

FISHERIES NEWS BULLETIN

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Minister:

Hon. P. J. A. CARDIN, M.P.

Deputy Minister of Fisheries
W. A. FOUND.

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MINISTER STRESSES VALUE OF FISHERIES

**News Bulletin Designed to Further Interests
of Fishermen and Great Canadian
Industry**

The increasing importance of the Canadian fishing industry is emphasized by the fact that in 1928 the Dominion's fisheries production went above \$55,000,000 in marketed value. Only once before, save in the days of the war era with its inflated values, was this total exceeded, and that was in 1926 when exceptional weather conditions greatly favoured fishing operations. An industry which adds more than \$55,000,000 to the year's production of the nation is entitled to be ranked as one of the most important industries of the nation. Moreover, there are many signs that the progress of the industry is to grow more rapid and that the fisheries will be an increasing factor in national prosperity. At present the fishing industry gives employment directly to some 80,000 people, and, indirectly, it makes work for a great many more so that it puts very large sums of money in circulation in Canada. In the export markets it carries on an annual business amounting to some \$38,000,000 and it added more than \$34,000,000 to Canada's favourable balance of trade in 1928.

The Fisheries Branch has many services to perform. It has to deal with many questions. Its operations are nation-wide, and the questions which come before it must be dealt with from the national standpoint. With a view to increased usefulness on behalf of the fishermen and the industry generally the services of the Branch have been expanded during the current year and various steps taken in the way of improvement of organization. The establishment of The Fisheries News Bulletin is another step which it is believed will increase the usefulness of the Branch.

The Fisheries News Bulletin will be published monthly, both in English and French. It will give publicity to in-

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SEA FISH CATCH FOR TEN MONTHS BRINGS \$23,200,000 TO FISHERMEN

**Landed Value of Canadian Sea Fish in January-October
Period Shows Increase over Same Months
of 1928**

Canada's catch of sea fish in the ten months ending on October 31 was 893,151,700 pounds, or about 3,500,000 pounds less than in the corresponding period of 1928, but the landed value to the fishermen was \$23,246,261 or approximately \$1,869,000 greater than a year ago.

So far as operations in the month of October are concerned, there was increase in catch and landed value on the Atlantic coast but decrease on the Pacific coast so that for Canada as a whole the catch was 4,028,600 pounds under the landings in October, 1928, and there was a drop of \$99,176 in landed value.

The Atlantic catch for the month, 35,300,800 pounds, was some 6,110,000 pounds above the figures for the previous October and landed value of \$716,339 showed an increase of \$128,445. Pacific coast landings of 69,590,200 pounds were 10,139,000 less than a year ago and the landed value was \$1,871,603 as compared with \$2,099,234 in October, 1928.

The figures are unrevised but revision is not likely to cause material change.

On the Atlantic Coast

Combined landings of lobsters on the Atlantic coast for the several seasons since last November totalled 36,458,000 pounds, an increase of 5,126,800 pounds. Prices this year, however, have been somewhat lower so that notwithstanding substantial increase in catch the rise in landed value has been only about \$5,000. The October lobster catch of 678,300 pounds was more than double the catch for October, 1928, and landed value was \$61,250 as compared with \$36,899 last year.

In Nova Scotia the October catch of sea fish was 13,182,600 pounds, with a

landed value of \$292,750, while in October of last year the catch was 10,004,200 pounds and landed value \$259,390. There were increases this year in the case of cod, haddock, hake, cusk, pollock, halibut, and lobsters among the principal fish but decreases in the case of herring and mackerel. Lobster catch jumped from 289,000 pounds in October, 1928, to 807,000 pounds. The herring catch was only \$46,900 pounds as compared with 1,438,600 pounds a year ago.

New Brunswick's October landings were 15,487,000 pounds and their landed value was \$253,744. In October, 1928, the catch was 13,699,500 pounds and landed value \$173,833. Catches of cod, hake and cusk, sardines, smelts, lobsters, and oysters all showed gains. Lobster landings of 508,200 pounds were made as compared with landings of only 202,600 pounds in the previous October. On the other hand, there were sharp decreases in the catches both of herring and pollock.

Prince Edward Island fishermen landed 991,600 pounds of fish during the month, or a few thousand pounds less than in October, 1928. The catch had a landed value of \$44,794, or a decrease of some \$1,600. There was a large increase in mackerel landings. Lobster catch of 89,400 pounds showed practically no change from October of last year. Landings of cod, haddock, herring, hake and cusk, and oysters fell off somewhat.

Quebec's catch of 5,639,600 pounds and landed value of \$125,161 showed a 1,200,000 pound increase in catch and \$17,000 in value. Cod landings were 5,031,900 pounds, as compared with only 3,058,900 pounds in October, 1928. The mackerel fishery was more successful than a year ago.

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DEPUTY MINISTER WILL CONFER WITH B.C. MEN

Arranges for Annual Meetings with Representatives of all Branches of Fishing Industry in Province

All matters touching the department's administration of the fisheries in British Columbia will be gone into by the Deputy Minister of Fisheries on a trip of several weeks which he is now making to the Pacific Coast. While away he will also attend a meeting of the International Commission under the Pacific Halibut Treaty.

In Vancouver, on December 3, he will hold a conference with representatives of the various branches of the British Columbia fishing industry, and it is hoped that as a result of this meeting any changes in the fishery regulations for the province for next year may be dealt with before the end of 1929. If this hope is fulfilled the necessity for changes after the coming season has begun will be avoided and the fishing interests will be able to make their preparations for the season with full knowledge as to the regulations which will govern operations. It is also believed that meetings of this kind—it is proposed by the Deputy Minister to hold such a conference in British Columbia every year—will be helpful in maintaining sound relations between all branches of the industry.

Preliminary to the Vancouver conference different organizations connected with the British Columbia fisheries will discuss among themselves any changes in regulations or policy which they believe might be desirable.

Collection of Atlantic salmon eggs for hatchery purposes for the current season is well advanced at the Miramichi pond in New Brunswick and on November 2, with 460 salmon still to be stripped, there were 13,290,000 eggs in the hatchery. All told, 3,454 salmon were obtained for the purposes of the Miramichi during the past season, the first of them on September 11 and the last on October 7. Salmon for hatchery use at this point are obtained by means of the tender-and-contract system. The contract to supply the necessary fish is awarded to the lowest tenderer and in capturing the salmon he must use equipment specified by the Fish Culture Division of the Fisheries Branch and operate according to conditions laid down by the Division.

NEW N.S. SCALLOP BEDS BELIEVED PROMISING

New scallop areas discovered on the western coast of Nova Scotia this summer are believed to promise considerable enlargement of the scallop production of the province.

The areas lie in Shelburne county waters and were explored during the latter part of the summer by ss. *Madeline A.*, which was chartered for this purpose by the Fisheries Branch.

Numerous draggings were made at different places by the *Madeline A.* and scallops were found in Shelburne bay, Clyde river, Cape Negro harbour, the western channel off Cape Negro island, and in Port LeHebert harbour. A few were also found in Lockeport bay. Large scallops were taken in scattered areas in Shelburne harbour and smaller scallops in other Shelburne bay waters. Draggings showed scallops all the way from Cape Negro to Port Clyde in the Clyde river, especially in shallow waters near shore. In the western channel off Cape Negro island large scallops were found but in this area there is a good deal of rough bottom which might interfere with fishing. In Cape Negro harbour many pieces of shallow water yielded scallops of fair size and at Port LeHebert the draggers found scallops scattered all over the harbour.

Scallop landings in Canada in 1928 totalled 26,304 barrels, with a marketed value of \$140,838; all save 1,771 barrels were taken by Nova Scotia fishermen. Most of the scallops landed in Canada are marketed fresh, but a few are canned. It is believed, however, that the rapid-freezing process will be increasingly used in the future in marketing these shellfish.

MINISTER STRESSES—Con.

interesting facts as to the fisheries resources and the progress of the fishing industry, and to the efforts by which it is sought to solve fisheries problems. Popular knowledge of the fisheries will thus be widened and popular interest in them stimulated. The Fisheries News Bulletin should also be of interest and value to fisheries officers throughout the country, and persons engaged in the industry, by enabling them to be more fully informed as to fisheries resources and operations in parts of the Dominion remote from their own and as to the work of the Fisheries Branch, which covers a wider field than is perhaps generally realized.

P. J. A. CARDIN.

OTTAWA, November 25, 1929.

FISHERMEN HAVE M.D. WITH DEEP SEA FLEET

394 "Calls" in Banks' Season by Doctor Sent to Fishing Grounds by Fisheries Branch

Dr. D. R. Webster is a Nova Scotia physician who has sometimes had an unusual practice. In the fishing season on the Atlantic banks off Canada's coast his patients were men of the Canadian fishing fleet for Dr. Webster is the medical officer who was sent to the banks on the Canadian Government Ship Arras this year to attend fishermen who found themselves in need of medical or surgical attention. And he had to make a good many professional "calls". During the 1929 season, according to his report to the Fisheries Branch, he made 394 calls and performed 42 operations, though, happily, no operations of a serious character were needed.

Outstanding observations of the season, Dr. Webster reports, were the increase in infections of the respiratory tract among the fishermen and the decrease in hand infections, especially those of a serious character. It appears, he says, that the change of atmospheric conditions which the fishermen meet when they arrive off Newfoundland in the spring is the predisposing cause of respiratory infections. The reduction in the number of hand infections he attributes to increased education of the fishermen in the use of antiseptics and in the care of infections after they occur. At the same time, however, Dr. Webster points out, much investigation still needs to be done in the study of infection and extensive necrosis (mortification or gangrene) following puncture wounds from fish bones.

The practice of sending a physician to the banks on the Government vessel which accompanies the fishing fleet has been followed by the Fisheries Branch since 1924 with very useful results. Plans for providing a special hospital ship to accompany the fleet are now under consideration.

Investigations made by L. F. Smith, of the Pacific Experimental Station of the Biological Board at Prince Rupert, B.C., have shown that a satisfactory glue can be made from fish heads. While glue has been made from fish waste on the Atlantic Coast for some time it was apparently previously believed that the fish waste available on the Pacific Coast was not so suitable for use in this way.

WATERS IN JASPER PARK STOCKED WITH EASTERN SPECKLED TROUT

Reports give Glimpses of Work of Fish Culture Division of Fisheries Branch in Aiding in Building up Fish Resources in Different Parts of Country

Successful introduction of eastern speckled trout into the formerly barren waters of the Medicine-Maligne lake system in the famous Jasper National Park in Alberta has been one of the recent interesting and important activities of the Fish Culture Division of the Fisheries Branch.

Eastern brook trout could be readily taken with spoon and fly all through the Medicine-Maligne system this summer, and as the natural increase goes on the waters may be expected to become a source of fine sport for anglers.

Years ago, perhaps aeons ago, a rock slide shut off these waters from the Athabaska river, occurring, apparently, before fish had reached that point, and until recently they were barren of fish life. At the instance of the Fisheries Branch an investigation of the lakes in Jasper Park was undertaken by the Biological Board of Canada and was carried on under the direction of Dr. C. H. O'Donoghue, who was then a member of the faculty of the University of Manitoba as well as a member of the Biological Board and of its Research Committee on Fish Culture. Observations covering two seasons were made and they were the basis for a subsequent recommendation that eastern speckled trout (*Salvelinus Fontinalis*) be introduced into the Medicine-Maligne system.

In the spring of 1928 the Fish Culture Division made an initial distribution of eastern brook trout in this system. A second distribution was made this year. During the past summer many trout were found which, although they were only sixteen months old, were eighteen inches in length and would spawn this autumn, very early spawning for wild trout. The fish were apparently thriving in all parts of the system.

Further evidence as to the value of the distribution of fry from the hatcheries is seen in the fact that the number of Atlantic salmon captured this year for stripping purposes at the egg-collecting camp conducted by the Fish Culture Division of the Fisheries Branch at River Philip, Nova Scotia, is consider-

ably larger than the number obtained a year ago. In 1928, when the camp was established, 615 salmon were captured for egg collection operations between October 24 and November 21 and yielded a total of 2,450,000 eggs. This year 800 salmon had been taken up to November 9 so that there are promising prospects for an increased collection of eggs. Earlier efforts to collect salmon eggs in the rivers of Eastern Nova Scotia were discontinued some twenty-five years ago because of the small measure of success attained. In recent years, however, following the distribution of hatchery fry, a marked improvement in these salmon waters has been evidenced by the number of fish and eggs already secured.

Seventy-five million whitefish eggs were obtained at the Dauphin river egg-collecting camp, lake Winnipeg, up to November 12 for the Gull harbour hatchery operated by the Fish Culture Division of the Fisheries Branch. The total count of eggs for the season, however, will reach a considerably larger figure since, on November 12, there remained to be stripped at the Dauphin camp some 3,600 of the 11,558 whitefish which had been captured for egg-collecting purposes. At Dauphin river the whitefish are intercepted when on their annual spawning migration from lake Winnipeg to lake St. Martin. The early part of the run is allowed to go by unimpeded and this year the first fish to be taken for collection purposes were impounded on September 23rd and the last on November 1. The total number impounded was smaller than in 1927 or in 1928. Throughout the time in which fish are being caught for egg collection there is a weekly period of twenty-four hours in which the leads of the trap are raised and no fish are taken.

Nearly 44,000 cases of canned clams and quahaugs were packed in Canada last year. The largest production was in New Brunswick—23,048 cases. British Columbia's output was 15,286 cases. In Nova Scotia 4,309 cases were canned and in Prince Edward Island 447.

EXPAND PRODUCTION OF EEL GRASS INSULATION

Utilization of large quantities of eel grass in the manufacture of insulating material is in prospect in the Atlantic Coast provinces, and new earning opportunities for the people in many fishing districts are likely to follow this development.

Eel grass grows in great quantities in the shore waters at many places along the Atlantic Coast of Canada but up to very recently it was regarded as so much waste matter. A year or so ago, however, a company in Eastern Nova Scotia began experimental manufacture of insulating blankets from this eel grass. The experiment was successful and a profitable market for the blankets has been found in the United States. Now it is believed that an increasing business can be developed in Canada, the United States, and elsewhere, and a group of business men and financiers in Nova Scotia are forming a second company to carry on manufacture.

The price paid fishermen who have engaged in gathering eel grass for use in this new branch of manufacturing is stated to be approximately \$14 or \$15 a ton, f.o.b. shipping point.

Frozen fish from lake Athabaska, several hundred miles north of Edmonton, are successfully marketed in Chicago and other cities of the United States.

SEA FISH CATCH—Con.

On the Pacific Coast

Pilchard landings of approximately 18,378,000 pounds in British Columbia in October were almost double those in October of last year, when the catch was 9,526,000 pounds. Landed value was about \$110,300 as against only \$71,445 a year ago.

The salmon catch for the month was only 30,268,000 pounds as compared with 45,619,000 pounds in 1928, and landed value was \$1,082,987 as compared with \$1,314,955.

In the halibut fishery the catch was 3,024,100 pounds and landed value \$407,490. In October, 1928, catch was 3,653,900 pounds and landed value \$429,305.

Herring landings of 17,144,300 were nearly 3,000,000 pounds less than in October, 1928, but landed value of \$238,921 showed an increase of \$7,166.

BRITISH COLUMBIA CANNED SALMON PACK 1,258,000 CASES IN 10 MONTHS

Bad Fishing Weather in Several Districts and Light Run of Chums Factors against Large Pack, Reports to Fisheries Branch Show

At present only unrevised figures are available as to salmon fishery production in British Columbia so far in 1929 but the indications are that the pack of canned salmon will be fairly well up to the average yearly pack since 1917.

In the ten months ending with October the pack totalled about 1,258,000 cases, of forty-eight pounds each, as compared with an average yearly pack since 1917 of 1,493,281 cases, and it is to be noted that the figures used in calculating the yearly average include the record-making pack of 1926 and the exceptionally large pack of 1928.

