |
| 77 | 211 | - | - | 77 | 211 | 1 | 10 | 1. | 10 | 23 | 616 | 18 |
| 26 | 471 | - | , | 26 | 471 | 13 | 68 | 13 | 69 | 11 | 577 | 19 |
| 22 | 93 | 1 | 3 | 23 | 96 | - | - | 1 | 3 | 2 | 40 | 20 |
| 4 | 17 | - | - | 4 | 17 | - | - | - | - | 2 | 40 | 21 |
| 67 | 268 | - | - | 67 | 268 | - | - | - | - | 17 | 515 | 22 |
| 37 | 131 | - | - | 37 | 131 | - | - | - | - | 16 | 450 | 23 |
| - | - | - | - | - | - | - | - | - | - | - | - | 24 |
| 30 | 137 | - | - | 30 | 137 | - | - | - |  | 1 | 65 | 25 |
| 393 | 6,807 | 60 | 1,660 | 453 | 8,467 | 31 | 613 | 91 | 2,273 | 123 | 12,141 | 26 |
| 280 | 4,180 | 8 | 267 | 288 | 4,447 | 16 | 255 | 24 | 522 | 72 | 6,866 | 27 |
| 32 | 301 | 44 | 1,213 | 76 | 1,514 | 2 | 8 | 46 | 1,221 | 3 | 109 | 28 |
| 81 | 2,326 | 8 | 180 | 89 | 2,506 | 13 | 350 | 21 | 530 | 48 | 5,166 | 29 |

## II. Agencies of Production, 1928-Part 2. In Fish Canning and Curing (g) Time in Operation and Hours Worked-concluded

| Province | $\begin{gathered} \text { Total } \\ \text { Number } \\ \text { of } \\ \text { Establish- } \\ \text { ments } \end{gathered}$ | Number of Establishments operating during the year |  |  |  |  | Number of wage-earners working in month of highest employment |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{gathered} \text { Less } \\ \text { than } \\ 60 \text { days } \end{gathered}$ | $\begin{gathered} \text { Frorn } \\ 60 \text { to } \\ 119 \text { days } \end{gathered}$ | $\begin{gathered} \text { From } \\ 120 \text { to } \\ 179 \text { days } \end{gathered}$ | $\left\|\begin{array}{c} \text { From } \\ 180 \text { to } \\ 239 \text { days } \end{array}\right\|$ | $\left[\begin{array}{l} 240 \text { days } \\ \text { and } \\ \text { over } \end{array}\right.$ | $\left\|\begin{array}{c} 8 \text { hours } \\ \text { per dey } \\ \text { or less } \end{array}\right\|$ | $\left\|\begin{array}{c} 9 \\ \text { hours } \end{array}\right\|$ | $\left\|\begin{array}{c} 10 \\ \text { hours } \end{array}\right\|$ |  |
|  |  | по. | по. | по. | no. | no. | no. | по. | no. | по. |
| New Brunswick-Totals.. | 152 | 81 | 43 | 19 |  |  | 82 |  | 56 | 4 |
| Lobster canneries.. | 99 | 74 | 24 | - | 1 | - | 58 | 4 | 33 | 4 |
| Clam canneries.... | $\left.\begin{array}{l}9 \\ 2\end{array}\right\}$ | 2 |  | 3 |  | 1 | 6 |  |  | - |
| Sardine canneries Fish curing establishments. | 37 | 4 | 15 | 13 | 1 | 4 | 16 | 3 | 18 | - |
| Reduction plants....... | 5 | 1 |  | 3 | 1 |  | 2 | 2 | 1 |  |
| Quebec-Totals. | 98 | 52 | 24 | 15 | 5 | 2 | 61 | 1 | 36 | - |
| Lohster canneries.... | 61 | 46 | 15 | - | - | - | 49 | 1 | 11 | - |
| Salmon canneries. Fish curing establishments. | 31 | 6 | 9 | $\overline{15}$ | 5 | 2 | 6 6 | - | 25 | - |
| British Columbla-Totals. | 136 | 25 | 39 | 1 | 13 | 18 | 60 | 51 | 9, | 4 |
| Salmon canneries. | 61 | 13 | 15 | 18 | 9 | 6 | 18 | 39 | 4 | - |
|  | ${ }_{46}{ }^{2}$ | 11 | 15 | 12 | 1 | 9 | 33 | 7 |  |  |
| Reduction plants.......... | 27 | 1 | 9 | 11 | 3 | 3 | 9 | 5 | 11 | 2 |

II. Agencies of Production, 1928-Part 2. In Fish Ganning and Curing (h) Classification of Establishments According to Value of Production

II. Agencies of Production, 1928-Part 2. In Fish Canning and Curing
(i) Classification of Establishments According to Number of Employees

| Province | Total number of establishments | Establishments |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Employing less than five persons | Employing five persons and over | $\begin{aligned} & \text { Having } \\ & \text { no } \\ & \text { employees } \end{aligned}$ |
|  | no. | no. | no. | no. |
| Canada-Totals. | 713 | 15: | 503 | 36 |
| Lobster canneries.. | 375 | 72 | 285 |  |
| Salmon canneries.. | 67 | 4 | 61 | 2 |
| Clam canneries.............. | $\stackrel{23}{5}$ | 11 | 10 | 1 |
| Fish euring establishments...... | $20 \pm$ | 7 | 114 | 13 |
| Reduetion plamts...... | 40 | 8 | 30 | 2 |
| Prince Edward Lsland-Totals.... | 108 | 35 | 72 | 1 |
| Lobster canneries. | 103 | 26 | 76 | 1 |
| Fish euring establishments. | $\left.\begin{array}{l} 3 \\ 2 \end{array}\right\}$ | 4. | 1 | - |
| Nova Scotia-Totals. | 219 | $5:$ | 152 | 5 |
| Iobster canneries... | 112 | 4 | 108 |  |
| Other fish eanneries.. | 8 | 3 | 4 2 | 1 |
| Fish curing establishments. | 88 | 45 | 40 | 3 |
| Reduction plants.... | 8 |  | 3 | 1 |
| New Brunswick-Totals. | 152 | 52 | 91 | 9 |
| Lobster eanneries.. | 99 | 22 | 77 | - |
| Sardine canneries. | $\left.{ }_{2}\right\}$ | 6 | 5 |  |
| Fish curing establishments. | 37 | 20 | 9 | 8 |
| Reduction plants........... | 5 | 4 |  |  |
| Quebee-Totals. | 98 | 28 | 50 | 20 |
| Lobster canneries...... | 61 | 20 | 24 | 17 |
|  | ${ }_{31}^{6}$ | 4 | $\overline{20}$ | 2 |
| British Columbia-Totals. | 136 | \% | 128 |  |
| Salmon canneries................ | 61 | - | 61 | - |
| Clam canneries. <br> Fish curing establishanents | $\left.\begin{array}{c}2 \\ 46\end{array}\right\}$ | 7 | 40 | 1 |
| Reduction plants.................. | 27 | - | 27 | - |

II. Agencies of Production, 1928-Part 2. In Fish Canning and Curing
(j) Classification of Establishments According to Form of Organization


# III. SPEGIAL TABLES OF IMPORTS AND EXPORTS, BOUNTIES, Etc. 

III. (1) Statement showing the Salmon-pack ${ }^{1}$ of the Provinces of British Columbia, by Districts and Species, from 1918 to 1928, inclusive. (From reports of B.C. Salmon Canners' Association)

| Species | 1918 | 1919 | 1920 | 1921 | 1929 | 1923 | 1924 | 1925 | 1926 | 1927 | 1028 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | cases | cases | cases | cascs | cascs | cases | cases | cases | cases | cases | cases |

FRISER RIVER

| Sockey | 16,849 | 29,628 | 44,598 | 35,900 | 48,744 | 29,423 | 36,200 | 31,523 | 83,598 | 57,056 | 26,530 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Springs, red | 15,192 | 14,519 | 19,601 | 11,360 | 10,561 | 3,854 | 2,982 | 5,695 | 9,710 | 5,032 | 397 |
| Springs, standar |  | , | , 392 | 5,949 | 2,433 | 664 | 592 | 2,294 | 3,073 | 2,893 | 776 |
| Springs, white. | 24,853 |  | ,392 | 5,949 | 3,867 | 3,615 | 4,056 | 27,701 | 20,169 | 10,528 | 3,309 |
| Blueback | 4,39] | 15,9:11 | 4,522 | 1,331 | 817 | 15 | 1,822 | 5,152 | 13,776 | 10,658 | 795 |
| Cohoes | 40,111 | 39,253 | 22,934 | 29,978 | 23,587 | 20,173 | 21,401 | 36,717 | 21,783 | 24,079 | ? 7,081 |
| Pinks. | 18,388 | 39,363 | 12,839 | 8,178 | 29.578 | 63,645 | 31,988 | 99,800 | 32,256 | 102, 536 | 2,881 |
| Chums | 86,215 | 15,718 | 23,884 | 11,223 | 17,895 | 103,248 | 109,495 | 66,111 | 88,495 | 67,259 | 193,106 |
| Total | 205,033 | 158, 718 | 132,860 | 103, 714 | 137,452 | 224,637 | 208,516 | 272,993 | 2J2,860 | 2S0,041 | 255,453 |

SKEENA RIVER

| Sockeyes | 123,322 | 184,945 | 30,869 | 41,018 | 100,667 | 131,721 | 144,747 | 81,146 | 82,360 | 83,996 | 34,559 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Springs, red | 16,013 | 19,661 | 37,403 | 18,599 | 7,080 | 8,863 | 9,366 | 15,978 | 13,377 | 11,955 | 3,717 |
| Springs, standa |  | 6,280 | 5,321 | 3,167 | $\{5,591$ | 2,885 | 1,301 | $\frac{2}{5} 227$ | 4,975 | 5,681 | 1,979 |
| Springs, white. | 6,828 | 6,280 | 5,321 | 3,107 | ( 1,805 | 499 | 1,301 | 5,240 | 2,242 | 1,402 | 724 |
| Steelheads. | 4,994 | 2,672 | 1,218 | 498 | 1,050 | ${ }^{418}$ | 214 | 70 | 754 | ${ }^{589}$ | 20.911 |
| Cohoes | 38,759 | 36,559 | 18,068 | 45,033 | 24,699 | 31,967 | 26,968 | 39,168. | 30,208 | 26,326 | 30,194 |
| Pinks. | 161,727 | 117,303 | 177,679 | 124,457 | 301,655 | 145,973 | 181,313 | 130,079 | 210. 081 | 38,768 | 209,379 |
| Chums | 22,573 | 31,457 | 3,834 | 1,993 | 39,758 | 16,527 | 25,588 | 74,308 | 63,527 | 19,006 | 17,716 |
| Total. | 374,216 | 398,877 | 334,392 | 234,265 | 482,305 | 338,363 | 390,858 | 318, 858 | 407,521 | 187,716 | 208,709 |

RIVERS INLET

| Sockeyes | 53,401 | 56,258 | 121,254 | 46,300 | 60,700 | 112,350 | 91,760 | 171,510 | 74,628 | 87,143 | 60,044 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Springs, red | 957 | 967 | 1,522 | 364 | 216 | 230 | 153 | 113 | 81 | 238 | 51 |
| Springs, standa | - | 475 | 271 | - | 69 | 269 | 261 | 331 | 581 | 510 | 124 |
| Springs, white. | 452 |  | 271 | - | 38 | 100 | 131 | 52 | 135 | 209 | 203 |
| Steelheads |  | 2 | - | 97 | 82 |  | - | - | 11 | 17 | 7 |
| Cohoes | 12,074 | 9,038 | 2,908 | 4,718 | 1,120 | 1,526 | 1,980 | 4,946 | 7,450 | 5,08: | 868 |
| Pinks. | 29,542 | 6,538 | 25,647 | 5,305 | 24,292 | 10,057 | 15,105 | 8,625 | 13,504 | 1,403 | 16,546 |
| Chums. | 6,729 | 7,089 | 1,226 | 173 | 311 | 3,242 | 4,924 | 11,510 | 11,758 | 3,727 | 3,594 |
| Total. | 103,15\% | 80,36: | 152,828 | 56,953 | 85, 528 | 127,784 | 114,314 | 197,08: | 108,148 | 98,331 | 81,525 |

SMITH'S INLET²

| Sockeyes.. | - | - | - | - | - | - | - | - | - | - | 28,831 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Springs, red... | - | - | - | - | - | - | - | - | - | - | 30 |
| Springs, standard | - | - | - | - | - | - | - | - | - | - | 78 |
| Springs, white... | - | - | - | - | - | - | - | - | - | - | 178 |
| Steelheads.. | - | - | - | - | - | - | - | - | - | - | - |
| Cohoes..... | - | - | - | - | - | - | - | - | - | - | $\stackrel{230}{167}$ |
| Pinks... Chums. | - | - | - | - | - | - | - | - | - | - | 161 19 |
| Tctal. | - | - | - | - | - | - | - | - | - | - | 29,539 |

NAAS RIVER

| Sockey | 21,816 | 28,259 | 16,740 | 9,364 | 31,277 | 17,821 | 33,590 | 18,945 | 15,929 | 12,026 | 5,540 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Springs, red | 2,332 | 2,408 | 3,586 | 1,431 | 1,466 | 2,522 | 2,142 | 3,067 | 4,616 | 3,158 | 937 |
| Springs, standa |  | 1,16 | 1,271 | 657 | 341 | 457 | 208 | 298 | 751 | 387 | 609 |
| Springs, white. | 1,820 | 1,10 | 1,271 | 057 | 255 | 335 | 375 | 392 | 597 | 279 | 307 |
| Steelheads | 1,305 | 789 | 560 | 413 | 235 | 595 | 1,035 | 245 | 375 | 96 | 6 |
| Cohoes. | 17,061 | 10,900 | 3,700 | 8,236 | 3,533 | 7.894 | 6,481 | 8,027 | 4,274 | 3,966 | 10,734 |
| Pinks | 59,206 | 29,940 | 43,151 | 29,488 | 75,687 | 4.2,165 | 72,496 | 35,530 | 50,815 | 16,609 | 83,183 |
| Chums. | 40,368 | 24,041 | 12,145 | 2,176 | 11,277 | 25,791 | 26,612 | 22,504 | 15,392 | 3,307 | 3,538 |
| Tota | 143,908 | 97,512 | 81,153 | 51,765 | 124,071 | 99,580 | 142,939 | 89,008 | 92, 719 | 33,828 | 101,577 |

[^20]III. (1) Statement showing the Salmon-pack ${ }^{1}$ of the Province of British Columbia, by Districts and Species, from 1918 to 1928, inclusive. (From reports of B.C. Salmon Canners' Association)-concluded

| Species | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | 1927 | 1928 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | cases | cases | cascs | cases | cases | cases | eases | cases | cases | cases | cascs |

QUEEN CHARIOTTE ISIANDS:


YANCOUYER ISLAND


OUTLYING DISTRICTS

| Sockeyes | 51,950 | 54,6i7 | 67, 15 c | 20,665 | 39,991 | 29,084 | 44,057 | 70,737 | 52,62s | 38,330 | 30,983 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Springs, red | 5,581 | 7,145 | 8,101 | 2,281 | 1,124 | 1,975 | 2,829 | 1,091 | 899 | 1,946 | 639 |
| Springs, standard |  | ) 7,618 | 532 | 2,714 | 3,421 | 543 | 933 | 2,683 | 1,465 | 2,350 | 579 |
| Springs, white. | 3,002 | ) 7,018 | 532 | 2,74 | 443 | 193 | 483 | 945 | 72 C | 1,115 | 860 |
| Bluebacks and steelheads. ................... | 1,097 | 767 | 3,721 | 2,790 | 409 | 732 | 497 | 1,520 | 1,002 | 965 | 603 |
| Cohoes. | 42,331 | 34, 936 | 33,807 | 18,203 | 31,331 | 28,709 | 26,031 | 38,112 | 43,467 | 39,598 | 50,606 |
| Pinks | 201, 847 | 110,300 | 247,149 | 14,818 | 113,824 | 146,611 | 141,878 | 118,107 | 170,731 | 35,474 | 270,914 |
| Chums | 90,46a | 165,717 | 30,946 | 21,412 | 80,485 | 120,900 | 195,357 | 229,240 | 180,363 | 147,251 | 269,336 |
| To | 306,212 | 381,163 | 398,412 | 32,883 | 271,023 | 323,846 | 412,085 | 162, 435 | 469,281 | 267, 023 | 621, 320 |

TOTAL SALMON-PACK ${ }^{1}$ BY SPECIES


TOTAL SALMON-PACK BY DISTRICTS

Fraser River
Slicena River
Rivers Inlet.
Smith's Inlet
Nazs River.
Queen Charlotte Ishands
Fancouver Island.......
Outlying Districts...
Total.

[^21]
## III. (2) Imports and Exports of Fish and Fishery Products

Statement showing the Quantities and Values of Fish and Fishery Products Imported into Canada for Consumption during the Calendar years, 1927 and 1928.
(Compiled by the External Trade Branch)

| Classification | 1927 |  | 1928 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Quantity | Value | Quantity | Value |
|  |  | \$ |  | \$ |
| Fish and Fishery Produets-Fish- |  |  |  |  |
|  |  |  |  |  |
|  | 6,000 | 74 | - | - |
| Dried................................................ $\mathrm{l}_{\text {b }}$ | 8,291,175 | 388,289 | 4,920,998 | 261,446 |
| Fresh............................................lb. | 903,952 | 32,958 | 1,049,090 | 38,609 |
| Smoked.,.......................................lb. ${ }_{\text {Wh }}$ | 35,086 | 4,714 | 17,540 | 2,427 |
|  | 3,710,396 | 137,761 | 3,465,419 | 131,478 |
| Halibut, fresh........................................ ${ }^{\text {Herrings, canned...........................ib. }}$ | 1,815,146 | 194,571 | 1,524,497 | 153,809 |
|  | 888, 605 | 95, 037 | 1,031, 047 | 114,019 |
|  | 6, ${ }^{1024,938}$ | 283,574 | 5, 848,949 | 2,734 294,693 |
| Herrings, smoked......................................ib. | 380,799 | 33, 837 | 579,237 | 58,441 |
| Live fish and fish eggs for propagating purposes. |  | 5,353 |  | 23,162 |
| Lobsters, canped, n.o.p.................................ib. | 5,376 | 1,983 | 122,191 | 54,162 |
| Lobsters, fresh.......................................b. ${ }^{\text {b }}$ | 3,894 | 2,158 | 28,225 | 5,306 |
| Mackerel, fresh...................................... 1 l b. | 84,348 | 7,428 | 91,624 | 8,825 |
| Mackerel, pickled.......................................lb. | 100 |  |  | 15 |
| Oysters, canned, in cans not over one pint. ..............can Oysters, canned, in cans over one pint but not over | 206,850 | 28,798 | 291,036 | 46,847 |
| one quart.........................................can | 867 | 577 | 1,596 | 959 |
| Oysters, canned, in cans exceeding one quart...........at. | 2,063 | 1,729 | 3,471 | 3,049 |
| Oysters, in the shell................................ bbl. | 1,981 | 18,804 | 2,227 | 21,210 |
| Oysters, shelled, in dulk...............................al. | 122,921 | 316,444 | 136,797 | 350,572 |
| Oysters, prepared or preserved, n.o.p................ Oysters, seed and breeding imported for the purpose | 19,221 | 14,392 | 20,289 | 15,850 |
|  |  | 4,328 |  | 4,644 |
| Salmon, canned, prepared or preserved, n.o.p............iib. | 174,157 | 29,068 | 411,672 | 68,252 |
| Salmon, fresh......................................bb. | 900,118 | 108,892 | 789, 247 | 110, 121 |
| Salmon, piekled or salted.............................lb. | 337,779 | 24,410 | 236,704 | 16,667 |
| Salmon, smoked..................................... ${ }^{\text {b }}$ | 23,225 | 7,819 | 23,223 | 6,433 |
| Sardines, anchovies, sprats, and other fish, paeked in tin boxes weighing- |  |  |  |  |
| Over 20 but not over 36 ounces each............... box | 9,050 | 3,923 | 18,456 | 9,373 |
| Over 12 but not over 20 ounces cach..............bbox | 53,762 | 14,075 | 50,206 | 14,758 |
| Over 8 but not over 12 ounces...................... box | 52,031 | 9,684 | 55,833 | 10,357 |
| 8 ounces or less.................................... box | 7,286,624 | 622,418 | 7,993,514 | 642,915 |
|  |  |  |  |  |
| Dried................................................lb. | 381,159 | 99,136 | 314,143 | 82,906 |
| Fresh................................................lb. | 1,244,346 | 130,931 | 1,207, 885 | 126,393 |
| Pickled or salted.......................................lb. | 1,039,629 | 72,928 | 1,119,825 | 74,607 |
| Preserved in oil, n.o.p |  | 56,584 |  | 67,623 |
| Prepared or preserved, n |  | 320,257 | - | 425,154 |
|  |  |  |  |  |
|  |  |  |  |  |
| Fish offal or refuse..................................ewt. | 1,019 | 4,749 | 11,699 | 4,693 |
|  |  |  |  |  |
|  |  |  |  |  |
| Cod liver oil........................................gal. | 225,507 | 228,369 | 212,185 | 223,448 |
| Seal oil...........................................gal. | 24, 831 | 12,849 | 38,948 | 23,786 |
| Whale and spermaceti oil ............................gal. | 15,628 | 14,883 | 52,750 | 33,212 |
| Other fish oil...................................gal. | 39,137 | 32.082 | 48,382 | 36,032 |
|  |  |  |  |  |
|  |  |  |  |  |
| Tortoise and other shells, unmanufactured. <br> Shells, n.o.p., erushed or ground. <br> Sponges of marine production. | - | 89 | - | 21,191 |
|  |  | 113,402 | - | 124,316 |
|  | - | 92,406 | - | 100,565 |
| Turtles............ |  | 6,427 | , | 8,514 |
| Whalebone, unmanufactured................................. b . Other artieles, the produce of the fiskeries, no.p............ | 2,310 | 669 | 2,025 | 450 |
|  |  | 89,880 | 2, | 116,469 |
| Total Fish and Fish | - | 3,768,901 |  | 4,068,074 |

## III. (2) Imports and Exports of Fish and Fishery Products-con.

Statmment showing the Quantities and Values of Fish and Fishery Products of Canadian origin Exported from Canada during the calendar years, 1927 and 1928.
(Compiled by the External Trade Branch)

| Classification | 1927 |  | 1928 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Quantity | Value | Quantity | Value |
|  |  | \$ |  | \$ |
| Fish and Fishery Products-Fish- |  |  |  |  |
| Fish-wives, salted..................................ewt. | 28,959 | 91,906 | 29,224 | 81,684 |
| Bait fish.............................................ton | 1,538 | 45, 521 | 2,126 | 45,857 |
| Clams, canned.........................................crrt. | 9,250 | 131, 432 | 13,030 | 182,662 |
| Clams, fresh......................................emt. | 13,622 | 23,561 | 13,317 | 23, 808 |
| Codfish, boneless, canned or preserved, n.o.p........est. | 18,376 | 183,584 | 22,277 | 230,502 |
| Codfish, dried.......................................evvt. | 605,560 | 4,296,929 | 594,384 | 4,933,119 |
| Codfish, fresh anf frozen................................ewt. | 8,325 | 60, 325 | 14,986 | 107,878 |
| Codfish, green-salted, (pickled).......................ert. | 56,508 | 243,912 | 81,933 | 380, 016 |
| Codfish, smoked....................................ewt. | 22,864 | 268,133 | 23,169 | 284, 297 |
| Eels, fresh and frozen..............................cwt. | 9,913 1,036 | 127,033 9.910 | 15,971 |  |
| Haddock, dried........................................................... | 27,900 | 157,380 | 28,378 | 180,764 |
| Haddock, fresh and frozen.............................ewt. | 2,957 | 22,489 | 6,056 | 44,417 |
| Haddock, smoked.....................................cwit. | 13,775 | 123,582 | 12,858 | 114,626 |
| Halibut, fresh and frazen..............................ewt. | 31,520 | 454,319 | 43,685 | 508, 293 |
| Herrings, lake, iresh and frozen .........................ewt. | 28,620 | 477, 046 | 20,003 | 362, 661 |
| Herrings, sea, canned (a).........................errt. | $\begin{array}{r}15,248 \\ 1,116.936 \\ \hline\end{array}$ | 142,716 2,199 | 1,169,805 | 2,023,664 |
| Herrings, sen, dry salted.............................curt. | 1,116,936 | 2, 199,440 | $\begin{array}{r}1,169,805 \\ 365,407 \\ \hline 18\end{array}$ | $2,023,664$ 272,077 |
| Herrings, sea, pickled.................................ewt. | 54,494 | 177,741 | 61,865 | 170,251 |
| Herrings, sea, smoked..................................ewt. | 95, 297 | 299,922 | 73,416 | 292,390 |
| Lobsters, canned . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 46.547 | 3,236,281 | 48,115 | 3,107,292 |
| Lobsters, iresh.......................................ent. | 46, 627 | 1,485,392 | 50, 501 | 1,514,719 |
| Mrackerel, fresh and frozen.............................cwt. | 20, 038 | 152,634 | 19,697 | 148,153 |
| Mackerel, piekled...................................crt. | 43,334 | 298,439 | ${ }^{66,167}{ }^{3} 336$ | 384, 24.868 |
| Oysters, fresh.....................................ewt. | 13,906 | 128,040 | 3,336 24,178 | 24,866 221,557 |
| Pollock, hake and cusk, boneless, canned or |  |  |  |  |
| preserved. n.o.p cwt. | 344 | 1,838 | 301 | 2,375 |
| Pollock, hake and cusk, dried.......................cwt. | 43,397 | 235,591 | 43,738 | 264,826 |
| Pollock, hake and cusk, fresh and frozen..............ewt. | 821 | 2,100 | 1,084 | 4,075 |
| Pollock, hake and cusk, green-salted...................ent. ${ }^{\text {ent. }}$ Pollock, hake and cusk, | 9, 162 | 19,792 | 30,080 | 61,298 2,925 |
| Salmon, canncd........................................crit. | 549,235 | 8,930,709 | 643,399 | 9,227,442 |
| Salmon, dry salted (chum) ...........................ent. | 96.083 | 361.332 | 209,060 | 756,957 |
| Salmon, fresh and frozen...............................cwt. | 78,218 | 982,992 | ${ }^{83,653}$ | 1,033,711 |
| Salmon, pickled $\ldots$..............................entwt. | 24, ${ }^{226} 9$ | 528,158 ${ }^{1,881}$ | 23,974 | 535,903 10,356 |
|  | 46,578 | 515,833 | 46,955 | 554,562 |
| Sardines (little fish in oil) (h) ..........................cwt. | 43,180 | 396, 331 | 55,036 | 536,833 |
| Shell fish, other, freslr...............................cwt. | 8,134 | 153,709 | 5,655 | 1 93,940 |
| Smelts, fresh and frozen ............................ewt. .ewt. | 61,574 | 876,635 132,682 | 81,161 2,295 | 1,165,640 |
|  | 6,585 | 102, 849 | 7,310 | 121,440 |
| Tongues and sounds..................................ewt. | 664 | 3,778 | 380 | 2,898 |
| Tullibee, iresh and frozen...........................ewt. ewt. | 87,498 | 463,791 | 99,662 | 620,055 |
| Whalc meat, canned or preserved, n.o.p...............cwt. |  | ${ }_{1}{ }^{3} 2,346$ |  |  |
| Whitefish, fresh and frozen, .... | 322,795 | 1, $2,607,860$ | 309,825 | $\begin{aligned} & 1,401,762 \\ & 2,563,776 \end{aligned}$ |
| Other fresh water fish, fresh and frozen.................ewt. Other fresh water fish, salted, dricd, smoked or | 322, 795 | 2,607,860 |  |  |
| Other pickled $\qquad$ $\qquad$ cाtt. |  | 113 |  | 493 |
| Other sea fish, fresh and frozen....................ewt. | 7,703 | 60, 679 | 6,043 | 47, 833 |
| Other sea fish, salted, dried, smoked, or pickled......ewt. | 1,049 | 8,769 7,163 | 4,249 106 | 16,833 1,877 |
| Other sea fish, canned or preserved, n.o.p.............ent. |  |  |  |  |
| Fish meal (c).......................................ewt. |  | - | 337,013 | 925,600 |
| Fish offal or retuse....................................w. | 25,859 | 62,217 | 33,499 | 81,497 |
| Oils- ${ }_{\text {Coder }}$ |  | 161,809 | 266, 348 | 216,709 |
| Cod liver oil. ............................................................... | 11,801 | 5 5,327 | 1,533 | 728 |
|  | 280,358 | 112,964 | 381,979 | 160,091 |
| Other fish oil................................................................ | 1,700, 958 | 657,948 | 3,434,013 | 1,359, 994 |
|  | 40,151 | 112,352 <br> 915,315 |  | 70,487 273,255 |
| Total Fish and Fish Products...................... | - | 34,814,448 | - | 38,096,245 |

(a) Ineludes "Sardines (little fish in oil)" for January, Fehruary and March, 1927 .;
(b) Nine months figures-Apiil 1 to Decemher 31, 1927: see "Herring, sea, canned".
(c) Nine months figures.