Very bad fishing weather in some districts, notably in northern sockeye areas, and a light run of chums, together with added conservation measures, tended against large production. So far as preliminary reports of spawning ground inspection are available, there is evidence that the conservation measures were warranted and effective.

Fishing in some of the chief sockeye areas was greatly handicapped by unusually bad weather. In Rivers and Smiths inlets, for instance, weather conditions are reported to have been the worst in fifteen years, from the fishermen's standpoint. This state of affairs kept down the sockeye catch, and the total pack of sockeyes up to the end of October was about 275,800 cases. An interesting and important fact is that an early sockeye run came into the Fraser river before the fishermen were prepared for it and a large proportion of the fish reached the upper spawning grounds, a greater proportion, it is believed, than for many years.

Of late years an increasing quantity of springs and steelheads has been used in supplying the market for fresh and frozen salmon so that a comparison of the canned pack figures, alone, does not accurately indicate the measure of the abundance of these fish. Mild-curing plants also use a considerable quantity of springs. The combined pack of springs and steelheads, up to the end of October, was about 19,000 cases.

Very satisfactory runs of cohoes and bluebacks have occurred this year, and the combined pack in the past ten

months—approximately 191,000 cases—was somewhat above the average for the corresponding period in recent years. As in the case of springs and bluebacks, a trend of recent years has been toward the greater use of cohoes and bluebacks in the trade in fresh and frozen fish.

In certain sections of the province this is an "off" year for pinks, which have a two-year life cycle, but the pack up to the end of October, about 476,000 cases, was larger than in any "off" year since 1917 and double the total pack for 1927 which was the brood year. The outcome of this year's run of pinks is particularly gratifying in view of apprehension that had existed in some quarters that this variety of salmon was being subjected to overexploitation. The only exception to the general condition as regards the size of pink runs was in the Naas river district where there was only a light run, and here restrictive measures were immediately applied in the interests of conservation so that the size of the pack was necessarily lessened.

The chum fishery has been inexplicably less productive than usual in virtually every section of the province, and in the Queen Charlotte area and the Naas and Skeena systems it has been very poor. The pack up to the end of October was approximately 300,000 cases, which is much under the average for the past six or seven years. Immediately it seemed apparent that the runs were smaller than usual, added conservation steps were taken to ensure escapement of the fish to the spawning grounds.

It is stated by Dr. Donald K. Tressler, of the Mellon Institute of Industrial Research, that the prevalence of goitre is, roughly, inversely proportional to the iodine content of the food and drinking water in the diet. The iodine content of fish, especially sea fish, is high so that the use of fish foods on the table is regarded by scientists as distinctly helpful as a preventative of goitre.

MARITIME OFFICERS TO MEET NEXT JANUARY

January and Halifax Time and Place for Annual Convention of Fisheries Officers of Three Provinces

Plans are being made by the Fisheries Branch for a convention of Maritime Province fisheries officers in Halifax in January. The arrangements are in the hands of the Director of Fisheries Promotion and Inspection, J. J. Cowie.

The 1930 convention, which is to be followed by a like gathering each year in future, will open on January 9 and continue for two days. All the permanent fisheries officers of the three Maritime Provinces will attend. The Deputy Minister will be present, if circumstances permit, as well as several members of the Ottawa staff of the Fisheries Branch. Invitations to attend will be extended to representatives of organizations of Maritime Province fishermen, and to representatives of the industry and Fish and Game Associations, and it is hoped to have some of these gentlemen take part in the program of the sittings.

Addresses or papers dealing with various phases of the fisheries and their problems, and with the work of the Fisheries Branch and fisheries officers will be given. Included among them, it is expected, will be addresses dealing with the work of the experimental and biological stations of the Biological Board on the Atlantic Coast. Dr. M. M. Coady, who has been engaged by the Fisheries Branch to assist the fishermen in carrying out plans of organization, will speak on the value and possibilities of fishermen's associations and the part that fisheries officers can take in assisting the fishermen in this connection.

It is believed that conventions of this kind will serve a useful purpose by assisting in the co-ordination of the officers' work, in stimulating interest in fisheries work, and in helping to maintain close sympathetic contact between the Fisheries Branch and the fishing industry.

British Columbia canned salmon are exported to upwards of thirty different countries. In 1928 the marketed value of the canned salmon put up in the province was considerably more than \$13,000,000.

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No. 2

SEA FISH CATCH SHOWS INCREASED VALUE THOUGH QUANTITY SMALLER

**Total Landings for Past Eleven Months Approximately
976,500,000 Pounds with Landed Value to
Fishermen Reaching About \$25,300,000**

Canada's sea fishermen haven't been catching as many fish this year as they brought ashore in 1928 but, all told, they have obtained more money for their landings.

In the eleven months ending on November 30 the total catch of sea fish was approximately 976,459,600 pounds, or about 27,000,000 pounds less than the catch of the January-November period of 1928 but the landed value of the fish was about \$25,315,000 as compared with only \$23,358,900 in the 1928 months. The figures for January-November, 1929, however, are given subject to revision.

November sea fishing operations were less successful than those of a year ago, so far as size of catch is concerned, but there was a \$70,369 gain in landed value. Pacific coast catch of 63,032,800 pounds was 18,870,500 pounds under the catch for November of last year but landed value increased by \$94,394 to a total of \$1,432,710. On the Atlantic coast, however, a decrease of 4,086,700 pounds in catch was accompanied by a drop of only \$22,025 in landed value. The Atlantic coast catch for November was 20,643,600 pounds, with a landed value of \$619,262, as compared with a catch of 24,730,300 pounds and a landed value of \$641,287 in November, 1928.

On the Atlantic Coast

The total landings of fish in Nova Scotia during November were 15,234,500 pounds as compared with 17,549,000 pounds in November, 1928, while the value of the catch to the fishermen was \$398,124, as compared with \$445,164. Increases were recorded in the catches of haddock, hake and cusk, halibut, smelts, clams and scallops while the catches of cod, pollock, herring, mackerel and oysters showed decreases. The smaller landings of cod were particularly notice-

able, only 6,356,900 pounds being taken as compared with 10,300,400 pounds in the previous November. The catch of hake was more than double that of a year ago, being 1,404,500 pounds, while some 182,500 pounds of smelts were taken, or an increase of 36,600 pounds.

For New Brunswick a decreased catch is also shown, but an increase in the landed value. There were 3,317,700 pounds of fish and shell fish landed with a value to the fishermen of \$154,524, compared with 3,841,600 pounds valued at \$113,945 as landed in November, 1928. There were increased catches of cod, haddock, hake and cusk and smelts. The drop in the catch of herring from 564,000 pounds to 343,000 pounds was noticeable, as was the drop in sardines from 7,491 barrels to 3,592 barrels. The new season for lobster fishing opened on November 15 and some 288,600 pounds were taken, a decrease from the 331,000 pounds caught during the same period in 1928.

There were 362,400 pounds of fish taken by fishermen in Prince Edward Island with a value of \$19,010 as landed. The catch during the corresponding month last year was 523,500 pounds with a landed value of \$23,984. Decreased landings were recorded in each variety except tom cod which showed 14,800 pounds increase, the catch being 36,700 pounds.

Quebec fishermen caught only 1,729,000 pounds of fish, which was a decrease of 1,087,200 pounds from the total for November, 1928. The landed values during the two respective months were \$47,604 and \$58,194. The catch of cod and herring fell off, that of cod decreasing nearly fifty per cent to 950,400 pounds, while herring dropped more than half to 175,900 pounds. Increases were noted in the catch of mackerel and smelts.

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CONFERENCE AGENDA FULL OF INTEREST

**Supervisors and Inspectors to Present
Papers at Maritime Officers'
Conference**

Under the plans which have been made for the conference of sea fishery officers of the Maritime Provinces in Halifax on January 9 and 10, eight papers on fishery topics will be presented by supervisors and inspectors and there will be short addresses by representatives of the Fishermen's Federation of Nova Scotia and other organizations interested in the fisheries and the fishing industry. Opportunity for open discussion will be given after each address and paper.

An address by Dr. M. M. Coady on fishermen's associations, their organization, aims, etc., will also be a feature of the two-day program. Dr. Coady, an authority on problems of fishing and farming communities, is the Maritime Province man who has been engaged by the Fisheries Branch to assist the fishermen of the three provinces in carrying out organization plans.

The conference will be under the chairmanship of J. J. Cowie, Director of Fisheries Promotion and Inspection. Supervisor D. H. Sutherland, of District No. 2, Nova Scotia, will read the first paper of the conference and in it he will deal with the subject "How Fishery Officers should be Utilized for Educational and Demonstration Work." Inspector J. G. d'Entremont, of Yarmouth county, N.S., will discuss in his paper "Carrying Out Provisions of the Fish Inspection Act, from a late Fishery Overseer's Point of View." More effective prevention of illegal fishing will be the subject of two papers, one by Inspector J. E. Leblanc, of Westmorland county, N.B., who will consider illegal fishing in sea or tidal waters, and the other by Inspector C. C. Hollis, of Cumberland county, N.S., who will take up the same problem as it is found in non-tidal waters.

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SALMON PACK IN B.C. IS 1,390,000 CASES

Year's Production of Canned Salmon Cut by Drop in Pinks and Chums

Reckoned in 48-pound cases, British Columbia's pack of canned salmon in 1929 has been 1,389,476 cases. Any change that may be made by final revision of the figures will be unimportant.

This year's pack was about 30,000 cases greater than the output in 1927 but considerably smaller than the production in the record years of 1926 and 1928.

Larger quantities of sockeye and cohoes were canned this year than in 1928 but the catch of pinks and chums fell off so that the pack of each of these two varieties was much smaller than a year ago when these fish were canned
(Continued on page 4)

SEA FISH CATCH—Concluded

On the Pacific Coast

Decreased landings were reported in November for all of the principal varieties of fish taken on the Pacific coast. The catch of salmon was 14,997,600 pounds as compared with 23,082,500 pounds in the previous November. Salmon landed values were \$618,537 for November of this year and \$627,251 in the previous November. Chum salmon, which is the main variety taken at this season of the year, showed a catch of only 12,961,600 pounds compared with 21,910,600 pounds in the preceding November. Higher prices were obtained, however, so that there was not a proportionate decrease in the value to the fishermen.

There were 1,870,700 pounds of halibut landed from the first of the month to the 15th when the closed season came into force. In the same period of last November some 1,890,700 pounds were taken. The landed values for the period under review and the corresponding previous time were \$243,851 and \$235,563, respectively.

The quantity of herring landed was 45,026,800 pounds with a value to the fishermen of \$511,043 compared with 55,591,400 pounds having a landed value of \$421,784 in the preceding November. The greater part of the catch was dry salted for the Orient, some 348,059 hundredweights being produced. In the previous period there were 432,131 hundredweights of dry salted produced.

COLLECTION OF SOCKEYE EGGS AT OWEKANO HATCHERY NEAR RECORD

Fish Culture Division Gets More Atlantic Salmon Eggs in Nova Scotia—Over 75,000,000 Whitefish Eggs Collected at Manitoba Camp

Only once exceeded in the past, the collection of sockeye salmon eggs at the hatchery operated by the Fish Culture Division of the Dominion Fisheries Branch at Owekano lake, Rivers Inlet, B.C., reached a total during the past season of 20,074,000 or less than 500,000 eggs under the record collection of 1927. A large run of sockeye occurred in the numerous tributaries of Owekano lake and, on the whole, these waters were well seeded, even those at the extreme head of the lake. The runs to Quap and Genesi creeks, where the eggs for hatchery purposes are obtained, were, respectively, up to the average and above the average of recent years. In both these creeks the sockeye were large, averaging about seven and a half pounds in Genesi and eight pounds in Quap. During a heavy freshet in mid-October the water rose so high that it poured over the fences and the cribwork at the ends of the fences at both egg-collecting stations and the situation was such that the salmon were enabled to pass up stream above the fences without hindrance. The new trap installed at Quap last year was washed out; no other damage was done, and the fences and traps were in operation immediately the water fell below the top of the fences.

Collection of Atlantic salmon eggs at the egg collecting camp conducted at River Philip, N.S., by the Fish Culture Division of the Dominion Fisheries Branch showed considerable gain this year over 1928 results. Between October 14 and November 16, 846 salmon were taken, yielding 3,133,000, eggs while last year 615 salmon were captured between October 24 and November 21 and yielded 2,460,000 eggs. The eggs of the 1929 collection have been divided between the hatchery at Bedford, N.S., and the hatchery at Antigonish, N.S. The first run of fish captured for the River Philip camp this autumn was made up very largely of males and owing to the unusually low water during the latter part of October and the early days of November the females apparently spawned as soon as they reached suitable grounds, with the result that a large percentage of the last fish taken during the collecting period were "spent" females.

Over 75,000,000 whitefish eggs—75,150,000, to be more exact—were collected during the past season at the whitefish egg collecting camp conducted at Dauphin river, lake Winnipeg, Man., by the Fish Culture Division of the Dominion Fisheries Branch. The capture of whitefish for the purposes of the camp began on October 21 and was continued until November 10, and in that period 11,558 fish were taken, or a little more than half the number captured for the 1928 operations of the camp.

Sockeye run to the Birkenhead river district, British Columbia, during the past season was considerably below the average for recent years and, consequently, the collection of sockeye eggs at the Pemberton hatchery of the Fish Culture Division of the Dominion Fisheries Branch totalled only 18,000,000, or about half the size of the collection in each of the two preceding years. Collection of eggs extended from September 9 to October 11 and in that period 11,388 sockeye were handled.

With a view to ascertaining what supply of whitefish eggs could be obtained in an average season at Pigeon bay, on the eastern side of lake Winnipeg, Man., experimental fishing was carried on in that area during the past autumn by the Fish Culture Division of the Dominion Fisheries Branch, but satisfactory returns were not obtained. The total catch of whitefish made during the experiment was only about 500 fish.

CONFERENCE AGENDA—Concluded

Other papers to be read will include the following: "How Dr. Knight's Plan for Inspecting and Grading Lobster Canneries Should be Applied," by Supervisor S. T. Gallant, of Prince Edward Island; "The Advisability of Giving to Each Lobster Cannery a Permanent Licence Number and of Stamping Such Number on All Cans for Export," by Inspector E. D. Fraser, of Pictou county, N.S.; "The Collection of Fishery Statistics," by Supervisor A. L. Barry, of District No. 2, New Brunswick; and "Should Fishery Officers Give More Time to Outside Work and Less to Office Work?" by Supervisor J. F. Calder, of District No. 1, New Brunswick.

TAKE SOCKEYE EGGS IN SHUSWAP SYSTEM

Collection Commenced with Gratifying
Return of Sockeye Runs to
Important Spawning Grounds

After a lapse of fifteen years, a period when there had been a great diminution of sockeye salmon runs in the Shuswap lake area of the Fraser river system in British Columbia, egg collection operations were recommenced at Squilax, on Little river, by the Fish Culture Division of the Dominion Fisheries Branch during the past season and over half a million eggs were obtained. Partly with a view to assisting the investigation that is being made into the possibility of re-establishing sockeye runs in upper waters of the Fraser system from the races of sockeye which frequent lower tributaries of the river, these eggs were transferred to the experimental station at Taft, on Eagle river. This station is being operated under the direction of Dr. R. E. Foerster, who is in charge of sockeye investigations in British Columbia for the Biological Board of Canada.

The Shuswap system, on the South Thompson river, was at one time one of the four most important sockeye spawning areas above Hell's Gate canyon on the Fraser. The other three chief areas were the Chilco lake system, the Quesnel lake system, and the Stuart lake system. Gradually, the abundance of sockeye on the spawning grounds of the Upper Fraser fell away, almost to the point of depletion, as commercial development expanded. The decrease was first observed in the "off" years but soon was equally apparent in the "big" run that occurs every fourth year. Practically no sockeye reached the Shuswap system in 1911, for instance, and only a very small number in 1914. In the latter year the local fishery officer stated that, in his opinion, not more than a million eggs would have been obtained if all of the nine principal salmon streams flowing into Shuswap lakes had been fenced. The virtual disappearance of sockeye runs from the Shuswap system led to the closing of the hatchery on Granite creek, which had been in operation since 1902, and the last distribution from this hatchery, less than 100,000, was made in 1915.

In 1926, however, there was a most gratifying return of sockeye to the spawning grounds on Adams and Little rivers, at the entrance to the Shuswap

FOOD SHORT AND TRAILS BLOCKED, FISHERIES OFFICER CARRIES ON

Muskegs Bridged and Miles of Windfalls Cut Through
as Inspector Makes Patrol in Far
Northern Saskatchewan

"Tea made was a mixture of blueberries, pine needles, and dirt. Tasted the way it smelled."

Writing in this laconic fashion as he makes official report of a November patrol trip away up in Northern Saskatchewan, William Rowan, Fisheries Inspector for the Peter Pond district, gives a revealing glimpse of difficulties and hardships sometimes met with by fisheries officers as they go their rounds in the more remote districts of the country.

Bound for Ile à la Crosse, 175 miles or so beyond North Battleford, Rowan started from Big river on November 13. The superstitious may perhaps see explanation of his troubles in the day he chose. Four days later he made Waterhen river; but it is easier to write about than it was to do it.

"Travelling was very difficult," says his weekly report to the Fisheries Branch, "owing to open muskegs and creeks which had to be corduroyed and bridged. Being the first party to move north, the year's windfalls had to be cut through. This caused serious delays, with food and horse feed getting short. Horse feed was scarce owing to the lack of ice, the hay being cut on islands.... We found the ferry at Rat creek hauled out; wired the authorities at Regina and had it replaced next day. The Beaver river here was open."

On Sunday, November 17, Inspector Rowan rested at Waterhen river. On Monday he set out again. That day he travelled as far as the foot of Grand rapids. On Tuesday he made Dore river. Next day he reached La Plonge, and there he rested on Thursday after the hard going. On Friday he had to spend the day hunting for horse feed, but on Saturday he reached Canoe river. Sunday found him at Ile à la Crosse.

"Food Down to a Whisper"

But this matter of fact recital of day-by-day progress merely sketches in the outline of the picture. Let the "Remarks" in the official report to Ottawa paint in the colour:

system. This run has reappeared, in varying numbers, in each year since then, and this condition led the Fish Culture Division to commence egg collection at Squilax this year.

"We continued northward towards Ile-à-la-Crosse. Progress was slow, as the trail got more blocked with windfalls. All muskegs had to be bridged. In some places two miles of windfalls would be down in one stretch.

"Night found us in places where no water was available. There was little snow. It took a long time to get enough for horse and man. Tea made was a mixture of blueberries, pine needles, and dirt. Tasted the way it smelled.

"We rested two days at La Plonge and hunted up some horse feed. Found the river impassable and had to take the bush trail by way of Canoe river, arriving at Ile-à-la-Crosse on Sunday (November 24).

"Horse feed is scarce and food is down to a whisper....It is reported (November 25) that Peter Pond lake is still open. Weather now much colder, with a lot of snow. Ice making slowly."

And that sort of thing may be all in the day's work for fisheries officers in the "new" sections of the country.

More Sockeye Eggs

Much larger numbers of sockeye salmon eggs were obtained this year for the Lakelse hatchery of the Fisheries Branch than were collected in 1927 or 1928, and when the 1929 collection work was completed a total of 8,183,000 eggs had been placed in the hatchery. When the first hatchery on Lakelse lake was opened in 1904 a collection of 4,000,000 eggs in a season was regarded as very satisfactory. Steady improvement took place, however, until in 1926 there was a collection totalling 15,717,000 eggs. In the next two years the vagaries of the sockeye manifested themselves and the expected runs did not materialize. In 1927 the collection of sockeye eggs for Lakelse dropped to 3,526,000 and in 1928 they were 5,525,000. Now the number has increased again to 8,183,000. It is in Lakelse lake, it may be noted, that the earliest run of sockeye handled in British Columbia for hatchery purposes takes place. This year the first sockeye eggs for the Lakelse hatchery were obtained on July 28 and the last on August 31 whereas, in some other parts of the province, eggs were obtained as late as in the opening days of November.

CHAMPLAIN FISHERIES INQUIRY UNDER WAY

International Investigation Authorized by
Canada and United States
Is Begun

Acting under the authority of Canada and the United States, jointly, J. A. Rodd, Director of Fish Culture for the Dominion Fisheries Branch, and Dr. John Van Oosten, who is the officer in charge of Great Lakes fisheries investigations for the United States Bureau of Fisheries, have begun an international fact-finding inquiry into the fisheries of Lake Champlain.

This new international action touching the fisheries provides for an investigation which is to cover the pike-perch, or pickerel or dore, fisheries of lake Champlain, and any other questions that might have bearing on the fisheries of the lake and its expansions.

As the province of Quebec, the state of New York, and the state of Vermont are directly interested in the Champlain fisheries, Mr. Rodd and Dr. Van Oosten have discussed the situation with the respective fisheries authorities of those territories preliminary to proceeding with their inquiry. After they have gone into the pertinent facts on their own part, they will hold public hearings for the presentation of information and opinions by persons wishing to be heard.

SALMON PACK—Concluded

in record making quantities. The production in 1929, by principal varieties, as compared with 1928 pack, was as follows:

	1929 Cases	1928 Cases
Sockeye..	275,751	203,542
Cohoos..	172,230	150,657
Springs..	18,120	18,891
Pinks..	476,217	792,372
Chums..	422,317	862,230

Canada is the only country which supplies Trinidad with the grade of dried codfish known as Extra Large. The other grades in demand on the Trinidad market, according to a report made to the Commercial Intelligence Service of the Department of Trade and Commerce by Mr. F. L. Casserly, Acting Canadian Trade Commissioner at Port of Spain, are Large, Medium, and Small. Newfoundland and England compete with Canada in the trade in these grades.

TAGGED CODFISH IN NOVA SCOTIA CATCH

Four codfish which had been tagged by workers on the staff of the Biological Board of Canada in the summer of 1927 and liberated off other parts of the Nova Scotia coast were caught a few weeks ago by fishermen operating in waters off Cheticamp, Inverness county, N.S.

These fish were among those which were tagged in July and August, 1927, in the course of the tagging operations which were carried on to assist in establishing facts as to the movements of cod and other fish. One of the four had been liberated on Carouse shoal, which lies off Canso; another, four miles northeast of Glace Bay; and the other two were freed four miles off Flint island, which is to the southeast of Glace Bay. They escaped capture for a little more than two years and in that time apparently made their way around the north of Cape Breton to the western coast of the island, whether they did any other travelling or not.

Tagging is done by placing a small numbered piece of metal, or tag, on the tail or caudal fin of the fish. A record is kept of the number of each tag, the date when it was used, and the place at which the fish bearing the tag was liberated. If the fish is caught later on it is possible to judge what its movements have been since it was tagged and freed. Thus, in the course of time, evidence of value to those engaged in the fisheries may be accumulated as to the migration habits of the different varieties of fish that are tagged. Tagging operations are carried on in North American waters both by Canada and the United States.

Pilchard oil, which is produced in very large quantities in British Columbia, is rich in vitamins and it is believed by investigators that its medicinal qualities compare favourably with those of cod liver oil. At present, however, the oil is chiefly used in the manufacture of soap, linoleum, etc.

Early spawning whitefish have been found in Chitek and Pelican lakes, which lie beyond Jackfish lake in Northern Saskatchewan. Spawning was found to be in progress in these waters as early as October 15 whereas in other Prairie Province waters the spawning period for whitefish extends over a considerably later period.

EASTERN WHITEFISH ARE TAKEN IN B.C.

Dominion Fish Culture Division Adds to
Fisheries Resources of
Okanagan Lake

Eastern whitefish, of course, are not indigenous to Okanagan lake in southern British Columbia but catches of these fish totalling slightly more than 1,000 pounds have been made there in the course of recent months. Back of this fact is a story of action by the Fish Culture Division of the Fisheries Branch to stock the Okanagan with the eastern whitefish or, to use the scientific name, *Coregonus clupeaformis*.

'Way back in 1896 a limited number of eastern whitefish fry were hatched in the old Fraser river hatchery from eggs that had been collected in lake Winnipeg and "eyed" in the old Selkirk hatchery and they were placed in Okanagan lake. As their number was comparatively small, large returns were not looked for and, as a matter of fact, the experiment did not receive a great deal of attention. A year ago, however, or a little more, the Fish Culture Division made a new distribution of fry in the lake at the request of the British Columbia Fisheries Department which is desirous of having eastern whitefish established in the larger lakes of the province. These fry were hatched in a subsidiary hatchery at Summerland, British Columbia, from lake Winnipeg eggs which had been brought to the "eyed" stage in the Gull harbour hatchery, Manitoba.

In the course of gill netting operations which were carried on in Okanagan lake during 1928 in connection with an investigation by Dr. J. R. Dymond as to the trout of that region, a number of eastern whitefish of mature size were taken. Experimental fishing was then initiated with gill nets of varying sizes of mesh—3, 3½, 4, 4½, 5 and 5½ inches. This fishing was begun in October, 1928, and was carried on continuously until January 10, 1929, and then again from March 15 last to August 1. In these two periods a total quantity of 1,061 pounds of eastern whitefish were landed, in addition to coarse fish such as suckers, squaw-fish, ling, and carp. Very few native or Rocky Mountain whitefish were caught. The fishing indicated that only the nets of 3½-inch mesh were suitable for taking mature fish in the lake.

FISHERIES NEWS BULLETIN

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FISHERIES OFFICERS DISCUSS MANY QUESTIONS AT BUSY CONFERENCE

Enlightening Discussions on Addresses and Papers Feature of Sessions of Maritime Province Sea Fishery Supervisors and Inspectors at Halifax

Fisheries supervisors and inspectors from the sea fishing districts of Nova Scotia, Prince Edward Island, New Brunswick, and the Magdalen Islands put in two days of steady, concentrated consideration of questions connected with their work when they attended the conference of sea fishery officers held by the Dominion Fisheries Branch at Halifax on January 9 and 10.

The conference had been planned as a business meeting pure and simple, and it was exactly that. Sessions were held each day from half-past nine until one o'clock, or a little later, and from half-past two until six. On the second day, an evening sitting was also held, continuing until nearly eleven o'clock. And each session was devoted wholly to matters relating to the fisheries and the officers' work.

Illuminating addresses, papers, and discussions made the sessions exceedingly interesting and useful, and at the close of the conference the exchange of views on various points was declared by officers to have been most helpful.

At the closing sitting, resolutions were proposed by the officers recommending: (1) that the Fish Inspection Act be amended to give fisheries inspectors the authority to condemn, for food purposes, any fish which they deem unfit for consumption; (2) that where it is the custom to handle lobster bait in barrels, the use of a standard container be required; (3) that a conference of departmental heads and fisheries supervisors consider further the regulation of lobster pounds. Other resolutions dealt with several points in connection with conditions under which fisheries officers work.

The conference, which by courtesy of the Halifax Board of Trade was held in the board's rooms, was under the chairmanship of J. J. Cowie, Ottawa, Director of Fisheries Promotion and Inspection for the Fisheries Branch. Reso-

lutions adopted by the officers at the close of the conference expressed appreciation of the manner in which Mr. Cowie conducted the sessions, and of the co-operation of the Board of Trade and the addresses by speakers outside the departmental staff. R. S. Shreve, Halifax, Acting Chief Supervisor of Fisheries for Nova Scotia, acted as secretary. In addition to Mr. Cowie, H. F. S. Paisley, Director of Fisheries Intelligence and Publicity, was present from the Ottawa staff to attend the conference.

Prior to the presentation of officers' papers, short speeches were made by representatives of several Nova Scotia fish and game associations. Mr. Justice Mellish and J. M. Weeks spoke on behalf of the Halifax Fish and Game Association and Dr. J. A. M. Hemmeon, of Wolfville, represented a like body in the Annapolis Valley. Robie W. Tufts, of Wolfville, officer under the Migratory Birds Convention, was also present and took part in a discussion of harm done some of the fisheries by the shell-duck and several other migratory birds. A paper by the president of the Prince Edward Island Fish and Game Association was read on his behalf by Supervisor S. T. Gallant.

Men from Trade Speak

Speeches were made during the conference by R. H. Williams, Halifax, who touched on several matters connected with the lobster canning industry, with which he has been long associated, and by A. H. Whitman, Halifax. Mr. Whitman, who is chairman of the Atlantic sub-executive of the Biological Board of Canada and is prominently identified with the salt fish industry, discussed the trend of the salt fish trade.

Another feature of the conference was an address by Dr. M. M. Coady, who was engaged by the Fisheries Branch a short time ago as Promoter of Fishermen's Organization. Dr. Coady dis-

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GATHER MARKET NEWS FOR FISH EXPORTERS

Monthly Cable Reports from Dried Fish Markets Obtained by Fisheries Branch

Under a co-operative arrangement made by the Dominion Fisheries Branch with the Commercial Intelligence Service of the Department of Trade and Commerce, monthly cable reports as to fish market conditions in a number of the principal export markets are now available to Canadian producers of dried fish and pickled herring and mackerel.

The markets covered by these reports are Jamaica, Trinidad, and adjacent British islands; Cuba, Porto Rico, Brazil, Italy, and Portugal. Argentina is shortly to be added to the territories which are covered.

The reports, cabled in code, are made to the Fisheries Branch at the middle of each month by the Canadian Government Trade Commissioners in the several territories in question. They indicate supply, demand, prevailing prices, and the prospective movement of fish from exporting countries trading in these markets. At the Fisheries Branch the messages are decoded and a summary of their contents is circulated to Canadian exporters, fishermen's unions, etc. In this way accurate market information is made available to Canadian fishing and trading interests. Appreciation of this service has been expressed to the Fisheries Branch from different quarters.

On application to the Fisheries Branch, Ottawa, any Canadians interested in the trade in dried and pickled fish may have their names placed on the mailing list of persons to whom the monthly summaries of these reports are sent.

Birch bark baskets are used by Indians at Pinche lake, B.C., and other places in the western provinces for storing frozen fish during the winter.

SIXTY-TWO ASSOCIATIONS FORMED BY FISHERMEN IN NOVA SCOTIA

Promoter of Fishermen's Organizations, Appointed by Fisheries Branch, Finds Great Interest in Movement—Organization Effort to Cover Maritime Provinces

By the end of December there were sixty-two fishermen's unions in Nova Scotia, most of them organized since Dr. M. M. Coady began his work as Promoter of Fishermen's Organizations for the Dominion Fisheries Branch last September.

Dr. Coady is to carry on his work in all parts of the Maritime Provinces, assisting the fishermen in forming their unions or associations and in mapping out association activities. It is expected that as the number of local units increases a Maritime Province organization will be established.

Dr. Coady's appointment by the Fisheries Branch to carry on this work is in accordance with the recommendations of the Royal Commission which investigated the fisheries of the Maritime Provinces and the Magdalen Islands a year or so ago. He himself is a native of Nova Scotia and has for some years been a member of the staff of the University of St. Francis Xavier's College at Antigonish, N.S. He has studied at first hand the co-operative movement in Western Canada and parts of the United States and he is recognized as an authority upon the problems of rural communities in the Maritime Provinces.