Statement showing Quantities of the Principal Fish and Fishery Products of Canadian origin exported from Canada during the calendar year, 1928
(Compiled by the External Trade Branch)

| Countries to which Exported | Alowives salted | Bait fish | Clams |  | Codfisi |  |  |  |  | Eels, [resh: and frozen | Haddock |  |  |  | Halibut fresh and frozen |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Canned | Fresh | Boneless, canned or preserved n.o.p. | Dried | Fresh and frozen | $\begin{gathered} \text { Green. } \\ \text { salted } \\ \text { (pickled) } \end{gathered}$ | Smoked |  | Canned | Dried | Fresh and frozen | Sinok- ed |  |
| United Kingdom |  | ton | ${ }^{\text {cwt. }} 7$ |  |  | $\underset{\substack{\text { cwt. } \\ 8,244}}{ }$ | ${ }^{\text {cwt. }} 50$ |  | ervt. - |  | ${ }^{\text {cwt. }} 30$ | owt. | ${ }^{\text {cwt. }} 63$ | cwt. | ${ }_{498}{ }^{\text {cwt. }}$ |
| Irish Free State | - | - |  | - | - | - | - |  | - | - | - | - |  |  | - |
| Afrioa, British Enst.... |  | - | - | - | - | - | - | - | - | - | - | - | -- | - | - |
| Africa, British South... |  | - |  | - |  | - | - | - | - | - | - | - | - |  |  |
| Africa, British West-. | - |  |  | - | - | - | - | - | - |  |  |  |  | - | - |
| Gold Coast......... | - | - | - | - | - | - | - | - | - | - | - | - |  | - |  |
| Nigeria...... | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Other........ | $-$ | - | - | - | - | - | 8 | - | - | - | - | - | - | - | - |
| Bermuda. . | - | - | - | - | 19 | 3,272 | 8 | - | 8 | - | - | - | - | 02 | 1 |
| British Enst Indies- |  |  |  |  |  |  |  | - |  |  |  |  |  |  |  |
| British India..... | - | - | - | - | - | - | - | - | - | - | - | - | - | - |  |
| Ceylon.titi... | - | - | - | - | - | - | - | - | - | - | - | - | - |  | - |
| Other......... | - | - | - | - | - | - | - | - | - | - | - | - | - | 28 |  |
| British Guiana. | 20 | - | - | - | -1 | $\begin{array}{r}3.273 \\ \hline 262\end{array}$ | $-_{4}^{4}$ | -- | -- | - | - | - | - | 28 | - |
| British Honduras..... |  |  |  | - |  |  |  |  |  |  |  |  |  |  |  |
| Barbados... | ${ }^{66}$ | - | - | - | - | -5,299 | 11 |  |  | - | - |  | - | ${ }^{9}$ | - |
| Jamaica, ,............ | 7,392 |  | - | - | - | 36,575 42,211 | - | $\overline{19}$ | - | - | - | 1,054 | - | - | - |
| Trinidnd and Tobago | 934 | - | - | - | - | 5,778 | - | - | 4 | - | - | 155 | - | 1 | - |
| Gibraltar... | - | - | - | - | - | - | - | - |  | - | - | - | -- | -47 | $\overline{85}$ |
| Hong Irang........ | - | - | - | - | -- | -- | - | - | - | - | - | - | - |  | - |
| Malta............ | - | - | $\overline{17}$ | - | - |  | 300 | $\overline{100}$ | - | - | -1 | - | - | $\overline{29}$ |  |
| Newfoundland. | - |  |  | - |  |  |  |  |  |  |  |  |  |  |  |
| Australin. | - | - | - | - | - | - | 136 | - |  | - | - | - | - |  |  |
| Fiji...... | -- | - | - | - | - | - | ${ }^{1}$ | - | $-{ }_{-}$ | - | - | -- | - | $-$ | - |
| Other....... | - | - | - | - | - | - | - | - | - | - | - | - | - | - | $\square$ |
| Palestine... | - | - | - | - | - | - | - | - |  | - | - |  | - | - | - |
| Argentina.... | - | - | - | - | - | - | - | - | - | - | - | - |  | - | - |
| Belgium... | - | - | - | - | - | - | -- | - | - | - | - | - | - | - | - |
| Belginn Congo. | - | $\square$ | - | - | - | - | - | -- | - | - | - | - | - | - | - |
| Brazil...... | - | - | - | - | - | 41,800 | - | - | - | - | - | - | - | - | - |
| Chile.. | - | - | - | - | - | 153 | - | - | - | - | - | - | -- | 30 | - |
| Colombia | - | - | - | - | - |  | - | - | - | - | - | - | - | - | - |
| Costa Rica. |  |  |  |  |  | 102, 0000 |  |  |  |  |  |  |  | - | 1 - |


| Czecho-Slovakia. | - | $-1$ | - | - | - | - | - | - | - | - | - | - | - | 1 - |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Denmark. | - | - | - | $-$ | - | - | - | - | - | - | - | - | - | - |
| Ecuador. | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Egypt. | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| France. | - | - | - | - | - | - | - | -- | - | - | - | - | - | - |
| French Africa. | - | - | -- | -- | - | $-$ | - | -- | - | - | - | - | - | - |
| French East Indics. | - | - | - | - | - | $\cdots$ | - | - | - | - - | - | - | - | - |
| French Oceanis... | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Freneh West Indies. | - | - | - | - | - | - | - | - | $\checkmark$ | - | - | - | - | - |
| St, Pierre and Miguelon. | - | 2 | - | - | -- | -- | - | - | - | - | - | - | - |  |
| Germany. . . . . . . . . . . . | - | - | - | - | - | $\cdots$ | - | - | 4,280 | - | - | - | - | $\cdots$ |
| Grecce.... | - | - | - | - | - | - | - | -- | - | $\cdots$ | - | - | - - | - |
| Guatemala | - | - | - | - | 450 | - | - | - | - | - | - | - | -- | - |
| Hayti.... | - | - | - | - | 4,134 | -- | - | - | - | $\cdots$ | - | - | - | - |
| Honcluras | - | $\pm$ | - | - | -- | - | $\cdots$ | $\cdots$ | - | - | - | - | - | - |
| Italy. | - | - | - | - | 78,800 | - | - | - | $\cdots$ | - | 703 | - | - | 2 |
| Tripoli | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Jnpan.. | - | - | - | - | - | - | - | 2 | - | - | - | - | 25 | - |
| Koren. | - | - | - | -- | -- | - | - | - | $\cdots$ | - | - | . - | - | - |
| Liberia. | - | - | -- | $\cdots$ | - | - | - | - | - | - | - | - - | - | - |
| Mexico.. | - | - | - | - | - | - | - | - | - | -- | - | - | - | - |
| Morocco. | - | - | - | - | - | - | - | - | - | - | - | $\cdots$ | - | - |
| Netheriands. | - | - | - | $-$ | - | - | - | - | 303 | - | $\cdots$ | - | - | 5 |
| Dutch East Indies. | - | - | - | - | $\cdots$ | - | $\cdots$ | $\cdots$ | -- | - | - | - | - | - |
| Dutch Guiana. | - | - | - | - | 116 | - | - | - | - | - | 2,477 | - | - | - |
| Dutch West Indies. | - | - | - | - | 161 | - | - | - | - | - | 305 | - | - | - |
| Nicaragur. | - | - | - | $\cdots$ | - | - | - | - | - | - | - | - | - | - |
| Norway. | - | - | - | - | - $-\frac{1}{-}$ | - | - | - | - | - | - | - | $\cdots$ | $\rightarrow$ |
| Panama. | - | - | -- | - | 13,04] | - | - | - | - | - | - | - | $\cdots$ | - |
| Paraguay. | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Peru... | - | - | $\cdots$ | $\cdots$ | - | $\cdots$ | - | - | - | - | - | - | - | - |
| Portugal.... | - | - | - | - | 7,646 | - | - | - | - | - | - | $\cdots$ | $\cdots$ | - |
| Portuguese Africa | - | - | $\cdots$ | $\stackrel{-}{-}$ | - | - | - | - | - | $\cdots$ | - | - | $\cdots$ | - |
| Portugueso Asia. | - |  | - - | - | - | - | - | - | $\cdots$ | $-$ | - | - | - | - |
| Roumania. | - | - | - | - - | - | - | $\cdots$ | - | - | $\square$ | - | $-$ | - | - |
| Salvador. | - | - | - | - | $-$ | - | - | - | - | $-$ | - - | - | - | - |
| San Domingo. | - | - | - | - | ${ }^{562}$ | - | - | , - | $\cdots$ | - | 4,428 | - | -- | - |
| Spain........ | - | - | $\square$ | $\square$ | 2,369 | - | - | -- | - | $-$ | $\stackrel{-}{-}$ | - | - | - |
| Canary Islands | - | - | $\cdots$ | - | -- | - | - | - | $-$ | - | $\square$ | - | - | $\square$ |
| Spanish Africa. | - | - | $\cdots$ | - | - | - | - | - | - | $\square$ | -- | - | $\cdots$ | $\checkmark$ |
| Switzerland. | - | - | - | - | - | $\ldots$ | - | - | - | - | - | - | - | $-$ |
| Syria. | - | - | - | $\cdots$ | - | - | - | - | - | - | - | - | - | - |
| Turkoy...... | , 5 | 1300 | 13. | -220 | 128, ${ }^{-106}$ | - $\square^{-}$ | 81.8 | 29.7 | 11.370 | 416 | 10.243 | 5. -703 | 12, 380 | 42,883 |
| United States. | 2,066 | 13, 00.1 | 13, 317 | 22,256 | 128, 166 | 14,468 | 81,814 | 22,058 | 11.370 | $\stackrel{416}{-}$ | 10,243 | 5, 003 | 12,380 28 | $42,883$ |
|  | 60 | - | - | - | - | - 2 | - | - ${ }^{-1}$ | - | -- | $\overline{25}$ | -- | $\stackrel{28}{-}$ | $7$ |
| American Virgin Islands. | - | - | -- | - | 9 | - | - | - | -- | -- | 25 - | $\cdots$ | -- | $\stackrel{-}{-}$ |
| Guam.......... | -- | - | - | - | -- | , - | - | - | $\cdots$ | - | -- | $\cdots$ | 72 | - |
| Hawaii........... | - | - | $\cdots$ | -- | -- | - | - | - | - | - | $\cdots$ | - - | - 12 | - |
| Philippine Isfands <br> Porto Rico. | - | - | $\cdots$ | - | 00, $\overline{77} \mathrm{C}$ | - | - | - | - | - | 3,683, | - | - | - |
| Uruguny.. | - | - | $\cdots$ | - | - | - | - | - | - | $-$ | - | - | - | - |
| Total Export. | 2,126 | 13,030 | 13.317 | 22.272 | 504,384 | 14, 880 | 81,033 | 23,169 | 15, 771 | 447 | 28,378 | 6,056 | 12,858 | 43,685 |
| 'To British IDmpire. | - | 24 | - | 21. | 11,342 | 516 | 110 | 204 | - | 37 | 2.219 | 63 | 374 | 788 |
| To Foreign Countries. | 2.126 | 13.006 | 13.317 | 22.256 | 483,042 | 14,470 | 81,814 | 22,965 | 15,871 | 410 | 26,159 | 5,903 | 12,484 | 42,887 |

Statement showing Quantities of the Principal Fish and Fishery Products of Canadian origin exported from Canada during the calendar year, 1928-con.


III. (2) Imports and Exports of Fish and Fishery Products-con.

Statemen'y showing Quantities of the Principal Fish and Fishery Products of Canadian Origin exported from Canada during
the calenclar year, 1928-con.

| Countries to which Pxported | Pollock, hako and cusk |  |  |  |  | Sulmon |  |  |  |  | Salmon trout or lake tront, fresh and frozen | Gardines (littlo fish in oil) | Smelts, fresh and frozen | Stur- <br> geon, fresil and frozen | Swordfish, fresh nnd frozen | $\begin{aligned} & \text { Tongues } \\ & \text { and } \\ & \text { sounds } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Boneless, camned or preserverl, n.o.p. | Dried | Fresh and frozen | Green salted | Smoked | Canned | Drysnlted (chum) | Fresh and frozen | ITicklert | Smoked |  |  |  |  |  |  |
| United Kingdom | ewt. | cwt. |  | cwt. | ewt. | cwt. | owt. ${ }_{2}$ | cwt. | cw-t. 831 | cri. | cwt. | cwt. 52 | cut: | cwt. | cwt. | cw'. |
| Irish Free State. | - | - |  | -- |  | -672 |  |  | $\sim$ |  | - | 231 | - | - | - | - |
| Africa, Britislr East. | - | - | - | - | - | 668 | - | - | - | - | -- | 104 | - | - | - | - |
| Airica, British South.. | - | - | - | - | - | 15,201 | - | - | - | - | $\cdots$ | 1,002 | - | - | - | - |
| Africa, British West- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Gambia. | - | - | - | - | - | 62 | - | - | - | -- | - | - | - | - | - | - |
| Gold Coast: | - | - | - | - | - | 10.091 | - | - | - | - | - | 109 | . - | - | - | - |
| Nigeria..... | - | - | - | - | - | 9,802 | - | - | $-$ | - | - | 121 | . - | - | - | - |
| Sierra Leone | - | - | - | - | - | 1,650 | - | - | - | - | - | 20 | - | - | - | - |
| Other. | -- | - | - | - | - | 60 | - | - | - | - | - | 10 | - | - | - |  |
| Bermuda.. | . - | 121 | - | - | - | 554 | - | 18 | 37 | - | - | 209 | - | - | - | 5 |
| British Enst Indies- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| British India....... | - | - | - | - | - | 3.549 | - | - | - | - | - | 278 | - | - | - | - |
| Ceylon. | - | - | - | - | - | 1,248 | - | - | - | -- | - | - | - | - | $\sim$ | - |
| Straits Settlements | - | - | - | - | - | 2,484 | - | - | - | - | - | 820 | - | - |  | - |
| Other. | - | $-$ | - | - | - | 68 | - | - | -- | - | - | 40 2 | - | - | - | - |
| British Guiana. | - | 403 | - | - | - | 582 | - | - | 215 | - | - | 2,380 | - | - | - | - |
| British Honduras. | - | - | - | - | - | 204 | - | - | - | - | - | 124 | - | - | - |  |
| British West Indios- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Barbados. | - | 307 3,372 | - | $-$ | - | 1.015 2,100 | - | 12 | 720 | - | - | 1,789 | - | - | - | -- |
| Jamaica...... ${ }^{\text {To..... }}$ | - | 3,371 9 | - | 253. | - | 2,100 | - | - | 720. | - | - | 7,87 4,019 | - | - |  | - |
| Trinidad and Tobago. | -- | 2,338 | - | 25.3 | - | 3,152 312 | - | $-$ | 40. 103 | - | - | 4,019 1,468 | - | - |  | -- |
| Other................ | - | 9,026 | - | - | - | 312 94 | - | - | 168 | $-$ | - | 1,468 | - | - |  | - |
| Gibraltar... | - | - | - | - | - | - 948 | $\stackrel{-}{-}$ | . 99 | -- | -4 | - | 42 | 20 | - | - | - |
| Hong Kong. . . . . . . | - | -- | - | - | - | - 84 | $\underline{-}$ | - | $-$ | - | . - | - | $\underline{-}$ | - | - | - |
| Maita............... | - | - | - | - | - | 1,259 | - | - | - | - | - | 192 | -- | - | $\cdots$ | - |
| Newloundland. | - | - | - | - | - | c | - - | - | - | - | - | 331 | - | - | 338 | - |
| Occania- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Australin. | - | - | - | - | - | 103,224 4,808 | 28. | 334 | - | 79 1 | - | 5,085 510 | . - | - |  | - |
| Fiji........... | - | - | - | - | - | $\begin{array}{r} 4,808 \\ 33,241 \end{array}$ | - | $\sim_{-}^{4}$ | - | 1 | - | 1,38.4 | - | - |  | - |
| New Zenland. | -- | - | - | - | - | 33,241 2,849 | -- | - | $\sim$ | - | - | $\left.\begin{array}{r} 1,38 \pm \\ 35 \end{array} \right\rvert\,$ | $\underline{-}$ | - | - | - |
| Other | - | - | - | - | - | 2,849 | -- | - | - | - | - | ${ }_{459}^{35}$ | - | - | - | - |
| Palestino. | - | - | - | - | - | -6,270 | $\cdots$ | $\underline{-}$ | $\overline{-}$ | -- | - | 4 | - | - | - | - |
| Argentina. | -- | - | - | - | - | 2, 270 | - | - | 7 | - | - | 1,000 | - | - | - | - |
| Belgium. | - | - | - | - | - | 25, 124 | - | 110 | 75 | , | - | 880 | - | - | - | - |
| Belgian Congo. | - | - | - | - | - | - 527 | - | - | - | - | - | - | - | - | - | - |
| Bolivia....... | - |  | - | - | - | 1,3.30 | - | - | - | - | - | - | - | - | - | - |
| Brazil... | - | 7,830 | - | - | - | 18, 512 | - | - | - | - | - | 80 |  | - | - | - |
| China | - | - | - | - | - | $\begin{array}{r} 353 \\ 519 \end{array}$ | 4,443 | 22 | - | $\stackrel{40}{-}$ | - | - $\begin{array}{r}474 \\ 1,154\end{array}$ | - | - | $\cdots$ | - |


III. (2) Imports and Exports of Fish and Fishery Products-concluded

Statement showing Quantities of the Principal Fish and Fishery Products of Canadian Origin exported from Canada during the calendar year, 1928-concluded

| Countrics to which Exported | Tullibec, fresh and frozen | White fish fresh and frozen | Other fresh water fish |  | Other sea fish |  |  | Fish meal (a) | Fish offal refuso. | Cod liver oil | $\begin{gathered} \text { Fish } \\ \text { oil } \\ \text { other } \end{gathered}$ | Seal pil | Whale oil | Seal skins, dressed |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Fresh and frozen | Salted, dried, smoked or piekled | Fresh and frozen | $\left\|\begin{array}{c}\text { Salted, } \\ \text { dried, } \\ \text { smoked } \\ \text { or piekled }\end{array}\right\|$ | Canned preservod n.o.p. |  |  |  |  |  |  |  |
| United Kingdom. | ${ }^{\text {cwt. }}$. | ewt. |  |  |  |  |  |  | ewt. | ${ }^{\text {gal. }}{ }_{480}$ |  |  | gal. | no. 6,482 |
| Irish Free State... |  | - | - |  | - |  |  |  |  | - | - | $-$ |  |  |
| Arrica British East.. | - | - | - |  | - | - | - | - | - | - | - | - | - |  |
| Afrien, British South........... | - | - | - | - | - |  | - | - | - | 135 | - | - | - | - |
| Gambia............ | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Gold Coast. | - | - | - |  | - | - | - | - | - | - | - | - | - |  |
| Nigeria...... | - | - | - | - | - | - | - | - | - |  | - | - | - | - |
| Other........ | - | - | - | - | - | - | - | - | - | - | $\underline{-}$ | - | - |  |
| Bermuda............. |  | - | - |  | - | 3 | - | - | - | - | - | - | - |  |
| British East Indics- British India...... |  |  |  |  | - | - | - | - | - | - | - | - | - | - |
| Ceylon... | - | - | - | - | - | - | $-$ | - | - | - | - | - | - | - |
| Straits Settlements. | - | - | - | - | - | - | $\cdots$ | - | - | - | - | - | - | - |
| Other.......... | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| British Guiana.... | - | - | $=$ | - | - | - | - | - | $\cdots$ | - | - | - | - | - |
| British West Indies- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Barbactos... | - | - | - | - | - | 20 | , | - | - | - | - | - | - | - |
| Jamaica ............ | - | - | - | - | - | $9{ }^{6}$ | 1 | - | - | ${ }^{325}$ | - | - |  |  |
| Trinidad and Tobago Other.............. |  |  | - | - | - | $\stackrel{92}{-}$ | - |  | - | - | - | - | - | - |
| Gibraltar................. | - | - | - | - | - | - | . - | - | - | - | - | - | - | - |
| Hong Kong.......... | - | - | - | - | - | 5 | - | - | - | - | - | - |  |  |
| Iraq (Mesopotamin). | - | - | - | - | - | - | - | - | - | - | - | - | - | $\bar{\square}$ |
| Newfoundiand........ | - | - | - | - | - | 1 | - | - | - | 2,562 | - | - | - | 134 |
| Oceania- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Australia.. | - | - | - | - | 30 | ${ }^{1}$ | - | - | - | - | - | - | - |  |
| New Zealand. | - | - | - | - | - |  | - | - |  | 5 | - | - | - | - |
| Other.... | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Palestine... | - | - | - | - | - | - | - | - | - | - | - | -- | - | - |
| Austria....... | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Belgium... | - | - - | - | - | - | - | - | - | - | - | - | - | - | - |
| Bohivia......... | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Brazil. | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Chile.. | - | - | - | - | - | $\overline{35}$ | - |  | - | - | - | - | - | - |
| Colombin. | - | - | - | - | - | $\stackrel{-}{-}$ | - | - | - | - | - | - | - | - |
| Costa Rica | - | - | - | - | - | - | - | - | - | - | - | - | - | - |


(a) (Nine menthe figures-Aprill 1 to December 31.
III. (3) Classification of Vessels and Boats used in the Sea Fisheries, according to Principal Kinds of Fish Taken, 1928

III. (3) Classification of Vessels and Boats used in the Sea Fisheries, according to Principal Kinds of Fish Taken, 1928-con.

III. (3) Classification of Vessels and Boats used in the Sea Fisheries, according to Principal Kinds of Fish Taken, 1928-con.

III. (3) Classification of Vessels and Boats used in the Sea Fisheries, according to Principal Kinds of Fish Taken, 1928-con.

| Scallops |
| :---: | :---: |

III. (3) Classification of Vessels and Boats used in the Sea Fisheries, according to Principal Kinds of Fish Taker, 1928-con.

III. (3) Classification of Vessels and Boats used in the Sea Fisheries, according to Principal Kinds of Fish Taken, 1928-con.

III. (3) Classification of Vessels and Boats used in the Sea Fisheries, according to Principal Kinds of Fish Taken, 1928-con.

III. (3) Classification of Vessels and Boats used in the Sea Fisheries, according to Principal Kinds of Fish Taken, 1928-con.

III. (3) Classification of Vessels and Boats used in the Sea Fisheries, according to Principal Kinds of Fish Taken, 1928-con.


III．（3）Classification of Vessels and Boats used in the Sea Fisheries，according to Principal Kinds of Fish Taken，1928－con．

|  |  | 1 |  | Hoverishor | $\infty$ |  | $\stackrel{9}{2}$ | 9 | － | ¢ ¢ ¢ ¢ | ¢लึ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 嵒 | $\stackrel{\circ}{\text { ¢ }}$ | $1: 11111$ | 1 |  | 1 | 1 | 11 | 11111 | 111 |  |
|  | $\begin{aligned} & \text { 惑 } \\ & \text { 党 } \end{aligned}$ |  | $\infty$ | 1111111 | 1 | 111 | $!$ | 1 | 11 | 11111 | 111 |  |
|  | 荌 | $\begin{aligned} & - \\ & \dot{z} \end{aligned}$ |  | 11111 ： | 1 | 111 | 1 | 1 | 11 | 11111 | 111 |  |
|  |  | 㤩 | $\dot{ٌ}$ | $\infty_{111} 11$ | 1 | $1^{m m}$ | 1 | 1 | 75 | $111 \stackrel{\text { ¢ }}{\substack{0}}$ | ホMcs |  |
|  | $\left\{\begin{array}{l} 0 \\ \frac{0}{4} \\ 0 \end{array}\right.$ |  | $\cdots$ | 足:11员:1 | 1 | $18$ | $!$ | 1 | $\begin{aligned} & 98 \\ & \stackrel{7}{6} \\ & \text { oi } \end{aligned}$ | $111 \mathrm{~S}_{\mathrm{N}}^{\mathrm{O}} \mathrm{O}$ | $\begin{aligned} & 0_{0}^{5} 0_{0}^{8} \\ & \text { anci } \end{aligned}$ |  |
|  |  | $\begin{array}{\|l} \circ \\ \dot{\circ} \\ \dot{z} \end{array}$ |  | \％1 1 ${ }^{\text {\％}} 1$ | 1 | $1^{m+1}$ | 1 | 1 | F－m |  | 학心 |  |
|  |  | $\underset{\underset{\sim}{\mid c}}{\stackrel{\rightharpoonup}{\mid}}$ | $\stackrel{\circ}{8}$ | 1111111 | 1 | 111 | 1 | 1 | 1 ！ | 11111 | 111 |  |
|  |  | $\frac{9}{3}$ | $\infty$ | 1111111 | 1 | 111 | 1 | 1 | 11 | 11111 | $1: 1$ |  |
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## III. (4) Detailed Statement of Fishing Bounties Paid to Vessels and Boats for the Year 1928



# STATISTIQUE DES PÊCHERIES 

## 1928

(En collaboration avec les Services des Pêcheries du Gouvernement Fédéral et des Provinces)

Publié par ordre de l'hon. James Malcolm, M.P., Minisire du Commerce


## TABLE DES MATIERES

Preface ..... 277
Les pêcheries du Canada. ..... 278
Introduction et Résumé
Quantité et valeur des principaux poissons, 1924-1928. ..... 285
Opérations de pêche en 1928 ..... 286
Resumé de la production de 1928 ..... 295
Moyens de production, 1926-1928-
Peche proprement dite-
Capital. ..... 300
Main-d'eeuvre ..... 301
Usines poissonnières-
Capital. ..... 301
Personnel ..... 301
Employes, appointements et salaires ..... 302
Ouvriers occupes par mois. ..... 303
Consommation de combustible. ..... 303
Force motrice utilisee ..... 303
Valeur des matières premières ..... 303
Valeur des produits. ..... 304
Classification des établissements selon la forme de l'organisation commerciale, la duré des opérations, lo personnel employé et l'importance de leur production. ..... 304
Repartition par provinces-
Valeur des petcheries, 1924-1928. ..... 305
Quantité des principaux poissons dont on fait commerce, et leur valeur 1924-1028. ..... 305
Quantité et valeur de tout le poisson pêché et mis en vente, 1928 ..... 309
Valeur totale, par comtés et districts, de tout le poisson de mer pêché et mis en vente, 1928. ..... 315
Proportion du poisson de mer pris en haute mer, 1928. ..... 316
Capitaux engages, 1928. ..... 322
Personnel, 1928. ..... 324
Primes de peche, 1928 ..... 326
Importations et exportations, 1828 ..... 326
Revue rétrospective ..... 327
Tableaux d'ensemble
I. Poisson pêché et vendu, 1828 ..... 58
Ile du Prince-Edouard, 58: Nouvelle-Ecosse, 62: Nouveau-Brunswick. 110: Québec, 130: Ontario, 138: Manitoba, 138: Saskatchewan, 140: Alberta, 142: Yukon, 143: Colombie Britannique, 144.
II. Moyens de production, 1928-Capital d'orploitation, personnel, etc. ..... 156
lère Partie-Peche proprement dite-
Ile du Prince-Edouard, 15i: Nouvelle-Ecosse, 160: Nouveau-Brunswick, 184: Quêbec, 198: Ontario, 200: Manitoba, 202: Saskatehewan, E02: Alberta, 204: Yukon, 204: Colombie Britannique, 200.
2e Partie-Usines poissonnières-
(a) Releve général des statistiques. ..... 212
(b) Capitaux engages. ..... 218
(c) Employes, appointements et salaires ..... 220
(d) Personnel occupe par mois. ..... 222
(e) Consommation de combustible. ..... 224
(f) Force motrice utilisee. ..... 226
(g) Classification des établissements selon la durée des operations et les heures de travail. ..... 226
(h) Classification des établissements par importance de leur production ..... 228
(i) Classification des établissements par rapport à leur personnel. ..... 229
(i) Forme de l'organisation commerciale ..... 230
III. (1) La manutention du saumon en Colombie Britannique, 1918-1928. ..... 232
(2) Importations et exportations de poisson et de produits du poisson, 1927 et 1928. ..... 234
(3) Classification des batenux de péche des pécheries maritimes, suivant l'espèce de poisson pêché, 1928. ..... 244
(4) Primes de peche, 1928. ..... 274

## PRÉFACE

Ce rapport est publié en vertu d'une entente établissant la coopération en matière de statistique intervenue entre le Bureau Fédéral de la Statistique et les différents services gouvernementaux ayant juridiction sur les pêcheries canadiennes. Ces services comprennent: la Direction des pêcheries du ministère de la Marine et des Pêcheries, qui exerce sa juridiction sur les pêcheries des provinces maritimes, des provinces des prairies et de la Colombie Britannique; et les Divisions des Pêcheries des provinces d'Ontario et de Québec, qui régissent les pêcheries de leurs provinces respectives, sauf les pêcheries des îles de la Madeleine, en Québec, lesquelles sont sous la juridiction de la Direction des pêcheries du Dominion. La Colombie Britannique possède une Division des Pêcheries, mais cet organisme ne s'occupe pas de statistique pour son propre compte.

En vertu de l'arrangement dont il est parlé plus haut, les statistiques du poisson pêché et des produits offerts en vente à l'état frais ou après une préparation sommaire sont recueillies par les fonctionnaires locaux des services des pêcheries, vérifiées et condensées au ministère de la Marine et des Pêcheries, puis compilées au Bureau Fédéral de la Statistique. En ce qui concerne le poisson industriellement préparé et ses sous-produits, des formules similaires a celles en usage dans le recensement des autres branches de production sont envoyées directement par le Bureau aux usines poissonnières, les fonctionnaires des services des pêcheries s'assurant que ces formules sont consciencieusement remplies et promptement retournées. Les fonctionnaires des gouvernements provinciaux voudront bien accepter nos remerciements pour le concours qu'ils nous ont prêté.

R. H. COATS, Statisticien du Dominion.

Buread fúderal de la statistique, Ottafa, 31 juillet 1929.

## Les pecheries du canada

Le dêbut des pêcheries.-La pêche est l'une des plus anciennes industries du Canada. Les Normands, les Bretons et les Basques pêchaient la morue d Terre-Neuve dès avant la découverte de l'Amérique. Lorsqu'en 1498 le continent nord-américain s'offrit à la vue de Cabot, ce navigateur lui donna le nom de «Bacalaos", nom basque de la morue que ces rudes pêcheurs poursuivaient déjà. Cap-Breton, l'un des plus anciens noms géographiques de l'A mérique, est un autre sowvenir des premiers pêcheurs Français que les Espagnols et les Portugais ne tardèrent pas à suivre. Fernandez de Navarrette nous apprend que des pêcheurs de ces trois nationalités fréquentaient le Grand Banc en 1502. La pêche se pratiquait au moyen de lignes à main, les pêcheurs se tenant dans des barils fxiés à l'extérieur du passavant pour éviter le contract des lignes avec les flancs du navire; les bateaux de pêche se livraient à leurs opérations tant que durait le beau temps, puis s'en retournaient en France avec leurs prises de 30,000 à 50,000 morues. Les voyages entrepris le long dub littoral démontrèrent bientôt que la morue était aussi abondante en vue du rivage que sur les bancs lointains; les équipages s'accoutumèrent alors à jeter l'ancre dans une baie, à construire une hutte sur la grève et à faire dans leurs petites chaloupes des excursions quotidiernes dont le produit était salé et séché à terre, puis expédié en France à la fin de la saison. Lorsqu'il remonta le Saint-Lazrent, en 1534, Jacques Cartier trowva partout les traces du passage de ces "capitaines courageux" et de leurs rivalités, lesquelles s'exergaient aussi bien dans des rencontres armées que dans la capture du poisson qui les avait attirés si loin de chez eux. Chauvin fonda un établissement de cette sorte à Tadoussac, en 1599. Bientôt après les pêcheurs s'habituèrent à passer l'hiver en Amérique et à y construire de véritables villages. La première concession de pêche fut octroyée par le roi de France à de Monts, en 1603. On peut donc considérer la pêche comme la première industrie à laquelle se soient livrés systématiquement les Européens au Canada; depuis ces temps lointains elle n'a jamais cessé de donner sa récolte annuelle tant à l'Europe qu'à l'A. mérique.

Le traité d'Utrecht de 1713 attribua Terre-Neuve à la Grande-Bretagne, dépossédant la France de son droit de pêcher et de faire sécher le poisson sur certaines sections du littoral de cette ̂̂le, mais la France conserva les pêcheries de CapBreton et celles du golfe. La guerre de Sept ans (1756-63) interrompit les opérations de pêche sur une vaste échelle. Lorsqu'elle se termina, la famille Robin, de Jersey, vint au Canada et au moyen d'acquisitions graduelles s'empara de toutes les anciennes stations de pêche françaises. Jusqu'à l'arrivée des Loyalistes, les pêcheurs s'étaient occupés exclusivement de la morue. Seules les p̂̂cheries côtières étaient exploitées durant cette phase, $y$ compris celles du littoral du Labrador; ce ne fut qu'en 1879 qu'un navire de pêche en haute mer sortit du port de Lunenburg qui est maintenant le centre principal de la grande pêche.

Lieux de pêche du Canada.-Les pêcheries canadiennes sont probablement les plas vastes de l'univers. Sur l'Atlantique, depuis Grand Manan jusqu'au Labrador, le rivage mesure plus de 5,000 milles, à l'exclusion des anses et échancrures qui le dentellent. La baie de Fundy avec 8,000 milles carrés, le golfe SaintLaurent dix fois plus grand, et d'autres eaux océaniques représentent ensemble environ 200,000 milles carrés, c'est-do-dire plus des quatie-cinquièmes des pêcheries du nord de l'Atlantique. De plus, l'on compte sur les bords de l'Atlantique 15,000 milles carrés d'eaux territoriales sous le contrôle absolu de la Puissance. Mais ces vastes étendues ne représentent qu'une partie des eaux canadiennes. La baie d'Hudson, dont les côtes s'étendent sur une longueur de 6,000 milles, est plus grande que la Méditerranée; sur le Pacifique, le littoral canadien mesure 7,180 milles; ses baies et fiords innombrables offrent aux pêcheurs une multitude d'abris très sûrs. Enfin, disséminés sur tout le territoire s'égrènent une série de lacs qui, touss
ensemble, contiennent plus de la moitié des eaux douces du globe, la part du Canada dans les Grands Lacs seulement couvrant plus de 34,000 milles carrés, auxquels viennent s'ajouter le lac. Winnipeg (9,457 milles carrés), le lac Manitoba et de nombreux autres non moins vastes.

Mais la qualité des produits des pêcheries canadiennes est encore plus remarquable. Chacun sait que l'excellence de la chair du poisson est en proportion directe de la pureté et de la fraîcheur des eaux qu'il habite. Considérés sous cet angle, la morue, l'églefin, le hareng, le maquereau, le poisson blanc et le saumon du Canada n'ont pas de rivaux dans l'univers. Il est donc évident que les plus magnifques pêcheries de l'hémisphère occidental, sinon du globe, appartiennent au Canada.