Following his appointment as Promoter of Fishermen's Organizations Dr. Coady first did work in Cape Breton Island and then at different points on the mainland. By the close of December local organizations of fishermen had been established along the coast line of Cape Breton, along Northumberland Strait from Harbour au Bouche, N.S., to Port Elgin, N.B., and on the eastern shore of Nova Scotia from Guysborough to Halifax. The list of places at which organizations existed in Eastern Nova Scotia at the end of 1929 included:

Dingwall, Bay St. Lawrence, Neil's Harbour, Ingonish, South Ingonish, New Campbellton, Englishtown, North Sydney, Louisburg, Port Morien, Glace Bay, Main-a-dieu, River Bourgeois, Poirrierville, Arichat, Petit de Grat, L'Ardoise, Grand River, Cheticamp, Grand Etang, Margaree Harbour, Broad Cove Marsh, Port Hood, in Cape Breton; Half Island Cove, Queensport, Half Way Cove, Whitehead, Dover,

Canso, Charlo's Cove, Port Felix, Cole Harbour, Larry's River, Goldboro, Drumhead, New Harbour, Liscomb, Port Bickerton, Marie Joseph and Ecum Secum in Guysboro county; Necum Teuch, Harrigan Cove, Port Dufferin, Sheet Harbour Passage, Mushaboom, Spry Bay, Tangier, Murphy Cove, Clam Harbour, East Jeddore, Ostrea Lake and Grand Desert in Halifax county; Harbour au Bouche, Tracadie, Monk's Head and Arisaig in Antigonish county; Lisimore, Big Island and River John in Pictou county; and Wallace Bridge, Northport and Tidnish in Cumberland county.

FISHERIES OFFICERS—*Contc.*

cussed some of the advantages to be expected, both from the public standpoint and from the standpoint of the fishermen themselves, from the formation of fishermen's associations, and he outlined the plans which are being followed in carrying out organization effort in the Maritime Provinces. In Nova Scotia, it may be noted, some 60 local associations are now established.

Officers' Papers

Papers were read by Supervisor D. H. Sutherland, District No. 2, N.S.; Inspector J. G. d'Entremont, Yarmouth County, N.S.; Inspector J. E. Leblanc, Westmoreland County, N.B.; Inspector C. C. Hollis, Cumberland County, N.S.; Supervisor Gallant, whose territory as supervisor is made up of Prince Edward Island and the Magdalen Islands; Inspector E. D. Fraser, of Pictou County, N.S.; Supervisor J. F. Calder, of District No. 1, N.B.; and Supervisor A. L. Barry, of District No. 2, N.B.

The papers dealt with such subjects as the part of fisheries officers in educational and demonstration work, fish inspection, more effective prevention of illegal fishing, inspecting and grading of lobster canneries, collection of statistics, the proper division of officers' time between office work and field work, and the advisability of giving permanent licence numbers to lobster canneries and stamping the numbers on cans intended for export.

NEW VESSELS ORDERED FOR FISHERIES WORK

Eleven Boats Being Constructed for Various Fisheries Services

With a view to increasingly effective service, the Dominion Fisheries Branch has made arrangements whereby eleven new vessels will be constructed this winter for use in various branches of fisheries work.

Five of the vessels will be for operation in the Fish Collection Services which are carried on along parts of the Atlantic coast. Four others will be patrol boats, two for Atlantic coast service and two for the British Columbia coast. Of the two other new vessels one is to be for use in connection with oyster fishery development, and the second will be used in exploratory scallop observations and investigations.

Construction of some of these eleven boats has already been begun. The others are about to be started. Some are to be available by early spring, none later than July.

The new fish collection boats, which are being built by an eastern company according to an arrangement under which they will be employed in the collecting service, will be about 95 feet in length, and are to have a minimum speed of ten knots an hour. They will each have capacity for taking care of 70,000 pounds of boxed fish and are to be fitted with approved cooling apparatus so that there may be certainty that the fish which they carry will be kept in good condition.

In addition to these five new vessels such other craft will, of course, be employed as may be necessary to carry on the required collection services. These collection services, which were first tried experimentally by the Fisheries Branch in 1927, carry the catches made by fishermen along various sections of the coast to central points where fish buyers have their establishments. A small charge per hundredweight is made for transporting the fish. The continuation and expansion of the collection plan since 1927 has proven very helpful to the fishermen in those areas which have been served, enabling them to find a ready and steady market for their fish and to sell their catches to better advantage than was previously possible. During the summer and autumn of 1929, six of these Fish Collection Services were in operation, although not all of them at precisely the same periods.

(Continued on page 4)

FISHWAY WILL HELP SALMON UP N.B. RIVER

Salmon will now be able to ascend the Magaguadavic river, Charlotte county, New Brunswick, thanks to the action of the Dominion Fisheries Branch which has completed at the falls at St. George the highest natural fishway in Eastern Canada. Hitherto, the salmon have not been able to make their way past these falls.

The fishway, built under the direction of Charles Bruce, Chief Engineer of the Fisheries Branch, overcomes a height of 40 feet, without the use of mechanical elevators. Work on its construction was finished a short time ago.

But the Magaguadavic fishway will not hold its place as the highest natural fishway in the eastern provinces for very long for plans have now been made for a similar work which is to overcome a height of sixty feet at the Great Falls on the Mersey river in Nova Scotia. The plans for the Mersey fishway have been prepared by the Fisheries Branch but the actual construction will be carried out by the Nova Scotia Power Commission under the law which requires power organizations to provide fishways of types approved by the fishery authorities in cases where works constructed in connection with power developments interfere with the passage of fish.

GET OVER 40,000 TONS OF DRY-SALT HERRING

Heavy runs of herring on the east coast of Vancouver island have been yielding the fishermen large catches during the present season but on the west coast the runs have been smaller. The season for Vancouver island, which is in Fisheries District No. 3, closes on February 5.

The pack of dry-salted herring on Vancouver island, up to January 4, totalled 40,146 tons. This total was some 6,000 tons under the figures for the pack up to the corresponding date in 1929, but was larger than the quantity packed up to the same time in either 1928, 1927, or 1926. During the present season 30 dry-salting plants have been operating on the island, 16 on the east coast and 14 on the west coast.

Nearly all of the dry-salted herring put up in British Columbia is exported to the Orient.

1929 SEA FISHERIES BROUGHT LARGER RETURN IN LANDED VALUE OF CATCH

**Total Landings of 1,024,200,000 Pounds Somewhat under
1928 Figures but Value of Fares to Fishermen
Showed Increase of Nearly \$1,700,000**

Canada's catch of sea fish in 1929, as shown by returns made to the Dominion Fisheries Branch, totalled 1,024,221,000 pounds and was worth \$26,170,350 to the fishermen in landed value—a decrease of something more than 42,000,000 pounds in catch, as compared with the result of 1928 operations, but a gain of over \$1,677,000 so far as landed value is concerned.

In 1928 the catch was 1,066,879,900 pounds and the landed value total was \$24,493,041.

Statistics as to the catch in the Inland Fisheries in 1929 and as to the marketed value of the production as a whole (Sea and Inland Fisheries) are not yet available in complete form.

So far as the month of December, alone, is concerned, operations in December, 1929, showed a decrease, both as to catch and landed value, as compared with the figures for December, 1928. The returns compiled by the Fisheries Branch for the two months in question are as follows, with the figures for December, 1929, still subject to final revision:

	December 1929	December 1928
Catch . . . lbs.	47,246,000	63,519,300
Landed value.	\$ 939,885	1,134,141

In December just past there were decreases in catch and in landed value both on the Atlantic and Pacific coasts. On the Pacific coast the catch for the month was about 32,610,000 pounds, with a landed value of \$384,480, which was a decrease of about 11,700,000 pounds in catch and some \$75,000 in landed value, as compared with the figures for December, 1928. The decreases were almost entirely due to less successful operations in the herring fishery.

Atlantic coast landings for the month were 14,636,000 pounds, or four and a half million pounds under the catch for the preceding December, while the fares had a landed value of \$555,400 as compared with the earlier \$674,546.

December landings in Nova Scotia were generally smaller than they had been in December, 1928. The total

catch was some 10,508,000 pounds, with landed value of about \$330,000, as compared with a catch of nearly 14,000,000 pounds and landed value of \$349,783 in the previous December. Cod landings of about 4,782,000 pounds showed a drop of 1,400,000 pounds. Landings of herring and scallops also fell off. Smelt and pollock, among the more important varieties of fish, were taken in larger quantities than in December, 1928. Lobster landings of 157,700 were practically the same as in the earlier month, but landed value of \$53,300 showed a \$14,000 gain.

New Brunswick's catch for the month totalled 3,625,000 pounds, as compared with 4,740,000 pounds in December, 1928, and landed value of \$202,775 was considerably under the 1928 figure. Landings of hake and cusk, herring, and tom-cods all increased in size but, on the other hand, the catches of cod, haddock, sardines, smelts, and lobsters were smaller than in the preceding December. The landed value of the lobster catch, however, \$50,520, showed an increase of some \$3,000.

In Prince Edward Island the total catch for the month was something over 306,000 pounds, a drop of 100,000 pounds. Landed value of \$19,770 was a couple of thousand dollars under the figures for December of the preceding year. Quebec's sea fishery operations in the month of December are not conducted on a large scale but in the December just past the catch of 197,000 pounds was 95,000 pounds greater than the catch in December, 1928.

Lobster fishing in December takes place only in a limited area in the Maritime Provinces. The catch for the month was 311,000 pounds, a decrease of 77,000 pounds as compared with the landings in December, 1928, but on the landed value side there was an increase of some \$17,000. Landed value in December, 1928, was \$87,132 and in December, 1929, it reached slightly more than \$104,000. Since the opening of the season in November, the total lobster catch has been 599,000 pounds, with a landed value of about \$190,000. There has been a drop in catch but a gain in landed value as compared with the result of like operations a year ago.

(Continued on page 4)

COLLECTED MANY SCORE MILLION EGGS FOR FISH CULTURAL WORK

Early 400,000,000 Salmon and Whitefish Eggs Obtained in Autumn of 1929 by Fish Culture Division of Fisheries Branch

During the autumn egg-collecting season of 1929 over 394,500,000 salmon and whitefish eggs were collected by the Fish Culture Division of the Dominion Fisheries Branch.

The records of the Division show that over 28,855,000 of the eggs were Atlantic salmon eggs collected in the Maritime Provinces, a larger collection by slightly over 6,000,000 than was made in the 1928 season; 277,178,000 were whitefish eggs collected in the Prairie Provinces; and 88,506,000 were Pacific salmon eggs—most of them eggs of the sockeye salmon—obtained in British Columbia. The totals in each case are given here in round figures.

The collections made in the Maritime Provinces and the disposition made of the eggs are shown by the following statements:

In Nova Scotia: At the River Philip collecting camp nearly 3,133,000 eggs were collected. Close to a million and a half of them were placed in the Antigonish hatchery and the others in the Bedford hatchery. At the Margaree pond the collection was 1,998,500 eggs, which were placed in the Margaree hatchery. Over 74,000 eggs were collected at Yarmouth and put in the hatchery there.

In New Brunswick: Of 14,411,000 eggs collected at the Miramichi pond, 10,458,000 were placed in the Miramichi hatchery, 1,954,000 in the hatchery at Middleton, N.S., and 1,998,000 in the Yarmouth hatchery. The New Mills pond yielded a collection of 1,635,000 eggs which were placed in the Restigouche hatchery, as were over half a million from the Matapedia river. At the St. John pond the collection totalled some 6,268,000 eggs. Nearly 3,100,000 of the eggs from this pond were put in the Grand Falls hatchery, 2,135,000 in the Florenceville hatchery, and the remainder, approximately 1,054,000 in the St. John hatchery.

In Prince Edward Island: A collection of nearly 835,000 eggs was made in the Morell river and the eggs were placed in the Kelly's Pond hatchery.

These Atlantic salmon eggs will be kept in the hatcheries until they reach the eyed stage, when they can be most readily moved about without fear of in-

jury. Various transfers will be carried out in order that fair allotments of eggs may be made to the different districts.

In the Prairie Provinces

In the Prairie Provinces the following collections and disposals of whitefish eggs were made during the year:

In Manitoba: At Pigeon bay, on lake Winnipeg, 1,800,000 eggs were collected and then placed in the Gull harbour hatchery. At the Dauphin river camp the collection was 75,150,000 eggs, and they, too, were taken to the Gull harbour hatchery. On Waterhen river, lake Winnipegosis, 104,300,000 eggs were obtained. Twenty million of them were taken to the hatchery at Fort Qu'Appelle, Saskatchewan, and the others were placed in the Winnipegosis lake hatchery.

In Saskatchewan: Over 62,000,000—62,325,000, to be more exact—were collected at McIntosh creek, Jackfish lake. Twenty million of them were placed in the Fort Qu'Appelle hatchery and 42,325,000 in Jackfish lake.

In Alberta: In Lesser Slave lake a collection of 43,278,000 eggs was made and in Whitefish lake a collection of 67,275,000. All of these eggs were placed in the Lesser Slave lake hatchery.

British Columbia Operations

Final returns covering the collection work carried on in British Columbia during the autumn season will increase somewhat, though not greatly, the total of 88,506,000 salmon eggs now shown as collected. In this total are included 86,777,000 sockeye eggs, something more than 623,000 coho, 432,000 spring, and over 176,000 steelhead, as well as 497,450 eggs of Kennerly's salmon.

The collection of sockeye eggs at the different hatcheries was as follows:

Anderson lake.. . . .	8,505,000
Babine lake.. . . .	7,830,000
Cultus lake.. . . .	10,635,285
Harrison lake.. . . .	191,000
Kennedy lake.. . . .	7,469,000
Lakelse lake.. . . .	8,183,000
Pemberton.. . . .	18,000,000
Pitt lake.. . . .	5,315,000
Rivers inlet.. . . .	20,074,000
Stuart lake.. . . .	69,000
Squillax (camp).. . . .	505,000

"SHORT COURSE" BEING GIVEN FOR FISHERMEN

Starting on January 22, another "short course" for fishermen was begun at the Fisheries Experimental Station of the Biological Board at Halifax and will continue for six weeks from the opening date. Previous courses of this kind at the Station have been most successful.

The course includes instruction in the preparation of pickled, dried, and boneless fish; navigation; motor engines and their repair, etc.; natural resources; and science. Included in the work done in connection with natural resources is some study of co-operation and of the history of industrial development. The instruction in the course is given by members of the Station staff and by other lecturers and demonstrators.

In order to assist them to attend the course the Biological Board made monetary grants to 35 fishermen. The grants were available only to bona fide fishermen, between the ages of 17 and 35 years. On the completion of the course each grantee will receive the amount of the railway fare for the return trip between Halifax and the railway station nearest his home and, in addition, the sum of \$45.

One reason why fish should be included in the diet of growing children is that they contain elements which are safeguards against such diseases as rickets.

1929 SEA FISHERIES—Conc.

In British Columbia during last December 112,000 pounds of salmon were landed, a decrease of some 60,000 pounds from the total for December, 1928. Landed value also decreased.

In the case of herring, the catch for December, 1929, was 31,065,000 pounds, while in the preceding December the landings had amounted to 42,585,900 pounds. Landed value in December, 1929, was \$303,355. or about \$74,000 less than in December, 1928.

NEW VESSELS—Conc.

The construction of the vessels for the oyster scallop development operations is expected to assist materially in these important undertakings. Each will be specially designed or equipped for its particular work. A good deal of work in this connection has been done by the Fisheries Branch in the past few years but the boats available were not altogether suited to the purpose.

FISHERIES NEWS BULLETIN

Published Monthly by the Fisheries Branch

Minister:
Hon. P. J. A. CARDIN, M.P.

Department of Marine and Fisheries,
Ottawa, Canada

Deputy Minister of Fisheries:
W. A. FOUND.

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No. 4

FISHERIES BRANCH TO MEET MAJOR COST OF BUILDING BAIT FREEZERS

Will Pay 75 Per Cent of Cost of Plants Put Up by Sea Fishermen's Associations and Give Bonus on Bait Frozen

Assistance to sea fishermen in maintaining adequate supplies of bait at all seasons is provided for in new regulations recently adopted by order in council under which the Dominion Fisheries Branch will pay seventy-five per cent of the cost of bait freezing and storage plants erected by associations consisting of not less than twenty fishermen who spend at least three months of each year in sea fishing with hand trawls or hooks and lines.

In the case of each plant constructed in accordance with the regulations the Fisheries Branch will also pay an annual bonus at the rate of \$5 a ton, up to a maximum of twenty tons, on the bait frozen and stored during the first five years that the plant is in operation. As a further assistance the branch will likewise provide and pay the building foreman who will direct the construction of any plant put up under the regulations.

It is expected that the effect of the plan embodied in the regulations will be to enable the fishermen to carry on fishing more steadily, and for greater lengths of time, and thus will further stimulate shore fishery production.

A summary of the regulations is as follows:—

The branch will contribute seventy-five per cent of the actual cost of a site and construction of a plant, and, in addition, an annual bonus at the rate of \$5 per ton, up to a maximum of twenty tons, on bait frozen and stored in the plant during the first five years following its construction, under the following conditions:

That the association shall consist of not less than twenty fishermen who spend at least three months each year in sea fishing with hand-trawl or hook and line, and the association shall be incorporated under the laws of the prov-

ince in which the plant is to be established.

That the association will furnish the branch with a list of the names and addresses of fishermen who spend at least three months of each year in sea fishing with hand-trawls or hook and line who would receive bait from the plant. (Before incorporation proceedings are taken the information required under this paragraph should be submitted to the branch and its approval of the proposed site and cost thereof obtained.)

That the plans of the plant, as well as the site and the cost thereof, shall be approved by the branch.

That the branch be furnished by the association with a copy of its charter, as well as with a list of its officers and members, and their addresses, and with a statement of the fees and dues payable annually or otherwise to the association.

That the plant will be maintained by the association in an efficient and sanitary condition, and that ice and salt will be provided and stored annually in such quantities as may be needed for the proper operation of the plant during the term covered by the agreement.

That the association will keep a book or books, in which will be recorded:—

(a) A list of the officers and members of the association and their addresses; (b) The amounts paid by each to the association, as fees, dues, etc., each year; (c) Details of all transactions by the association in which money is involved.

That receipts for all payments of money by the association will be obtained and filed.

That all materials and equipment required for the construction or operation of the plant shall be procured and paid for by the association.

(Continued on page 2)

TRADE OPENING FOR BONELESS SALT COD

Commerce Commissioner Sees Canadian Business Opportunity in North of England

In a recent report the Canadian Government Trade Commissioner at Liverpool quotes a Liverpool firm as being of the opinion that if a steady Canadian source of supply for boneless salt codfish packed in one pound cartons could be established it would be possible to develop a considerable trade in this commodity in the North of England.

During the past few years there has been export of boneless salt codfish packed in pound cartons from Newfoundland to the North of England. More recently one or two Scottish firms have begun putting up salt codfish cutlets in one and two pound cartons to compete again the Newfoundland pack.

The Trade Commissioner says that the two most likely centres for introducing Canadian boneless cod in cartons are Liverpool and South Wales. One firm of agents interested in obtaining a Canadian source of supply is in a position to work these two areas from Liverpool.

The seasonal supply of the Newfoundland boneless cod is brought into Liverpool during the autumn months and placed in cold storage. The fish is attractively put up and apart from its quality the package in which it is sold is an aid to sales.

In the opinion of a firm of distributors seeking a Canadian source of supply the best selling season would be from September through to July but patience would have to be exercised while testing the market.

Something more than a million and a half dollars was paid out by one Canadian fish company in 1929 in wages and the purchase of coal, boxes, etc. The money went to workers in many different parts of the country.

CRAWFORD LAKE SOCKEYE DEPART FROM WAYS OF OTHERS OF THEIR FAMILY

Dominion Fish Culture Division Finds Exceptions to Rule that Sockeye Must Go to Sea before Reproducing and Die after First Spawning

Sockeye salmon in Crawford lake, a small body of water near the Stuart lake hatchery of the Dominion Fisheries Branch in northern British Columbia, have provided exceptions to the generally accepted belief that sockeye must go to the sea before they reproduce and to the other belief that all sockeye die after their first spawning.

During 1929 the Fish Culture Division of the Fisheries Branch collected 69,000 eggs from Crawford lake sockeye—fish which it is certain had never left the lake since the outlet stream is so precipitous that it is impossible for salmon to ascend it from the lower levels—and fish which were kept in pens for fourteen days after they had spawned remained alive and frisky.

The story of the Crawford lake sockeye goes back a number of years. The lake, which is about 730 yards long, 280 yards wide, and 33 feet deep, had been found teeming with natural fish food but barren of fish. In 1921 the Fish Culture Division placed sockeye fry in the lake for the first time. Most of the fish from this distribution left Crawford of their own accord between the middle of May and the middle of June, 1922, when they ranged from three and a half to five and a half inches in length. Fry planted in 1922 averaged about two inches in length in June of that year, and in the following year they migrated in very large numbers. In 1924 equally favourable results were observed, though the average size of the fish was, if anything, larger than in previous years. In 1925, when migration started on May 17, the fish were apparently of rather smaller average size than in former years but, at the same time, a small percentage of larger-than-average size fish were observed and were considered two-year-olds. Two distinct sizes were noticed—one averaging four and a half inches and the other seven inches. This was the first time that fish of this larger size had been seen among the migrants from Crawford.

A small percentage of fingerlings, or fish in their first year, was noticed each season in the general migration but in 1926 such fish were present in greater numbers than usual. In the following year an increase was observed in the

number of large fish, two-year-olds, and a decrease in the general run. Practically no migration of yearling sockeye was seen in 1928, and it was decided to discontinue further stocking for a period of three years. In the autumn of 1928 a test net was set and twenty sockeye, ranging from two-year-olds to mature landlocked fish carrying eggs, were caught in one night.

The collection of sockeye eggs at the lake was undertaken last year. Four hundred and ninety-six fish were caught. The females, most of them ripe when taken, greatly outnumbered the males; out of 307 fish caught up to September 4 only 36 were males.

The spawners were a dirty greyish-green on the back sides and a mottled grey underneath. The fish containing immature eggs were of a bright silvery colour. Unlike sockeye that return from the sea, these landlocked fish did not turn red.

Generally, the eggs collected were apparently of poor quality, a condition partly attributed to the scarcity of males and to the manner in which the fish had to be taken, namely, gill-nets. The eggs also appeared to lack somewhat the vitality of those taken from sea-run sockeye.

In order to test further the theory that all sockeye die after their first spawning, the Division placed seven of the spawned fish in pens and kept them under observation for two weeks. At the end of that period all the fish were still alive.

Collection of whitefish eggs for the Lesser Slave lake hatchery in 1929 was the largest since the hatchery was established. All told, 113,013,000 eggs were collected by the Fish Culture Division of the Dominion Fisheries Branch. The fish stripped, 7,844, were captured between September 24 and November 20 and the eggs were secured between October 27 and November 27. Of the total number of eggs collected, 51,355,000 were obtained from the collecting camp at Whitefish river, 18,380,000 from the Mink creek camp, and the remaining 43,278,000 from various collecting points on Lesser Slave.

SUPERVISOR TAYLOR DIES AT NANAIMO, B.C.

Edward Grey Taylor, Supervisor of Fisheries for District No. 3, British Columbia, died at Nanaimo, B.C., on January 31, following a short illness.

Mr. Taylor was born at Baddeck, Nova Scotia, in April, 1865, but had been resident in British Columbia for many years. He entered the Fisheries Service on March 13, 1905, as Inspector of Fisheries for the Vancouver Island district, and he had been continuously on the Fisheries Branch staff since that time. He is survived by his widow and two children—Edward Geddes, 15, and Helen Christine, 12.

FISHERIES BRANCH—*Contc.*

That after an association has entered into an agreement with the branch for the construction and operation of a plant, and is in readiness to begin construction, the branch will provide, at its own cost, a construction foreman, who will direct the work until the plant is completed. This foreman shall have authority to dismiss any workman whom he deems to be incompetent for the work in hand.

That payments may be made by the branch, from time to time, during the construction of a plant; but the total payments shall not at any time exceed seventy-five per cent of the expenditure on the plant incurred by the association up to that time.

That a representative of the branch may at any time inspect any or all parts of the plant.

Must be Supervised

That the association will employ and pay a competent man, whose duty it will be to see that bait is provided, frozen and stored at proper times and in sufficient quantity, and to furnish bait to the members of the association, and to such others as the association may approve, in such quantities, at such times and on such terms as the association may approve.

That before any payment towards the cost of a plant is made by the branch, the association shall deposit with the branch a bond in its favour, by a bonding company approved by the branch, for \$1,000 guaranteeing that the association will perform in full its part in the agreement.

That should the plant not be completed and/or operated in accordance with the agreement, it will become the exclusive property of the branch which will dispose of it to the best advantage.

LARGER ATLANTIC COAST LANDINGS INCREASE JANUARY SEA FISH CATCH

**Sea Fisheries Show Betterment Over January of Last
Year with Greater Nova Scotia Returns
Accounting for Net Gains**

Atlantic coast landings of sea fish in January, as shown by unrevised statistics of the Dominion Fisheries Branch, were larger by 1,721,300 pounds than the landings in January, 1929, so that notwithstanding some drop in Pacific coast catch there was a net increase of 1,163,300 pounds in the Dominion sea totals for the month.

Similarly, there was an increase of \$53,871 in the landed value of the Atlantic catch and a net increase of \$52,583 in the landed value of the Dominion catch.

The Atlantic coast gains in catch and landed value were due to increased returns from Nova Scotia operations for the figures for New Brunswick and Prince Edward Island, respectively, were somewhat less than in January of last year and there is practically no fishing carried on in January in Quebec, the remaining Atlantic coast province. Nova Scotia's landings for the month were more than fifty per cent greater than in January, 1929, totalling 7,009,200 pounds as compared with 4,507,500 pounds. The landed value to the fishermen was \$198,500 in round figures, a gain of nearly \$68,000.

There were substantial increases in the Nova Scotia landings of most of the principal varieties of fish during the month. The cod catch was 2,761,000 pounds, compared with 1,911,400 pounds in January of last year. The landings of haddock totalled 2,416,500 pounds as against 1,893,400 pounds; 315,800 pounds of pollock were taken, compared with only 36,900 pounds; 170,100 pounds of hake and cusk, compared with 121,900 pounds; 24,800 pounds of halibut, compared with 13,000 pounds; landings of scallops amounted to 1,822 barrels while in January, 1929, they were only 891 barrels. On the other hand, there was some decrease in the returns from the smelt fishery, a fishery which was generally less successful in the Maritime Provinces last month than in January, 1929, and in the landings of clams and quahaugs.

In Other Provinces

New Brunswick's catch of cod for the month was more than double the catch made in the previous January but haddock, herring, and smelt landings all

fell off sharply. Haddock catch was only 82,500 pounds as compared with 240,400 pounds in January, 1929; herring landings were slightly less than 10,000 pounds as compared with 54,000 pounds; and the quantity of smelt taken, 1,372,700 pounds, showed a decrease of about 600,000 pounds. A lobster catch of 50,200 pounds was nearly 9,000 pounds larger than the catch for January of a year ago, and 2,651 barrels of clams and quahaugs were landed, or more than twice the January, 1929, landings. One hundred barrels of scallops were taken while in January of last year scallops were landed. The total catch of all varieties of sea fish and shellfish in the month was 2,393,200 pounds, with a landed value of \$213,161; in the preceding January the catch was 3,103,900 pounds and the landed value \$227,371.

Comparatively little fishing is done by Prince Edward Island fishermen in January and the landings for the month are never large. In the January just gone, smelts, caplin, and tomcods were taken. The total catch was 275,000 pounds, or about 88,000 pounds less than in January, 1929, and landed value was \$17,076 as against \$19,309.

Lobster Fishery

Lobster fishing in January is permitted only in Charlotte and St. John counties, New Brunswick; along a stretch of the Halifax and Lunenburg county coast in Nova Scotia; and, after the 15th of the month, in Kings county and a small part of Digby county, Nova Scotia. The principal operations are in the two New Brunswick counties. The lobstermen there were more successful than in January, 1929, and their landings for the month, as has been noted, were 50,200 pounds as compared with 41,500 pounds. The Nova Scotia landings of lobsters in January are always small.

The open season in Charlotte and St. John counties began on November 15th last, the season in the Halifax-Lunenburg area in question on December 1, and the season in the Kings-Digby area on January 15. The total catch since the first of these seasons began and up to the end of January was 650,800 pounds. As compared with results in the previous corresponding period, there

(Continued on page 4)

PROMISING TEST OF BRINE FROZEN BAIT

**Dominion Experimental Station Work
Helpful Toward Meeting
Bait Problems**

Brine frozen bait produced at the Fisheries Experimental Station of the Biological Board of Canada at Halifax was used with success a few weeks ago by the crew of a Nova Scotia schooner "fresh fishing" out of Halifax. Only a limited test was made, but the fishermen landed a very satisfactory catch and attributed their success to the quality of the bait, which they declared to be much superior to the frozen bait ordinarily used. The brine frozen bait, they said, became perfectly fresh when placed in the water and, unlike other frozen bait, did not become soft and crumble. Further experimentation with the brine frozen product is planned for the early future.

Production of this bait at the Halifax Station is one of the steps being taken by the Dominion fisheries authorities to help in solving the problem of how the fishermen may be assured of a bait supply that will be adequate at all times. The problem has important bearing upon the success and development of the fisheries, and has been receiving a good deal of attention from the Dominion Fisheries Branch. A short time ago plans and specifications for a small bait freezer were prepared by the Branch engineer and made available to fishermen. Further action is now being planned.

ANGLING REGULATIONS IN B.C. AREA CHANGED

Under an amendment recently made to the Special Fishery Regulations for British Columbia the closed season for angling is abolished in the tidal waters of the Lower Mainland District of the province and in those portions of the Vedder and Chilliwack rivers that are between the Fraser river and the junction of the Chilliwack with Liumchin creek. Hitherto there had been a certain closed season from December 1 to the last day of February.

The request for the change in the regulations came from British Columbia anglers and was approved by officers of the Fisheries Branch and the Biological Board of Canada.

WATERS OF CANADA'S FARTHEST NORTH RICH IN MANY VARIETIES OF FISH

Great Lakes and Rivers of Northwest Territories Abounding in Whitefish, Trout, Jackfish, Etc., Officials Report

Canada's inland fishing operations have been pushed steadily northward of recent years but apparently there are important fisheries resources yet awaiting development in areas still farther northward.

Reports obtained by the Dominion Fisheries Branch from the district agent of the Department of the Interior at Fort Smith and the Indian agent at Fort Resolution indicate that trout, whitefish, herring, jackfish and other varieties of fish are to be found in abundance in the Northwest Territories, which lie upwards of a thousand miles from the international boundary and extend an equal distance or more to the north.

Lack of transportation facilities whereby catches might be borne to market has hitherto been the barrier to commercial fishing of any magnitude in the territories but gradual improvement of transport may be expected to be accompanied by increasing exploitation of the fishing waters.

The district agent at Fort Smith, J. A. McDougal, reports that at least three distinct varieties of trout are to be found in large quantities in such waters as Great Slave lake and Great Bear lake. Some of the fish reach a weight of fifty pounds. In Great Bear lake whitefish have been taken, he says, which have weighed from twelve to fifteen pounds. Whitefish, trout, fresh water herring, and other fish are abundant in all the major waters of the territories, such as Great Bear lake, Great Slave lake, the Mackenzie river, and the Slave river. Inconnu, which Mr. McDougal describes as resembling the whitefish in appearance and the trout in physical proportions, are also abounding.

Great Slave lake supplies fish for settlers as far south as Fort Smith and as far north as Fort Simpson. Incidentally, it also supplies fish for the dogs, and in the north country a sufficient store of food for the huskies is an essential consideration. The fishing is practically all done in the summer and autumn, with the latter months yielding the larger catches. Gill-nets of from four- to five-inch mesh are ordinarily used. A part of the catch is

dried and transported as far north as Good Hope.

Dr. Bourget, the Indian agent at Fort Resolution, reports that there are whitefish, trout, jackfish, and inconnu in abundance in different parts of Great Slave. Other varieties of fish are also taken.