Le bref exposé qui précède démontre qu'il est impossible d'envisager les pêcheries canadiennes sous un unique aspect; embrassant tout un continent, elles offrent nécessairement une grande diversité. Laissant de côté les immenses êtendues de la baie d'Hudson et de la région arctique qui s'étend depuis l'Ungava jusqu'd l'Alaska, lesquelles, outre la baleine, donnent asile à de nombreux poissons comestibles, on peut diviser ainsi qu'il suit les pêcheries canadiennes:

1. Pécheries de l'Atlantique.-Elles sont les premières en date, et jusqu'en 1918 elles furent les plus importantes par la valeur de leurs produits. On y prend la morue, le fétan, l'églefin, le merlan, le hareng, le maquereau, le homard, l'huître et le phoque. Le golfe et les eaux intérieures des provinces maritimes et de Québec sont quelquefois considérés distinctement; mais en les réunissant, la liste ci-dessus s'accrồtrait du saumon, de l'alose, du gasparot, de l'éperlan, du bar, du tacaud, de la truite et du maskinongé. Les opêrations de pêche sont communément considérées sous deux aspects distincts, la pêche hauturière ou de haute mer et la pêche côtière. Cette dernière se pratique au moyen de petites embarcations, le plus souvent automotrices, montées par deux ou trois hommes; on $y$ emploie aussi de petīts navires dont l'équipage se compose de quatre à sept hommes. Les engins de pêche le plus fréquemment employés sont les rets à mailles, les lignes à main et les chaluts; l'autre part, on dispose le long du rivage des filets, des sennes et des nasses. La pêche à l'églefin est aussi importante que celle de la morue; pendant le printenps et l'été ce poisson est owvert et salé mais la meilleure saison est à l'automne, le poisson étant alors vendu frais ou fumé, sous le non de «finnan haddie". La pêche en haute mer se pratique au moyen de navires de 40 à 100 tonnes, portant de douze à vingt hommes, qui pêchent dans les doris au moyen de lignes de fond. Les flottilles fréquentent tour à tour les différents bancs de pêche tels que le Grand Banc, le Banc Intermédiaire et le Banquereau. Ces navires, construits sur place, restent quelquefois plusieurs mois en mer; les naufrages sont rares, tant est grande l'habileté de leurs équipages. A leur retour, le poisson, qui a été vidé et salé à bord, est débarqué, lavé et séché. Les Antilles sont le principal débouché de ce produit; aucune autre morue ne pourrait supporter le climat tropical aussi bien que celle préparée par les pêcheurs de la Nouvelle-Ecosse. De grands chalutiers à vapeur, tels que ceux en usage dans la mer du Nord, ont été introduits depuis plusieurs annêes dans les pêcheries canadiennes du littoral de l'Atlantique; on compte actuellement dix de ces navires appartenant aux ports de la Nowvelle-Ecosse. Ils se livrent à la pêche presque toute l'année; leurs prises approvisionnent le commerce de poisson frais.

La pêche au homard est également une industrie caractéristique. En 1870, il n'existait que trois homarderies sur le littoral de l'Atlantique; en 1928 on en compte 376, occupant environ 5,800 personnes; 30,000,000 de homards constituent une prise normale. L'un des constants problèmes de cette industrie, c'est d'assurer lexécution des dispositions prohibant la capture des jeunes homards et des adultes au monent du frai; on croit toutefois avoir mis un frein au déclin de la production. L'huître, qui pullulait autrefois tout le long du rivage, est maitenant moins abondante. La mise en boîte des savdines, qui sont de jeunes harengs, occupe au Nouveau-Brunswick un rang égal à l'industrie du homard.

Les pêcheurs des provinces maritimes constituent une population industrielle spécialisée. La pêche côtière s'y pratique d'avril à novembre, et même en janvier, dans les districts abrités et, quoique les plus grands navires travaillent pendant tout l'hiver, plusieurs milliers d'hommes sont disponibles a certains moments de l'année pour d'autres travaux. Les uns cultivent de petites parcelles de terre entourant leurs maisons, les autres travaillent dans les chantiers de bois du NouveauBrunswick ou bien dans les charbonnages de la Nouvelle-Ecosse. Quelques pêcheurs de Lunenburg et d'ailleurs font du négoce avec les Antilles. Outre l'oisivèté forcée résultant soit du mauvais temps, soit de la fermeture de la pêche, la méthode consistant à rémunérer les pêcheurs au moyen d'une part de la prise tend à les pousser vers des occupations secondaires, surtout dans les mawaises années.
2. Pêcheries intérieures.-Les Grands Lacs et les eaux tributaires du St-Laurent constituent une seconde grande division des pêcheries canadiennes. Le poisson blanc, la truite, la sandre et le hareng des lacs sont les poissons les plus importants d'Ontario, commercialement parlant, quoique le brochet, l'esturgeon et quelques autres poissons ne soient pas à dédaigner. La valeur des pêcheries intérieures de Québec se compose principalement de produits de la pêche d l'anguille et au doré. Dans les Grands Lacs la saison de pêche dure de six à huit mois; quelques pêcheurs continuent leurs opérations durant l'hiver en creusant des trous dans la glace, mais le plus grand nombre cherche une autre occupation dans l'intermede des saisons. En se dirigeant plus d l'ouest, le lac Winnipeg, le lac Winnipegosis, le lac Manitoba et des lacs plus petits au nord et d̀ l'est de celui-ci fournissent la plupart des poissons du Manitoba. Le poisson blanc et la sandre sont les principaux d'entre eux, mais le brochet, le tullipi, l'œil d'or et nombre d'autres variétés s'y trouvent à profusion. En Saskatchewan et en Alberta, la pêche pour le commerce est confinée aux régions situées au nord de la rivière Saskatchewan où l'on prend de grandes quantités de poisson blanc. Le problème des transports devient particulièrement aigu; quelques-uns des plus grands lacs du continent, les lacs Reindeer, Athabaska, Grand Esclave, Grand Ours et des centaines de lacs plus petits n'ont aucune communication avec les marchés de consommation. Toutefois, les lacs de l'ouest ont joué le même rôle que le Saint-Laurent dans les temps du régime français et que les bancs de morue dans l'histoire de la Nouvelle-Angleterre, en facilitant la colonisation du pays, puisqu'ils offrent un aliment certain aux colons nouvellement arrivés.
3. Pécheries du Pacifique.-La Colombie Britannique possède des pêcheries d'eau douce presque similaires à celles de la région des prairies; il est douteux que le commerce des fowirures (qui devait être l'agent de liaison entre cette province et le reste du Canada à travers les. Montagnes Rocheuses) ê̂t pu s'établir au commencement de l'histoire de cette province si ces pêcheries n'avaient pas existé. Les pêcheries de la Colombie Britannique sont d'une grande richesse; elles représentent environ les deux cinquièmes de l'industrie poissonnière du Canada et ses produits se consomment jusqu'aux extrémités de la terre; ils sont essentiellement constitués par le saumon pêché à l'embouchure du fleuve Fraser, de la Skeena, de la Naas et d'autres rivières descendant du versant occidental des montagnes. Chacune des variétés de ce roi des poissons comestibles (qui toutefois n'est pas le vrai saumon) fréquentant les eaux du Pacifique, se trouve sur le littoral de la Colombie Britannique, c'est-d̀-dire le sockeye ou dos bleu, le saumon de printemps, le saumon argenté, le saumon rose et le saumon bécard. Entre tous ceux-ci, le dos bleu est de beaucoup le plus important, tant en raison de son abondance que de l'excellence de sa chair, dont la belle couleur rougeâtre est tant appréciée des consommateurs de la Grande-Bretagne. Le fleuve Fraser était autrefois la principale source d'approvisionnement de saumon, mais sa production est aujourd'hui dépassée par celle de la rivière Skeena et de ses tributaires septentrionaux; la prise varie considérablement d'année en année. La montée du saumon commence vers la fin de juillet et atteint son apogée dans les premières semaines d'août; néanmoins, les régions septentrionales ont une saison plus hâtive. Le saumon de printemps ou quinnat
est un très gros poisson; c'est la première espèce qui fut mise en bô̂te aux EtatsUnis; la migration de ce poisson s'opère au commencement du printemps et se continue jusqu'en juillet. Le saumon argenté est plus petit; comme le dos bleu, il voyage par bandes innombrables, pendant septembre et octobre, dans le fleuve Fraser, et un peu plus tôt dans les cours d'eau plus au nord. Le saumon bécard est salé pour l'exportation en Orient et une quantité considérable est aussi mise en boîte. Le saumon rose, lui aussi, suit le dos bleu. Le plus grand nombre de personnes qu'occupe cette pêche sont des Chinois, des Japonais et des Indiens, l'élément chinois étant prépondérant dans les usines, tandis que les Indiens et les Japonais se consacrent plutôt aux opérations de pêche. Le fêtan abonde à hauteur de l'̂̂le Vancouver et entre les îles de la Reine Charlotte et le continent; quoique la première tentative d'exploitation industrielle de ce poisson ait avorté, dès 1909 la Colombie Britannique contribuait pour $10,000,000$ de livres à la production de 25,000,000 de liwres pêchées sur le lititoral du Pacifique, au nord de la Californie, chiffre qui a triplé depuis lors. La prise annuelle de hareng de la Colombie Britannique représente environ 65 p.c. de tout le hareng de mer pêché dans les eaux canadiennes. Ce poisson est presque en entier salé à sec et exporté en Chine et au Japon. Depuis quelques années, la pêche au pilchard a pris une certaine importance, la plus grande partie de la prise allant aux huileries qui produisent chaque année de grandes quantités d'huile et de poudre de poisson. En 1928, le pilchard était troisième par ordre de valeur parmi les poissons pêchés en Colombie Britannique. On y pêche aussi la baleine et trois stations sont en opérations dans les îles Reine Charlotte. On prend annuellement des cétacés de différentes sortes; baleines franches, rorquals, dauphins et même parfois des cachalots. La pêche à la baleine se pratique dans des bateaux rapides armés de canons lance-harpon Svend Foyn, système venu de Norvège. Aucune partie de la baleine ne se perd, l'huile, les fanons et la poudre en sont les produits les plus importants. Le cabillaud, la morue longue, l'oulachon, l'éperlan, le carrelet, la raie et l'esturgeon sont également abondants dans les eaux de la Colombie :Britannique.

Ajoutons un mot concernant les pêcheries du phoque à fourrure du Pacifique, dont le siège historique était autrefois à Victoria. Cette industrie est à peu près disparue, tant à cause de la raréfaction de ces animaux que par l'effet du traité de 1911. La flottille qui poursuit le phoque à fourrure dans le nord de l'Atlantique a ses quartiers généraux à St-John, Terre-Neuve.

Le sport de la pêche.-Nous n'avons envisagé jusqu'ici les pêcheries qu'au point de vue purement industriel et commercial; mais le sport lui-même comporte un aspect économique dans un pays où foisonnent des poissons aussi réputés que le saumon de la Restigouche, l'achigan de Québec et des hautes terres d'Ontario et la truite de la Nipigon. Le gouvernement perçoit des revenus fort élevés en louant soit à des clubs, soit à des particuliers, le droit de pềche dans les lacs et les cours d'eau des contrées les moins peuplées; d'autre part, des centaines de guides y trouvent une occupation rémunératrice pendant les mois d'été.

Le gouvernement et les pêcheries.-Au début de la Confédération, le gouvernement fédéral administrait directement la marine et les pêcheries du Canada; un ministre du Cabinet exercgait cette juridiction au moyen d'un personnel considérable d'inspecteurs, de surveillants et de gardes-pêche. Pendant l'année fiscale terminée le 31 mars 1929, le gouvernement fédéral a dépensé pour les pêcheries, $\$ 2,100,221$ et les revenus qui en découlent se sont élevés à $\$ 206,154$. Des décisions judiciaires intervenues en 1882, 1898, 1913 et 1920 ont sensiblement modifié la juridiction du gouvernement fédéral à l'avantage des provinces. Aujourd'hui, la Puissance contrôle directement les pêcheries en eau salée des provinces maritimes et de la Colombie Britannique et les pêcheries d'eau douce des trois provinces des prairies. Les pêcheries intérieures des provinces maritimes et d'Ontario et les pêcheries tant en eau douce qu'en eau salée de la province de Québec sont contrôlées par ces provinces respectivement, mais le gouvernement fédéral possède seul le droit de légiférer sur toutes les matières concernant la pêche dans toutes les parties du pays.

Conservation.-Les pêcheries fuviales et lacustres incontestablement, et les pêcheries maritimes probablement, si elles étaient abandonnées à elles-mêmes, subiraient la loi économique de l'appauvrissement. Pour combattre cette tendance le gouvernement canadien dut légiférer, interdisant la pêche en certaines saisons la pollution des rivières et l'obstruction de leur cours; il dut aussi spécifier les dimensions des mailles des filets, réglementer les agrès et les opérations de pêche. En outre, il a été créé un système de pisciculture qui possède aujourd'hur SO frayères, 10 viviers auxiliaires et 4 bassins à saumon, ayant coûté $\$ 434,141$ en 1928, et distribuant $440,302,380$ aufs, alevins et poissons par année, principalement le saumon de la Colombie Britannique, le doré et le poisson blanc. Ces alevins sont distribués gratuitement et placés dans les eaux qui leur conviennent le mieux.

Recherches scientifiques.-Des stations, ou l'on procède à des recherches biologiques sur les problèmes aussi nombreux que complexes que présentent les pêcheries, et placées sous la direction de la Commission Biologique du Canada, sont établies à Halifax, N.-E., St-A ndrews, N.-B., et à Nanaïmo et Prince Rupert, C.B. Les universités de Toronto, McGill, Queen's, du Manitoba, de la Colombie Britannique et les principales institutions des provinces maritimes détachent à chacune de ces stations, soit des professeurs, soit des spécialistes et techniciens. Parmi les problèmes pratiques que l'on y a abordés citons entre autres: l'histoire naturelle des poissons comestibles, la bactériologie du poisson, soit frais, soit préparé, l'amélioration des méthodes de manipulation et de prépaation du poisson, etc. Des mémoires scientifiques et des rapports sont publiés chaque saison.

Aide directe.-Dans le domaine d'aide directe, outre le päiement de primes aux pêcheurs dont il est question dans un autre paragraphe, le gouvernement adopte différentes mesures de temps à autre. Depuis 1927 un service de transport du poisson a été fait sur plusieurs divisions de la côte de l'Atlantique par la branche dés Pêcheries du ministère de la Marine et des Pêcheries. Ce service permet aux pêcheurs des territoires desservis par les bateaux du Ministère de vendre leurs prises rapidement, parce qu'ils peuvent les délivrer aux acheteurs à des points centraux, ̀̀ un coût beaucoup moins élevé par guintal. Ainsi les régions qui peuvent bénéficier d'un marché immédiat pour le poisson frais se trouvent grandement étendues à une époque à laquelle le marché du poisson frais prendra plus grande importance. Les pêcheurs peuvent obtenir une meilleure compensation pour leur travail beaucoup plus tôt qu'il leur serait possible autrement et de plus ils peuvent consacrer à la pêche tout le temps qu'ils devaient autrefois employer au saurissage du poisson. Un autre pas destiné à rendre de grands services aux pêcheurs est l'établissement d'un système de radio pour émettre des rapports sur les probabilités de température, les approvisionnements de boëtte et de glace le long des côtes et les prix du morché aux poissons. Pendant la saison de 1928 ces rapports ont été irradiés deux fois par jour d'Halifax à Louisbourg, et les rapports de température ont également été irradiés de St. John. Comme la plupart des vaisseaux de pêche ont maintenant des appareils récepteurs, ce service a été d'une grande valeur et il a été continué cette année. Les informations télégraphiques sur les approvisionnements de boëtte à la côte sont aussi irradiées par la branche des pêcheries et affichées dans nombre de ports dans les mois de printemps et d'été. Deux bulletins statistiques traitant de la pêche maritime sont aussi préparés par la branche des Pêcheries et publiés mensuellement et trimestriellement et sont distribués par tout le Canada pour le plus grand avantage des pêcheurs et de l'industrie poissonnière. On prépare encore des plans pour la distribution de rapports sur l'état du marché au poisson dans les pays où le poisson canadien est exporté. Depuis plusieurs années des primes ont été payées pour la destruction des phoques dans les ports de certaines régions. Afin d'améliorer la qualité du hareng saur canadien, le gouvernement a employé un expert pour démontrer les méthodes écossaises de saurissage du poisson. En vertu de la Loi d'inspection du poisson, un système d'instruction sur les méthodes améliorées de préparer le poisson et de fabriquer les barils est en opération depuis plusieurs années de même que l'inspection du
poisson préparé. Une flotte de petites canonnières circule dans les eaux côtières, aussi bien que dans les eaux intérieures pour assurer l'application des reglements de la pôche et prévenir le braconnage. Depuis plusieurs années on fait aussi dans les stations scientifiques du gouvernement des recherches et des expérimentations sur la pêche et les productions poissonnières. Cette partie des activités du gouvernement fait l'objet d'un autre paragraphe de cette revue, sous l'en-tête "Recherches Scientifiques".

Pendant la guerre, on s'est efforcé d'augmenter autant que possible la consommation de poisson, afin d'économiser les autres aliments plus facilement exportables chez nos alliés. A cette fin, le gowvernement établit un service de transport du poisson par grande vitesse dans des wagons réfrigérateurs sur son réseau, depuis le littoral jusqu'aux grandes villes de l'intérieur; de plus, il s'efforça de stimuler la consommation du poisson au moyen d'une active propagande. Les résultats n'ont pas été négligeables puisqu'aujourd'hui la consommation de poisson au Canada dépasse 22 livres par bouche.* Le gowvernement s'est aussi préoccupé d'améliorer le service de trains rapides transportant le poisson depuis la côte de l'Atlantique jusqu'à Montréal et Toronto.

Problèmes internationaux.-Une région de pêche aussi riche que celle du nord de l'Atlantique ne pouvait manquer d'attirer les pêcheurs d'autres pays et d'anciennes coutumes se transformèrent en droits acquis, dont quelques-uns durent encore, notamment le séchage de leurs prises par les pêcheurs Français sur les rivages de Terre-Neuve. Autrement grave est la question des droits des Etats-Unis dont les pêcheurs, durant la période coloniale, approvisionnaient de poisson la NouvelleAngleterre et à qui le traité de Versailles de 1783 reconnut le droit de pêcher dans les caux côtières du Canada. La guerre de 1812 leur fit perdre cette prérogative, si bien qu'après 1818, les Etats-Unis n'avaient d'autres droits que coux de faire escale dans les ports canadiens pour s'y abriter ou s'y approvisionner de bois ou d'eau, ou y réparer leurs embarcations; de pêcher autowr des âles de la Madeleine et sur la rive nord du golfe St-Laurent, à l'est de Pointe-Jolie; enfin de faire sécher et de préparer leur poisson dans les havres, baies et anses non habités de cette partie de la rive nord. I'interprétation des clauses du traité de 1818 souleva maintes querclles apaisées par le traité de réciprocité (1854-1866). Par ce dernier traité, le poisson canadien et ses sous-produits entraient on franchise aux Etats-Unis et vice versa; de plus, les pêcheurs des Etats-Unis obtenaient le droit de pêche dans les eaux territoriales canadiennes de l'Atlantique, les pêcheurs canadiens étant autorisés à pêcher dans certaines eaux territoriales des Etats-Unis, sur le même littoral, à l'exclusion dans les deux cas des cours d'eau et de leurs estuaires. Les crustacés, mollusques et coquillages étaient exceptés. Le traité de Washington de 1871 confirma le traité de réciprocité de 1854 en ce qui concerne les pêcheries et pourvut à la nomination d'une commission d'arbitrage devant déterminer le chiffre de l'indemnité à payer par les Etats-Unis à la Grande-Bretagne, en raison des concessions par elle consenties. Cette commission siégea d Halifax en 1877 et y rendit une sentence arbitrale fixant cette indemnité à $\$ 5,500,000$, dont $\$ 1,000,000$ étaient attribués à Terre-Neuve. Cependant, en 1885, les Etats-Unis dénoncèrent les clauses de ce traité se rapportant à la pêche et cette action fut suivie d'une période de désagréments entre les deux pays. Une convention signée en 1888 porte le nom de "Traité non ratifié de 1888 ". Les plénipotentiaires qui l'ont négocié étaient tombés d'accord sur les points suivants: les bateaux de pêche des Etats-Unis recevraient annuellement et gratuitement des licences les autorisant à pénétrer dans les ports canadiens, $\grave{a} y$ acheter des provisions et des agrès, à transborder leurs prises et à embarquer des équipages. C'est ce traité qui donna naissance aux «licences de modus vivendi». Les négociateurs du traité ayant reconnu qu'il ne pouvait être ratifié par les deux gowernements avant l'ouverture de la saison de pêche, décidèrent, comme mesure transitoire et ne devant pas durer plus de deux ans, que les bateaux de pêche des Etats-Unis, sur paiement d'un droit de $\$ 1.50$

[^22]par tonneau, pourraient exiger l'émission d'une licence leur accordant le bénéfice des dispositions ci-dessus énumérées. Le Sénat des Etats-Unis rejeta ce traité; néanmoins, le gouvernement canadien continua à émettre des "licences du modus vivendi» jusqu'en 1918, date à laquelle des arrangements furent faits assurant des privilèges réciproques aux pêcheurs des deux pays dans les ports de leur voisin, mais les effets de cette entente-qui était une mesure spéciale de guerre du gouvernement des Etats-Unis-cessèrent le premier juillet 1921. L'année suivante, on dut recourir de nouveau aux «licences du modus vivendi», mais à la fin de 1923 elles disparurent. Depuis lors, on est revenu aux dispositions du traité de 1818.

Dans les Grands Lacs également les problèmes les plus importants, tels que le repeuplement et la disposition du poisson, ont nécessairement un caractère international et se compliquent du nombre d'Etats intéressés. Une situation analogue s'est créée en Colombie Britannique, où les industriels de Puget Sound capturent le saumon dos bleu du fleuve Fraser en quantités beaucoup plus considérables que les pêcheurs du Canada et ce, au moyen de pièges et autres méthodes interdites dans les eaux canadiennes. En 1906, une commission internationale fit le premier pas vers une entente sur cette question vitale; en 1922 une commission parlementaire recommandait la prohibition de la pêche de ce saumon dans les eaux du Fraser, pendant cinq ans, comme mesure de conservation.

La pêche au flétan de notre côté du Pacifique ne peut se faire que par les ports du Canada ou des Etats-Unis, mais comme elle se pratique principalement en dehors des eaux territoriales, aucun des deux pays ne powvait la contrôler seul. En même temps, il est de l'intérêt des deux pays de la maintenir florissante etpermanente. C'est pourquoi l'étude des moyens à adopter pour la protection de ce poisson a été confiée à la conférence canado-américaine des pêcheries nommée en 1918 par les deux pays pour étudier toutes les questions relatives à la pêche et pendantes entre les deux pays. En 1922, le Canada a propqsé que la question du flétan fut étudiée séparément. La suggestion ayant été bien accueillie, il en est résulté le traité du 2 mars 1923 "pour la protection du flétan du Pacifique». En vertu de ce traité, la pêche du flétan est interdite depuis le 16 novembre de chaque année jusqu'au 15 février inclusivement de l'année suivante.

Primes.-Ëne conséquence indirecte mais fort importante du traité de Washington subsiste encore aujourd'hui. Une loi de 188.2 ( 45 Tict., c. 18) pour le développement des pêcheries maritimes et l'encouragement d̀ la construction des navires de pêche a consacré une somme annuelle de $\$ 150,000$ représentant l'intérêt sur le montant de la sentence arbitrale d'Halifax, à la distribution de primes aux propriétaires de bateaux de pêche et à leurs équipages. Une autre loi, votée en 1891 (54-55 Vict., c. 42), éleva ces primes à $\$ 160,000$, les détails de leur distribulion étant réglés chaque année par arrêté ministériel.

Industrie moderne.-L'industrie poissonnière du Canada telle qu'elle existe actuellement est le fruit des efforts accomplis pendant les cinquante dernières années. En 1844, la valeur des prises n'était estimée qu'à $\$ 125,000$; elle doubla dans la décade suivante, et dès 1860 , dépassait $\$ 1,000,000$. Dix ans plus tard, elle atteignit $\$ 6,000,000$, chiffre plus que doublé en 1878. Dans la dernière décade du siècle elle dépassait $\$ 20,000,000$, touchait d̀ trente-quatre millions en 1911 et - atteignait presque cinquante-cinq millions en 1928. Mais son apogée fut atteinte en 1918, année qui dépassa soixante millions. Ces chiffres représentent la valeur totale de tout le poisson vendu soit frais, soit séché, soit en conserve ou autrement préparé. Pendant ce temps le personnel de cette industrie a atteint 80,000 personnes et le capital qu'elle absorbait, $\$ 50,000,000$ en certaines années.

Entre tous les poissons, la morue et le saumon se disputèrent longtemps la primauté; si l'on remontait jusqu'aux origines, la morue tiendrait la tête, mais si l'on ne considère que les vingt dernières années, on constate que le saumon a définitivement conquis la premiere place et même le volume de homard et son prix
élevé ont plus d'unè fois relégué la morue au troisième rang. Ceci eut pour effet de modifier le rang des provinces entre elles, la Colombie Britannique tenant maintenant la première place qui appartenait auparavant à la Nouvelle-Ecosse. Le fétan prend la quatrième place parmi nos poissons de commerce.

Commerce.-On a déjà vu que la consommation domestique de poisson est relativement minime au Canada et que cette industrie dépend largement des marchés de l'étranger. On peut évaluer approximativement à 60 pour cent des prises annuelles la portion exportée, dont les Etats-Unis absorbent approximativement un tiers et la Grande-Bretagne un sixième. Pendant l'année civile 1928, les exportations totales se sont élevées à $\$ 38,096,245$, dont $\$ 16,654,589$, pour les EtatsUnis et $\$ 4,160,391$ pour la Grande-Bretagne. Le plus important des poissons exportés est le saumon en bô̂te (expédié en Grande-Bretagne et aux autres marchés européens), suivi de près par la morue sèche (expédiée aux Antilles, en Amérique du Sud, etc.). Pour le poisson frais, spécialement le poisson blanc et le homard les Etats-Unis constituent le principal débouché. En définitive, les exportations de poissons du Canada ne le cèdent qu'à celles de la Grande-Bretagne et de la Norvège, mais si l'on y joint les exportations de Terre-Neuve, elles excèdent l'une et l'autre. En 1928, le Canada, a importé pour $\$ 4,068,074$ de poisson.

## STATISTIQUE DES PEAGHERIES CANADIENNES, 1928

La valeur totale de la production des pêcheries canadiennes en 1928 est de $\$ 55,050,973$, comparativement à $\$ 49,123,609$ en 1927 et $\$ 56,360,633$ en 1926. Ces chiffires représentent la valeur de la pêche telle que vendue, soit fraîche, soit préparée par les pêcheurs ou dans les usines. Le tableàu qui suit donne la quantité prise et la valeur des ventes de chacun des principaux poissons (dont les ventes ont donné $\$ 100,000$ et plus) au cours des cinq dernières années, avec, dans la dernière colonne, une indication de l'augmentation ou de la diminution en 1928 comparativement à 1927.

1. Quantité ${ }^{1}$ et valeur ${ }^{2}$ des principaux poissons, 1924-1928

| Esplèes | 1924 | 1925 | 1926 | 1927 | 1928 | Augmentation ou diminution en 1928 sur 1927 Aug. + Dimin. - |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Saumon.............................. . qtx | 2.024,675 | 1.933,260 | 2.180.470 | 1,541,447 | 2,286,151 | + 744.704 |
| s | 13,784,920 | 15,760,630 | 19,607,082 | 15,065,063 | 17,867,053 | + 2,801,990 |
| Morue............................. qtx | 1.888, 316 | 2,309,000 | 2,733.864 | 1, 978.803 | 2,150.078 | + 171,275 |
| s | 5,443, 814 | 6,232,821 | 6,995,283 | 4,881,980 | 6, 285; 777 | + 1,403,797 |
| Homard.,....................... qtx $_{\text {s }}$ | $\begin{array}{r} 272,213 \\ 4,169,171 \end{array}$ | $\begin{array}{r} 340,838 \\ \mathbf{5 , 5 5 2 , 9 7 7} \end{array}$ | $\begin{array}{r} 339.583 \\ 5,883,672 \end{array}$ | $\begin{array}{r} 316,831 \\ 5,426,176 \end{array}$ | $\begin{array}{r} 322.437 \\ 5,183,988 \end{array}$ | $\begin{array}{r} 5.606 \\ =\quad 242,188 \end{array}$ |
| Flétan............................ qtx | $\begin{array}{r} 359,647 \\ 5,878,870 \end{array}$ | $\begin{array}{r} 340,007 \\ 4,185,391 \end{array}$ | $\begin{array}{r} 339.918 \\ 4,935,472 \end{array}$ | $\begin{array}{r} 299.854 \\ 3,945,312 \end{array}$ | $\begin{array}{r} 329,923 \\ 3,812,321 \end{array}$ | $\begin{array}{r} 30.069 \\ \pm \quad 132,991 \end{array}$ |
| Hareng............................ qtx | $\begin{aligned} & 2,127,432 \\ & 3.147,123 \end{aligned}$ | $\begin{aligned} & 2,413,973 \\ & 3,117,841 \end{aligned}$ | $\begin{aligned} & 2,423,457 \\ & 3,238,919 \end{aligned}$ | $\begin{aligned} & 2.724,113 \\ & 3,358,098 \end{aligned}$ | $\begin{aligned} & 2,396.054 \\ & 3,104,911 \end{aligned}$ | $\begin{aligned} & -\quad 328.059 \\ & -\quad 253,187 \end{aligned}$ |
| Pilchard,........................... qtx | 27.485 | 318,973 | 969,958 | 1,368,582 | 1,610,252 | $+\quad 241.670$ $+\quad 724,270$ |
| s | 82,845 | 182,911 | 1,256,721 | 1,838,867 | 2,563,137 | + 724,270 |
| Paisson blanc...................... qtx | 167,706 $1,747,528$ | $\begin{array}{r}186,648 \\ 1,990 \\ \hline\end{array}$ | $\begin{array}{r} 190.884 \\ 2.167 .865 \end{array}$ | $\begin{array}{r} 185,664 \\ 2,192,738 \end{array}$ | $\begin{array}{r} 180.695 \\ 2,192,567 \end{array}$ | 4,969 |
|  | 337,860 |  | 496.802 | 421.709 | 481.708 | + 59,899 |
| \$ | 1,013,253 | 1,171,555 | 1,754,846 | 1,483,844 | 1,733,781 | + 249,937 |
| Dore................................ qtx | 101,610 | 86.877 | 126.086 | 140,019 | 142,610 | + 2.591 |
| Dore................................ $\mathrm{q}_{\text {s }}$ | 1,010,015 | 1,056, 169 | 1,385,856 | 1,347.589 | 1,616,442 | + 268,853 |
| Truite.............................. qtx | 76,858 | 81.292 | 78.710 | 92,007 | 91,694 | $\begin{array}{r}313 \\ 49.515\end{array}$ |
|  | 990.321 | .1,097,728 | 1,051,196 | 1,397,294 | 1,347,779 | 49.51 |
| Sardines........................... brl | 270.076 | $158,533$ | $173.166$ | $174,695$ |  | $+\quad 111.285$ $+\quad 245,147$ |

1.-Quantitel ${ }^{1}$ et valeur ${ }^{2}$ des principaux poissons, 1924-1928-fin

| Espėces | 1924 | 1925 | 1926 | 1827 | 1928 | Aug ou d en 19 D D | entation <br> inution <br> sur 1927 <br> + <br> in. - |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Eperlan................................ qtx $\mathbf{q}^{\mathbf{S}}$ | $\begin{array}{r} 90,428 \\ 1,154,641 \end{array}$ | $\begin{array}{r} 76,795 \\ 1,035.504 \end{array}$ | $\begin{array}{r} 92.311 \\ 1,174,185 \end{array}$ | $\begin{array}{r} 82,762 \\ 1,117,330 \end{array}$ | $\begin{array}{r} 91,877 \\ 1,241,452 \end{array}$ | $\pm$ | $\begin{array}{r} 9,115 \\ 124,122 \end{array}$ |
| Perche $\qquad$ qtx 8 | $\begin{array}{r} 29.387 \\ 185,350 \end{array}$ | $\begin{array}{r} 27,532 \\ 180,497 \end{array}$ | 30,498 230,155 | 34.573 272,687 | 53.176 763,315 | $+$ | $\begin{array}{r} 18.803 \\ 490,628 \end{array}$ |
| Tullipi................................. qtx $_{\text {¢ }}$ | $\begin{array}{r} 42,346 \\ 175,268 \end{array}$ | $\begin{array}{r} 61,804 \\ 290.754 \end{array}$ | $\begin{aligned} & 101,525 \\ & 645,945 \end{aligned}$ | $\begin{aligned} & 121.764 \\ & 633,150 \end{aligned}$ | $\begin{aligned} & 104,145 \\ & 612,931 \end{aligned}$ | - | $\begin{aligned} & 17,619 \\ & 20,219 \end{aligned}$ |
| Maquereau............................... gtx $_{\text {g }}$ | $\begin{array}{r} 215.590 \\ 1,021.242 \end{array}$ | $\begin{aligned} & 187,661 \\ & 663,628 \end{aligned}$ | $\begin{aligned} & 115.487 \\ & 443,155 \end{aligned}$ | $\begin{aligned} & 158,797 \\ & 582,705 \end{aligned}$ | $\begin{aligned} & 123.768 \\ & 528.267 \end{aligned}$ | - | $\begin{aligned} & 35,029 \\ & 54,438 \end{aligned}$ |
| Merluche et lingue. .................... qtx | $\begin{aligned} & 192,811 \\ & 316,508 \end{aligned}$ | $\begin{aligned} & 174,136 \\ & 295,720 \end{aligned}$ | $\begin{aligned} & 151,051 \\ & 203,502 \end{aligned}$ | $\begin{aligned} & 177,370 \\ & 232,404 \end{aligned}$ | $\begin{aligned} & 253,244 \\ & 368,237 \end{aligned}$ | $+$ | $\begin{array}{r} 75,874 \\ 135,833 \end{array}$ |
| Marue longue ${ }^{\text {a }}$. . . . . . . . . . . . . . . . . . . ${ }^{\text {qtx }}$ | - | - | - | $\begin{array}{r} 49.916 \\ 401,259 \end{array}$ | $\begin{array}{r} 50,772 \\ 366,101 \end{array}$ | $\pm$ | $\begin{array}{r} 856 \\ 35,158 \end{array}$ |
| Brochet............................... qtx $_{\text {q }}$ | $\begin{array}{r} 53.995 \\ 230,261 \end{array}$ | $\begin{array}{r} 54,217 \\ 278,369 \end{array}$ | $\begin{array}{r} 72,520 \\ 407,181 \end{array}$ | $\begin{array}{r} 70.473 \\ 356.992 \end{array}$ | $\begin{array}{r} 62.701 \\ 362,922 \end{array}$ | $\pm$ | $\begin{aligned} & \mathbf{7 , 7 7 2} \\ & \mathbf{5}, 930 \end{aligned}$ |
| Clovisses et mactres. . . . . . . . . . . . . . . . brl | $\begin{array}{r} 60.357 \\ 320,241 \end{array}$ | $\begin{array}{r} 54.986 \\ 290.063 \end{array}$ | $\begin{array}{r} 54.230 \\ 268,887 \end{array}$ | $\begin{array}{r} 57.712 \\ 274,287 \end{array}$ | $\begin{array}{r} 63,320 \\ 322,874 \end{array}$ | $+$ | $\begin{array}{r} 5,608 \\ 48,587 \end{array}$ |
|  | 30.601 168,306 | $\begin{array}{r} 34,453 \\ 275,624 \end{array}$ | $\begin{array}{r} 30,385 \\ 182,310 \end{array}$ | $\begin{array}{r} 31.173 \\ 187,038 \end{array}$ | $\begin{array}{r} 21,496 \\ 257,952 \end{array}$ | + | $\begin{array}{r} 9.677 \\ 70.914 \end{array}$ |
| Anguille. . . . . . . . . . . . . . . . . . . . . . . . qtx $_{\text {S }}$ | $\begin{array}{r} 15,635 \\ 127,255 \end{array}$ | $\begin{array}{r} 15,675 \\ 146,062 \end{array}$ | $\begin{array}{r} 24,466 \\ 231,559 \end{array}$ | $\begin{array}{r} 15.926 \\ 139,932 \end{array}$ | $\begin{array}{r} 25,661 \\ 227,751 \end{array}$ | + | $\begin{array}{r} 9,735 \\ 87,819 \end{array}$ |
| Hultres...................................... brl | $\begin{array}{r} 28,892 \\ 212,408 \end{array}$ | $\begin{array}{r} 21,428 \\ 185,353 \end{array}$ | $\begin{array}{r} 22.255 \\ 209,378 \end{array}$ | $\begin{array}{r} 21,650 \\ 197,781 \end{array}$ | $\begin{array}{r} 21.493 \\ 214,180 \end{array}$ | 7 | $\begin{array}{r} 157 \\ 16,399 \end{array}$ |
| Petoncles.. . . . . . . . . . . . . . . . . . . . . . . . . . . . brl | $\begin{aligned} & 10,350 \\ & 70,655 \end{aligned}$ | 17,718 97,751 | $\begin{array}{r} 23,200 \\ 151,926 \end{array}$ | $\begin{array}{r} 38,635 \\ 217,932 \end{array}$ | $\begin{array}{r} 26,304 \\ 164,607 \end{array}$ |  | $\begin{array}{r} 12,331 \\ .53,325 \end{array}$ |
| Esturgeon. $\qquad$ qty \$ | $\begin{array}{r} 7,174 \\ 248,786 \end{array}$ | $\begin{array}{r} 6,243 \\ 201,227 \end{array}$ | $\begin{array}{r} 5,198 \\ 159,438 \end{array}$ | $\begin{array}{r} 4,788 \\ 143,720 \end{array}$ | $\begin{array}{r} 4,866 \\ 141,009 \end{array}$ | $\pm$ | $\begin{array}{r} 78 \\ 2,711 \end{array}$ |
| Espadon.......................................................... | $\begin{array}{r} 5,575 \\ 96,157 \end{array}$ | $\begin{array}{r} 4,551 \\ 78,209 \end{array}$ | $\begin{array}{r} 12.936 \\ 207,248 \end{array}$ | $\begin{array}{r} 7,299 \\ 120,692 \end{array}$ | $\begin{array}{r} 8,088 \\ 132,345 \end{array}$ | $+$ | $\begin{array}{r} 789 \\ 11,653 \end{array}$ |
| Eil d'or. $\qquad$ qtx | $\begin{array}{r} 6,597 \\ 36,263 \end{array}$ | 7,263 70,776 | $\begin{aligned} & 11.685 \\ & 85,791 \end{aligned}$ | 11.485 115,970 | $\begin{array}{r} 10.713 \\ 115,956 \end{array}$ | - | 772 |
| Merlan........................................ qtx | $\begin{array}{r} 54,787 \\ 107,691 \end{array}$ | $\begin{array}{r} 76,396 \\ 127,415 \end{array}$ | $\begin{array}{r} 86,416 \\ 124.957 \end{array}$ | $\begin{aligned} & 35,050 \\ & 62,597 \end{aligned}$ | $\begin{array}{r} 64,691 \\ 107,871 \end{array}$ | $1+$ | $\begin{aligned} & 29,6641 \\ & 45,274 \end{aligned}$ |
| Morue noire............................. qtx $_{\mathbb{S}}$ | $\begin{array}{r} 18,183 \\ 130,334 \end{array}$ | $\begin{array}{r} 14,956 \\ 114,315 \end{array}$ | $\begin{aligned} & 10.358 \\ & 89,371 \end{aligned}$ | $\begin{array}{r} 16.430 \\ 123,421 \end{array}$ | $\begin{array}{r} 13,388 \\ 101,452 \end{array}$ | - | $\begin{array}{r} 3,042 \\ 21,969 \end{array}$ |

${ }^{1}$ Pris et débarqué. ${ }^{2}$ Vendu. ${ }^{\text {a }}$ Compris avec morue avant 1927.

## opérations des pêcheries en 1928

La valeur des produits des pêcheries canadiennes de l'année civile 1928 atteint un total de $\$ 55,050,973$, soit $\$ 5,553,935$ de plus qu'en 1927 . Une fois seulement en dehors de 1918 et 1919, quand les prix du poisson subissaient la règle générale de l'inflation de guerre et d'après-guerre, les pêcheries du Canada ont donné une production plas grande qu'en 1928. Cette exception se constate en 1926 alors qu'une température anormalement favorable a aidéles pêcheurs et leur a permis d'écouler des produits poissonniers pour une valeur de $\$ 56,360,633$ ou $\$ 1,309,660$ de plus qu'en 1928.

L'année 1928 donne une prise plus considérable sur chacune des côtes-sur la côte de l'Atlantique, c'est-à-dire les pêcheries d'eau salée des provinces maritimes et du Québec, et sur la côte du Pacifique. Les prises dans les eaux intérieures montrent une faible diminution nette attribuable à des pêches moins considérables en Ontario et au Manitoba. La valeur des produits des pêcheries maritimes est de $\$ 46,669,222$ comparativement à $\$ 41,547,697$ l'année précédente. Pour les pêcheries intérieures, cette valeur est de $\$ 8,381,751$, soit une augmentation de $\$ 805,839$ sur l'année précédente.

Dans l'ensemble, les prix ont été un peu meilleurs en 1928 que l'année précédente, ce qui, avec une augmentation dans le volume de la prise, a procuré aux pêcheurs une année plus prospère. Ies exportations montrent une expansion substantielle. Le poisson et les produits poissonniers canadiens ont été écoulés sur environ cent marchés étrangers et le total de l'exportation donne une valeur de $\$ 38,096,245$ comparativement à $\$ 34,814,448$ en 1927: En 1928, les pêcheries canadiennes contribuent à la balance favorable du commerce canadien une somme de $\$ 34,028,171$.

Le nombre d'hommes employés à la pêche et autres opérations primaires est de 62,785 , comparativement à 63,415 l'année précédente et le nombre employé dans la préparation du poisson est de 15,434, au lieu de 16,697 l'année précédente, ce qui donne un personnel total de 78,219 personnes engagées directement dans l'industrie poissonnière, soit 1,893 de moins qu'en 1927.

Il est intéressant de noter que comparativement à 1927 l'année 1928 domne une diminution dans le nombre de personnes employées dans l'industrie, tandis que la prise et la valeur de la pêche pour tout le Dominion sont beaucoup plus considérables. L'usage plus répandu d'embarcations à moteur et d'engins mécaniques dans les pêcheries augmente la capacité productive de chaque ouvrier dans cette industrie. La vulgarisation de la force motrice dans les pêcheries est un facteur dont il faut tenir compte dans toute analyse des changements d'une annét à l'autre, principalement quand il s'git du personnel. Le capital engagé montre une augmentation de $\$ 1,765,910$ sur 1927 atteignant le chiffre de $\$ 58,072,371$. Il est à noter que s'il y a une certaine avance des capitaux engagés dans l'industrie en 1928, on constate aussi des indications que cette augmentation doit se continuer l'année suivante. Sur la côte de l'Atlantique, par exemple, on place de nouveaux capitaux dans les facilités pour opérations primaires. Au cours de l'hiver pas moins de 155 nouveaux bateaux de pêche étaient en construction dans les provinces maritimes, le plus grand nombre en Nouvelle-Ecosse. Les activités de ce genre de construction dans les provinces maritimes ont été au cours de l'hiver dernier plus grandes que depuis plusieurs années, résultat attribué à un plus grand succès des pêcheurs en 1928 et partiellement, selon les indications, à la création d'un service de transport du poisson par le Département ce qui a donné de meilleures facilités d'écoulement et a encouragé les pêcheurs à perfectionner leur outillage.

Dans une répartition selon la valeur, la Colombie Britannique contribue 48 p.c. de la production des pêcheries de tout le Canada en 1928. Les provinces maritimes y contribuent 32 p.c., l'Ontario 7 p.c., les provinces des prairies et le Yukon, pris ensemble, 7 p.c. et le Québec 6 p.c. Seulement dans le cas d'une des provinces, l'Ile du Prince-Edouard, trouve-t-on une diminution $(\$ 171,126)$ comparativement à 1927.

Dans la division des produits, le saumon est le premier en importance au cours de l'annee, sa production ayant augmenté d'environ $\$ 3,000,000$ sur l'année précédente, donnant une valeur de $\$ 17,867,053$. La morue vient en second avec une valeur de $\$ 6,285,777$. Le homard suit avec une valeur de $\$ 5,183,988$. Cette année, le flétan et le hareng ont donné chacun plus de $\$ 3,000,000$. La production de pilchard dépasse $\$ 2,000,000$ et la valeur du poisson blanc vendu, le plus important des produits de la pêche intérieure, dépasse aussi $\$ 2,000,000$. L'églefin, le doré, la sardine, l'éperlan et la truite ont donné respectivement chacun une valeur de plus de $\$ 1,000,000$.

Nouvelle-Ecosse--Avec une production totale de $\$ 11,681,995$, la NouvelleEcosse donne près de $\$ 900,000$ de plus qu'en 1927 et seulement $\$ 823,927$ de moins qu'en 1926, qui était, comme on l'a déjà noté, une année dont les conditions naturelles furent anormalement favorables. La pêche à la morue donne une augmentation de plus de 140,000 quintaux et en valeur de plus de $\$ 950,000$. Il •y a aussi des augmentations en volume et en valeur de l'églefin, merluche et
lingue et de l'espadon, parmi les principaux poissons de mer et une augmentation en valeur seulement du maquereau mais une diminution dans le cas du flétan, du hareng, du homard et du saumon. Les pétoncles ont donné beaucoup moins qu'en 1927 mais tout de même substantiellement plus qu'en aucune autre année antérieure. Il y a une certaine augmentation dans la valeur des mactres et clovisses. Les prix du poisson séché ont été un facteur important dans l'augmentation de valeur de la production de cette province. La prise totale de la flotte de Lunenberg, qui pêche principalement pour le commerce du poisson séché, donne 717,225 quintaux de poisson salé à vert, comparativement à 682,770 quintaux en 1927, bien que le nombre de vaisseaux employés ait été de 75 ou 8 de moins que l'année précédente.

Nouveau-Brunswick.-L'année a été très heureuse pour l'industrie poissonnière du Nouveau-Brunswick et la valeur totale de la prise dans la province qui est de $\$ 5,001,641$ dépasse de près de $\$ 600,000$ celle de 1927. La pêche à la sardine, dont l'importance grandit toujours et qui a donné au cours de l'année 279,349 barils, a une valeur de $\$ 1,284,771$ et contribue plus de $\$ 238,000$ à cette augmentation dans les produits poissonniers de toute la province. L'éperlan a aussi donné une augmentation en valeur de $\$ 225,000$ de plus que l'année précédente, alors qu'une prise de 46,184 quintaux donnait une valeur de $\$ 686,163$, tandis qu'en 1928 une prise de 59,866 quintaux donne une valeur de $\$ 912,055$. Il y a eu aussi une forte augmentation relative dans la pêche à la merluche, la valeur totale de la pêche étant de $\$ 55,297$ ou $\$ 41,000$ de plus qu'en 1927. La prise de maquereau a été deux fois celle de l'année précédente tandis qu'il y a aussi une augmentation substantielle en volume et en valeur de la pêche à la morue et au homard. D'autre part, il y a diminution de la pêche au gasparot, au hareng et au saumon.

Ile du Prince-Edouard.-Dans cette province la pêche au maquereau a été meilleure en 1928 que l'année précédente tant en volume qu'en valeur, tandis que la pêche au hareng donne une diminution d'à peu près 4,000 quintaux mais une légère augmentation en valeur. La pêche aux huîtres a donné en volume une augmentation de près de 700 barils mais la valeur n'a pas été tout à fait aussi grande que l'année précédente. La pêche au homard a donné 65,613 quintaux ou 2,813 quintaux de plus que le total de 1927. La pêche à l'éperlan et à la morue a baissé tant en valeur qu'en volume.

Québec.-Une augmentation totale de $\$ 260,164$ dans la valeur de la production poissonnière de cette province se répartit entre $\$ 132,001$ pour les pêcheries maritimes et $\$ 128,163$ pour les pêcheries intérieures. Dans les pêcheries maritimes la prise d'églefin a plus que doublé celle de l'an dernier, tandis que la prise de homard a augmenté d'environ 1,840 quintaux. La pêche à la morue a aussi été meilleure qu'en 1927 et il y a également augmentation dans un ou deux autres cas. Il y a des diminutions dans la pêche au hareng et à l'éperlan, tandis que le maquereau n'a rapporté qu'un tiers de son volume de 1927. Les pêcheries intérieures donnent des augmentations tant en volume qu'en valeur pour presque tous les poissons pêchés pour le commerce, avec une ou deux exceptions. La plus forte augmentation se trouve dans la pêche à l'anguille dont la valeur a monté de $\$ 110,778$ en 1927 à $\$ 189,905$ en 1928 .

Ontario.-Une augmentation de $\$ 360,524$ dans la valeur des produits poissonniers de l'Ontario vient principalement de la pêche du doré et de la perche. Le doré a donné en volume moins qu'en 1927 mais en valeur a rapporté $\$ 420,252$ comparativement à $\$ 300,529$ tandis que la valeur de la perche a triplé le chiffre de 1927, $\$ 704,025$ au lieu de $\$ 211,352$. La pêche au hareng, à la truite et an poisson blanc a été moins beureuse que l'année précédente.

Manitoba.-Les pêcheries du Manitoba donnent une diminution dans le volume total de production mais les conditions du marché sont cause qu'il y a une augmentation de $\$ 200,576$ en valeur. Le poisson blanc donne une légère
augmentation en volume et une augmentation proportionnellement plus grande en valeur. La pêche au tullipi a diminué de plus d'un million de livres en volume, mais la valeur de la prise a donné $\$ 65,000$ de plus qu'en 1927. La pêche au doré a donné plus que l'année précédente tant en volume qu'en valeur. Le brochet donne un plus faible volume mais une plus grande valeur. L'œil-d'or donne aussi un volume moins considérable mais la diminution en valeur sur 1927 est de seulement $\$ 66$. La pêche à la truite a aussi donné une diminution.
.Saskatchewan.-Les pêcheries de cette province ont donné 4,131 quintaux de plus qu'en 1927 et l'augmentation en valeur est approximativement de $\$ 60,000$. La production de poisson blanc, 43,667 quintaux, est de 2,344 quintaux supérieure à celle de 1927 en volume et de $\$ 50,000$ en valeur. Le brochet et le mulet ont augmenté en valeur, tandis que la truite, le doré et le tullipi ont diminué. La pêche à l'œil-d'or est au même niveau qu'en 1927.

Alberta.-La pêche à la truite en 1928 a pour principale cause d'augmentation de la valeur totale du poisson pris dans cette province une prise de 20,000 quintaux donnant près de deux fois autant qu'en 1927 et la valeur totale est de $\$ 222,312$ comparativement à $\$ 126,955$ l'année précédente. Il y a aussi des gains plus ou moins considérables dans la prise de perche, doré et tullipi mais des diminutions pour le mulet, le brochet et le poisson blanc. Ce dernier a donné 5,335 qtx de moins qu'en 1927.

Colombie Britannique.-De fortes augmentations dans les prises de saumon, de flétan et de pilchard caractérisent l'année 1928 dans les pêcheries de la Colombie Britannique et contribuent la plus forte partie d'une avance de prix de $\$ 3,700,000$ dans la valeur de toute la production poissonnière de cette province comparativement à l'année précédente. Il faut aller à l'année de guerre 1918 et à 1926 pour trouver une plus grande valeur aux produits poissonniers de la Colombie Britannique. Le saumon pris en 1928 donne $2,257,455 \mathrm{qtx}$ ou près de $767,000 \mathrm{qtx}$ de plus qu'en 1927 et une valeur de $\$ 17,345,670$ comparativement à $\$ 14,253,803$ l'année précédente. Le fétan débarqué aux ports de la Colombie Britannique en 1928 donne $31,466 \mathrm{qtx}$ de plus qu'en 1927 mais une diminution de $\$ 97,000$ en valeur. La pêche au pilchard donne une augmentation de 241,670 qtx. La pêche au hareng a donné en volume un peu moins qu'en 1927 mais la valeur a été un peu plus élevée.

Territoive du Yukon.-La production des pêcheries du Yukon donne en 1928 un remarquable total de $\$ 51,665$, soit $\$ 39,575$ de plus qu'en 1927. Le saumon' donne un total de $\$ 17,320$ comparativement à $\$ 8,050$ l'année précédente et la truite une augmentation de $\$ 13,000$; le poisson blanc a une augmentation d'à peu près $\$ 12,000$.

## pécheries des côtes de l'atlantique

La pêche sur les côtes de l'Atlantique a rapporté $5,219,716 \mathrm{qtx}$ de poisson en 1928 dont la valeur est de $\$ 20,106,495$.

Morue, églefin, merluche, lingue et merlan.-Ces cinq variétés mises ensemble ont donné en 1928 sur les côtes de l'Atlantique un volume beaucoup plus considérable qu'en 1927 et leur valeur donne une augmentation de $\$ 1,834,136$. En 1928 le volume de cette pêche atteint $2,948,221$ quintaux valant $\$ 8,493,938$ comparativement à $2,612,743$ qtx et $\$ 6,659,802$, l'année précédente. Le poisson fumé et le filet fumé de ces espèces provenant des prises de 1928 donnent 111,327 qtx, ce qui est inférieur à la production de l'année précédente mais les proportions se trouvent renversées quand il s'agit de poisson frais et de poisson séché et sans arêtes. Le poisson frais et les filets frais écoulés donnent $379,048 \mathrm{qtx}$ comparativement à $334,175 \mathrm{qtx}$ en 1927 ; la production de poisson séché et sans arêtes donne 574,682 qtx comparativement à 523,794 qtx l'année précédente. Cette
augmentation dans la prise et la valeur des poissons de ce groupe est contribuée principalement par la Nouvelle-Ecosse, et le Québec y participe aussi. Dans I'Ile du Prince-Edouard, la prise de 1927, qui était de $61,913 \mathrm{qtx}$, a baissé à 49,773 qtx et la valeur de $\$ 149,397$ à $\$ 125,444$. En volume l'Ile du PrinceEdouard donne une légère augmentation pour la merluche et la lingue et une légère diminution pour l'églefin et une grande diminution pour la morue. Les pêcheurs de l'Ile du Prince-Edouard et du Québec ne prennent pas de merlan. Les pêcheurs di Québec ont pris 469,924 qtx de morue, ce qui donne 815,200 livres de plus qu'en 1927. En églefin ils ont pris 5,884 qtx, ce qui représente une augmentation de plus de cent pour cent. La merluche et la lingue ont donné à peu près quatre fois autant qu'en 1927 soit de 830 qtx à 3,804 qtx. Au Nouveau-Brunswick, la prise d'églefin a été inférieure à celle de l'année précédente, 28,878 qtx en 1928 comparativement à 33,834 qtx en 1927 mais il y a une amélioration visible dans la pêche à la morue, à la merluche et à la lingue. La morue a donné 172,874 qtx comparativement à 136,773 qtx en 1927 et la merluche et lingue ont donné $78,726 \mathrm{qtx}$, une augmentation de plus de $32,000 \mathrm{qtx}$. L'augmentation en merlan est relativement considérable, $34,118 \mathrm{qtx}$ comparativement à 7,693 qtx l'année précédente. Les pêcheurs de la Nouvelle-Ecosse ont été beaucoup plus heureux que l'année précédente. De ces cinq variétés ils ont pris $1,470,172$ qtx de morue comparativement à $1,331,873 \mathrm{qtx} ; 445,950$ qtx d'églefin comparativement à $384,207 \mathrm{qtx}, 158,744 \mathrm{qtx}$ de merluche et lingue comparativement à 119,431 qtx et 30,573 qtx de merlan comparativement à 27,357 qtx.

Maquereau, hareng et sardine.-La pêche de ces trois variétés en 1928 donne une augmentation de 51,832 qtx sur 1927 mais ceci provient principalement d'une augmentation de plus de 222,000 qtx de sardines parce qu'il y avait en même temps une diminution de 135,729 qtx de hareng et de 35,029 qtx de maquereau. La diminution dans la prise de maquereau, $123,768 \mathrm{qtx}$ comparativement à 158,797 qtx, provient de l'insuccès des pêcheurs du Québec. En Nouvelle-Ecosse la prise de maquereau, $71,440 \mathrm{qtx}$, est un peu inférieure à celle de 1927, tandis qu'au Nouveau-Brunswick les 18,611 qtx depassent deux fois la prise de l'an dernier et dans l'Ile du Prince-Edouard la prise est de 10,197 qtx comparativement à 6,455 qtx en 1927. En Québec les pếcheurs au maquereau n'ont pris que 23,520 qtx, tandis qu'en 1927 ils en avaient pris 70,765 qtx. Ia prise de hareng est considérablement inférieure à celle de 1927 dans chacune des trois provinces. Au Nouveau-Brunswick la diminution est de $77,000 \mathrm{qtx}$, en Nouvelle-Ecosse de $48,162 \mathrm{qtz}$ en Québec 6,178 qtx et dans l'Ile du PrinceEdouard $4,383 \mathrm{qtx}$. La pêche à la sardine a été très bonne au Nouveau-Brunswick, la prise étant de 558,698 qtx comparativement à 349,280 qtx l'année précédente. L'augmentation en valeur est de $\$ 238,521$. Les sardines en conserve de cette province donnent 257,881 caisses. En 1927 ce chiffre était de 240,091 caisses.

Autres poissons de mer.-La pêche au flétan qui en 1927 dépassait de 3,670 qtx la prise de l'année précédente a baissé en 1928 à 1,397 qtix au-dessous du total de 1927. La prise en Nouvelle-Ecosse, Nouveau-Brunswick et Québec (celle du Nouveau-Brunswick est plutôt faible) donne un total de 27,103 qtx. La prise de Québec est de 1,269 qtx comparativement à seulement 848 qtx en 1927 mais la Nouvelle-Ecosse donne une diminution de $1,783 \mathrm{qtx}$ et il y a aussi diminution dans le cas du Nouveau-Brunswick. L'espadon pris seulement par les pêcheurs de la Nouvelle-Ecosse donne une pêche de plus de $8,080 \mathrm{qtx}$, comparativement à 7,299 qtx l'année précédente. La pêche au tacaud qui se pratique principalement au Nouveau-Brunswick a baissé à 19,601 qtx soit environ 3,140 qtx de moins qu'en 1927. Il y a aussi une forte diminution dans la prise de gasparot en Nouvelle-Ecosse et au Nouveau-Brunswick, le volume total étant de 3,474 qtx au lieu de 9,383 qtx l'année précédente. En Nouvelle-Ecosse cette prise qui était de 8,195 qtx en 1927 a baissé à 2,488 qtx en 1928.

Homard.-Les quatre provinces de l'Atlantique donnent ensemble une augmentation de 5,000 qtx dans la prise de homard qui se chiffre à un total de 322,437 qtx; cependant les prix n'ont pas été aussi bons qu'en 1927 et la valeur totale de la prise, $\$ 5,183,988$, est de $\$ 242,188$ inférieure au chiffre de l'année précédente.

Autres mollusques.-La production de clovisses et mactres a augmenté dans les quatre provinces excepté au Nouveau-Brunswick, donnant un total de 46,486 barils ou une augmentation de 3,193 barils. La plus forte production, 30,058 barils, est contribuée par le Nouveau-Brunswick. La production de pétoncles, 26,304 barils, donne 12,331 barils de moins qu'en 1927. La pêche à l'huitre donne une faible diminution en Nouvelle-Ecosse, Nouveau-Brunswick et Ile du Prince-Edouard pris ensemble, mais tandis que la Nouvelle-Ecosse et l'Ile du Prince-Edouard ont des prises respectives de 1,944 et 4,756 barils plus grandes que celles de 1927, la prise du Nouveau-Brunswick de 12,383 barils est de 1,191 barils en baisse sur l'année précédente.

Poissons frayant dans les rivières.-Si l'on prend ensemble les quatre provinces on constate une diminution dans la pêche du poisson frayant dans les rivières, le gasparot, le saumon et l'éperlan, bien que la prise de l'éperlan soit plus grande que celle de l'année précédente. La pêche au gasparot en NouvelleEcosse a baissé de 14,680 qtx à 11,950 qtx et au Nouveau-Brunswick de 39,434 qtx à 23,600 qtx. Dans l'Ile du Prince-Edouard, où il n'y a pas de gasparot prix en 1927, on en a pêché 150 qtx en 1928. Le marché au gasparot, qui s'écoule généralement sous la forme de poisson salé, a été peu satisfaisant comme l'année précédente. La diminution totale dans le volume de saumon pris est de 22,398 qtx , le volume global des quatre provinces donnant seulement 26,715 qtx comparativement à 49,113 qtx en 1927. Il y a diminution dans chacune des quatre provinces de la pêche à l'éperlan, le Nouveau-Brunswick, qui est le principal producteur, donne une augmentation de 13,682 qtx avec un total pour cette province de 59,866 qtx mais chacune des trois autres provinces donne une diminution.

## PÉCHERIES INTÉRIEURES

La pêche en eau douce se pratique au Nouveau-Brunswick, où elle a peu d'importance comparativement à la pêche en eau salée, et dans le Québec, l'Ontario, les Provinces des Prairies et le Yukon. Comparativement à 1927, l'année sous revue donne un gain dans la valeur des produits de la pêche en eau douce, dépassant d'un peu plus de $\$ 800,000$ les chiffres de l'année précédente, $\$ 8,381,751$ comparativement à $\$ 7,575,912$ en 1927. L'achigan, la barbotte, le saumon, le sauger, l'alose, l'esturgeon et les poissons divers donnent des augmentations, tandis qu'il y a diminution dans la pêche au gasparot, au maskinonge et à l'éperlan. L'Ontario contribue la plus forte pêche de poisson blanc, $58,235 \mathrm{qtx}$ mais ce total est de 3,420 qtx inférieur à celui de 1927. Le Manitoba et la Saskatchewan ont donné un peu plus qu'en 1927 et l'Alberta un peu moins. Le Québec donne une faible augmentation. Le Manitoba, qui est le principal producteur de doré, a donné une plus forte prise qu'en 1927, 101,870 qtx comparativement à 99,813 qtx l'année précédente. La prise de l'Ontario, $20,012 \mathrm{qtx}$, n'est pas tout à fait aussi grande que celle de 1927. Celle de la Saskatchewan, 3,054 qtx, est légèrement inférieure à celle de l'année précédente mais l'Alberta, avec 8,499 qtx, donne 1,750 qtx de plus que l'année précédente. Toute la sandre prise vient de l'Ontario. Cette pêche donne une diminution en volume en 1928 avec une augmentation en valeur. Le Manitoba est.toujours le principal producteur de brochet mais en 1928 il a donné 3,800 qtx de moins qu'en 1927 alors que la production a été de $40,166 \mathrm{qtx}$. Le Québec et la Saskatchewan ont donné plus qu'en 1927 mais l'Ontario et l'Alberta ont donné moins.