Like Small Logs

The inconnu reach very large size, "Many times," Dr. Bourget writes, "we have hit a conie with the propeller of our boat, nearly stalling the engine, and giving the impression of hitting a drift log."

Perhaps the best fishing areas in the lake, so far as has yet been determined, Dr. Bourget thinks, are those near Tals-ton or Rocher river and those near Hay river. There are tremendous possibilities for the commercial fishery on the lake as a whole, he believes, once transportation facilities are sufficiently improved.

MORE FUR SEALS ARE TAKEN BY B.C. INDIANS

During the year just past 3,116 fur seals were killed by Indians in British Columbia, an increase of slightly more than 1,000 over the number taken in 1928. Under the Pelagic Sealing Treaty none but Indians are permitted to kill fur seals.

In 1929 fur seals to the number of 2,248 were taken in Fisheries District No. 3, which includes Vancouver Island and part of the adjacent mainland. In District No. 2, which includes that part of British Columbia to the north of District No. 3, the Indians captured 868 seals. No fur seals are taken in District No. 1. Hunting was best in the vicinity of Bonila Island, in District No. 2, where 630 seals were taken last year.

PROGRESS IN NORTH

Filletting of fish in the Peter Pond district, a couple of hundred miles north of the Battleford area in Saskatchewan, was undertaken this winter for the first time. Forty thousand pounds of whitefish and 5,000 pounds of jackfish were filleted.

INLAND CANADA BUYS MORE MARITIME FISH

Shipments by Railway Freight and Express Increased in Past Three Years

Statistics compiled by the Dominion Fisheries Branch show that shipments of Maritime Province fish to Central and Western Canada by railway freight and express have increased annually during the past three years.

In 1927 these shipments totalled 38,440,481 pounds. In the following year they increased by nearly 1,200,000 pounds and amounted to 39,602,129 pounds. The 1929 shipments showed a very substantial increase and reached a total of 43,677,854 pounds.

As between 1927 and 1929, the greater part of the increase has been in shipments to Ontario and points west of Ontario which, all told, amounted in 1929 to 20,145,380 pounds. Shipments to Quebec last year, totalling 23,532,474 pounds, were, roughly, a million and a half pounds greater than in 1927.

A large business is also done by Maritime Province fish producers with the United States by express and freight. There is fluctuation, of course, in the amount of business from year to year and the 1929 shipments, 16,545,655 pounds were not greatly in excess of the 1927 figures.

LARGER ATLANTIC — *Cont.*

was a decrease of 110,100 pounds in catch but, on the other hand, the landed value increased from \$155,722 to \$208,695, a gain of nearly \$53,000.

January in British Columbia

British Columbia's landings of sea fish in January amounted to 25,531,400 pounds, or 558,000 pounds less than in the preceding January, and the landed value to the fishermen, about \$289,600, also showed a small decrease—less than \$1,300.

The decrease in the catch for the province was due to the fact that landings fell off in the herring fishery, the principal fishery carried on by fishermen of British Columbia at the first of the year. The herring catch was 23,994,800 pounds, with a landed value of \$216,979 while in January, 1929, the catch was 24,764,500 pounds and the landed value \$229,617.

Salmon catch for the month, 60,800 pounds, was slightly less than the catch of a year ago. There was substantial increase in the catch and landed value of ling.

FISHERIES NEWS BULLETIN

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No. 5

FILLETING SUCCESS IN NORTHERN LAKES

**Initial Operations Promise Expansion of
Fillet Production in Prairie Provinces**

Rapid expansion of the production of fillets of trout and whitefish in the Prairie Provinces is foreshadowed by the success which has attended recent initial operations of this kind at Lake Athabasca and some other waters far north in Alberta and Saskatchewan.

When fillets of trout from Lake Athabasca were first offered on the Chicago market by an Illinois firm of fish wholesalers a short time ago, 85 per cent of the firm's dealer-customers came back with repeat orders, while the sale of filleted whitefish from the same lake, principally on the domestic market, was exceptionally brisk. The trout fillets for Chicago were attractively packed in 25-pound boxes. The whitefish fillets, individually wrapped in parchment, were put up in 15-pound cantons—"Direct from the Northern-most Inland Fisheries on the Continent." Increasing production and sale of both kinds of fillets is in prospect this year.

One company operating at Lake Athabasca put up 260,000 pounds of trout fillets and 60,000 pounds of whitefish fillets during the summer season of 1929. During the winter season just past the same company also put up another 50,000 pounds of whitefish fillets at Peter Pond Lake, which is situated in Saskatchewan some distance south of Lake Athabasca but a couple of hundred miles north of the Battlefords. Some 5,000 pounds of jackfish fillets were also produced at Peter Pond Lake this winter, and a smaller quantity of pike fillets at Lesser Slave Lake.

Hitherto, the dogfish or greyfish has been regarded only as a pest and nuisance, but research by Biological Board scientists in British Columbia has shown that these fish are fairly rich in Vitamin D., which is essential to human health. Oils or foods abundant in Vitamin D. are valuable in curing rickets.

SCIENTISTS CONTINUALLY BUSY ON RESEARCH WORK FOR FISHERIES

**Many Problems of Importance to Fishing Industry
Subject of Investigation by Scientists at Biological
and Experimental Stations Maintained
by Canada**

Experiments made by the Atlantic Fisheries Experimental Station at Halifax in recent months have shown that smoked fish can be given the desired colour in as short a time as fifteen minutes through the use of electrical precipitation in the smoking process. The experiments were made in the course of an investigation by the Station as to means of speeding up the smoking process. The results obtained in the investigation are regarded as promising.

These particular experiments were only a few among many carried on during 1929 in various investigations at the Atlantic and Pacific fisheries experimental stations, which are concerned with problems related to the practical side of the Canadian fishing industry. The stations are conducted by the Biological Board of Canada, which is under the authority of the Minister of Marine and Fisheries. The Board also conducts two biological stations, one at St. Andrew's, N.B., and the other at Nanaimo, B.C. The scientists at these latter stations carry on study of questions touching fish life. All four stations of the Board are staffed by trained scientists and a great deal of research and experimentation in connection with the fisheries and fishing industry is carried on continually, with very useful results.

At Halifax in 1929

The 1929 investigation at the Halifax station in connection with the smoking of fish was a continuation of earlier work of the kind. A study of the fundamental constitution of wood smoke was particularly concerned with the formaldehyde content. With a view to making fish-smoking independent of the weather, laboratory experiments were made in which conditioned air was used for the preliminary drying operation. As there

was some question of untreated smoke being suited for introduction into chambers through ducts and fans, owing to the deposition of tar and the subsequent clogging of these parts, smoke was "de-tarred by electrical means," the Station reports, "and was found to be satisfactory in producing colour and flavour in the fish exposed to it."

The main investigations of the Station during the year were directed at problems in connection with refrigeration. Determination of the conductivity of fish muscle, frozen and unfrozen, was sought, and the development of a formula for predicting time of freezing when various factors are known. In continuing and elaborating earlier investigation as to the effect of storage temperature on frozen fish it was found, after storage of cod for a year, that storage at 4 deg. F. was satisfactory while at 23 deg. F. spoilage was very marked. Preliminary results from experiments in the storage of haddock were found to indicate that this fish does not stand up so well under storage as cod. Further tests in the use of a special jacketed cold storage room proved the value of this jacketing in that evaporation from exposed surfaces was reduced to "from one-fifth to one-sixth of what it was in an ordinary type of room at equivalent temperature." Other interesting experiments in refrigeration had to do with the retention of fish, prior to processing, at a lower temperature than can be obtained with ice. An improved tank for holding fish was built and the additional use of chlorine solutions was tried, but no positive benefit from chlorine treatment was demonstrated.

Among other work at the Station was the continued examination of the effect

(Continued on page 8)

DOMINION LANDINGS OF SEA FISH FOR FEBRUARY SHOWED INCREASE

Totals for Month Raised by Larger Catches on Pacific Coast but Slight Drop in Figures from Returns for February 1929, shown in Landed Value

Increased Pacific coast landings brought the total Canadian catch of sea fish in February well above the figures for February, 1929, according to unrevised returns to the Dominion Fisheries Branch, but the landed value of the catch to the fishermen showed a decrease of about \$34,800, amounting to \$566,746, as compared with \$601,549 a year ago.

February landings in British Columbia were some 13,500,000 pounds larger than a year ago and totalled approximately 22,923,000 pounds. The increase took place in spite of a great drop in halibut landings—a drop explained by a voluntary agreement among virtually all of the halibut vessel owners to delay fishing until March 1st notwithstanding that February 15th was the legal opening date of the season. Only 2,200 pounds of halibut were landed during the month just past, as compared with over 1,000,000 pounds in February, 1929. A very large increase in herring landings, which reached nearly 20,000,000 pounds as compared with only 7,372,400 pounds in the preceding February, chiefly accounted for the substantial net gain in total landings of fish in the province but on the landed value side, the lack of halibut fishing more than offset gains brought by increased catches of herring and several other fish so that the total landed value for the month was only \$211,200, or \$2,080 less than a year ago.

In Atlantic Coast Provinces

On the Atlantic coast the February landings were 8,102,500 pounds, or 553,000 pounds less than in February, 1929. Smaller catches in New Brunswick were the main factor in causing the decrease.

Landed value of the Atlantic coast catch was approximately \$355,500, or about \$32,710 less than a year ago.

Lobster catch on the coast was 12,800 pounds, a trifle less than in the preceding February, but landed value, \$5,375, showed a gain of a few hundred dollars. Comparatively little lobster fishing, of course, is done in February. Since the first of the present lobster seasons opened last November, the catch (as of February 28th) has amounted to 663,600 pounds, a decrease of 110,400 pounds. Prices have been better than a year ago, however, and landed value in the period under review has totalled \$214,070, as

compared with \$160,297 at the end of February, 1929.

Nova Scotia fishermen did better in February, both as regards size of catch and amount of landed value, than in February of last year. Total landings (including some coarse fish which, prior to this year, were not covered by monthly reports issued by the Fisheries Branch) were 6,450,800 pounds, as compared with 6,003,800 pounds a year ago, and landed value was \$221,176, as compared with \$209,064. There were larger catches of cod, hake and cusk, and pollock, among the principal fish, but decreases in the haddock, smelt and scallop catches, and a substantial decrease in the case of halibut. Smelt catch, however, showed increased landed value.

In New Brunswick the smelt fishery was much less successful than in February, 1929, and this condition explains, in large part, the fact that total landings of all fish were only 1,534,300 pounds, or some 900,000 pounds less than a year ago, and landed value was \$125,050, as against \$173,368. Smelt catch totalled 762,900 pounds, a decrease of over 500,000 pounds, and landed value of \$106,382 was nearly \$46,000 less than in the previous February. Cod, herring, lobster, and clam catches also showed some decreases, though lobsters showed some gain in landed value.

February fishing operations in Prince Edward Island and Quebec are on a small scale only. In the month just gone Prince Edward Island's catch was 92,800 pounds, a decrease of 36,800 pounds, but landed value of \$7,435 represented an increase of \$1,600. Some smelt and tomcod were taken by Quebec fishermen during the month, whereas in February, 1929, none were landed. The catches had a value of about \$2,000.

KILL B.C. HAIR SEALS

Records in the office of Major J. A. Motherwell, Chief Supervisor in Fisheries in British Columbia, show that 109 hair seals were killed on the west coast of Vancouver Island during 1929. In the preceding year the number killed was only 63. Hair seals are very destructive of fish which they may find in nets. For this reason a bounty is paid by the Dominion Fisheries Branch on each of these seals that is killed.

BIG TROUT THRIVING WHERE ONCE UNKNOWN

Fish Culture Methods Establish Loch Leven Trout in Southwest Saskatchewan

Game fish were unknown in the Cypress Hills area of Southwestern Saskatchewan until the Fish Culture Division of the Dominion Fisheries Branch introduced Loch Leven trout into the Little Frenchman River and tributaries of Cypress Lake in an experimental way a few years ago, but last summer fine gamey trout weighing as much as six pounds were taken from these waters by anglers.

That is another way of saying that fish cultural operations have brought excellent angling in a district where the sport could not previously be enjoyed. And, of course, there are numbers of other districts where similar operations have had similar results.

The first distribution of Loch Leven fry in the Cypress Hills country was made in 1924. Each year since then a further distribution has been made. The fry were planted in the upper waters of the Little Frenchman and in the smaller tributaries of Cypress Lake. Naturally hatched fry have now been seen at different points, and observation has shown that the fish have travelled many miles from the places at which the fry distributed by the Division were planted. Some of the larger fish caught by anglers in the 1929 season measured as much as 26 inches in length and 13 inches in girth, and though no fish heavier than six pounds were taken last year several specimens estimated to weigh more than seven pounds were seen. The anglers who landed the fish taken last year found that in their new environment the trout have evidently retained all the game and food qualities for which the Loch Leven species is noted.

The success of this Cypress Hills experiment—now apparently well past the experimental stage—has caused a good deal of gratification to fisheries authorities and Saskatchewan sportsmen alike. To ensure success careful attention to protecting the fry and allowing the fish to become acclimatized and thoroughly established was essential. To this end the streams in which the fry were planted were closed to all fishing until last summer, and the authorities had the whole-hearted co-operation of anglers in the district in their effort to build up a new sport fishery in that part of the country.

FISHERMAN ORGANIZE IN NEW BRUNSWICK

Associations Formed when Fisheries Branch Representative Visits North Shore

Thirteen fishermen's associations were recently formed in Kent and Restigouche counties, New Brunswick, when the fishermen were assisted in their plans by Dr. M. M. Coady, who was appointed last autumn as the Promoter of Fishermen's Organization for the Dominion Fisheries Branch. Dr. Coady also addressed a number of fishermen's meetings in Gloucester county, where a county fishermen's association was established about a year ago. Organization effort was not attempted at the Miramichi fishing ports in Northumberland county as the fishermen were busy winding up their smelt fishing operations at the time of Dr. Coady's visit. Dr. Coady will be back in New Brunswick again a little later in the year to visit fishing districts which he has not yet covered.

Associations were formed at Richibucto, Buctouche, St. Edward, St. Thomas, and Cocagne, in Kent county, and at Dalhousie Junction, Dalhousie, Charlo, New Mills, Nash's Creek, Green Point, Petit Rocher, and Beresford, in Restigouche county. In some cases very severe weather and badly drifted roads kept some of the fishermen away but at all the organization meetings enthusiastic interest was shown. In Gloucester county Dr. Coady addressed fishermen's gatherings at Salmon Beach, Blue Cove, Mizomette, Upper Caraquet, Lower Caraquet, Grand Anse, and Shippegan. In the course of his visit to the province he also spoke on the fisheries and their importance and possibilities at public meetings held under Board of Trade auspices at Bathurst, Newcastle, and Shediac, as well as at Campobello.

In previous weeks Dr. Coady had assisted in the formation of a large number of associations in Eastern Nova Scotia, where there are now over 60 such organizations all told. He is now at work in other parts of Nova Scotia. Later on, he will carry on his work in Prince Edward Island and the parts of New Brunswick which have not yet been visited. When conditions permit, following the opening up of navigation, he will also go to the Magdalen Islands, Quebec, to take up with the fishermen there various questions of organization.

EXPANSION IN NORTH

Expansion of fishing operations in the Lac la Biche district of Northern Alberta this summer is forecast by the report from Fishery Inspector S. Travers to the Dominion Fisheries Branch that considerably more ice has been stored for summer use than formerly. Four companies will probably be buying fish at Lac la Biche this summer.

SCIENTISTS BUSY FOR FISHERIES—Con.

on oil production of freezing the fish livers, which brought out interesting facts. "It was found that freezing of the livers increased the yield of oil when cooking was resorted to. It was found that livers could be frozen, ground up and pressed after thawing, but without cooking, and that they would yield a higher amount of No. 1 oil than could be obtained by cooking."