## PECHERIES DES PROVINCES DES PRAIRIES

Dans l'ensemble, les pêcheries des provinces des prairies ont eu en 1928 une meilleure année qu'en 1927, malgré la rigueur de la température qui a grandement nui à la pêche en hiver. Au Manitoba, par exemple, où la production a été moins grande en volume, il y a augmentation en valeur. En Saskatchewan il y a augmentation de plus de $4,000 \mathrm{qtx}$ dans la production commerciale. Les pêches d'hiver de l'Alberta ont produit beaucoup moins mais celles d'été donnent une plus grande augmentation, de sorte qu'il y a un gain net de plus de 4,500 qtx et les prix dans leur ensemble ont été satisfaisants; les prix du poisson en été sont de passable à moyen et ceux d'hiver, plutôt bons. Il y a augmentation dans le nombre de personnes engagées dans cette industrie dans les trois provinces et tout indique une tendance a l'expansion comme le fait voir une production plus grande. En Saskatchewan l'outillage employéest évalué à $\$ 26,660$ de plus qu'en 1926; par exemple, le nombre de seines s'étant aügmenté de 2,926. En Alberta la valeur de l'outillage est portée à $\$ 416,185$. Malheureusement, les pêcheurs du Manitoba ont souffert de lourdes pertes dans leur outillage à la suite du mauvais temps. Comme résultat, plusieurs équipes ont perdu tout leur matériel de pêche et l'on estime que la perte totale en filets seulement atteint $\$ 42,600$. On remarque dans les trois provinces cette année un plus grand intérêt dans le sport de la pêche. En Alberta le nombre de permis a atteint un nouveau chiffre et la quantité de poisson pris par ces pêcheurs en Alberta est presque deux fois aussi considérable que l'année précédente. Le nombre de pêcheurs à la ligne en Saskatchewan pour 1928 est plus considérable que celui de' 1927 mais leurs captures sont moindres: Au Manitoba, où le nombre de permis a atteint 6,113, la prise est estimée à 2,935 qtx, le trait le plus frappant étant le nombre d'étrangers ayant pris des licences qui dépasse le double de celui de 1927, atteignant 1,113. Cette amélioration dans le sport de la pêche des Provinces des Prairies est en grande partie le résultat de l'action du Département qui a semé de la truite et d'autres poissons dans les différents cours d'eau depuis quelques années. On a rapporté une bonne pêche dans les ruisseaux et cours d'eau qui ont été semés de truite. Des milliers de perches ont été prises dans le lac Mayatan, en Alberta, où en 1922 le Département a déposé seulement 42 poissons adultes. On peut voir en grand nombre les jeunes perches dans tous les autres lacs de l'Alberta où l'on a déposé des perches adultes aussi récemment qu'en 1925, tandis que les alevins de perches qui ont été mis dans le lac. Whitewood cette même année étaient en 1928 des poissons d'une livre et demie. On a constaté en 1928 des résultats semblables avec le doré dans d'autres eaux. En Saskatchewan un nombre de cours et de nappes d'eau qui avaient été peuplés il y a quelques années donnent maintenant une bonne pêche et généralement dans chacune des trois provinces les résultats de cette politique de peuplement des eaux au moyen des poissonnières du gouvernement ont eu des résultats satisfaisants, le sport de la pếche étant meilleur d'année en année. Les pêcheries du lac Athabaska dans le nord extrême des provinces des prairies ont fait de nouveaux progrès en 1928, indiquant les possibilités que réservent les régions septentrionales du Dominion. Le poisson pris dans le lac Athabaska se vend en quantités de plus en plus grandes à mesure que la pêche y est développée par des méthodes énergiques et progressives. La truite soigneusement tranchée à la machine, gelée et empaquetée dans des enveloppes étiquetées de papier paraffiné, a été envoyée aux marchés européens les plus éloignés avec des résultats satisfaisants. On a ajouté deux remorqueurs à vapeur et deux barges-glacières à l'outillage de pêche, ce qui montre l'expansion de cette industrie sur ce lac. La création d'une coopérative de pêcheurs au Manitoba est un des développements importants de 1928 dans les pêcheries des provinces des Prairies. Cette coopérative, connue officiellement sous le nom de Manitoba Cooperative Fisheries, et qui est incorporée en vertu de la loi des sociétés coopératives du Manitoba, est le résultat d'altercations qui duraient depuis des années entre les pêcheurs et les négociants de poisson du Manitoba. L'organisation a été complétée dans la mi-été de 1928 et jusqu'au 28 janvier

1929 elle avait disposé de $3,326,255$ livres de poisson frais et gelé, produit de la pêche d'hiver. A la fin de janvier dernier la Coopérative comptait 515 membres, ee qui représentait estimativement de 1,000 à 1,200 hommes sur un total de 4,100 pêcheurs au Manitoba. L'industrie de la pêche dans ces provinces se ressent beaucoup du progrès des mines et de l'extension des chemins de fer qui permettent d'étendre les activités de la pêche dans des eaux peu éloignées et d'exploiter de nouveaux lieux de pêche. Par exemple, la construction du chemin de fer à la mine Flin-Flon, au nord du Manitoba, a rendu possible des opérations de pêche dans les eaux de la rivière Churchill, entre les détroits de Pélican et les chutes Island, le centre de la pêche à l'esturgeon sur la rivière Churchill, les pêcheurs pouvant placer leur poisson au terminus de chemin de fer en une journée et les expéditions atteignant Le Pas la journée suivante, tandis qu'autrefois il fallait faire un voyage, aller et retour, qui prenait vingt jours. De même, une extension de ce chemin de fer vers le nord du portage Cranberry jusqu'au mines Sherritt-Gordon, au lac Cold, maintenant en construction, rendra accessible toutes les eaux du nord du Manitoba le long de cette ligne et permettra de disposer d:a produit de la pêche. En Saskatchewan, un arpentage de chemin de fer projeté de Nipiwan a déjà tracé la route des pêcheurs jusqu'aux lacs Grand Ours, Ballantyne et Deschambault. Ce nouveau chemin de fer donnera accès à un nombre important de lacs poissonneux et avec d'autres chemins de fer mettra les produits de lieux de pêche très importants à une distance raisonnable des transports par chemin de fer.

## pécherdes de la côte du pacifique

La partie la plus importante de l'industrie poissonnière de la Colombie Britannique se trouve dans l'exportation du saumon en conserves qui en 1928 a eté distribué dans pl:1s de 25 pays différents. La France a été le plus fort client ayant pris environ 333,670 caisses sur un total de production de $2,035,637$ caisses. Les achats de l'Australasie atteignent environt 269,000 caisses et le Royaume-Uni est le troisième client au point de vue quantité, prenant approximativement 258,000 caisses. Les expéditions à l'Europe continentale en outre de celles faites à la France, atteignent presque 150,000 caisses, les achats belges contribuant un tiers de cette quantité. Les consignations à la côte de l'Atlantique des Etats-Unis donnent un peu plus de 14,500 caisses. Les exportations à l'Afrique-Sud et à l'Afrique Occidentale donnent un total de plus de 63,000 caisses, tandis que les autres pays où cette précieuse denrée est expédiée comprennent les Etats de l'Amérique Centrale et de l'Amérique du Sud, Ceylan, la Chine, les Indes Occidentales, l'Egypte, Fidji, l'Inde, le Japon, les Philippines, les Straits Settlements et les Antilles. La production de saumon sockeye de 1928 ayant baissé à 203,541 caisses, plus de 100,000 caisses inférieure à la moyenne des cinq années 1924-28, le record de 1926 n'a pu être dépassé ou atteint. Tout de même le total de conserves de saumon n'est que de 30,000 caisses inférieur au chiffre de 1926. Les records de 1926 ont été dépassés pour le saumon rose et le quinat. Le saumon rose a donné 792,362 caisses ou 19,369 caisses de plus que le plus haut précédent et le quinat 161,294 caisses de plus que son record précédent et a atteint un total de 863,256 caisses. Le saumon cohoes a produit 150,684 caisses et le saumon de printemps 18,856 caisses, mais chaque année on emploie de plus en plus une plus grande quantité de saumon de printemps et de cohoes dans le commerce de poisson frais et gele. La montée de saumon rose et de quinat a été exceptionnellement forte pour l'ensemble de la province et en même temps les officiers de pêcheries informent qu'au cours de la saison ils ont constaté la présence de variétés de saumon dans des cours d'eau où elles n'avaient jamais été vues auparavant. La baisse de production de sockeye vient principalement des rivières Fraser et Skeena. Dans ces deux rivières au cours des deux années précédentes la montée du sockeye qui s'etait prolongée beaucoup
plus tard que d'ordinaire avait aidé la production, mais en 1928 rien de tel ne s'est produit sur la Fraser. Sur la rivière Skeena la réduction de production est attribuable à l'application d'une période de clôture de 60 heures par semaine au cours de la montée du saumon rose dans ces eaux, mesure adoptée pour assurer la conservation, et dont le résultat semble amplement prouver la sagesse. Les opérations dans le sound Barclay au cours de l'année indiquent que le programme de pisciculture et de restriction de pêche dans ces eaux a eu de bons effets comme le montre la montée excellente du saumon. Au cours de l'année on a noté une amélioration dans l'emballage et la continuation de ce progrès devrait avoir pour résultat des marchés plus faciles et plus satisfaisants. L'amélioration du standard est considérée retraçable en grande partie à deux causes: d'abord, la réduction des seines à puise employées, réduction provenant des efforts du département pour persuader à tous les intéressés qu'ils devaient s'entendre entre eux à cet effet. A la suite de cette entente, la pêche avec seine à puise a été confinée pour la plupart du temps à des eaux se trouvant à une distance raisonnable des conserveries alimentées par les seines et le saumon s'est trouvé apporté de cette manière aux conserveries plus frais et en meilleur état. Le second facteur d'amélioration de l'étalon se trouve dans les règlements exigeant que le poisson transporté par eau là où la navigation est susceptible de retard soit vidé et empaqueté dans la glace immédiatement après la prise. Deux autres développements d'intérêt et d'importance se sont produits en 1928 sur les côtes du Pacifique; ce sont, une augmentation de la production de hareng salé à sec et une augmentation de la production d'huile et de poudre de poisson. Le hareng salé à sec est exporté en Chine et la production de 1928 a atteint un niveau record-1,072,188 qtx-en dépit du désarroi politique dans lequel se trouve actuellement ce pays et qui a nécessairement son écho sur les problèmes mercantiles. La production de l'an dernier est de 23,998 qtx supérieure à celle de 1927. L'huile de poisson extraite en 1928 en Colombie Britannique donne un total de $5,047,339$ gallons comparativement à $3,657,627$ gallons en 1927. La production de poudre de poisson et d'engrais (y compris aussi un peu d'os de baleine) est de 20,119 tonnes, comparativement à 17,655 tonnes l'année précédente. Cette forte augmentation provient de la pêche au pilchard, les huileries montant leur production de $2,673,876$ gallons à $3,995,806$ gallons et la production de poudre et d'engrais à 14,500 tonnes, comparativement à 12,169 tonnes en 1927. La mise en conserve du pilchard a aussi atteint un chiffre élevé en 1928 donnant 65,097 caisses, le plus fort total de toute année depuis 1920. On constate en 1928 une certaine augmentation dans la proportion revenant au Canada des produits de la pêche du fétan débarqués à Prince Rupert bien que la quantite de poisson débarqué à ce port par les vaisseaux américains soit encore plus grande que celle débarquée par les goélettes canadienn'es. Le flétan débarqué aux ports de la Colombie Britannique au cours de l'année dóne 302,820 qtx de plus que le total de 1927 mais encore moins que la moyenne de la période 1923-26. Il y a une bonne augmentation dans le nombre de phoques à fourrure pris au large des côtes de la Colombie Britannique par les Indiens en 1928 de même qu'une augmentation dans la pêche à la baleine. Les Indiens qui ont droit de prendre des phoques en vertu du traité de la chasse Pélagique ont débarqué 2,090 peaux comparativement à 1,476 en 1927. La pêche à la baleine a été faite par six vaisseaux à vapeur avec deux bases opérant au cours de l'année dont la prise a été de 305 contre 258 en 1927 et 269 en 1926. Continuant ses efforts pour développer le sport de la pêche dans la province, le gouvernement a semé des œoufs et des alevins en 201 cours d'eau en 1928 et a maintenu une minutieuse inspection des lacs et des cours d'eau dans les territoires concernés. On s'attend à des résultats fructueux de ces efforts.

## Résumé de la production, 1928

Le tableau qui suit donne pour l'ensemble du Canada un relevé de tout le poisson pris et mis sur le marché en 1928. On y trouvera d'abord la quantité et la valeur de la prise de chaque espèce au navire ou bateau de pêche, puis l'indication de la forme sous laquelle chacune de ces espèces a été livrée à la consommation et la valeur qu'elle avait alors.
2. Quantité et valeur de tout le poisson pêché et mis en vente au Canada, durant l'annêe 1928


## 2. Quantité et valeur de tout le poisson pêché et mis en vente au Canada durant l'année 1928-suite


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## 2. Quantité et valeur de tout le poisson pêché et mis en vente au Canada durant l'année 1928-suite

| Espèces | Pêcheries maritimes |  |
| :---: | :---: | :---: |
|  | Quantité | Valeur |
|  |  | \$ |
| Crabes, pris. | 6,451 | 27,939 |
| Mis en vente- | 5,928 |  |
| Frais..... | 5,928 | 34,018 1,248 |
| Total, valeur marchande. | - | 35,266 |
| Homard, pris.. | 322,437 | 3,611,962 |
| Mis en vente- | 97, 906 | 2,215,352 |
| Vivant.... | ${ }^{97.332}$ | 2, 25,8820 |
|  | 111.986 | 2,883,922 |
| Foie de.. | 4,867 | 58,894 |
| Total, valeur marchande. | - | 5,183,988 |
| Huitres, prises.. | 21,493 | 164,108 |
| Mises en vente, fratches. | 21,493 | 214,180 |
| Pêtoncles, pris.. | 26,304 | 140,838 |
| Mis en vente- | 52,139 | 163,417 |
| En botte... | 119 | 1,190 |
| Total, valeur marchande. | - | 164,607 |
|  | 1,202 | 10,303 |
| Mises en vente, fratches. | 1,202 | 14,280 |
| Langues et noues, marinées ou sêclıées. | 1,111 | 4,748 |
|  | 1.298 | 2.296 |
| Mis en vente, frais. | 1,298 | 3,701 |
| Algue, verte........... | 2,526 | 4,009 |
| Mise en vente, sêchêe. | 388 | 4,579 |
| Phoque à fourrure, pris. | 2,090 | 18,812 |
| Peaux vendues........ | 2,090 | 23,092 |
| Phorque, commun, | 8,258 | 31,177 |
| Peaux vendues. | ${ }_{8,015}$ | 32,962 |
| Huile de....... | 8,015 |  |
| Total, valeur marchande. | - | 36,058 |
| Marsouins, pris. | 3 | 90 36 |
| Peaux vendues Huile | 142 | 57 |
| Total, valeur marchande. | - | 83 |
| Baleines, prises. | 305 | 318,616 |
| Mises en vente- | 376 | 12,784 |
| Os et poudre. Huile de.... | 571,914 | 260, 592 |
| Engrais de. | 754 | 45,240 |
| Total, valeur marchande. | - | 318,616 |
| Produits divers- |  |  |
| Huile de poisson.. | 415,348 | 11,584 |
| Colle de poisson....... | 13, 087 | 23, 129 |
| Entrailles de poisson. | 12,240 | 45,649 |
| Engrajs de poisson... | 6,858 | - 380.1273 |
| Poudre de poisson. | 6, | -11,991 |
| Autres produits.... |  |  |
| Valeur totale des pêcheries- |  |  |
| Valeur des prises.. | - | 27,046,153 |
| Valeur marchande.. | - | 46,669,222 |

2. Quantité et valeur de tout le poisson pêchê et mis en vente au Canada durant l'année 1928-fin

| Espèces |  | Pêcheries intérieures |  |
| :---: | :---: | :---: | :---: |
|  |  | Quantite | Valeur |
|  |  | 548 | 8 |
| Gasparot, pris <br> Mis en vente- |  |  | 1,644 |
| Frais..................................................................... |  | $\begin{array}{r}284 \\ 88 \\ \hline\end{array}$ | 859792 |
|  |  |  |  |
| Total, valeur marchande.. |  | - | 1,644 |
| Achigan, pris................................................................ q qtx |  | 698698 | $\begin{aligned} & \mathbf{9 , 3 2 4} \\ & 9,593 \end{aligned}$ |
| Mis en vente, frais |  |  |  |
|  |  | 13,497 | $\begin{aligned} & 76,436 \\ & 92,754 \end{aligned}$ |
|  |  | $\begin{aligned} & 8,935 \\ & 8,935 \end{aligned}$ |  |
| Misc en vente, iralche. |  |  | $\begin{aligned} & 78,626 \\ & 84,733 \end{aligned}$ |
|  |  | 23,24023,240 | $\begin{aligned} & 198,793 \\ & \mathbf{2 0 0 , 0 2 1} \end{aligned}$ |
| Mise en vente, fratche |  |  |  |
| Cil-d'or, pris. qty |  | 10,713 | 54,106 |
| Frais...... |  | 6,552 | $\begin{array}{r} 832 \\ 115,124 \end{array}$ |
| Fume.. |  |  |  |
| Total, valeur marchande. |  |  | 115,956 |
| Hareng, pris.................................................................. qt. q. |  | $\begin{gathered} 59,993 \\ 59,993 \end{gathered}$ | $\begin{aligned} & 168,861 \\ & 235,127 \end{aligned}$ |
| Mis en vente, frais | qtx |  |  |
|  |  | $\begin{array}{r}\text { 53,93 } \\ \hline 93\end{array}$ | 2,369 2,369 |
| Poisson divers (gade, chabot, ouananiche, ete.), pris qtx |  | 49,281 | $\begin{array}{r} 203,069 \\ 205,539 \end{array}$ |
|  |  | 49,281 |  |
| Mulet, pris................................................................. ${ }^{\text {. }}$ qtx |  | 16,065 <br> 16,065 | $\begin{aligned} & 26,433 \\ & 37,557 \end{aligned}$ |
| Mis en vente frais. | qtx |  |  |
| Perche, prise............................................................. qtx |  | 51,751 | $\begin{aligned} & 639,338 \\ & 750,926 \end{aligned}$ |
| Mise cл vente, fratche. |  |  |  |
| Doré, prìs................................................................. qtx |  | 142,610142,610 | $\begin{aligned} & 1,289,325 \\ & 1,616,442 \end{aligned}$ |
| Misen vente, frais | qty |  |  |
|  |  | $\mathbf{2 1 , 4 9 6}$ <br> $\mathbf{2 1}, 496$ | $\begin{aligned} & 257,952 \\ & 257,952 \end{aligned}$ |
|  |  |  |  |
| Broche t, pris. Mis en vente, frais | qtx | 62,701 | $\begin{aligned} & 277,632 \\ & 362,922 \end{aligned}$ |
| Ssumon, pris............................................................. qtx |  | 1,981 1,981 | 34,38237,786 |
| Mis en vente, frais |  |  |  |
| Saugers, pris............................................................. qtr |  | 4,1044,104 | $\begin{gathered} 22,731 \\ 28,795 \end{gathered}$ |
| Mis en vente, fra |  |  |  |
|  |  | 1,635 | $\begin{gathered} \mathbf{1 3 , 9 1 4} \\ 13,914 \end{gathered}$ |
| Mise en vente, fralcho |  |  |  |
|  |  | 8,774 | $\begin{aligned} & 68,704 \\ & 68,704 \end{aligned}$ |
| Mis en vente, frais. |  |  |  |
|  |  | 4,5614,5614,711 | 115,748129,6584,711 |
|  |  |  |  |
|  |  |  |  |
| Total, valeur marchande. |  |  | 134,369 |
|  |  | $\begin{aligned} & \mathbf{9 0 , 0 7 5} \\ & 90,075 \end{aligned}$ | $\begin{aligned} & \mathbf{1 , 0 5 4 , 3 2 3} \\ & 1,319,150 \end{aligned}$ |
|  |  |  |  |
| Tullipi, pris.....................................................................$^{\text {. }}$ qtx |  | 104,145 | 455,418 |
|  |  | $\begin{array}{r}103,715 \\ \hline 268\end{array}$ | 608,961 |
| Fume. |  |  |  |
| Total, valcur marchande. |  | 268 | 612,931 |
| Polsson blanc, pris........................................................................................ <br> Mis en vente, frais............................................................................... qtx |  | $\begin{aligned} & 180,695 \\ & 180,695 \end{aligned}$ | $\begin{aligned} & 1,653,232 \\ & 2,192,567 \end{aligned}$ |
|  |  |  |  |
| Yaleur totaie des pêcheries intérieuresValeur des prises. |  |  | 6,702,350 |
|  |  |  |  |  |
| Vaieur marchande |  |  | 8,381,751 |
| Valeter totaie de toutes les pecherles-Valeur des prises................ |  |  | 33,748,503 |
|  |  |  |  |  |
|  |  |  | 55,050,973 |

## Moyens de production: Capital, outillage, employés, etc.

(1) Opérations primaires-

Capital.-La valeur des vaisseaux, bateaux et engins de pêche (filets, seines, pièges, chaluts, etc.), servant aux opérations primaires de pêche en 1928 est de $\$ 31,131,088$, comparativement à $\$ 31,851,979$ en 1927 et $\$ 29,038,613$ en 1926. Le tableau 3 donne le nombre et la valeur de chaque espèce de bateaux et d'engins de pêche pour chacune de ces trois années. On y remarquera que les statistiques des engins de pêche de 1928 sont beaucoup plus détaillées que celles des années précédentes.

Personnel.-Le nombre d'hommes employés sur les bateaux ou pêchant sans bateau en 1928 est de 62,785, comparativement à 63,415 en 1927 et 61,371 en 1926. (Tableau 4).

## (2) Usines poissonnières-

Capital.-Le capital engagé dans les usines poissonnières en 1928 est de $\$ 26,941,283$ comparativement à $\$ 24,454,482$ en 1927 et $\$ 28,868,071$ en 1926. Ces totaux comprennent la valeur des terrains des bâtiments et des machineries, des produits et des matières premières en main, l'argent en caisse et les comptes courants. (Tableau 5).

Personnel.-Le nombre de personnes employées dans les usines en 1928 est de 15,434 comparativement à 16,697 en 1927 et 17,408 en 1926. Les homarderies ont employé le plus grand nombre de personnes en 1928, 5,811, suivies par les saumoneries avec un total de 5,179. (Tableau 6).
3. Matériel et agrès de pêche. Valeur des vaisseaux et barques de pêche, filets, pièges, quais, etc., employés dans les pêcheries canadiennes en 1926, 1927 et 1928

| Nomenclature | Pêcheries maritimes |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1926 |  | 1927 |  | 1928 |  |
|  | Nombre | Valeur | Nombre | Valeur | Nombre | Valeur |
|  |  | \$ |  | \$ |  | 8 |
| Chalutiers a vapeur | 14 | 990, 000 | 17 | 1,240,000 | 11 | 743,000 |
| Vajsseaux de pêche à vapeur |  | 159,500 | 11 | 178,000 |  | 164.500 |
| Vaisseaux à voiles et à gazoline | 1,398 | 6,454,422 | 1.561 | 8,017,679 | 1,422 | 7,707,251 |
| Barques (voiles et rames)..... | 14,138 | 615, 936 | 14,569 | -679,949 | 14,877 | 587,472 |
| Barques à gazoline. | 15,622 | 5,328,186 | 15,944 | 5,434,057 | 15,136 | 6,004, 131 |
| Pinasses et chalands |  | 516.783 |  | 5, 566,293 |  | 579,515 |
| Filets à maillest. | 125,899 | 4,507,399 | 124,590 | 5,178,239 | 67,139 | 1,231,711 |
| Sennes in saumon tratnantes | - | - |  |  | 11, 349 | 1,444,019 |
| Sennes à saumon, de fond ${ }^{2}$. | - | - | - | - | 21 | 5,500 |
| Sennes à saumon, à parci . | - | - | - | - | 136 | 39,500 |
| Autres sennes ${ }^{\text {a }}$ parc ${ }^{\text {a }}$ | - | - | - | - | 855 | 449,485 |
| Sennes de fond ${ }^{\text {a }}$ Sennes a fperlan ${ }^{\text {a }}$. | - | - | - | - | - ${ }^{6} 5.294$ | 591,458 |
| Sennes àparc².. | - | - -7 | - | - - | 65 | 13,090 |
| Nasses... | 470 | 604,750 | 455 | 586,515. | 446 | 429,155 |
|  | - | - | - |  | 19 | 3,800 |
| Seines en bourse pour saumon ${ }^{\text {2 }}$ | - | - | - | - | 354 | 512,244 |
| Autres seines²....... | - | - | - | - | 1,913 | ${ }^{449,242}$ |
| Traineurs de ${ }^{\text {Chassoluts...... }}$ | 18, - $^{-7}$ | 300,374 | 18,129 | 307,217 | 18,557 | - 326,691 |
| Lignes à main. | 69,434 | 120,321 | 67,577 | 132,710 | 65,303 | 155,693 |
| Pieges à crabes. | 4,215 | 15,445 | 6,045 | 22,735 | 6,551 | 21,583 |
| Pieges a anguille. |  |  | 100 | ${ }^{400}$ | 418 | 1,032 |
| Pieges à homard. | 1,613,974 | 1,926,793 | 1,659,784 | 1,985,920 | 1,586,576 | 2,050, 207 |
| Parcs a homard2. |  |  |  | - |  | 39,570 5,207 |
| Rateaux a huitresi... | - | - | - | 8.170 | 1,365 | 5,207 |
| Rateaux à pétoncles? | 180 | 3,420 | 312 | 8,170 | 418 | 10, 138 |
| Rateaux a mactres 2 |  | 26,000 | 1 | 26,000 |  | 26,000 |
| Quais et moles............ | 2,623 | 977,820 | 2,511 | 954,820 | 2,060 | 825, 365 |
| Glacières. | 567 | 448,401 | 573 | 450,901 | 494 | 342,275 |
| Fumeries.. | 7,331 | 1,026,824 | 7,313 | 1,005,825 | 6,049 | 920,539 |
| Valeur totale. | - | 24,022,374 | - | 26,785,430 | - | 25,698,928 |

[^23]3. Matériel et agrès de pêche. Valeur des vaisseaux et barques de pêche, filets, pièges, quais, etc. employés dans les pêcheries canadiennes en 1926, 1927 et 1928-fin

| Nomenclature | Pêcherles Intérieures |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1926 |  | 1927 |  | 1928 |  |
|  | Nombre | Valeur | Nombre | Valeur | Nombre | Valeur |
| Bateaux à vapeur et remorque | 140 | $\stackrel{8}{\text { 1,038,674 }}$ | 138 | $\stackrel{\text { 1,037,354 }}{\text { ¢ }}$ |  | 1 , 037.684 |
| Barques (voiles et rames).... | 3,828 | $1,038,64$ 189,616 | 4,020 | $\begin{array}{r}1,037,354 \\ 180,480 \\ \hline\end{array}$ | 3,860 | 1,037.684 |
| Barques a gazoline. | 1,444 | 778,170 | 1,504 | 847, 425 | 1,557 | 906,516 |
| Chalands.. | 3 | 2,500 | 2 | 5,000 | ${ }^{1} 7$ | 23,500 |
| Filets à mailles. |  | 1,491,831 |  | 1,584,005 | - | 1,606, 105 |
| Seines Filets a parcs | 131 1322 | 25,018 | 1 1444 | - 2121.925 | 160 | 1, 27,851 |
| Filots cylindriques. | 1,185 | - 34,596 | 1,296 | 331,622 | 1,225 | -672,780 |
| Filots à rouleaux. | 52 | 605 | 57 | ${ }_{691}$ | 80 | ${ }^{978}$ |
| Lignes.. | 3,033 | 59,697 | 2,668 | 20,112 | 2,573 | 43,800 |
| Nasses... | 1,308 | 83,222 | 1,442 | 124,487 | 1,624 | 129,789 |
| Pieges a anguilles | $2{ }_{3}$ | 100 | 7 | 1050 | 110 | 320 |
| Dards......... | 140 | 990 | 123 | 1,910 | 88 | 1,134 |
| Quais et môles. | 462 | 195,698 | 469 | 167,273 | 467 | 183,760 |
| Glacières. | 945 | 451,170 | 955 | 464,592 | 1,005 | 545,058 |
| Eumeries. | 292 | 39.082 | 356 | 45, 470 | 331 | 50,912 |
| Valeur totale. | - | 5,016,239 | - | 5,066,549 | - | 5,432,160 |

## 4. Personnel occupé aux opérations de pêche en 1926, 1927 et 1928

| Classification | Pécheries maritimes |  |  | Pécheries intérieures |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1926 | 1927 | 1928 | 1926 | 1927 | 1928 |
| Hommes employes: | nomb. | nomb. | nomb. | nomb. | nomb. | nomb. |
| A bord des chalutiers à vapeur. | 249 | 311 | 226 | - | - | - |
| A bord des navires....................... | 7,660 | 7,808 | 7,567 | 729 | 732 | 767 |
| A bord des chaloupes...................... | 40,122 | 39,672 | 38,061 | 8,193 | 8,320 | 8,166 |
| A bord des pinasses.................... | 737 | 804 1,743 | $\begin{array}{r}\text { r } \\ \hline 236 \\ 2,972 \\ \hline\end{array}$ | 3,675 | 4,021 ${ }^{4}$ | + ${ }^{21} 469$ |
| Total. | 4,368 | 50,338 | 49.362 | 12,603 | 13,077 | 13,423 |

1 Pas d'information.
5. Capital d'exploitation ${ }^{1}$ des établissements de préparation du poisson en 1926, 1927 et 1928

| Enumération | 1926 |  | 1927 |  | 1928 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Nombre | Valeur | Nombre | Valeur | Nombre | Valeur |
| Homarderies. | 455 | $\stackrel{\text { S }}{\text { 1,47,374 }}$ | 438 | $\stackrel{5}{5}$ | 375 | 1,358,269 |
| Saumoneries. | 79 | 16,367,870 | 81 | 11,595,454 | 67 | 12,477,218 |
| Crustaces et mollusques. | 19 | 226,012 | 15 | 199,417 | 22 | 271,831 |
| Sardineries et autres conserve | ${ }^{4}{ }^{4}$ |  | 198 |  | ${ }^{5}$ | 1,262,229 |
| Saurisseries.... | 251 23 | 7,438,396 $\mathbf{2 , 1 0 4 , 9 9 5}$ | $\begin{array}{r}199 \\ 34 \\ \hline\end{array}$ | 7,009,983 $\mathbf{2 , 9 6 4 , 3 5 0}$ | 204 40 | $7,520,353$ $4,051,383$ |
| Hwileries........ | 831 |  |  |  |  | 4,051,383 |
| Total | 831 | 28,868,071 | 773 | 24,451,482 | 713 | 26,941,283 |

1 Embrasse la valeur des terrains, batiments, aménagements, outillages les matières premières en stock et les fonds do roulement.
6. Personnel des établissements de préparation du poisson en 1926, 1927 et 1928

| Enumération | 1926 |  |  | 1927 |  |  | 1928 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Hommes | $\underset{\text { mes }}{\text { Fers }}$ | Total | Hom. mes | Femmes | Total | Hommes | Femmes | Total |
| Personnes employees dans les: | nomb. | nomb. | nomb. | nomb. | nomb. | nomb. | nomb. | nomb. | nomb. |
| Homarderies......................... | 2,887 4,439 | 3,614 2,355 | 6,501 | 2,790 4,288 | 3,390 2,438 | 6,180 <br> 6,726 | 2,614 3,307 | 3,197 1,872 | $\mathbf{5 , 8 1 1}$ 5,179 |
| Saumoneries <br> Etablissements de préparation des mollusques et crustaces. | $\begin{array}{r}4,439 \\ 82 \\ \hline 80\end{array}$ | 2,355 201 14 | 6,794 | 1008 | $\begin{array}{r}2,438 \\ 127 \\ \hline 153\end{array}$ | $\begin{array}{r}6,720 \\ 227 \\ \hline 146\end{array}$ | 3,307 103 205 | $\begin{array}{r}1,872 \\ 326 \\ \hline 14\end{array}$ | 5,179 429 |
| Sardineries et autres conserveries...... | 340 2,511 | 142 <br> 321 <br> 1 | - ${ }^{4882}$ | - 29293 | 153 | 2,501 | 2,566 | 143 229 | 418 2.795 |
| Saurisseries.................................... | 2,503 | 13 | 2, 316 | 2, 602 | 15 | 2, 617 | , 765 | 37 | 802 |
| Total. | 10,762 | 6,646 | 17,408 | 10,330 | 6,367 | 16,697 | 9,630 | 5,804 | 15,434 |

## Détails des usines poissonnières

Nombre d'établissements.-Le nombre d'usines poissonnières en activité au Canada en 1928 est de 713, classifiées comme suit: 375 homarderies, 67 saumoneries, 22 conserveries de clovisses, 5 sardineries, 204 saurisseries et 40 huileries. Comparativement à l'année précédente, le nombre de homarderies montre un déclin de 63 , les saumoneries un déclin de 14 , et les sardineries une diminution de 1 , tandis que les conserveries de clovisses donnent une augmentation de 7 , les saurisseries une augmentation de 5 et les huileries une augmentation de 6 . Les conserveries sont classifiées selon l'espèce de poisson mis en conserves mais dans un grand nombre de ces usines on fait aussi le fumage et le salage du poisson. En 1928, le nombre de conserveries faisant aussi le fumage, le salage ou le séchage du poisson est de 38, comprenant 26 homarderies, 7 saumoneries, 2 conserveries de clovisses et 3 sardineries. On a classifié sous l'en-tête de saurisseries tous les établissements préparant le poisson autrement que par la mise en conserves, tandis que les huileries sont les usines préparant l'huile et la poudre de poisson. Ces industries sont limitées aux provinces maritimes, au Québec et à la Colombie Britannique.

Personnel et traitements.-En 1928 le personnel se compose de 15,434 personnes comprenant 630 employés à salaires, 10,579 à gages et 4,225 travaillant à la pièce. Cette dernière classification comprend plus spécialement les ouvriers à contrat dans les saumoneries de la Colombie Britannique où une grande partie du travail est à forfait, l'entrepreneur engageant ses propres travailleurs et étant lui-même payé par la saumonerie suivant la quantité de poisson mise en boîtes. Plus de la moitié des travailleurs clans les saumoneries de la Colombie Britannique sont employés cle cette manière. Comparativement à l'année précédente, le total d'employés donne une diminution de 1,263. Les rapports des établissements ont été classifiés de manière à montrer (1) les usines employant moins de cinq personnes, (2) celles en employant cinq et plus et (3) celles qui n'ont pas d'employés, le travail étant fait par le propriétaire lui-même. Le premier groupe (moins de 5 personnes) comprend 174 établissements, le second groupe, (de 5 personnes et plus), 503 établissements et le troisième groupe (pas d'employés), 36 établissements. La somme payée aux employés en 1928 est de $\$ 5,261,096$, divisée comme suit: Aux employés à salaire $\$ 853,800$; aux employés à gages $\$ 3,539,070$; aux employés à la pièce $\$ 868,226$. Ce total donne une diminution de $\$ 112,855$ sur l'année précédente. Le tableau ci-dessous donne les statistiques des employés à salaire et à gages pour les trois années 1926, 1927 et 1928.
7. Personnel des usines poissonnières, appointements et salaires, 1926, 1927 et 1928

| Année | Employes |  | Ouvriers et journaliers |  | Ouvriers a l'entreprise ou aux pièces |  | Total, personnel, appointements et salaires |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | nomb. | S | nomb. | \$ | nomb. | S | nomb. | S |
| 1926. | 546 | 733,760 | 11,579 | 3,807,533 | 5. 283 | 1,081,544 | 17,408 | 5,622,837 |
| 1927. | 639 | 871,211 | 11,343 | 3,769, 791 | 4.715 | 732,949 | 16,697 | 5,373,951 |
| 1928. | 630 | 853,800 | 10,579 | 3,539, 070 | 4.225 | 868,226 | 15,434 | 5,261,096 |

La main-d'oourre, par mois.-Les mois de plus grande activité de toute l'industrie sont juin, avec 9,418 employés à gages et mai avec 8,942 , tandis que les mois de moindre activité sont février, avec 1,468 employés à gages et janvier avec 1,719 . Ces chiffres ne comprennent pas les employés à la pièce sur qui aucune statistique n'existe. Dans les homarderies les mois de plus grande activité sont mai et juin; dans les saumoneries, juin, juillet et août; dans les saurisseries, septembre, octobre, novembre et décembre; et dans les huileries, juillet, août et septembre. Dans les conserveries de clovisses et dans les sardineries le nombre d'employés ne varie guère de mois en mois. Le tableau ci-dessous donne les statistiques de l'emploiement des trois dernières années.
8. Main-d'œurre de l'industrie poissonnièrel_Nombre d'employés sur la liste de paie le 15 de chaque mois en 1926, 1927 et 1928

| Mois | 1926 |  |  | 1927 |  |  | 1928 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Hommes | Femmes | Total | Hommes | Femmes | Total | Hommes | Femmes | Total |
|  | nomb. | nomb. | nomb. | nomb. | nomb. | nomb. | nomb. | nomb. | nomb. |
| Janvier. | 1,458 | 95 | 1,553 | 1,656 | 112 | 1,768 | 1,608 | 111 | 1,719 |
| Fevrier | 1,322 | 119 | 1,441 | 1,528 | 97 | 1,625 | 1,387 | 81 | 1,468 |
| Mars. | 2,086 | 272 | 2,358 | 2,109 | 314 | 2,423 | 1,634 | 213 | 1,847 |
| Mrini. | ${ }_{6,341}^{4,041}$ | - 1,078 | $\begin{array}{r}5,119 \\ 10,163 \\ \hline\end{array}$ | 4,058 6,109 | - 831 | 4,889 9,654 | 3,769 <br> 5 | 1,090 3,313 | 4,859 |
| Juin. | 6.933 | -3,924 | 10,857 | 6,109 6,812 | -3,535 | - 10,347 | 5,629 $\mathbf{6}, 270$ | 3,313 3,148 | 8,942 9 |
| Juillet. | 5,848 | 2,183 | 8.031 | 4,893 | 1,036 | 5,929 | 4,766 | +910 | 5, 5176 |
| Août. | ${ }^{4.572}$ | 759 | 5,331 | 4,441 | 676 | 5,117 | 4,414 | 560 | 4,974 |
| Septembre | 4.230 | 632 | 4.862 | 3,889 | 573 | 4,462 | 4,194 | 496 | 4,690 |
| Octobre. | 3,895 | 598 | 4,493 | 3,512 | 440 | 3,952 | 3,850 | 369 | 4,219 |
| Novembre | 3, 1264 | 281 | 3,345 | 2,722 | 186 | 2,908 | 3,100 | 210 | 3, 310 |
| Decembre. | 2,127 | 199 | 2,326 | 2,163 | 162 | 2,325 | 2,585 | 184 | 2.769 |

${ }^{1}$ A l'exclusion des ouvriers travaillant a l'cntreprise ou à la pièce.

Combustible.-Le combustible employé dans les établissements en 1928, y compris l'électricité servant comme force motrice, a une valeur totale de $\$ 494,887$ comparativement à $\$ 465,230$ en 1927. Le principal item de 1928 est le charbon, $\$ 249,089$; l'huile $\$ 125,392$; le bois $\$ 48,151$; l'électricité $\$ 43,347$. Dans les conserveries de homards et de clovisses le charbon, le bois et la gazoline sont les principaux combustibles; dans les saumoneries, le charbon, l'huile et le bois; dans les sardineries, le charbon et l'huile; dans les saurisseries, le charbon, le bois et l'électricité et dans les huileries, le charbon, l'huile et l'électricité.

Force motrice.-Le principal item de la production de force motrice mesurée par la quantité de h.p. produite en 1928 comprend: les engins et les turbines à vapeur au nombre de 238 , avec une capacité totale de $5,090 \mathrm{~h} . \mathrm{p}$. Les engins à combustion interne viennent en second, au nombre de 597 et une capacité de $3,664 \mathrm{~h} . \mathrm{p}$. Les moteurs électriques, en troisième, au nombre de 155 et une capacité de $2,808 \mathrm{~h} . \mathrm{p}$. et les turbines et roues hydrauliques en quatrième, au nombre de 65 et une capacité de $1,152 \mathrm{~h} . \mathrm{p}$. Les conserveries et les huileries se servent principalement des engins et des turbines à vapeur, tandis que les saurisseries emploient plutôt les moteurs électriques.

Matières premières.-La valeur totale du poisson acheté par les usines pour entrer dans la préparation des produits poissonniers ou pour être consommé frais est de $\$ 15,617,194$. La valeur du sel, des récipients et autres matières premières est de $\$ 4,961,573$, donnant un total de $\$ 20,578,767$ en 1928 comparativement à $\$ 18,364,846$ en 1927. La quantité de poisson employé par ces établissements en 1928 est de $8,230,443$ qtx ou 73 p.c. de la prise totale de poisson d'eau salée au cours de l'année, les autres 27 p.c. étant vendus directement par les pêcheurs. Le tableau ci-dessous donne la valeur des matières premières employées chacune des trois années.

## 9. Valeur des matières premières de l'industrie poissonnière, 1926, 1927 et 1928


Valeur de la production.-La production des usines poissonnières de 1928 donne une valeur totale de $\$ 36,267,732$, comprenant $\$ 27,992,063$ pour le poisson mis en boîtes, salé, séché, etc., et $\$ 8,275,669$ représentant la valeur du poisson vendu pour être consommé frais. A ce total, les saumoneries ont contribué $\$ 15,269,249$ ou 42 p.c., les saurisseries $\$ 11,331,890$ ou 31 p.c.; les homarderies $\$ 4,522,434$ ou 12 p.c.; les huileries $\$ 3,089,059$ ou 9 p.c.; les sardineries $\$ 1,759,246$ ou 5 p.c.; et les conserveries de clovisses $\$ 295,854$ ou 1 p.c. La classification des rapports des établissements suivant la valeur de leur production montre qu'en 1928235 établissements ont une production inférieure à $\$ 5,000 ; 121$, de $\$ 5,000$ à moins de $\$ 10,000 ; 126$, de $\$ 10,000$ à moins de $\$ 20,000 ; 91$, de $\$ 20,000$ à moins de $\$ 50,000$ et 140 , plus de $\$ 50,000$. Dans ce dernier groupe se trouvent 60 saumoneries, 39 saurisseries, 22 huilleries, 15 homarderies, 2 conserveries de clovisses et 2 sardineries. Le tableau qui suit donne les statistiques de la valeur de production par espèces d'établissements, pour les années 1926 à 1928.
10. Valeur des produits de l'industrie poissonnière, 1926, 1927 et 1928

| Nomenclature | 1926 |  | 1927 |  | 1928 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Poisson vendu frais | Poisson en bolte ou autrement préparé | Poisson vendu frais | Poisson en bolte ou autrement préparé | Poisson vendu frais | Poisson en bolte ou autrement préparé |
| Homarderies. $\qquad$ <br> Saumoneries. $\qquad$ <br> Etablissements de conserves de mollusques. | s | \$ | \$ | \$ | \$ | \$ |
|  | 886,127 | 4,005,358 | 933,631 | 3,709,313 | 1,263,559 | 3,258,875 |
|  | 167, 617 | 17,123,468 | 284,452 | 13,042, 682 | 338,907 | 14,930,342 |
|  | ,794 | 222,118 | - | 178,956 | 3,927 | 291,927 |
| Sardineries.. | $\begin{array}{r} 234,809 \\ 6,048,473 \end{array}$ | 1,725,344 | 192,981 | 1,320,476 | 241,237 | 1,518,009 |
| Saurisseries... |  | 4,474, 036 | 5,712,426 | 3,823,079 | 6,428,039 | 4,903,851 |
| Huileries et fabriques d'engrais. | 1,291,620 |  | 1,886,613 |  | - | 3,089,059 |
| Total | 7,348,820 | 28,841,944 | 7,123,490 | 23,961,119 | 8,275,669 | 27,902,663 |

Autres données.-Le recensement annuel des industries relève aussi des informations sur la forme d'organisation, la période d'activité et le nombre d'heures pendant lesquelles les employés ont travaillé. Une classification des usines de 1928 suivant leur forme d'organisation montre que 329 établissements sont exploités par des particuliers, 126 par des associés, 250 par des compagnies à fonds social et 8 par des associations cooperatives. Presque toutes les saumoneries et les huileries sont exploitées par des compagnies à fonds social tandis que les autres usines poissonnières sont en plus grand nombre la propriété de particuliers ou de quelques associés. Le nombre de jours d'activité en 1928 pour tous les établissements est de 72,941 ou une moyenne de 102 jours par établissement. Une classification des établissements suivant le nombre de jours en opération montre que 293 ont été actifs pendant moins de 60 jours, 192 de 60 à 119 jours, 114 de 120 à 179 jours, 47 de 180 à 239 jours et 67 de 240 jours et plus. Le groupe des établissements actifs pendant 240 jours et plus comprend 41 saurisseries, 10 homarderies, 6 saumoneries, 6 huileries et 3 conserveries de clovisses et 1 sardinerie. La moyenne de durée du travail par jour est de $8 \cdot 6$ heures et 50.8 par semaine. La classification de la main-d'œuvre suivant le nombre d'heures de travail pendant le mois de plus grande activité montre 4,536 personnes travaillant 8 heures par jour ou moins, 3,045 travaillant 9 heures, 5,072 travaillant 10 heures et 284 travaillant plus de 10 heures. Les statistiques des heures de travail sont données en détail dans les tableaux d'ensemble.

## Répartition par provinces

Les tableaux 11-17 qui suivent sont consacrés à la production poissonnière dans les provinces. On y trouve la valeur totale des pêcheries; la quantité de poisson pris et de poisson vendu, pour les espèces principales; la quantité et la valeur de tout le poisson pris et vendu; la valeur totale, par comté ou district de tout le poisson de mer pris et vendu; le volume du poisson pêché en haute mer; la valeur du matériel de pêche et le nombre du personnel.
11. Valeur des pêcheries, par provinces, de 1924 à 1928, par ordre de leur importance en 1928

12. Quantité des principaux poissons dont on fait commerce et leur valeur par provinces, 1924-1928

He du Prince-Edouard

| Espèces | 1924 | 1925 | 1926 | 1927 | 1928 | Augmentation ou diminution en 1928 sur 1927. (Aug. + dimin. - ) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 65,893 | 78,570 | 66, 298 | 62,800 | 65, 613 | $+$ | 2,813 |
| Homard.................... qtx $_{\text {\% }}$ | 777,301 | 1,088,712 | 926,718 | 855,917 | 752,123 |  | 103,794 |
| Eperian................... qtx | $\begin{array}{r} 14,273 \\ 133,747 \end{array}$ | $\begin{array}{r} 17,595 \\ 142,496 \end{array}$ | 15,390 98,670 | 14,936 179,232 | $\begin{array}{r} 13,122 \\ 112,319 \end{array}$ | - | $\begin{gathered} 1,814 \\ 66,913 \end{gathered}$ |
| Morue................... $\mathrm{qtx}_{\mathrm{s}}$ | $\begin{aligned} & 41,036 \\ & 81,885 \end{aligned}$ | $\begin{array}{r} 61,483 \\ 150,135 \end{array}$ | $\begin{array}{r} 49,823 \\ 118,380 \end{array}$ | 49,419 128.830 | $\begin{aligned} & 36,852 \\ & 98,028 \end{aligned}$ | - | $\begin{aligned} & 12,567 \\ & 30,802 \end{aligned}$ |
| Hareng................... qtx § $_{\text {g }}$ | $\begin{aligned} & 37,716 \\ & 58,664 \end{aligned}$ | 64,942 83,703 | $\begin{gathered} 63,930 \\ 89,915 \end{gathered}$ | 51,834 <br> 88,368 | $\begin{aligned} & 47,451 \\ & 94,939 \end{aligned}$ | + | $\begin{aligned} & 4,383 \\ & 6,571 \end{aligned}$ |
| Euftres................. qtx $_{\text {q }}$ | $\begin{array}{r} 7,945 \\ 63,840 \end{array}$ | 5,278 52,780 58 | $\begin{array}{r} 5,161 \\ 61,898 \end{array}$ | 4,071 48,838 | 4,756 |  | ${ }_{218}^{685}$ |
| Maquereau................. qtx | $\begin{array}{r} 7,646 \\ 37,448 \end{array}$ | $\begin{array}{r} 6,220 \\ 23,246 \end{array}$ | $\begin{array}{r}6,054 \\ \hline 20,653 \\ \hline\end{array}$ | 6,455 28,255 | 10,197 42,068 | $+$ | $\begin{array}{r} 3,742 \\ 13,813 \end{array}$ |

12. Quantité des principaux poissons dont on fait commerce et leur valeur par provinces, 1924-1928-suite

Nouvelle-ECosse


Noureau-Brunswick

| Sardines................... brl. | $\begin{array}{r} 269,643 \\ 1,241,508 \end{array}$ | $\begin{array}{r} 158,259 \\ 1,016,325 \end{array}$ | $\begin{array}{r} 171,637 \\ 1,172,490 \end{array}$ | $\begin{array}{r} 174,640 \\ 1,046,250 \end{array}$ | $\begin{array}{r} 279,349 \\ 1,284,771 \end{array}$ | $+$ | $\begin{aligned} & 104,709 \\ & 238,521 \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Homard.................. qtx | $\begin{array}{r} 68,303 \\ 1,203,564 \end{array}$ | $\begin{array}{r} 65,894 \\ 1,069,722 \end{array}$ | $\begin{array}{r} 59,611 \\ 1,135,664 \end{array}$ | $\begin{array}{r} 49,752 \\ 955,053 \end{array}$ | $\begin{array}{r} 57,970 \\ 1,037,195 \end{array}$ | $+$ | $\begin{array}{r} 8,218 \\ 82,142 \end{array}$ |
| Eperlan.................. qtx | $\begin{array}{r} 63,975 \\ 844,730 \end{array}$ | $\begin{array}{r} 46,692 \\ 718,149 \end{array}$ | $\begin{array}{r} 59,400 \\ 850,913 \end{array}$ | $\begin{gathered} 46,184 \\ 686,163 \end{gathered}$ | $\begin{array}{r} 59,866 \\ 912,055 \end{array}$ | $+$ | $\begin{array}{r} 13,682 \\ 225,802 \end{array}$ |
| Morue....................... qtz | $\begin{aligned} & 259,166 \\ & 643,321 \end{aligned}$ | $\begin{aligned} & 205,544 \\ & 512,013 \end{aligned}$ | $\begin{aligned} & 201,425 \\ & 478,770 \end{aligned}$ | $\begin{aligned} & 136,773 \\ & 284,662 \end{aligned}$ | $\begin{aligned} & 172,874 \\ & 436,736 \end{aligned}$ | $+$ | $\begin{array}{r} 36,101 \\ 152,074 \end{array}$ |
| Hareng........................ qtx | $\begin{aligned} & 333,530 \\ & 367,037 \end{aligned}$ | $\begin{aligned} & 372,710 \\ & 385,354 \end{aligned}$ | $\begin{aligned} & 422,897 \\ & 529,195 \end{aligned}$ | $\begin{aligned} & 412,833 \\ & 379,618 \end{aligned}$ | $\begin{aligned} & 335,833 \\ & 377,966 \end{aligned}$ | 二 | $\begin{array}{r} 77,000 \\ 1,650 \end{array}$ |
| Saumon. $\qquad$ qtx | $\begin{array}{r} 33,563 \\ 425,800 \end{array}$ | $\begin{array}{r} 30,073 \\ 428,558 \end{array}$ | $\begin{array}{r} 25,131 \\ 408,397 \end{array}$ | $\begin{array}{r} 22,464 \\ 414,280 \end{array}$ | $\begin{array}{r} 12,557 \\ 264,000 \end{array}$ | - | $\begin{array}{r} 9,907 \\ 150,280 \end{array}$ |
| Clovisses et mactres........ brl. | $\begin{array}{r} 33,444 \\ 137,099 \end{array}$ | $\begin{aligned} & 19,496 \\ & 88,426 \end{aligned}$ | $\begin{array}{r} 27,278 \\ 111,362 \end{array}$ | 33,197 130,688 | $\begin{array}{r} 30,058 \\ 131,679 \end{array}$ | $+$ | 3.139 981 |
| Hustres $\qquad$ brl. \& | $\begin{array}{r} 17,201 \\ 103,040 \end{array}$ | $\begin{aligned} & 12,038 \\ & 88,693 \end{aligned}$ | $\begin{aligned} & 12,383 \\ & 92,535 \end{aligned}$ | $\begin{array}{r} 13,574 \\ 100,576 \end{array}$ | $\begin{array}{r} 12,383 \\ 107,808 \end{array}$ | + | $\begin{aligned} & 1,191 \\ & 7,232 \end{aligned}$ |
| Merluche et lingue........... qtx $\mathrm{q}_{\mathrm{s}}$ | $\begin{gathered} 56,978 \\ 85,360 \end{gathered}$ | $\begin{array}{r} 66,892 \\ 87,146 \end{array}$ | $\begin{aligned} & 43,818 \\ & 45,104 \end{aligned}$ | $\begin{aligned} & 45,759 \\ & \mathbf{6 0 , 3 0 2} \end{aligned}$ | $\begin{aligned} & 78,726 \\ & 69,923 \end{aligned}$ | $+$ | $\begin{array}{r} 32,067 \\ 9,621 \end{array}$ |
| $\text { Alose............................... } \underset{\S}{ }$ | $\begin{array}{r} 7,082 \\ 65,888 \end{array}$ | 7,724 71,264 | $\begin{array}{r} 5,253 \\ 48,816 \end{array}$ | $\begin{array}{r} 3,403 \\ 30,238 \end{array}$ | $\begin{array}{r} 8,126 \\ 67,351 \end{array}$ | $+$ | $\begin{array}{r} 4,723 \\ 37,113 \end{array}$ |
| Eglefin......................... qtx | $\begin{aligned} & 16,638 \\ & 37,039 \end{aligned}$ | $\begin{aligned} & 18,186 \\ & 32,546 \end{aligned}$ | $\begin{aligned} & 35,038 \\ & 76,480 \end{aligned}$ | $\begin{aligned} & 33,834 \\ & 72,924 \end{aligned}$ | $\begin{aligned} & 28,878 \\ & 64,800 \end{aligned}$ | 二 | $\begin{aligned} & 4,950 \\ & 8,124 \end{aligned}$ |
| $\text { Tacaud....................... qtx }{ }_{8}$ | $\begin{gathered} 13,375 \\ 50,208 \end{gathered}$ | $\begin{aligned} & 13,056 \\ & 41,517 \end{aligned}$ | $\begin{aligned} & 17,078 \\ & 61,242 \end{aligned}$ | $\begin{aligned} & 20,246 \\ & 91,979 \end{aligned}$ | $\begin{aligned} & 17,286 \\ & 63,774 \end{aligned}$ | - | $\begin{array}{r} 2,980 \\ 28,205 \end{array}$ |

## 12. Quantité des principaux poissons dont on fait commerce et leur valeur par provinces, 1924-1928-suite

Quêbec

| Espèces | 1924 | 1925 | 1926 | 1927 | 1928 | $\begin{gathered} \text { Augmentation } \\ \text { ou diminution } \\ \text { en } 1928 \text { sur } \\ \text { 1297. (Aug.+, } \\ \text { dimin.--) } \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Morue............................... | $\begin{array}{r} 417,783 \\ 1,120,570 \end{array}$ | 602,099 $1,545,804$ | 584,567 $1,408,516$ | 460,573 | 469,924 | $+$ | 9,351 |
| Homard $\qquad$ qtx | $\begin{array}{r} 22,742 \\ 283,899 \end{array}$ | $\begin{array}{r} 25,676 \\ 379,580 \end{array}$ | $\begin{array}{r} 29,358 \\ 434,874 \end{array}$ | $\begin{array}{r} 24,606 \\ 359,579 \end{array}$ | $1,351,501$ 26,445 346,415 | + $\pm$ | $\begin{array}{r} 339,706 \\ 1,839 \\ 13,164 \end{array}$ |
| Hareng...................... qts | $\begin{aligned} & 206,135 \\ & 161,119 \end{aligned}$ | 286,028 246,115 | 326,416 278,795 | 262,521 | 258,245 |  | 4, 4 , ${ }^{176}$ |
| Anguille...................... qts | $\begin{aligned} & 11,918 \\ & 86,756 \end{aligned}$ | $\begin{array}{r} 11,816 \\ 104,463 \end{array}$ | $\begin{array}{r} 21,172 \\ 195 ; 608 \end{array}$ | 238,038 13,570 113,148 | 256,015 219818 192,075 | $\pm$ | 17,922 8,301 788 |
| Dore......................... qtx | 1,226 16,883 | 2,016 40,211 | 2,104 39,214 | $\begin{array}{r} 8,064 \\ 137,165 \end{array}$ | 8,725 149,655 | + + + | $\begin{array}{r} 7,927 \\ 661 \\ 12,490 \end{array}$ |
| Eperlan $\qquad$ qtx | 2,854 $\mathbf{3 2 , 4 6 8}$ | 3,400 37,243 | 5,259 41,811 | 13,428 110,823 | 12,013 | - | 1,410 |
| Saumon.................. qtx | $\begin{array}{r} 15,080 \\ 136,725 \end{array}$ | 20,714 189,318 | 15,536 159,303 | $\begin{array}{r} 14,840 \\ 152,710 \end{array}$ | $\begin{array}{r} 8,159 \\ 100,007 \end{array}$ | - | $\begin{array}{r} 6,681 \\ 52,703 \end{array}$ |
| Msquereau.................... qtx | 79,437 296,278 | 47,135 131,299 | $\begin{aligned} & 22,765 \\ & 71,353 \end{aligned}$ | $\begin{array}{r} 70,765 \\ 185,296 \end{array}$ | $\begin{gathered} 23,520 \\ 78,548 \end{gathered}$ | - | $\begin{array}{r} 47,245 \\ 106,748 \end{array}$ |
| Carpe.................... qtx ${ }_{\text {s }}$ | 3,24 25,472 | 2,563 18,216 | $\begin{array}{r} 4,868 \\ 60,825 \end{array}$ | 5,032 63,298 | 51,051 | $\pm$ | 1,210 12,247 |
| Ontario |  |  |  |  |  |  |  |
| Truite.................... qtx | 68,821 981,555 | $\begin{array}{r} 73,257 \\ 1,003,621 \end{array}$ | 69,127 933,214 | $\begin{array}{r} 74,978 \\ 1,199,150 \end{array}$ | $\begin{array}{r} 66,596 \\ 1,042,893 \end{array}$ | - | $\begin{array}{r} 8,382 \\ 149,257 \end{array}$ |
| Paisson blanc $\qquad$ qtx | $\begin{array}{r} 66,918 \\ 869,934 \end{array}$ | $\begin{array}{r} 70,583 \\ 924,638 \end{array}$ | $\begin{array}{r} 64,049 \\ 864,661 \end{array}$ | $\begin{array}{r} 61,658 \\ 937,202 \end{array}$ | $\begin{array}{r} 58,235 \\ 911,958 \end{array}$ | - | $\begin{array}{r} 3,423 \\ 25,244 \end{array}$ |
| Perche $\qquad$ $\stackrel{q}{\mathrm{q} x}$ | $\begin{array}{r} 25,158 \\ 150,948 \end{array}$ | $\begin{array}{r} 23,317 \\ 139,902 \end{array}$ | $\begin{array}{r} 20,678 \\ 124,068 \end{array}$ | 28,180 211,352 | $\begin{array}{r} 46,935 \\ 704,025 \end{array}$ | $+$ | $\begin{array}{r} 18,755 \\ 492,673 \end{array}$ |
| Dore $\qquad$ qtx | $\begin{array}{r} 29,646 \\ 400,221 \end{array}$ | $\begin{array}{r} 25,677 \\ \mathbf{3 7 0 , 7 7 4} \end{array}$ | $\begin{array}{r} 23,071 \\ 299,923 \end{array}$ | $\begin{array}{r} 21,163 \\ 300,529 \end{array}$ | 20,012 420,252 | $\mp$ | $\begin{array}{r} 1,151 \\ 119,723 \end{array}$ |
| Sandre $\qquad$ qtx | $\begin{array}{r} 30,601 \\ 168,306 \end{array}$ | $\begin{array}{r} 34,453 \\ 275,624 \end{array}$ | $\begin{array}{r} 30,385 \\ 182,310 \end{array}$ | $\begin{array}{r} 31,173 \\ 187,038 \end{array}$ | $\begin{array}{r} 21,496 \\ 257,952 \end{array}$ | 耳 | $\begin{array}{r} 9,677 \\ 70,914 \end{array}$ |
| Hareng $\qquad$ $\underset{s}{q}$ | $\begin{aligned} & 125,013 \\ & 625,065 \end{aligned}$ | $\begin{array}{r} 45,555 \\ 250,554 \end{array}$ | $\begin{array}{r} 44,122 \\ 264,732 \end{array}$ | $\begin{array}{r} 58,099 \\ 302,114 \end{array}$ | $\begin{array}{r} 53,006 \\ 198,772 \end{array}$ | - | $\begin{array}{r} 5,093 \\ 103,342 \end{array}$ |
| Brochat....................... qtx | $\begin{aligned} & 12,933 \\ & 65,958 \end{aligned}$ | $\begin{aligned} & 13,163 \\ & 75,688 \end{aligned}$ | $\begin{aligned} & 12,954 \\ & 97,155 \end{aligned}$ | $\begin{aligned} & 14,002 \\ & 98,014 \end{aligned}$ | $\begin{array}{r} 12,467 \\ 124,670 \end{array}$ | + | $\begin{array}{r} 1,535 \\ \mathbf{2 6 , 6 5 6} \end{array}$ |
| Tullipi............................... | $\left.\begin{array}{r} 5,004 \\ 32,526 \end{array} \right\rvert\,$ | $\begin{array}{r} 9,109 \\ 66,041 \end{array}$ | $\begin{array}{r} 11,971 \\ 125,695 \end{array}$ | $\begin{array}{r} 15,520 \\ 194,001 \end{array}$ | $\begin{array}{r} 10,304 \\ 103,040 \end{array}$ | - | $\begin{array}{r} 5,218 \\ 90,961 \end{array}$ |

Manitoba

| Dor6..................... qtx | 62,486 | 48,953 | 87,251 | 99, 813 | 101,870 | $+$ | 2,057 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \& | 528,426 | 562,881 | 900,608 | 804,854 | 921,010 | $+$ | 116,156 |
| Tullipi.......................... qtx $_{\text {s }}$ | $\begin{array}{r} 34,363 \\ 125,258 \end{array}$ | $\begin{array}{r} 49,539 \\ 207,622 \end{array}$ | $\begin{array}{r} 85,267 \\ 501,814 \end{array}$ | $\begin{aligned} & 102,451 \\ & 419,103 \end{aligned}$ | $\begin{array}{r} 89,068 \\ 484,129 \end{array}$ | + | $\begin{gathered} \quad 13,383 \\ 65,026 \end{gathered}$ |
| Poisson blanc................ qtx | $\begin{array}{r} 27,904 \\ 265,076 \end{array}$ | $\begin{array}{r} 38,078 \\ 361,849 \end{array}$ | $\begin{array}{r} 54,122 \\ 490,625 \end{array}$ | $\begin{array}{r} 49,114 \\ 418,461 \end{array}$ | $\begin{array}{r} 49,899 \\ 473,232 \end{array}$ | $+$ | $\begin{array}{r} 785 \\ 54,771 \end{array}$ |
| Brochet...................... qtx | $\begin{array}{r} 30,314 \\ 104,973 \end{array}$ | $\begin{array}{r} 27,305 \\ 110,222 \end{array}$ | $\begin{array}{r} 43,467 \\ 176,425 \end{array}$ | $\begin{array}{r} 40,166 \\ 149,658 \end{array}$ | $\begin{array}{r} 36,366 \\ 154,550 \end{array}$ | $+$ | $\begin{aligned} & 3,800 \\ & 4,892 \end{aligned}$ |
| Eil d'or................... qtx | $\begin{array}{r} 6,533 \\ 34,495 \end{array}$ | $\begin{array}{r} 7,205 \\ 70,080 \end{array}$ | $\begin{gathered} 11,625 \\ 85,099 \end{gathered}$ | $\begin{array}{r} 11,420 \\ 115,190 \end{array}$ | $\begin{aligned} & 10,642 \\ & 115,124 \end{aligned}$ | $\pm$ | 778 66 |