Experiments on Pacific

One of the important pieces of work carried on during 1929 at the Pacific Fisheries Experimental Station at Prince Rupert, B.C., was a series of experiments designed to ascertain an effective means whereby the organism causing discolouration of halibut in vessel holds might be destroyed without injury being done to the quality of the fish. These experiments followed on earlier investigations, made under Biological Board auspices, which cleared up the question as to the cause of discoloration and traced cause to a specific bacteria. The 1929 experiments were made with appropriate germicides, but further work in this regard will be done.

With a view to improving the quality of salmon as they are landed at canneries, the Station undertook investigation of salmon spoilage. The work covered different phases of this important subject, and further investigation is planned for this year.

Examination of various methods of producing glues from waste fish liquor was also carried on at Prince Rupert in 1929, and different experiments were made. A good deal of time was given to the continuation of research in connection with pilchard oil, including experimentation in the use of the oil in paint production. Paints produced by bodying pilchard oil with various catalysts were subjected to standard weathering tests. "These tests indicate that while the water-resisting properties, the flexibility, and drying times are satisfactory, the film is somewhat softer than that which is produced by linseed oil." The Station's work in this connection is being continued.

OLD COUNTRY OYSTER EXPERT FOR CANADA

Will Co-operate in Research on Atlantic Coast during Summer

In order that he may take part in the investigation of the oyster resources in the Atlantic coast provinces, H. P. Sherwood, an Old Country oyster expert, is being brought to the Dominion by the Biological Board of Canada and will spend the spring and summer on this side of the water. Mr. Sherwood will arrive in the Dominion about the middle of April and will remain until October. Much of his time will be spent in Prince Edward Island where the oyster resources are believed to be capable of marked further development.

Investigation of the oyster situation on the Atlantic coast, particularly in Prince Edward Island, has been in progress for several seasons past under the auspices of the Dominion Fisheries Branch. During the past summer the Biological Board also assigned to this work one of its trained research men, A. W. H. Needler. Mr. Sherwood's research will be carried on as part of a further program of investigation.

Mr. Sherwood, who has established reputation in Great Britain as an expert in regard to oysters and mussels, is now a member of the staff of the Fisheries Experimental Station at Castle Bank, Conway, Wales. At the request of the Biological Board, he has been temporarily released from his Conway work by the Fisheries Department of the British Ministry of Agriculture and Fisheries.

WHITE FISH AND CISCO SPAWN IN ALKALI LAKES

Experiments and investigations made by the Fish Culture Division of the Dominion Fisheries Branch and the Biological Board of Canada at Big and Little Quill Lakes in central Saskatchewan have established the fact that whitefish and ciscoes will reproduce in alkaline waters. Previous to 1924 these lakes, both alkaline in nature, had contained neither whitefish nor ciscoes but in 1924-5-6 the Fish Culture Division stocked them with cisco fry and in 1926 with whitefish fry. The fish are now spawning naturally in the lakes and a member of the Biological Board has found whitefish and ciscoes one and two years old. Some whitefish weighing as much as 4½ pounds have been caught, and ciscoes weighing up to 1½ pounds.

MANITOBA FISHERIES PRODUCTION DOUBLES IN VALUE IN FIVE YEARS

Fisheries of Prairie Provinces Show Steady Expansion with Manitoba Catch and Value in 1929 Recording Notable Gains

Manitoba's fisheries production has increased by more than 100 per cent in value in the past five years!

That is a striking bit of fact, but it is fact, and here are the figures that tell the story: In the calendar year 1924 the marketed value of the fisheries production of the province, as shown by the Dominion Fisheries Branch, was \$1,232,563 while in 1929 it was \$2,634,705.

The 1929 figures are given subject to final revision by the Fisheries Branch but the total is not likely to be changed materially by revision.

There has, indeed, been steady expansion of fisheries production in all three of the Prairie Provinces in recent years, though the gain in Manitoba has been especially notable. Indications are, moreover, that expansion will continue in each of the three provinces for additional fishing waters are being opened up year by year as people push forward into unsettled parts of the country and as transportation facilities are extended.

As showing how rapidly operations are being extended to "new" fishing waters, there is the interesting fact, brought out by J. B. Skaptason, Supervisor of Fisheries in Manitoba for the Fisheries Branch, in his annual report for 1929, that in the Sub-district of The Pas 28 waters were fished last year by commercial fishermen as compared with only 17 waters in 1928. Somewhat similar facts could be cited touching other parts of the Prairie Provinces.

Record Year For Manitoba

Nineteen hundred and twenty-nine found Manitoba experiencing its most successful fisheries year. All told, the commercial fishermen of the province landed more than 33,000,000 pounds of fish, a record Manitoba catch. As compared with the landings in 1928, last year's catch showed an increase of approximately 2,300,000 pounds. In landed value to the fishermen the 1929 catch was worth \$2,038,500, in round figures, an increase of \$417,000 over the fishermen's 1928 return, and the marketed value of \$2,634,705 went \$445,000 beyond the total for the previous year.

"There was very material and important increase in production activities," Supervisor Skaptason says in his report to the Fisheries Branch, "The number

of men employed increased from 4,172 to 4,693; fishing tugs and fish carriers from 16 to 21; sail and row boats from 938 to 1,182; gasoline craft from 118 to 152; and gill nets increased by more than 11,000, or fully 20 per cent."

The activities of the Manitoba Co-operative Fisheries, or "Fish Pool," were an interesting feature of the 1929 fisheries. In the year ending with August, its first year of operation, the pool handled nearly 3,000,000 pounds of fresh fish and slightly more than 7,000,000 pounds of frozen fish, or a total of almost 10,000,000 pounds. Most of this fish was caught in the winter season and it made up about 50 per cent of the total winter production of the province. The fish handled through the pool came from 477 pool members and 200 non-members.

EMPLOY SEAWEED IN MAKING FISH MEAL

Experimental use of seaweed in combination with fish offal in the production of fish meal is yielding apparently satisfactory results at a Maritime Province fish meal plant, and it is believed that operations can be successfully expanded. Fish meal has been proven an exceptionally good feeding material for cattle, swine, and poultry, and the particular value of seaweed for use in meal production is chiefly due to its high iodine content. Seaweed is abundant on Canada's coasts, and can be gathered comparatively easily, so that if further experiments show that it may be profitably used in quantity lots in making fish meal an important new source of income will be opened up to many fishermen. Production of meal from seaweed and offal at the plant which is trying out the process has been in progress for only a few weeks but in that time about 200 tons of seaweed have been used. The seaweed is first dried, then ground and mixed with a certain percentage of the fish offal; subsequent operations are similar to those employed in making any fish meal.

RADIO REPORTS FOR FISHERMEN CONTINUE

Arrangements are being made by the Dominion Fisheries Branch for the continuation, this year, of the broadcasting of weather and bait reports from St. John, N.B., Halifax, N.S., and Louisburg, N.S. for the benefit of men engaged in the fisheries. These broadcasts have been carried on for several seasons past, and have been found by the fishermen to be of great benefit.

The broadcasts from Louisburg and those from Halifax will be resumed about April 1. They will be made twice daily from each of these ports—at 4 a.m. and 12 o'clock noon. Weather reports, bait reports, news items, and in some cases, prevailing local fish prices will be on the air.

The broadcast from St. John will be made twice each morning, once at 6 o'clock, and once at 8 o'clock. Weather probabilities only will be given in the service from St. John.

MANY SOCKEYE REACHED ANDERSON LAKE BEDS

Approximately 135,000 parent sockeye salmon are estimated to have reached the Anderson lake spawning beds in British Columbia last season, the largest number noted in the experience of the superintendent of the hatchery conducted at the lake by the Fish Culture Division of the Dominion Fisheries Branch. Almost 100 per cent more sockeye reached the beds than in the 1928 season. All the natural spawning grounds are reported as being well seeded. The collection of sockeye eggs at the hatchery in 1929 totalled 8,505,000 which were obtained from 4,918 fish.

SETTLERS MOVING IN

New settlers are filling up the country west of Snipe lake, 175 miles or so northwest of Edmonton, according to a statement by Fisheries Inspector W. H. Bannister, Faust, Alberta, in one of his recent reports to the Dominion Fisheries Branch. The country between Snipe and Sturgeon lakes is being taken up fast.

A quarter of a million speckled trout eggs for the hatchery at Cowichan lake, B.C., were obtained in 1929 from Spectacle lake and the hatchery ponds. This was an increase of 73 per cent, and more over the 1928 collection.

FISHERIES NEWS BULLETIN

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W. A. FOUND.

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RECORDS SET IN PILCHARD INDUSTRY OF BRITISH COLUMBIA DURING 1929

Production of Meal and Canned Pilchards at New High Levels—Halibut Landings Largest Since 1926, Statistics Show—More Whales Taken

SALMON PACK 1,400,750 CASES

Examination of official data prepared by the Dominion Fisheries Branch as to the results of 1929 fishery operations in British Columbia brings out these interesting facts:—

Landings of halibut at British Columbia ports were the largest since 1926 and amounted to 30,436,400 pounds.

The year's pack of canned salmon was 1,400,750 cases or 634,887 cases less than in 1928 when the pack was only slightly smaller than the record pack of 1926. (Salmon packs are expressed in official statistics in terms of the 48-pound case.)

Over 1,200,000 cases of canned salmon were exported, or a quantity slightly greater than the average annual export in the preceding three-year period.

Pilchard meal production set a new high record, 15,826 tons.

Canned pilchard production set a new high record, 98,821 cases, and was 33,724 cases larger than in 1928.

All told, 21,084 tons of fish meal and fertilizer were produced and 4,066,015 gallons of fish oil.

Production of dry-salted herring, 91,638,400 pounds, was one of the larger packs in the history of the industry though slightly smaller than in 1928.

Four hundred and seven whales were caught, the largest number taken since 1924 and 102 more than were killed in 1928.

While the pack of canned salmon in 1929 dropped nearly 635,000 cases under the 1928 figures, it is pointed out by the chief officer of the Fisheries Branch on the Pacific coast, the Chief Supervisor of the Fisheries Branch for British Columbia, that this condition is not to be accepted as indicating depletion. On the contrary, he says, "had the salmon fisheries of the province been administered during 1929 under the same regulations that obtained previous to three or four

years ago, there is no doubt that the total pack of salmon would have been increased very greatly, if not to the extent that a new record would have been established;" in other words, the measures taken to ensure proper conservation of the salmon runs for the future prevented such large captures of fish as would otherwise have been made. As an illustration of steps taken by way of conservation Chief Supervisor Motherwell cites the case of the Naas and Skeena rivers. In these areas "before the salmon fishing season of 1929 commenced, the upper boundary of the former (Naas area) was brought down six miles and the one on the latter (Skeena area) three miles, thereby eliminating some of the most productive gill net drifts. Obviously, this conservation measure alone had a very considerable effect on the escapement of salmon and was partly the cause of the smaller pack."

Persons unfamiliar with conditions are sometimes apt to look upon a drop in pack figures as suggesting depletion of the fishery. Actually, "the only safe method of arriving at a conclusion is to take the figures of the pack together with the quantities of fish found on the spawning grounds. . . . The object of the conservation measures which have been enforced during recent years is to prevent such large percentages of the several runs of salmon being captured and to permit of a materially larger escapement to the spawning grounds. The annual examination of the spawning ground conditions has shown that the object desired is being obtained."

Gains with Years

As a matter of fact, although the 1929 pack was smaller than that of 1928, comparisons covering the past fifteen years

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ASSISTS LIVE LOBSTER EXPORTATION TO U.S.

Fisheries Branch Arranges for New Service to Help in Marketing

Under plans made by the Dominion Fisheries Branch with a view to assisting the Canadian lobster industry a special transportation service has been established for the carriage of live lobsters from Eastern Nova Scotia to the United States market by way of Boston.

Live lobsters are ordinarily in brisk demand in the eastern states and while the new service has been undertaken experimentally it is believed that it will be of material help in expanding lobster export trade.

Three new vessels are being employed in this lobster collection and transportation service, which was brought into operation a few days ago. These vessels were built especially for fish collection work, under an arrangement made by the Fisheries Branch, and each has capacity for handling some 70,000 pounds of fish per trip.

The collection route covered by the vessels extends from Red Point, in Richmond county, Cape Breton, to Owl's Head, Halifax county, where the run to Boston commences. On each trip each vessel makes calls at something like a dozen fishing ports along the collection route and takes on board crates of lobsters from any fishermen who wish to make shipments. The cost to a fisherman of shipping a standard crate of 150 pounds of lobsters by this service is \$3, a figure which includes return carriage of the empty crate.

Giving Lobsters a Drink

Weather conditions, of course, will always have a good deal to do in determining the time it will take a carrying vessel to run from Owl's Head to Boston, but the time must depend, too, upon how long is required for "drinking" the lobsters en route. The vessels are equipped with a method of refrigeration, and, in some cases, the lobsters are packed in rockweed, which helps to keep them cool and moist, but since the trip

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RECORDS SET IN PILCHARD INDUSTRY—*Contc.*

show a higher average annual production of canned salmon in the last five years than in either of the two preceding five-year periods. In the 1915-1919 period the pack averaged 1,339,049 cases, in the next five years, 1920-1924, it averaged 1,234,134 cases but for 1925-1929 the average was 1,716,531 cases.

In the course of a detailed review of the salmon fishery Chief Supervisor Motherwell points out that the 1929 cohort run was one of the best of recent years. Cohoes were plentiful along practically the whole coast, and canned production, 174,198 cases, has only been three times exceeded and then by small quantities only. The catches both of pinks and chums fell considerably below 1928 figures. However, taking the production of canned pink salmon in the 1916-1929 period and considering it in two-year cycles—the length of the life cycle of pinks—the figures show the average pack in the years 1928 and 1929 as far larger than the average for any other two years; in 1916 and 1917, for example, the average pack was only 388,701 cases, and though there have been some fluctuations in the intervening years the trend has been upward. Similarly, the average annual pack of chums in the past five years has been far above the average in the two preceding five-year periods, reaching 632,042 cases in the 1925-1929 period as compared with 280,558 cases in the 1920-1924 period and 333,435 cases in 1915-1919.

So far as the pink fishery is concerned, Major Motherwell writes that "there is no doubt that the drastic conservation measures enforced during the brood year of 1927 have been shown well justified. Although in 1927, when salmon fishing along practically the whole coast was stopped, it was felt by some that the action taken was too drastic, the results in 1929 leave no doubt as to the desirability of the course adopted."

While the chum pack in 1929 was disappointing to the industry, "the figures cannot be taken as an indication of a lack of supply. . . . In order to take care of conservation requirements (fishing) boundaries were moved out, areas closed off, and extra close seasons enforced, with the result that the usual toll of chum runs was not permitted."

Fraser Pack Grew

The pack of sockeye totalled 281,306 cases, which was nearly 78,000 cases larger than the 1928 production but 23,000 cases under the average annual pack for the five-year period from 1925 onward. In his discussion of the sockeye operations the Chief Supervisor makes interesting reference to results on

the Fraser river. "The pack on the Fraser," he writes, "was unexpectedly large compared with packs in recent years, and particularly in view of the fact that the brood year of 1925 resulted in a pack of only 31,523 cases or approximately 50 per cent less than in 1929. An interesting feature in this connection was the large proportion of 'early run' fish which proceeded to the upper waters of the Fraser River watershed and were of the finest quality. These were undoubtedly either the remnant of the old runs from above Hells Gate or were the result of fish cultural operations during recent years. . . . If conservation and fish culture are responsible even in part for the runs of the 1925-1929 cycle, there should be justification for the hope that, with an international arrangement looking to the rehabilitation of the sockeye runs to the Fraser watershed, great things can be accomplished." In his references to the "early run" fish in 1929, Chief Supervisor Motherwell also points out incidentally that as the fishermen were largely taken unawares "only a comparatively few nets were operated, with the result that an unusual percentage of fish passed to the spawning grounds."