12．Quantite des principaux poissons dont on fait commerce et leur valeur par provinces，1924－1928－fin

Saskatchewan

| Eөpèces | 1024 | 1025 | 1026 | 1027 | 1828 | Augmentation ou diminution en 1028 sur 1027．（Aug．+ dimin．－） |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Poisson blanc．．．．．．．．．．．．．qtx | 42，393 | 44，978 | 37，667 | 41，323 | 43，667 | $+$ | 2，344 |
| Brochet．．．．．．．．．．．．．．．．．．． qtx $_{\text {s }}$ | 5,393 35,920 | 4,153 <br> 28,285 | 4,354 26,606 | 3,731 24,215 | 4,875 27,060 | $\pm$ | 1,14 3,745 |
| Doré．．．．．．．．．．．．．．．．．．．．qtx | 3,566 28,576 | 2， 2 ， 896 | －2，918 | 3,753 34,224 | 3,054 27,248 | 二 | 699 6,976 |
| Truite．．．．．．．．．．．．．．．．．．．．．．．．．．．．．${ }_{\mathbf{s}}$ | 2， 839 28,891 | 3,146 30,980 | 3,106 33,483 | 2,700 29,784 | 2,408 26,908 | 二 | $\begin{array}{r} 291 \\ 2,876 \end{array}$ |
| Esturgeon．．．．．．．．．．．．．．．．．qtx | $\begin{array}{r} 26 \\ 1,040 \end{array}$ | 15 600 | 1，200 | － | 20，520 |  | $\begin{array}{r} 342 \\ 20,520 \end{array}$ |

## Alberta

| Poisson blanc．．．．．．．．．．．．． $\mathrm{q}_{5}$ | 29,931 241,696 | 32,349 310,665 | $\begin{array}{r} 34,132 \\ 478,660 \end{array}$ | $\begin{array}{r} 32,355 \\ 434,449 \end{array}$ | $\begin{array}{r} 27,020 \\ 340,407 \end{array}$ | 二 | $\begin{array}{r} 5,335 \\ 94,042 \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Truite．．．．．．．．．．．．．．．．．．．． $\mathrm{q}_{\mathrm{\delta}}$ | $\begin{array}{r} 3,602 \\ 36,102 \end{array}$ | 2,746 31,930 | 3,907 46,418 | 10,882 126,955 | 19,371 222,312 | $\pm$ | $\begin{array}{r} 8,489 \\ 05,357 \end{array}$ |
| Dors．．．．．．．．．．．．．．．．．．．．．qtx | $\begin{array}{r} 3,921 \\ 28,159 \end{array}$ | $\begin{array}{r} 6,943 \\ 52,645 \end{array}$ | 10,374 116,175 | 6,746 85,257 | $\begin{array}{r} 8,499 \\ 92,427 \end{array}$ | $+$ | $\begin{array}{r} 1,753 \\ 27,170 \end{array}$ |
| Brochet．．．．．．．．．．．．．．．．．．． $\mathrm{q}_{\boldsymbol{\delta}}$ | 4,311 17,275 | 7,438 42,889 | $\begin{array}{r} 9,780 \\ 83,559 \end{array}$ | $\begin{aligned} & 10,473 \\ & 63,516 \end{aligned}$ | $\begin{array}{r} 0,657 \\ 32,056 \end{array}$ | 二 | $\begin{array}{r} 3,816 \\ 31,560 \end{array}$ |

Colomble Britannique

| Saumon．．．．．．．．．．．．．．．．．．． qtx $_{\text {\％}}^{\text {d }}$ | $\begin{array}{r} 1,065,159 \\ 13,027,251 \end{array}$ | $\begin{array}{r} 1,873,376 \\ 14,973,885 \end{array}$ | $\begin{array}{r} 2,125,555 \\ 18,769,605 \end{array}$ | $1,490,395$ $14,253,803$ | $\begin{array}{r} 2,257,455 \\ 17,345,670 \end{array}$ | $+$ | $\begin{array}{r} 767,060 \\ \mathbf{3}, 091,887 \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Flttan．．．．．．．．．．．．．．．．．．． $\mathrm{q}_{\mathbf{\$}}^{\text {tr }}$ | $\begin{array}{r} 331,382 \\ 5,427,542 \end{array}$ | $\begin{array}{r} 318,240 \\ 3,891,818 \end{array}$ | $\begin{array}{r} 315,095 \\ 4,543,720 \end{array}$ | $\begin{array}{r} 271,354 \\ 3,467,904 \end{array}$ | $\begin{array}{r} 302,820 \\ 3,370,670 \end{array}$ | $\pm$ | $\begin{aligned} & 31,466 \\ & 97,234 \end{aligned}$ |
| Pilchard．．．．．．．．．．．．．．．．．．．qtx | 27,485 <br> 82,881 | $\begin{gathered} 318,973 \\ 182,911 \end{gathered}$ | $\begin{array}{r} 969,958 \\ 1,256,721 \end{array}$ | $\begin{aligned} & 1,368,582 \\ & 1,838,867 \end{aligned}$ | 1，610，252 | $\pm$ | $\begin{array}{r} 241,670 \\ 724,270 \end{array}$ |
| Hareng．．．．．．．．．．．．．．．．．．．qtx | $\begin{aligned} & 1,157,625 \\ & 1,392,580 \end{aligned}$ | $\begin{aligned} & 1,437,875 \\ & 1,717,985 \end{aligned}$ | $\begin{aligned} & 1,301,269 \\ & 1,528,734 \end{aligned}$ | $\begin{aligned} & 1,724,246 \\ & 1,867,429 \end{aligned}$ | $\begin{aligned} & 1,535,118 \\ & 1,308,944 \end{aligned}$ | 二 | $\begin{array}{r} 189,128 \\ 58,485 \end{array}$ |
| Morue longue ${ }^{1} \ldots \ldots \ldots \ldots{ }_{\delta}^{\text {qtx }}$ |  |  |  | $\begin{array}{r} 49,912 \\ 401,259 \end{array}$ | $\begin{array}{r} 50,772 \\ 366,101 \end{array}$ | $+$ | $\begin{array}{r} 860 \\ 35,158 \end{array}$ |
| Clovisses et mactres．．．．．．．brl． | $\begin{array}{r} 20,030 \\ 153,472 \end{array}$ | $\begin{array}{r} 26,527 \\ 161,764 \end{array}$ | $\begin{array}{r} 12,813 \\ 105,409 \end{array}$ | $\begin{aligned} & 14,410 \\ & 96,182 \end{aligned}$ | $\begin{array}{r} 16,834 \\ 130,015 \end{array}$ | $+$ | $\begin{array}{r} 2,415 \\ 33,833 \end{array}$ |
| Morue noire．．．．．．．．．．．．．．．qtx | $\begin{array}{r} 18,183 \\ 130,334 \end{array}$ | $\begin{array}{r} 14,956 \\ 114,315 \end{array}$ | $\begin{aligned} & 10,358 \\ & 89,371 \end{aligned}$ | $\begin{array}{r} 16,430 \\ 123,421 \end{array}$ | $\begin{array}{r} 13,388 \\ 101,452 \end{array}$ | － | $\begin{array}{r} 3,042 \\ 21,969 \end{array}$ |

Territoire du Yukon

| Saumon．．．．．．．．．．．．．．．．．．．．qtx | 684 11，628 | 585 9,945 | 656 12.490 | 805 8,050 | $\begin{array}{r} 866 \\ 17,320 \end{array}$ | $\pm$ | 61 $\mathbf{9}, 270$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Truite．．．．．．．．．．．．．．．．．．．． $\mathrm{qtx}_{8}$ | 115 2,875 | $\begin{array}{r} 82 \\ 2,050 \end{array}$ | r 2， 948 | $\begin{array}{r} 50 \\ 1,000 \end{array}$ | $\begin{array}{r} 562 \\ 14,050 \end{array}$ | $\pm$ | $\begin{array}{r} 512 \\ 13,050 \end{array}$ |
| Poisson blanc．．．．．．．．．．．．． qtx $_{\text {d }}$ | $\begin{array}{r} 150 \\ 3,750 \end{array}$ | $\begin{array}{r} 115 \\ 2,875 \end{array}$ | $\begin{array}{r} 89 \\ 2,492 \end{array}$ | $\begin{array}{r} 70 \\ 1,400 \end{array}$ | $\begin{array}{r} 535 \\ 13,375 \end{array}$ | $+$ | $\begin{array}{r} 465 \\ \mathbf{1 1 , 9 7 5} \end{array}$ |

[^24]
## 13. Quantité et valeur de tout le poisson pêché et mis en vente durant l'année 1928

 par provinces| Espèces | Pêcheries maritimes |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | He du PrinceEdouard |  | Nouvelle-Ecosse |  | NouveauBrunswick ${ }^{1}$ |  | Québec ${ }^{1}$ |  | Colomble Britannique |  |
|  | $\begin{aligned} & \text { Quan- } \\ & \text { tite } \end{aligned}$ | Valeur | $\begin{aligned} & \text { Quan- } \\ & \text { tite } \end{aligned}$ | Valeur | $\begin{aligned} & \text { Quan- } \\ & \text { tité } \end{aligned}$ | Valeur | $\begin{gathered} \text { Quan- } \\ \text { tité } \end{gathered}$ | Valeur | $\begin{aligned} & \text { Quan- } \\ & \text { titte } \end{aligned}$ | Valeur |
|  |  | \$ |  |  |  |  |  | \$ |  | \$ |
|  |  |  |  |  |  | $269,075$ |  | 956,355 | 256 | 643 |
|  | $\begin{gathered} 36,807 \\ 8,574 \\ -13,606 \end{gathered}$ | 25,474 |  | $2,822,472 \mid 1$ | $\begin{gathered} 11,853 \\ 5,298 \end{gathered}$ | $269,075$ | 469,924 | 68,584 | 118 | 1,010 ${ }^{+}$ |
|  |  | 68,921 | 21,104 | 367,142 |  | $\begin{gathered} \mathbf{5 0 , 6 0 1} \end{gathered}$ | $17,773 \mid$ |  |  |  |
|  |  |  | 81,246 |  |  | 28,851 | 24,325 | 96,399 | 69 | 483 |
|  | $\begin{array}{r} 13,606 \\ - \end{array}$ | - | -2,271 | 3,232 <br> 670,965 | - | $1,200$ | - | - | - | - |
|  | ${ }_{24}^{-}$ |  | 55,529 |  | $\begin{array}{r} 100 \\ 46.939 \\ 261 \end{array}$ |  |  |  |  | - |
|  |  | 411 |  | 390,808 |  | $\begin{array}{r} 32,333 \\ 2,882 \end{array}$ | 133,662 662 | 1,125,876 |  |  |
|  | $\begin{array}{r} 39 \\ 2,926 \end{array}$ |  | 33,598 63.302 | 390,808 $\mathbf{5 7 , 7 1 4}$ | $\begin{aligned} & 23,696 \\ & 22,152 \end{aligned}$ | $\begin{array}{r} 2,882 \\ 22,697 \\ \mathbf{9}, 172 \\ 436,736 \end{array}$ | 662 38,726 | 6,426 33,767 |  | - |
|  |  | 1,313 <br> 98,028 | 110,851 | $\begin{array}{r} 51,587 \\ 4,398,019 \end{array}$ |  |  | $\begin{aligned} & 38,726 \\ & 42,632 \\ & \hline \end{aligned}$ | $\left.\begin{array}{r} 33,767 \\ 20,449 \\ 1,351,501 \end{array} \right\rvert\,$ | - | - |
|  |  |  |  |  |  |  |  |  | - | 1,493 |
| Eglefin, pris......... qtx |  | 2,591 | 445,950 | 917,404 | 28,878 | $\begin{array}{r} 436,736 \\ 54,430 \end{array}$ | $5,884$ | 8,826 | - |  |
| $\xrightarrow{\text { Mis en vente- }}$ Frais......... qtx |  | 4,254 | 152,049 | $\begin{aligned} & 558,962 \\ & 437,145 \end{aligned}$ |  | $49,972$ |  |  | - |  |
| filets irais......... qtx | 4, |  | $\begin{array}{r} 36,747 \\ 9,664 \end{array}$ |  | $\begin{array}{r}15,364 \\ 254 \\ \hline\end{array}$ |  |  |  |  |  |
| en bofte.........ccaisses |  |  |  |  | 4,69,734356.412 | 234 |  |  | $\begin{array}{r} 4, \\ 2,896 \end{array}$ |  | - |
| fumb............. 9 qtx | - |  | 42,001 | 1, 555 |  |  |  |  |  |  |  |
| filets fumes....... qtx | - | - | 9,972 |  | 124,898 |  |  |  |  |  |  |
| en saumure....... qtx | - |  | 6,335 | 15,830 | 794 |  | 1, $\square_{58}$ | 9,690 | - | - |  |
| seche $\ldots \ldots \ldots \ldots .$. Eans aretes. |  |  | 16,143 | 80, 014 | - |  |  |  |  | - |  |
|  |  | 4,254 | 11.159 | $\begin{array}{r} 11,982 \\ 1,654,977 \end{array}$ |  |  | - | 9,750 | - |  |  |
| Merluche et Ilingue, prises............. qtx | 11,925 | 9,981 | 158,744 | 132,046 | 78,726 | 50,531 | 3,804 | ,706 | 45 | 202 |  |
|  | 243 | 406 | $\begin{aligned} & 18,451 \\ & 1,356 \end{aligned}$ |  |  |  |  |  | 45 | 235 |  |
| fratets frais.......... qtx ${ }_{\text {qtx }}$ |  |  |  | 23,396 12,830 |  | ${ }^{433}$ |  | - |  |  |  |
| en saumure....... qtx | 4,382 | 16,998 | 37, 2338 | 73,84332,534 | 11, 113 | 22,065 |  | - | - | - |  |
| filets fumes........ qtx |  |  |  |  |  |  |  |  |  |  |  |
| secheces........... sans aretes...... qtx | $\stackrel{1,058}{-}$ | 5,758 | 23,017 1,603 | 112,312 13,662 | 10,856 106 | 45,931 | 1,268 | 6,340 | - - |  |  |
| Total, valeur marchande. | - | 23,162 |  | 268,577 |  | 69,923 | - | 6,340 | - 235 |  |  |
| Merlan, pris......... qtx | - | - | 30,573 | 31,496 | 34,118 | 31,725 | - - |  | - |  |  |
| Mis en vente- |  |  | $\begin{aligned} & 3,063 \\ & 62 \\ & 3,019 \\ & 7,525 \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |
| frais............ ${ }^{\text {qtz }}$ | - | - |  | $\begin{array}{r} 7,211 \\ 6000 \\ 9,889 \\ 34,874 \\ 52,574 \end{array}$ | 2,240 | 4,879 | - | - |  |  |  |  |
| filets frais......... qtx | - | - |  |  |  |  | - | - | - |  |  |
| $\begin{aligned} & \text { en saumure........ qtx } \\ & \text { seché............... qtx } \end{aligned}$ | - |  |  |  | 7,637 6,907 | 18,685 | - | - | - |  |  |
| Total valeur marchande., | - |  |  |  |  | 55,297 | - | - |  |  |  |
| Colln, pris........... qtx | - | - | - | - | - | - | - | - | 18 | 72 |  |
| Mis en vente, frais... qtx | - |  |  |  |  |  |  |  | 18 | 128 |  |
| Barbotte, prise...... qtx | - | - | 1,287 | 1,262 | - | - | - | - | - | - |  |
| Mise en vente, iratche qtr | - | - | 1,272 | 3,816 | - | - | - | - | - |  |  |
| filets frais........ qtr | - | - | 5 | 60 3,876 | - | - | - | - | - |  |  |
| Fletan, pris.......... qtx | - | - | 25,768 | 297,703 | 66 | 985 | 1,269 | 6,901 | 302,820 | 2,961,319 |  |
| Mis en vente- |  |  |  |  |  |  |  |  |  |  |  |
| frais............. $q$ tx | - | - | 25,757 | 433, 5678 | - | - | 1,269 | 7,541 | 302,810 | 3,370,539 |  |
| ${ }_{\text {fume. }}^{\text {en bolte.............arisses }}$ | - | - |  |  | - | - | - | - |  | 131 |  |
| en bolte............caisses Total, valeur marchande. | - |  | 47 | 434,110 | - | - |  | 7,541 |  | 3,370,670 |  |
| Carrelet, barbue, plle, |  |  |  |  |  |  |  |  |  |  |  |
| etc., pris......... qtx | - | - | 2,488 | 3,090 | 986 | 2,122 | - | - | 4,132 | 11,915 |  |
| Mis en vente, frais... ${ }_{\text {g tx }}$ | - | - | 2,488 | 11,422 | 986 | 2,882 | - | - | 4,132 | 19,832 |  |
| Raie, prise.......... qtx |  | - | 2,318 | 2,308 | 142 | 190 | - | - | 1,134 | 2,571 |  |
| Mise en vente, fratche $q$ tx | - | - | 2,318 | 7,189 | 142 | 190 | - | - | 1,134 | 4,332 |  |
| Sole, prise............ qtx | - | - | 14,399 | 30,090 | - | - | - | - | 5,673 | 22,732 |  |
| Mise en vento- <br> fratche | - | - | 13,553 | 54,280 | - | - | - | - | 5,673 | 36,276 |  |
| filets frais.......... qutx |  |  |  | 5,584 | - | - |  |  |  |  |  |

[^25]13. Quantité et valeur de tout le poisson pêché et mis en vente durant l'année 1928 par provinces-suite


[^26]13. Quantité et valeur de tout le poisson pêché et mis en vente durant l'année 1928 par provinces-suite

-
1 Voir aussi pecheries intérieures
13. Quantité et valeur de tout le poisson pêché et mis en vente durant l'année 1928 par provinces-suite


2 Voir aussi pecheries interieures.

## 13. Quantité et valeur de tout le poisson pêché et mis en vente durant l'année 1928 par provinces-suite

| Espèces | Pêcheries intérieures |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | NouveauBrunswick ${ }^{1}$ |  | Guêbec ${ }^{1}$ |  | Ontario |  |
|  | $\begin{aligned} & \text { Quan- } \\ & \text { tité } \end{aligned}$ | Valeur | Quan- | Valeur | $\begin{aligned} & \text { Quan- } \\ & \text { tité } \end{aligned}$ | Valeur |
|  | 542888 | \$ |  | \$ |  | \$ |
|  |  | 1,644 | - | - | - | - |
|  |  | 852 | - | - | - |  |
|  |  | 792 <br> 794 <br> 64 | $\cdots$ | - | - | - |
| Achigan, pris.. $\qquad$ qtx Mis en vente frais..................................... qtx | 1111 | 198 | 545  <br> 545 8,686 <br> 8,686  |  | - | - |
|  |  |  |  |  |  |  |
|  | - | - | 645  <br> 6,242 8,086 <br> 6,242 51,051 <br> 51,051  |  | 7,2407,240 | 25,34041,628 |
|  | - |  |  |  |  |  |
| Barbotte, prise. <br> Mise en vente, fraiche. $\qquad$ qtx qtx | - | - | 3,570 | $\begin{aligned} & 39,861 \\ & 39,861 \end{aligned}$ | 4,3474,347 | 30,42934,776 |
|  |  |  | 3,570 |  |  |  |
| Anguille, prise $\qquad$ qtz <br> Mise en vente, fralche..................................... qutx | 380380 | 1,5201,520 | 21,632 | $\begin{aligned} & 189,905 \\ & 189,905 \end{aligned}$ | 1,2281,228 | 7,3688,596 |
|  |  |  | 21,632 |  |  |  |
|  | - | - | 6,984 | 36,30136,301 | 53,00653,006 | 132,515198,772 |
|  |  |  | 6,984 |  |  |  |
| Maskinongé, pris. $\qquad$ qtx <br> Mis en vente, frais. | - | - | ${ }_{93}^{93}$ | 2,369 2,369 | - | = |
| Polsson dirers, prls. $\qquad$ (gade, chabot, ouananiche, etc.). qtx <br> Mis en vente, frais. qtx | - | - | 10,285 | 65,857 | 30,515 | 122,060 |
|  |  |  | 10,285 | 65,857 | 30,515 | 122,060 |
| Mulet, pris.................................. qtx | 365365 | 1,095 | - | 18,89418,894 | - | - |
|  |  |  |  |  |  |  |
|  | 33 | 12 | 2,475 |  | 46,935 | 598,421 |
|  |  |  | 2,475 |  | 46,035 | 704,025 |
|  | 450450 | $\begin{aligned} & \mathbf{5 , 8 5 0} \\ & \mathbf{5}, 850 \end{aligned}$ | 8,725 | $\begin{aligned} & 149,655 \\ & 149,655 \end{aligned}$ | 20,01220,012 | 350,210420,252 |
|  |  |  | 8,725 |  |  |  |
|  | - | - | - | - | 21,496 | $\begin{aligned} & 257,952 \\ & 257,952 \end{aligned}$ |
|  |  |  |  |  |  |  |
| Brochet, prls. $\qquad$ qtz Mis en vente, frais........................................ quts | - | - | $\begin{aligned} & 2,336 \\ & 2,336 \end{aligned}$ | $\begin{aligned} & 23,686 \\ & 23,686 \end{aligned}$ | $\begin{gathered} 12,467 \\ 12,467 \end{gathered}$ | $\begin{array}{r} 99,736 \\ 124,670 \end{array}$ |
|  |  |  |  |  |  |  |
| Saumon, pris. $\qquad$ qtx Mis en vente, frais........................................ qtx | 348 <br> 348 | 8,811 <br> 8,811 | 767 | 11,655 | - | - |
|  |  |  |  |  |  | - |
| Alose, prise................................................... Mise en vente, fratche.............................. qtx | 975975 | $\begin{aligned} & \mathbf{5 , 9 7 6} \\ & \mathbf{5 , 9 7 6} \end{aligned}$ | 660660 | 7,9387,938 | - |  |
|  |  |  |  |  |  |  |
|  | - | - | 8,774 | $\begin{aligned} & 68,704 \\ & 68,704 \end{aligned}$ | - | - |
|  |  |  |  |  |  |  |
| Esturgeon, pris......................................... qtx <br> Mis en vente: | 67 | 2,345 | 2,763 | 50,728 | 1,393 | 48,755 |
|  | $\begin{array}{r}67 \\ 300 \\ \hline\end{array}$ | 2,345 | 2,753 | 50,728 | 4,3931 | 55,7204,41160,131 |
| caviar.......................................... iv. |  |  |  |  |  |  |
| Total, valeur marchande..................... |  | 2,645 | - | 50,728 |  |  |
|  | - | - | 203.203 | $\xrightarrow[2,875]{2,875}$ | $\begin{aligned} & 6,596 \\ & 66.596 \\ & \hline \end{aligned}$ | $\begin{array}{r} 932,344 \\ 1,042,893 \end{array}$ |
|  |  |  |  |  |  |  |
|  | - | - | -- | - | $\begin{aligned} & 10,304 \\ & 10,304 \end{aligned}$ | $\begin{array}{r} 85,832 \\ 103,040 \end{array}$ |
|  |  |  |  |  |  |  |
|  | 3131 | $\begin{array}{r}328 \\ 328 \\ \hline\end{array}$ | 1,3081,308 | $\begin{aligned} & \mathbf{1 4 , 1 9 2} \\ & 14,192 \end{aligned}$ | $\begin{aligned} & .58,230 \\ & 58,235 \end{aligned}$ | $\begin{aligned} & 786,172 \\ & 911,958 \end{aligned}$ |
|  |  |  |  |  |  |  |
| Valcur totale des pêcheries intérieures: |  |  |  |  |  |  |
| Valeur des prises. <br> Vaieur marchande. |  | 27,779 | .......... | 742,357 | ........... | 3,477,134 |
|  |  | 28,079 | -....... | 742,357 | ... | 4,030,753 |
|  | $\ldots \ldots .$ |  |  |  |  |  |

3Voir aussi pêcheries maritimes.
13. Quantité et valeur de tout le poisson pêché et mis en vente durant l'année 1928 par provinces-fin

14. Valeur totale, par comtés et districts, du poisson de mer pêché et mis en vente 1928

| Comté ou district | Valeur totale du poisson pêché | Valeur totale du poisson et des produits du poisson mis en vente |
| :---: | :---: | :---: |
|  | \$ | \$ |
| Ile du Prince-Edouard-Totaux. | 849,038 | 1,196,681 |
| Kings.. | 259,151 | 371,261 |
| Queens.............................. | 223,501 | 329,267 |
| Nourelle-Ecosse-Totaux. | 7,395,966 | 11,681,995 |
| Richmond.. |  |  |
| Cap Breton. | 1733,299 | 442,968 |
| Inverness.. | 170,788 | 206,579 |
| Cumberland. | 81,599 | 125,969 |
| Colchester. | 18,299 | 25,110 |
| Antigonish. | 138,454 <br> 123 <br> 1803 | 192,979 |
| Guysborough | 648, 897 | 1,395,713 |
| Hants... | 1,022,597 | 2,229, 657 |
| Lunenburg | 1,875,322 | 2,450,336 |
| Queens.... | 222, 330 | 261,716 |
| Yarmouth. | 755,057 | 905,358 1077418 |
| Digby... | 604, 698 | 1, 100,823 |
| Annapolis. | 125,844 | 1,169,297 |
| Kings... | 10,245 | 10,258 |
| Nouveau-Brunswlck-Totaux. | 2,590,258 | 4,973,562 |
| Charlotte. | 674.623 | 1,898,825 |
| St John. | 187,346 | 236.779 |
| Albertmorlan |  | 200 |
| Westmorlan | 245,332 | 640,642 |
| Northumberland | - 570,283 | 1,052,081 |
| Gloucester. | 502,398 | 716,197 |
| Restigouche. | 111,893 | 118,114 |
| Quêbec-Totaux. | 1,577,264 | 2,254,257 |
| Bonarenture. | 270,073 | 326,482 |
| Gaspe. | 684, 618 | 997,886 |
| Iles de la Madeleine. | 378,592 | 644,350 |
| Saguenay. | 167, 108 | 207,146 |
| Matane.... | 3,394 | 4,914 |
| Rimouski. | 73,479 | 73,479 |
| Colomble Xritannique-Totaur | 14,633,627 | 26,562,727 |
| District No $1 .$. | 3,002,332 | 3,485,300 |
| District ${ }^{\circ}{ }^{\circ}$ | $6,587,075$ $5,044,220$ | $14,302,773$ $8,774,654$ |

15. Proportion de poisson de mer pris en haute mer par les chalutiers à vapeur et autres navires de 40 tonnes ou plus, pêchant sur les bancs, 1928

|  | Province et comte ou district | Morue |  |  | Eglefin |  |  | Merluche et lingue |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{gathered} \text { Prise } \\ \text { au } \\ \text { large } \end{gathered}$ | Prise sur les côtes | Prise totale | Prise gu large | Prise sur les cotes | Prise totale | Prise au large | Prise sur les côtes | Prise totale |
|  |  | qtx | qtx | qtx | qtx | qtx | qtx | qtx | qtx | qtx |
|  | Canada-Totaux. | 940,564 | 1,209,514 | 2,150,078 | 249,075 | 232,633 | 481,708 | 12,111 | 241,133 | 253,244 |
|  | He du Prince-Edouard-Totaur | - | 36,852 | 36,852 | - | 996 | 996 | - | 11,925 | 11,925 |
|  | Kings... | - | $\begin{array}{r}5,893 \\ 20,274 \\ \hline\end{array}$ | - $\begin{array}{r}5,883 \\ 20,274\end{array}$ | - | 846 150 | 846 150 | - | 4,850 1,335 | 4,850 1,335 |
|  | Prince. | - | 10,685 | 10,685 | - |  |  | - | 5,740 | 5,740 |
| 6 | Nourelle-Ecosse-Totaur. | 927,797 | 542,375 | 1,470,172 | 247,875 | 198,075 | 445, 950 | 10,711 | 148,033 | 158,744 |
| 7 | Richmond. | - | ${ }_{5}^{21,236}$ | 21, 236 | - | 13,547 | 13,547 | - | 27 | 27 |
| 8 | Cap Breton |  | 52, 4569 | 52,169 | - | - ${ }^{37}$, 00994 | $\begin{array}{r}3,009 \\ 27.894 \\ \hline\end{array}$ | - | 19 | 19 |
| 10 | Inverness.. | 2,423 | 32,205 | 34,628 | 8,035 | 5,015 | 13,050 | 218 | 7,380 | 7,598 |
| 11 | Cumberland |  | 40 | 40 |  | 18 | 19 |  |  |  |
| 12 | Colchester. | - | 114 | 114 | - | - | - | - | - |  |
| 13 | Pictou. |  | 180 | 180 | - |  |  | - | 432 | 432 |
| 14 | Antigonish. |  | 1,522 | 1, ${ }^{1,222}$ |  | ${ }^{390}$ | ${ }_{57} 390$ |  | 2,521 | 2,521 |
| 15 | Guysborough | 35,481 | 89,080 | 194,561 | 37,425 | 19,805 | 57,230 | 1441 | 1964 | 1,405 |
| 17 | Halifax. | 76,898 | $\begin{array}{r}72,666 \\ \hline 17\end{array}$ | 149,542 | 17,201 |  | 183,888 |  |  | 3.300 |
| 18 | Lanenburg | 783,277 | 17,483 | 800,760 | 22,619 | 3.396 | 26,015 | 2,530 | 3,399 | 5,929 |
| 18 | Queens... |  | 47,046 | 47,046 |  | 7. 452 | 7,452 |  | 2,712 | 2,712 |
| 20 | Shelburne | 4,270 | 107, 376 | 111,646 | $\stackrel{-}{7}$ | 32,702 | 32,702 | 5 | 10, 222 | 10, 222 |
| 21 | Yarmouth | 25,448 | 17,192 | 42,640 | 2,535 | 6, 6.835 |  | 5,972 | 101,053 | 101,053 |
| 22 | Digby | - | 33,199 | 33,199 | - | 64, 6.298 | 64, 298 | - | 16,659 | 16,659 |
| 24 | Annapolis........................... | - | ${ }^{4,793}$ | ${ }^{4} 703$ | - | $\stackrel{602}{ }$ | -602 | - | 12 | , 12 |
| 25 | Nouveau-Brunswick-Totaur. | 4,190 | 168,684 | 172,874 | - | 28,878 | 28,878 | - | 78,726 | 78,726 |
| 26 | Charlotte. | - | 19,882 | 19,992 | - | 27, 214 | 27,214 | - | 61,410 | 61, 410 |
| 27 | St. John. | - | 2,150 | 2,150 | - | 850 | 950 | - | 6,750 | 6,750 |
| 28 | Albert... | - | ${ }_{9}$ | 7 | - | - | - | - | - | - |
| 9 | Kestmorla | 1,637 | 810 | 2,447 | - | - | - |  | 4,655 | 4,655 |
| 31 | Northumberiand | 2,553 | 280 | 2,833 | - | - | - | - | 10 | 10 |
| 32 | Gloucester... | - | 144,329 | 144,329 | - | 480 | 480 | - | 5,797 | 5,797 |
| 33 | Restigouche. | - | 1,107 | 1,107 | - | 234 | 234 | - | 104 | 104 |
| 34 | Québer-Totaux. | 8,414 | 461,510 | 469,924 | 1,200 | 4,684 | 5,884 | 1,400 | 2,404 | 3,804 |
| 35 | Bonaventure. | 2,500 | 74,696 | 77,196 | 1,200 | 4,684 | 5,884 | 1,400 | 2,404 | 3,804 |
| 36 | Gaspe. | - | 271.508 | 271,598 |  | - |  |  |  |  |
| 37 | Iles de la Madeleine. | - | 66,000 | 66, 000 | - | - | - | - |  | - |
| 38 | Saguenay. | 5, 914 | 48,009 | 53,923 | - | - | - | - | - | - |
| 9 | Matane... | - | 1,109 | $1.10{ }^{8}$ | - | - | - | - | - | - |
| 41424344 | Colombie Britannique-Totaux | 16 | 33 | 256 | - | - | - | - | 45 | 45 |
|  | Listrict $\mathrm{n}^{0} 1$. | - | - | - | - | - | - | - | 17 | 17 |
|  |  | 163 | - | 163 | - | - | - | - | $\overline{28}$ | $\overline{28}$ |
|  |  | - | 98 | 8 |  |  |  |  |  | 28 |

15. Proportion de poisson de mer pris en haute mer par les chalutiers à vapeur et autres navires de 40 tonnes ou plus, pêchant sur les bancs, 1928-suite

16. Proportion de poisson de mer pris en haute mer par les chalutiers à vapeur et autres navires de 40 tonnes ou plus, pêchant sur les bancs, 1928-suite

|  | Province et comté ou district | Sole |  |  | Hareng |  |  | Maquereau |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Prise au large | Prise sur les côtes | Prise totale | Prise au large | Prise sur les côtes | Prise totale | $\begin{gathered} \text { Prise } \\ \text { au } \\ \text { large } \end{gathered}$ | Prise sur les côtes | Prise tatale |
|  |  | qtx | qtx | qtx | qtx | qtx | qti | qtx | qtx | qtx |
|  | Canada-Totaux | 14,853 | 5,219 | 20,072 | 14,663 | 2,321,398 | 2,336,061 | 4,808 | 118,960 | 123,768 |
|  | Le du Prince-Edouard-Totaur. | - | - | - | - | 47,451 | 47,451 | - | 10,197 | 10,197 |
|  | Kings. Queens.. | - | - | - | - | 16,124 | 16,124 7,364 | - | 776 4,693 | 776 4,693 |
|  | Prince.. | - |  | - | - | 23,063 | 23,963 | - | 4,728 | 4,728 |
|  | Nouvelle-Écosse-Totaux..... | 14,187 | 212 | 14,399 | - | 166,398 | 166,398 | - | 71,440 | 71,440 |
| 10 | Richmond. | - | - | - | - | 4,321 | 4,321 | - | 11,559 | 11,559 |
|  | Victoria..... | - | = | - | - | - 3,695 | 10,695 | - | 7, 7,549 | 6,365 <br> 7 <br> 7 |
|  | Inverness. | - | - | - | - | 13,811 | 13,811 | - | 2,337 | 2,337 |
|  | Cumberland. | - | - | - | - | 8,090 | 8,090 | - | 148 | 148 |
|  | Colchester. | - | - | - | - | 1235 | 1235 | - | 2 | 2 |
| 13 | Pictou.. | - | - | - |  | 1,457 | 1,457 | - | 355 | 355 |
| 14 | Antigonisb. | - | - | - | - | 4,817 | 4,817 | - | 170 | 170 |
| 5 | Guysborough | 4,790 | - | 4,790 | - | 17,423 | 17,423 | - | 9,208 | 9,208 |
| 16 | Halifax. | 9,390 | - | 9,390 | - | 18,199 | 18,199 | - | 19,699 | 19,699 |
| 17 | Hants.. | - | - | - |  |  |  | - |  |  |
| 18 | Lunenburg. | - | - | - | - | 9,285 | 9,285 | - | 6,759 | 6,759 |
| 19 | Queens.... | - | 2 |  |  | 2,581 | 2,581 |  | 2,483 | 2,483 |
| 2 | Shelburne. | - | 212 | 212 | - | 7,630 | 7,630 | - | $9{ }^{9}$ | 94 |
| 1 | Yarmouth. | 7 | - | 7 | - | 15,014 | 15,014 | - | 4,333 | 4,333 |
| 2 | Digby. | - | - | - | - | 17,917 | 17,917 | - | 351 | 351 |
| 2 | Annapolis. | - | - | - | - | 23, 883 | 23,883 | - | 16 | 16 |
| 24 | Kings.... | - | - | - | - | 1.848 | 1,848 | - | 12 | 12 |
| 25 | Noureau-Rrunswick-Totaux. | - | - | - | 7,288 | 328,546 | 335,833 | 2,658 | 15,953 | 18,611 |
| 6 | Charlotte. | - | - | - | - | 160,105 | 160, 105 | - | - | - |
| 27 | St. John. | - | - | - | - | 155 |  | - | - |  |
| 8 | Albert...... | - | - | - | - |  |  | - | , | - |
|  | Westmorland | - | - | - | - | 87,311 | 87,311 | - | 261 | 261 |
| 30 | Kent. | - | - | - | 3,489 | 23,670 | 27, 159 | 736 | 1,811 | 2,547 |
| 1 | Northumberland | - | - | - | 3,798 | 2,050 | 5,848 | 1,022 |  | 1.927 |
| 2 | Gloucester... | - | - | - | - | 53,030 | 53,030 | - | 13,693 | 13, 693 |
| 3 | Restigouche........... | - | - | - | - | 2,217 | 2,217 | - | 183 | 183 |
| 34 | Québec-Totaur | - | - | - | 7,376 | 243,885 | 251,261 | 2,150 | 21,370 | 23,520 |
| 5 | Bonaventure. | - | - | - | 6,500 | 72, 820 | 79,420 | 2,150 | 550 | 2,700 |
| 6 | Gaspe. | - | - | - |  | 55,715 | 55, 715 |  |  |  |
| 7 | Iles de la Madeloine. | - | - | - |  | 109,572 | 109,572 | - | 20,820 | 20,820 |
| 8 | Saguenay. | - | - | - | 876 | 1,830 | 2,706 | - |  |  |
| 8 | Matane.. | - | - | - | - | 1,440 | 1,440 | - | - | - |
| 0 | Rimouski.... | - | - | - | - | 2,408 | 2,408 | - | - | - |
| 41 | Colombie Britannique-Totaux... | 666 | 5,007 | 5,673 | - | 1,535,118 | 1,535,118 | - | - | - |
| 2 | District $\mathrm{n}^{0} 1$. | - | 4,280 | 4,280 | - | 80,075 | 80,075 | - | - | - |
| 4 | District $\mathrm{n}^{\circ}$ 2....... | ${ }^{688}$ | 724 | ${ }_{724}^{669}$ | - | 1,317,327 | $1 \begin{array}{r}137,716 \\ 1,317,327\end{array}$ | - | - | - |
|  |  |  |  |  |  |  |  |  |  | - |

15. Proportion de poisson de mer pris en haute mer par les chalutiers à vapeur et autres navires de 40 tonnes ou plus, pêchant sur les bancs, 1928 -suite

16. Proportion de poisson de mer pris en haute mer par les chalutiers à vapeur et autres navires de 40 tonnes ou plus, pêchant sur les bancs, 1928-suite

17. Proportion de poisson de mer pris en haute mer par les chalutiers à vapeur et autres navires de 40 tonnes et plus, pêchant sur les bancs, 1928-fin

${ }^{1}$ Excepte les phoques à fourrure et les baleines.
18. Rêsumé des capitaux engagés par provinces, 1928

${ }^{1}$ En Ontario, les rets à malles et les seines sont indiquées par verges.
19. Résumé des capitaux engagés par provinces, 1928

'Pour 1926 et 1927 , comprend tous les filets et seines.
20. Résumé des capitaux engagé par provinces, 1928 -suite

|  | Etablissements industriels | He du Prince-Edouard |  |
| :---: | :---: | :---: | :---: |
|  |  | Nombre | Valeur |
|  |  |  | S |
|  | Homarderies.. | 103 | 179,940 |
|  | Etablissements de preparation des mollusques. | $3)$ |  |
|  | Sardineries et autres poissonneries............. | - | 10,350 |
|  | Etablissements de fumage, salage et séchage Huileries........................... | $\stackrel{2}{-}$ |  |
| 7 | Total. | 108 | 190,290 |

17. Résumé du personnel, par provinces, 1928

|  |  | Medu PrinceEdouard | NourelleEcosse | Noureau-Brunswick |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Maritimes |  | Interieures |
|  | Hommes employés sur les bateaux, embarcations, etc. Personnes employtes dans les saurisseries de fumage, salage et séchage. <br> Total. |  | Nombre | Nombre | Nombre | Nombre |
| 1 |  | 2,396 | 15,857 | 10,596 | 444 |
| 2 |  | 1,211 | 3,738 | 2,035 | - |
| 3 |  | 3,607 | 19,595 | 12,631 | 444 |

16. Résumé des capitaux engagé par provinces, 1928-fin

| Nouvelle-Ecosse |  | Noureau-Brunswick |  | Québec |  | Colomble Britannique |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Nombre | Valeur | Nombre | Valeur | Nombre | Valeur | Nombre | Valeur |
|  | \$ |  | S |  | s |  | § |
|  | 726, 132 | -99 | 349,902 | 61 6 | 102, 295 | - 61 | 12,476,543 |
| 8 <br> 3 | 232,585 | ${ }_{2}^{9}$ ) | 1,068,375 | - |  | ${ }^{2}$ | 4,671,102 |
| 88 8 | 2,506,120 | 37 5 | $\begin{array}{r} 191,866 \\ 12,619 \end{array}$ | 31 | 339, 713 | $\begin{array}{r}46 \\ 27 \\ \hline\end{array}$ | 3,813,693 |
| 219 | 3,724,210 | 152 | 1,622,762 |  | 442, 683 | 136 | 20,961,338 |

17. Résumé du personnel, par provinces, 1928


## Primes

En vertu d'une «Loi pour encourager le développement des pêcheries maritimes et la construction des navires de pêchen, une somme de $\$ 160,000$ est donnée en primes chaque année, par le Gouverneur en conseil. Sous le nom de Primes de Pêche, elles sont distribuées par le ministère de la Marine et des Pêcheries parmi les pêcheurs et propriétaires de navires de pêche et de barques de pêche du littoral de l'Atlantique selon les règlements édictés de temps à autre par le Gouverneur en conseil.

Les versements en 1928 ont été effectués sur les bases ci-après:
Aux propriétaires de navires de pêche ayant droit à cette prime-\$1 par tonne enregistree; avec un maximum de $\$ 80$ par navire.

A chaque membre de leur équipage, $\$ 8$.
Aux propriétaires de barques mesurant au moins 12 pieds de quille, $\$ 1$ par embarcation.

A chaque pêcheur d'une barque ayant droit à une prime, $\$ 6.60$ chacun.
Il a été payé 9,390 réclamations de prime; 11,036 de ces réclamations furent payées l'année précédente.

Le montant total payé en 1928 est de $\$ 151,411.20$ réparti comme suit:
A 553 vaisseaux et leurs équipages, $\$ 41,099.50$.
A 9,066 barques et leurs équipages, $\$ 110,311.70$.

## Importations et exportations

Les importations canadiennes de poisson et de produits poissonniers en 1928 donnent une valeur de $\$ 4,068,074$, soit une augmentation de $\$ 299,173$ ou 8 p.c. sur l'année précédente. La valeur des exportations de l'année est de $\$ 38,096,245$, soit une augmentation de $\$ 3,281,797$ ou 9 p.c. sur 1927. Les principaux articles d'exportation de 1928 sont: le saumon en boites de fer-blanc, $\$ 9,227,442$; la morue sèche, $\$ 4,953,119$; le homard en conserves, $\$ 3,107,292$; et le hareng salé à sec, $\$ 2,023,664$.

## Revue rétrospective

Les cinq tableaux suivants présentent une revue rétrospective de l'industrie de la pêche au Canada dans les années passées. En ce qui concerne la production, les données sont établies par provinces et par années et remontent jusqu'à 1870. Quant au nombre et à la valeur des navires, barques, etc., les chiffres partent de l'année 1880. Enfin, le personnel occupé à cette industrie nous est révélé depuis 1895.
18. Revue rétrospective (a) Valeur totale des pêcheries dans les différentes provinces du Canada depuis 1870 jusqu'à 1928 inclusivement

| A nnée | He du PrinceEdouard | $\begin{aligned} & \text { Nourelle- } \\ & \text { Ecosse } \end{aligned}$ | NoureauBrunswick | Québec | Ontario | Colombie- Britanni- que | Manitoba, Saskatchewan, Alberta et Yukon | Total pour tout le Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ | \$ | § | § | \$ ${ }^{\text {- }}$ |
| 1870. | Inconnu | 4,019,425 | 1, 131,433 | 1,161,551 | 264,982 | Inconnu | Inconnu | 6,577,391 |
| 1871. |  | 5, 101, 030 | 1, 185,033 | 1,093, 612 | 193,524 |  | " | 7,573,199 |
| 1872 | 5 | 6,016,835 | 1,965,459 | 1,320,189 | $\stackrel{267,633}{ }$ | " | " | 9,670,116 |
| 1873 | 207,595 | 6,577,085 | 2, 285, 662 | 1,301,564 | 293,091 | " | * | 10,754, 997 |
| 1874 | 288,863 | 6,652,302 | 2,685,794 | 1,608,660 | 446,267 |  |  | 11,681,886 |
| 1875. | 298, 927 | 5,573,851 | 2,427,654 | 1,596,759 | 40̄3,194 | " | " | 10,350,385 |
| 1876 | 494, 967 | 6,029,050 | 1,953,389 | 2,097,668 | 437,229 | 104,697 | " | 11,117,000 |
| 1877. | 763,036 | 5,522,858 | 2, 133,237 | 2, 560,147 | 438,223 | 583,433 | " | 12, 0051,934 |
| 1878. | 840,344 | 6, 131, 600 | 2,305,790 | 2, 664, 055 | 348,122 | 925,767 | " | 13,215, 678 |
| 1879. | 1,402,301 | 5,752, 937 | 2,554,722 | 2, 820,395 | 367,133 | 631,766 | . | 13,529,254 |
| 1880. | 1,675,089 | 6,291, 061 | 2,744,447 | 2,631,556 | 444,491 | 713,335 | . " | 14,499, 979 |
| 1881 | 1, 050, 290 | 6,214,782 | 2, 930,904 | 2,751,962 | 509, 903 | 1,454,321 | " | 15,817,162 |
| 1882 | 1,855, 687 | 7,131,418 | 3,192,339 | 1,976,516 | 825, 457 | 1,842,675 | " | 16,824,092 |
| 1883. | 1,272,468 | 7,689,374 | 3,185, 674 | 2,138,997 | 1,027,033 | 1,644,646 | " | 16,958, 192 |
| 1884. | 1,085,619 | 8,763,779 | 3,730,454 | 1,694,561 | 1,133, 224 | 1,358,267 | " | 17,766, 404 |
| 1885 | 1,293,430 | 8,283, 922 | 4,005,431 | 1,719,460 | 1,342,692 | 1,078,038 | " | 17,722, 973 |
| 1886. | 1,141,991 | 8,415,362 | 4,180, 227 | 1,741,382 | 1,435,998 | 1,577,348 | 186,980 | 18,679, 288 |
| 1887 | 1,037,426 | 8,379,782 | 3,539,507 | 1,773,565 | 1,531,850 | 1,974, 888 | 129,084 | 18,386, 103 |
| 1888 | 876,862 | 7,817,030 | 2,841,863 | 1,860,012 | 1,839,869 | 1,902,195 | 180,677 | 17,418,508 |
| 1889. | 886,430 | 6,346, 722 | 3,067,039 | 1,876,194 | 1,963,123 | 3,348,067 | 167,679 | 17,655, 254 |
| 1880. | 1,041,109 | 6,636,444 | 2,699,055 | 1,615,119 | 2,009,637 | 3,481,432 | 232,104 | 17,714,900 |
| 1891. | 1,238,733 | 7,011,300 | 3,571,050 | 2,008, 678 | 1,806, 389 | 3,008,755 | 332, 969 | 18, 977, 874 |
| 1892 | 1,179, 856 | 6,340,724 | 3, 203,922 | 2, 236,732 | 2,042,198 | 2,849,483 | 1,088,254 | 18,941,169 |
| 1893. | 1,133,368 | 6,407,279 | 3,746,121 | 2,218,905 | 1,694,930 | 4,443, 963 | 1,048, 093 | 20,686,659 |
| 1894. | 1,119,738 | 6,547,387 | 4,351,526 | 2,303,386 | 1,659, 968 | 3,950, 478 | 787,087 | 20,719,570 |
| 1895. | 976,836 | 6,213,131 | 4,403, 158 | 1,867,920 | 1,584, 473 | 4,401,354 | 752, 466 | 20,199,338 |
| 1896 | 976, 126 | 6,070,895 | 4,799, 433 | 2,023,754 | 1,605, 674 | 4,183,999 | 745,543 | 20,407, 424 |
| 1897 | 954, 949 | 8,090,346 | 3,934, 135 | 1,737,011 | 1,289,822 | 6, 138, 865 | 638,416 | 22,783, 544 |
| 1898. | 1,070,202 | 7,226, 034 | 3,849,357 | 1,761,440 | 1,433,632 | 3,711,107 | 613,355 | 19,667, 121 |
| 1899. | 1,043,645 | 7,347,604 | 4,119,891 | 1,933, 134 | 1,590,447 | 5,214,074 | 622,911 | 21,891,706 |
| 1900. | 1,059,193 | 7,809,152 | 3,769,742 | 1,989, 279 | 1,333,294 | 4,878, 820 | 718,159 | 21,557, 639 |
| 1901. | 1, 050,623 | 7,989,548 | 4, 193, 264 | 2,174,459 | 1,428,078 | 7,942,771 | 958,410 | 25,737, 153 |
| 1902. | 887,024 | 7,351,753 | 3,912,514 | 2,039,175 | 1,265,706 | 5, 284, 824 | 1, 198,437 | 21,959,433 |
| 1903. | 1,099.510 | 7,841,602 | 4, 186,800 | 2,211,792 | 1,535, 144 | 4,748,3603 | 1,478,665 | 23,101,878 |
| 1904. | 1,077,546 | 7,287,099 | 4,671,084 | 1,751,397 | 1,793,229 | 5,219, 107 | 1,716,977 | 23,516,439 |
| 1905. | 998, 922 | 8,259,085 | 4,847,090 | 2,003,716 | 1,708,963 | 9, 850, 216 | 1,811,570 | 29,479,562 |
| 1906 | 1,168, 939 | 7,799,160 | 4,905,225 | 2,175,035 | 1,734,856 | 7,003,347 | 1,492,923 | 26,279,485 |
| 1907. | 1,492,695 | 7,632,330 | 5,300,564 | 2,047,390 | 1,935,025 | 6,122,923 | 968,422 | 25,499,349 |
| 1938 | 1,378,624 | 8,009,838 | 4,754,298 | 1,881, 817 | 2,100,078 | 6,465,038 | 861,392 | 25,451,085 |
| 1009. | 1,197,557 | 8,081,111 | 4,676,315 | 1, 808, 437 | 2.177,813 | 10,314,755 | 1,373,181 | 29,629,169 |
| 1910. | 1,153,708 | 10,119,243 | 4,134.144 | 1,602.475 | 2,026,121 | 9,163,235 | 1,676,216 | 29,965, 142 |
| 1911 | 1.196.396 | 9,367.550 | 4,886,157 | 1, 868, 136 | 2, 205, 436 | 13,677, 125 | 1,467,072 | 34,667, 872 |
| 1912 | 1,379.905 | 7,384,055 | $4,264,054$ $4,308,707$ | 1,888,241 | - $2,842,878$ |  | 1,074,843 | ${ }_{33,207,748}$ |
| 1913 | 1,280,447 | 8, 297.626 | $4,308,707$ $4,940,083$ | 1,850,427 | $2,674,685$ $2,755,291$ | ${ }_{11,515,086}^{13.891,98}$ | 1, 1374,884 | 31,264, 631 |
|  | 1,261,666 | 7, 330,191 | 4,940,083 | 1,924, 2,076 | 2,34, 182 | 14, 538, 320 | 1,066,677 | 35,860,708 |
| 1916 | 1,344,179 | 10,092, 902 | 5,656,859 | 2,991,624 | 2,658,993 | 14,637,346 | 1,826.475 | 39,208,378 |
| 1017. | 1,786,310 | 14,468,319 | 6,143,058 | 3.414.378 | 2,866.419 | 21,518,595 | 2,114, 935 | 52,312,044 |
| 1918. | 1,148,201 | 15, 143,066 | 6,298,990 | 4,577, 973 | 3.175.111 | 27,282, 223 | 2,634, 180 | 60,259,744 |
| 1919. | 1,536,844 | 15, 171, 929 | 4,979, 574 | 4, 258, 731 | 3,410,750 | 25,301,607 | 1,849,044 | 36,508,479 |
| 1920. | 1,708,723 | 12,742,659 | 4,423,745 | 2,592,382 | 3.336,412 | 22,329,161 | 2,108,257 | 49,241,339 |
| 1921. | 924,529 | 9,778,623 | 3, 690.726 | 1,815, 284 | 3.065.042 | 13, 953,670 | 1,704,061 | $34,931,935$ $41,800,210$ |
| 1922. | 1,612,599 | 10,209, 258 | 4, 6855,660 | 2,089,414 | 2, ${ }^{2}$, 1595.427 | 18, $20.795,914$ | 1,757, 192 | 42,565,545 |
| 1923. | 1, 754.980 | 8, 448,385 | 5,383,809 | $\frac{2}{2,283,314}$ | 3,557, 587 | 21, 257, 567 | 2,072,935 | 44,534,235 |
| 1924. | 1,201,772 | 8,777,251 | 5,383,809 |  |  |  |  |  |
| 1925. | 1,598.119 | 10, 213.779 | 4,788,589 | 3,044, 919 | $3,436,412$ $3,152,193$ | $22,414,618$ $27,367,199$ | 2,435, 695 | 56, 360,633 |
| ${ }_{1927}^{1926 .}$ | 1,358, 934 | $12.505,922$ $10,783,631$ | $5,325,478$ $4,406,673$ | 3,736,450 | 3,670,229 | 22, 390,913 | 3,267, 906 | 49,123, 609 |
| 1928. | 1,196,681 | 11,681,995 | 5,001,641 | 2,996,614 | 4,030,753 | 26,562,727 | 3,580,562 | 55,050,973 |
|  |  |  |  |  |  |  |  |  |

18. Revue rétrospective (b) Nombre et valeur des navires et barques de pêche du
Canada et valeur des agrès de pêche et du matériel de l'industrie poissonnière
pour les années $1880,1885,1890$, 1895 et de 1900 à 1928

(1) Cela comprend toutes les fabriques de conserves de poisson. les poissonneries et établissements de fumage, les entrepôts frigorifiques, les móles et quais affectés à la peche. les casiers à homard, pièges à saumon et à crabe, les nasses, chaluts et autres agrès de pêche, à l'exception des 'navires", des "barques" et des "filets et seines".
19. Revue rétrospective (c) Nombre de personnes employées dans l'industrie poissonnière en 1895 et depuis 1900 jusqu'à 1928

${ }^{1}$ Nor classifié separément, anterieurement id 1917.
20. (d): Capital engagé dans l'industrie de la pêche, par provinces, 1880-1928

| Année | Ile du PrinceEdouard | NouvelleEcosse | NouveauBrunswlek | Québec | Ontarlo | $\begin{aligned} & \text { Colomble } \\ & \text { Britan- } \\ & \text { nlque } \end{aligned}$ | Manitoba, Saskatchewan, Alberta et Yukon | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | $\delta$ | \$ | § | \$ | \$ | \$ |
| 1880 | 106,011 | 2,225,493 | 490,714 | 756,796 | 177,543 | 182,025 | Inexistant | 3,938,582 |
| 1885. | 493, 143 | 3,010,000 | 1,075, 879 | ${ }^{930,358}$ | 378, 274 | 809,805 |  | 6,697,459 |
| 1890. | 348,320 | 3,243,310 | 1,184,745 | 521.544 | 563,443 | 1,511,279 |  | 7,372,641 |
| 1893. | 479, 639 | 3,139,968 | 1,710,347 | 804,703 | 831,505 | 2;085,435 | 202,251 | 9,253,848 |
| 1900. | 442,120 | 3,278,623 | 2,361,087 | 830,869 | 789,042 | 2,987,104 | 301, 280 | 10,990, 125 |
| 1901 | 425, 589 | 3,319,334 | 2, 233, 825 | 954,661 | 750,921 | 3,360,082 | 446, 888 | 11, 991,300 |
| 1902. | 395, 648 | 3,485,489 | 1,943,654 | 1,014, 168 | 816,392 | 3,160,683 | 489,925 | 11,305,959 |
| 1903. | 464,792 | 3,937,428 | 2,005,391 | 1, 124,848 | 846,368 | 3,256, 102 | 606,525 | 12,241,454 |
| 1904. | 444,868 | 4,016,661 | 2,113,377 | 1,243,085 | 931,097 | 2,935,416 | 672,438 | 12,356,942 |
| 1905 | 417,951 | 4.361,897 | 2,182,059 | 1,138,875 | 960,700 | 3,158,145 | 661,270 | 12,880,897 |
| 1906 | 480,694 | 4,529,301 | 2,171,083 | 1,207,515 | 942,810 | 4,591,560 | 652, 502 | 14.555,565 |
| 1907. | 488,905 | 4,469,041 | 2,332,455 | 1,134,315 | 1,099,403 | 4,767,863 | 534,610 | 14, 226,592 |
| 1908. | 547,714 | 5,052,148 | 2,365,563 | 1,101,746 | 1,125,884 | 4,898,854 | 417,445 | 15,509,354 |
| 1909 | 568,828 | 5,014,909 | 2,346,467 | 1,097,767 | 1,147,075 | 6,823,852 | 359,034 | 17,357,932 |
| 1910. | 601,753 | 5,334,083 | 2,576,795 | 1,031, 813 | 1,165,229 | 7,830,976 | 479,221 | 19,019,870 |
| 1911. | 641,731 | 5,645,276 | 2, 894, 795 | 1,215,532 | 1,177, 365 | 8, 103,090 | 462,205 | 20,932.904 |
| 1912 | 851,070 | 6,531,590 | 3,508, 899 | 1,440, 114 | 1,808,404t | 9, 941, 049 | 307,333 | 24,388,459 |
| 1913 | 948, 667 | 7,110,210 | 3,600,547 | 1,445.871 | 1,506,581 | 12,489,613 | 362,544 | 27,464,033 |
| 1914 | 1,030,464 | 7,568,821 | 3,765,020 | 1,392,039 | 1,752,339 | 8,829,740 | 394,739 | 24,733,162 |
| 1915. | 1,024,268 | 7,899,112 | 3, 958, 714 | 1,464,373 | 1,860,732 | 9,141, 915 | 506,461 | 25,855,575 |
| 1916 | 1,178,148 | 8,661,643 | 4,487,601 | 1,479,593 | 2,027,018 | 10,371,303 | 523,656 | 28,728,962 |
| 1917. | 1,770,949 | 11,702,311 | 5,733,071 | 3,283,218 | 2,331,182 | 21,696,345 | 626,049 | 47,143, 125 |
| 1918. | 1,529,184 | 13,084,412 | 6,960,327 | 4,469,164 | 2,694,102 | 30,478,437 | 1,006,237 | 60,221,863 |
| 1919. | 1,528,541 | 13, 971, 623 | 5,878, 652 | 3,767,293 | 3,039,682 | 25,373,497 | 1,017,733 | 54,577,026 |
| 1820. | 1,309,179 | 13,347,270 | 4,931,856 | 3,246,442 | 3,269,971 | 23,290,359 | 1,010,401 | 50, 405,478 |
| 1921. | 970,798 | 12,265,465 | 4, 436, 076 | 2,735,617 | 3,151,715 | 21, 135,723 | 974,083 | 45,669,477 |
| 1922. | 1,161,325 | 12,860, 960 | 4,614,008 | 2, 142,572 | 3,352,410 | 22, 763, 363 | 870,350 | 47,764,988 |
| 1923. | 1,278,481 | 12, 188, 808 | 4,574,617 | 2,267,511 | 2,807,368 | 23,577,988 | 978,177 | 47, 672,950 |
| 1924. | 1,211,858 | 10, 990, 472 | 5,357,891 | 2,328,671 | 2,995,362 | 19,905,883 | 1,067,213 | 43,807,350 |
| 1925. | 1,237,972 | 11,674,790 | 5,247,448 | 2,708,239 | 3,295,510 | 21,674,584 | 1,094,087 | 46,872,630 |
| 1926. | 1,106, 622 | 12,094, 428 | 5, 369.112 | 2,766, 336 | 3.337,737 | 31,862,753 | 1,309,408 | 57,306, 884 |
| 1927. | 1.117,473 | 11,468,249 | 5,526,988 | 2,408, 274 | 3,257,190 | 31, 117,986 | 1,409,301 | 56,306,461 |
|  | 940, 844 | 11,078,262 |  |  | 3,432,528 | 32, 326,325 | 1,603,011 | 58,072,371 |

18. (e) Personnel de l'industrie de la pêche au Canada, par provinces, 1895 et de 1900 à 1928


[^0]:    Total number of anglers.
    6,113
    Total value of equipment
    \$10,783

[^1]:    90655-7!

[^2]:    Nore.-Licenses issued 1926, 1927 and 1928 include transfers from other districts.
    *Pack of fish caught at Naas River regardless where canned. tPack at Naas River regardless where caught.
    For the years 1881 to 1884,1888 to 1901 and 1903 , particulars of varieties not available-practically all sockeye.

[^3]:    Indian permits.
    .924
    Angling permits.

[^4]:    Note.-Number of passages refers to transportation one way. A return trip counts as two passages. Number of permits refers to one-way passage for cases or cans, either by permit, special authority or free transportation without a permit form.

[^5]:    (a) includes small collection taken in 1929.
    (b) green eggs.

[^6]:    Total distribution

[^7]:    FISHERIES BRANCH

[^8]:    *Included in Saskatchewan.

[^9]:    *This estimate is based on the quantity of fish caught and landed in Canada, plus the quantity imported and minus the quantity exported.

[^10]:    ${ }^{1}$ Includes for 1926 and 1927 all nets and seines.

[^11]:    ${ }^{1}$ Included with cod prior to 1927 .
    90209-3

[^12]:    ${ }^{1}$ See also Sea Fisheries.

[^13]:    ${ }^{1}$ Marketed in Nova Scotia.

[^14]:    Netr.-In addition to the quantitiea shown in the above table, there were taken by anglers in Inland New Brunswick 710 owt of fish valued at $\$ 12,830$.

    90209-9

[^15]:    ${ }^{1}$ In the statistics for the ialand fisheries of Quebec no distinction is made between value as caught and landed and value

[^16]:    ${ }^{1}$ For the districts the values as marketed are given.

[^17]:    1 For the districts the values as marketed are given.
    Nore. - In addition to the quantities shown in the above table, there were taken in the province of Alberta $13,489 \mathrm{cwt}$. of fish valued at $\$ 67,449$, under domestic license, and $13,941 \mathrm{cwt}$. valued at $\$ 67,811$, under anglers' permits.

[^18]:    1 The statistics for Gloucester County include 2 lobster canneries in Restigouche County.

[^19]:    ${ }^{1}$ The statistics for Gloucester County include 2 lobster canneries in Restigouche County.

[^20]:    1 Standard cases of 48 pounds.
    ${ }^{2}$ Prior to 1928 included with Hivers Inlet.

[^21]:    ${ }^{1}$ Standard cases of 48 pounds.
    2 Prior to 1923 included with Skeena Rivar.

[^22]:    *On arrive à cette estimation en additionnant le poisson importé au poisson pris au pays, puis en soustrayant la quantite - exportée.

[^23]:    ${ }^{2}$ Pour 1926 et 1927, comprend tous les filets et seines.
    ${ }^{2}$ Pas donné séparément avant 1928.

[^24]:    1 Compris avec morue antérieurement a 1027.

[^25]:    1 Voir aussi pecheries intorieures.

[^26]:    ${ }^{1}$ Voir aussi pecheries intérieures.