AIDS IMPROVEMENT IN PROCESSING COD

With a view to assisting fishermen and fish curers in the Maritime Provinces in following the most approved methods of handling and curing codfish, the Dominion Fisheries Branch has established the position of Promoter of Fish Curing and George R. Earl, of Yarmouth, Nova Scotia, an experienced, practical man, has been appointed to the post. Mr. Earl's work will be in addition to that done by the Maritime Province fisheries inspectors who already carry on practical educational effort among the fishermen as regards handling and processing fish. The inspectors were equipped for this educational work by special courses which they were required to take at the Atlantic Fisheries Experimental Station at Halifax.

Mr. Earl has been actively connected with the fishing industry in Nova Scotia for a number of years. During the summer of 1929 he was employed by the Fisheries Branch to do work in Prince Edward Island similar to that which he will now carry on in the Maritime Provinces generally. It is the intention of the Branch to have him carry on a systematic and intensive campaign of instruction throughout his territory.

FISH CULTURE AIDS TOURIST BUSINESS

Summer Resort Plans Follow Stocking of Southwestern Saskatchewan Waters

Following upon the success of the Fish Culture Division of the Dominion Fisheries Branch in introducing Loch Leven trout into waters of the Cypress Hills area in Southwestern Saskatchewan, reports come now that Saskatchewan people have plans in hand for summer resort development in that part of their province.

The case indicates the effective part which fish cultural operations may play in building up tourist business.

A few years ago there were no game fish in the Cypress Hills country. Then the Fish Culture Division of the Fisheries Branch set about the experimental introduction of Loch Leven trout in the Little Frenchman River and tributaries of Cypress Lake. Now there is excellent angling in these waters. And because there is good sport fishing, summer resort development is planned, according to the report brought to the attention of the Branch by one of its Saskatchewan inspectors.

The first distribution of Loch Leven fry in the Cypress Hills waters was made by the Fish Culture Division in 1924. Additional distributions were made in each succeeding year. In the 1929 angling season some of the trout which were caught weighed as much as six pounds and measured 26 inches in length and 13 inches in girth.

BROADCAST HOURS

Under the plan adopted by the Dominion Fisheries Branch for broadcasting daily bait and weather reports to fishermen this summer messages are put on the air twice daily from the Halifax Lightship and from the Marconi station at Louisburg. The hours for the Halifax broadcasts are 8 a.m. and 1.30 p.m. The Louisburg broadcasts are given at 4 a.m. and 1 p.m. An earlier report as to the plan for the 1930 broadcasts was inaccurate as to the hours at which Halifax and Louisburg will go on the air with this service to fishermen. In addition to the broadcasts from Halifax and Louisburg, there are also weather broadcasts from St. John.

Sixty-three salmon canneries operated in British Columbia in 1929. That was one more than in 1928 but 13 less than in either 1927 or 1926.

MORE SEA FISH CAUGHT IN MARCH BUT LANDED VALUE SOMEWHAT LOWER

Bigger Catches on Both Coasts than in March of Last Year but Value to Fishermen Dropped below Previous Total East and West

Catches of sea fish by the Dominion's fishermen in the month of March, as shown by unrevised returns to the Dominion Fisheries Branch, totalled approximately 31,681,000 pounds, or some 11,314,000 pounds more than in March, 1929, but the landed value of the catches to the fishermen was only \$761,368, in round figures, as against \$850,299 in the preceding March.

On the Pacific coast the landings for the month were 21,454,000 pounds, an increase of 10,268,600 pounds over the landings for March of last year. Landed value, \$364,350, showed a decrease of \$95,191—a drop chiefly due to smaller halibut returns.

The Atlantic coast catch was 10,226,700 pounds and the landed value \$397,037, a gain of 1,095,800 pounds in catch and a gain of \$6,279 in landed value.

The lobster catch in March—lobsters are taken in Atlantic coast waters only—was 707,800 pounds, or 11,500 pounds less than in the corresponding month of last year, but lobster prices have been better so far this year than in 1929 so that the landed value of the March catch was \$14,445 greater than a year ago—\$178,341 as compared with \$163,896. Similarly, though the total lobster catch for the season, up to the end of March, has been only 1,368,400 pounds as against 1,493,300 pounds for the like period of last year, the improved prices have brought up the landed value figures to \$391,552 as against \$324,193 in 1929.

Results by Provinces

Nova Scotia fishermen landed 9,477,500 pounds of sea fish in March, with a landed value of \$385,630, a gain of 1,973,700 pounds in catch as compared with March, 1929, and an increase of some \$15,450 in landed value. Cod landings showed a substantial gain, an increase of slightly more than 1,400,000 pounds, and landed value was \$66,435, an increase of nearly \$16,000. Haddock catch also increased by a half a million pounds and landed value was \$106,376 as against \$101,314 a year ago. Hake and cusk landings of 219,800 pounds were more than twice as large as in March of last year while the catch of pollock was 194,000 pounds as compared with only 39,800 pounds. On the other hand, there were smaller catches of halibut, lobsters, and scallops. The lobster land-

ings were 704,800 pounds, with a landed value of \$177,531, as compared with landings of 717,500 pounds and landed value of \$163,410 in the preceding March. In the case of halibut the catch was 112,500 pounds and the landed value \$17,022 while in March, 1929, the landings were 226,800 pounds and the landed value figures were \$31,599. Scallop landings fell off sharply—1,629 barrels as against 2,886 barrels in the previous March—and landed value was only \$11,156 as compared with \$19,347.

There was no fishing during the month in either Quebec or Prince Edward Island but in New Brunswick the fishermen did not fare as well as they had done in March, 1929. Their total catch was 749,200 pounds, while in the preceding March they landed 1,627,100 pounds. Landed value was \$11,407 as compared with \$20,578. Cod catch for the month was 11,600 pounds, as compared with 68,900 pounds last year while landings of herring, sardines, alewives, and clams and quahaugs all showed decreases. Scallop landings increased by 105 barrels to a total for the month of 405 barrels, with a landed value of \$2,746.

In British Columbia the herring catch was more than double the catch in March, 1929. All told, 15,901,900 pounds of herring were taken, with a landed value of \$32,947, as compared with a catch of 6,630,900 pounds and a landed value of \$23,428 in March of last year. Salmon landings for the month, 196,100 pounds, were somewhat larger than a year ago and landed value of \$31,617 showed an increase of some \$11,000. Landings of clams and quahaugs increased and landed value of \$13,295 showed a gain of over \$5,000.

Halibut catch for March, on the other hand, was some 700,000 pounds less than in March, 1929, and landed value dropped \$126,000. In March, 1929, the catch was 2,962,000 pounds, with a landed value of \$359,279, while in March just past the catch was 2,214,600 pounds and the landed value totalled \$232,547.

Six whaling vessels operated out of British Columbia in 1929—three from Naden Harbour and three from Rose Harbour. All told, they captured 407 whales, all in the vicinity of the Queen Charlotte Islands.

BROADCASTING TALKS UPON FISH COOKERY

Through the co-operation of the Canadian National Railways, radio talks on fish cookery are now being broadcast regularly by the Dominion Fisheries Branch from Station CNRO at Ottawa. A talk is given on one morning of each week, and since morning broadcasts from CNRO cover all the territory within a radius of 130 miles of Ottawa—and, indeed, are heard within much wider limits—a very large number of housewives are reached. Reports reaching the Fisheries Branch indicate that the cookery talks are being heard with much interest by a good many people. The talks are prepared from material within the Branch and are broadcast by Miss M. E. Campbell, a member of the staff of the Branch at Ottawa.

ASSISTS LIVE LOBSTER—Contc.

from Eastern Nova Scotia to Massachusetts must take up several days in actual running time it is necessary that something more be done, especially in warmer months, to keep the lobsters in good condition for market. To this end the "drinking" process must be carried out somewhere along the route, probably in the vicinity of Cape Sable. This process consists in putting the loaded crates into the sea at the side of the vessel and allowing them to remain submerged for several hours before bringing them back on board and continuing the voyage.

On the return trips to Nova Scotia the vessels will be "light" except for the empty crates which they will bring back to the ports of shipment for use again.

While the Fisheries Branch assumes no liability for the condition of the lobster shipments on their arrival at the point of destination, every care is taken, of course, in handling the lobsters while they are in transit. To make it as certain as possible, also, that proper methods of packing and shipment are followed, and good condition of the lobsters on arrival at Boston thus ensured, arrangements have been made whereby advice and assistance will be given the shippers by a qualified man who will travel continuously up and down the collection route. His services are in addition to those rendered by the regular fisheries officers along the collection route. At Boston another representative assists in looking after the distribution of the shipments as they are landed.

CAPT. F. C. LAIRD DIES AFTER LONG SERVICE

Following an illness which had extended over some months, Captain Frederick Charles Laird died at his home, 3460 Yukon street, Vancouver, on March 24, after more than 20 years of efficient work in the service of the Dominion. Fisheries Branch in British Columbia.

Capt. Laird had been continuously in the service since April 1, 1908. He served first as master of the patrol boat *Alcedo* and then as master of the *Fispa*. Subsequently, he was appointed to command the Fisheries Protection Ship *Givenchy* and for some years prior to his death he had been master of the F.P.S. *Malaspina*. At the time of his death Capt. Laird was 61 years of age. He is survived by his widow and three children—Mrs. W. H. Paddon and Ernest James Laird, of Vancouver, and Dr. Frederick W. Laird, St. Louis, Mo.

The death of Capt. Laird brought the Fisheries Branch the second loss, within a space of two months, of an officer with a long service record to his credit in British Columbia, Supervisor Edward G. Taylor having passed away in February. In their earlier years in the service Captain Laird and Supervisor Taylor were closely associated in the administration of the fisheries of District No. 3 in their province.

B.C. OFFICERS HOLD TWO DAY MEETING

Under the chairmanship of the Chief Supervisor of Fisheries for British Columbia, Major J. A. Motherwell, the annual meeting of the fisheries supervisors and inspectors of the Pacific coast for the discussion of their work and the best methods of carrying it on was held at Vancouver last month and extended over two days. In addition to the supervisors and inspectors, several of the fisheries patrolmen were also in attendance and the meeting proved to be the most enthusiastic and successful of these official gatherings that has yet been held in British Columbia.

The sessions were wholly for purposes of business and a wide range of questions relating to the fisheries and fisheries administrative work were taken up. The earlier part of the two-day program consisted of separate meetings of the officers from the three fisheries districts in the province; later, all the officers met together.

PRACTICAL COURSES FOR FISHERMEN GIVEN YEARLY BY BIOLOGICAL BOARD

Atlantic Coast Fishermen Students at "Schools of Instruction" Carried on at Atlantic Fisheries Experimental Station—More Accommodation Now Being Made Available

Schools at which Atlantic coast fishermen may obtain additional instruction in subjects of direct, practical relation to the fisheries now have regular place in the program carried on in the interests of the fishing industry of the Dominion by the Biological Board of Canada under the authority of the Minister of Marine and Fisheries.

Not only does the Board conduct these "Schools of Instruction to Fishermen" but in order to assist ambitious young men who wish to equip themselves for more efficient work by attendance at these courses of study it also makes grants towards meeting their living expenses while they are enrolled as students and pays railway fare to and from Halifax, where the schools are held.

The first of these schools was established by the Biological Board at the Atlantic Fisheries Experimental Station at Halifax in 1928, and with such satisfactory results that similar schools were held in 1929 and 1930. Lack of greater accommodation has so far made it necessary to limit the attendance—the average attendance at the schools so far has been about 22—but a new building now being completed at the Station will make it possible to take care of larger enrolments in the future. Only bona fide fishermen between the ages of 17 and 35 who have reached a certain educational grade in the common schools are accepted as students. Written examinations are held at the close of each school, and it is interesting to note that of the 20 students enrolled in 1930 only two were unsuccessful in passing and four passed with honours.

Cover Practical Subjects

An outline of the courses given at the 1930 school, which was in session for approximately six weeks and was under the immediate supervision of Dr. A. H. Leim, Director of the Experimental Station, will indicate the field covered. Six separate courses were given and the instructors, in addition to members of the Station's staff, included several college professors, departmental experts, and several other authorities.

One course was concerned with the preparation of dried and boneless fish.

Practical instruction was given and during the course each student was required to prepare a 30-pound box of boneless fish and a quantity of dried fish. A course was given similarly in the preparation of pickled fish and the cooping of barrels. A third course had to do with motor engines, and both theory and practice were studied. In the course in navigation lectures and demonstrations were given and practical work was taken up.

Lectures, demonstrations, and experiments made up the course in science. Among the subdivisions of the various subjects that were dealt with were the theory of fish salting; salt and its constituents; evaporation and boiling; migrations of fish; life history of some of the more important fishes; reproduction of fish; micro-organisms and plant and animal diseases; fermentation and spoilage of food; factors influencing bacteria in fish; bacteriology of cured fish; chilling, freezing, drying, smoking, pickling, salting, and canning; effect of freezing on tissues; effects of storage; rapid freezing of bait; salt penetration; types of commercial freezers; and methods of preparing fish oils.

The course in natural resources included instruction as to goods, wealth, production, division of labour, exchange, demand and supply, co-operation, co-operative marketing, banking operations, etc.

During the school some instruction was also given in methods of fish handling. Several illustrated lectures on such subjects as "Life in the Sea" and "Methods of Fishing" were given, and a series of motion picture films were shown dealing with commercial and sport fishing on the Atlantic and Pacific coasts.

A Chicago fish company has made preparations for carrying on fishing operations on Lac la Biche, Alberta, during the coming summer.

Ice left the Inverness county coast of Cape Breton this year early in April. "This is the earliest date in many years," writes Inspector A. J. Murphy, one of the Fisheries Branch officers in Inverness.

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APRIL SEA FISH CATCH SHOWS GAIN AND FISHERMEN'S RETURNS INCREASE

**With Bigger Catches on Both Coasts Total Landed Value
of Fares to Fishermen over Quarter Million Dollars
About Figures for April, 1929**

Both on the Atlantic coast and the Pacific coast there were larger landings of sea fish by Canadian fishermen in April than were made in April, 1929, and the landed value of their catch to the fishermen showed a total increase of nearly \$286,000.

Total landings for the month, as shown by unrevised figures of the Dominion Fisheries Branch, were approximately 34,445,000 pounds, with a landed value of nearly \$1,514,000, as against landings of 27,930,400 pounds and a landed value of \$1,228,030 in April of last year.

Atlantic coast catch amounted to some 25,264,000 pounds, an increase of better than 3,768,000 pounds as compared with April, 1929, and landed value, increasing by about \$247,400, was \$937,207.

On the Pacific coast the landings were 9,180,400 pounds, a gain of nearly 2,746,000 pounds, and the landed value rose from \$538,212 to about \$576,400.

Lobster Fishery Feature

Featuring the April returns for the Atlantic coast was the fact that a large part of the total gain in catch, and the major part of the gain in landed value, was due to more successful operations in the lobster fishery. The catch of lobsters for the month was 3,013,200 pounds, or upwards of 1,056,000 pounds above the figures for the preceding April, while the landed value, in round figures, was \$520,630, an increase of over \$192,900.

Practically all the lobster fishing in April is carried on in Western Nova Scotia, although a little is done in New Brunswick. The New Brunswick catch for the month was 40,800 pounds, a gain of several hundred per cent, and the landed value figures were \$10,191 as compared with \$3,712 a year ago. In Nova Scotia the catch totalled over 2,972,000 pounds, and the landed value

was \$510,438, whereas, in April '29, the catch was only 1,945,800 pounds and landed value \$323,984.

The season's catch of lobsters, up to the end of April, has also shown a large increase—nearly 934,000 pounds—over the catch for the corresponding period of last year which amounted to 3,450,700 pounds as compared with this year's 4,384,600 pounds. Total landed value stood at approximately \$913,000 at the end of April as against \$651,889 for the same period a year ago.

In British Columbia

On the Pacific coast in April the herring fishery was much more productive than in April, 1929, yielding some 2,424,000 pounds, or an increase of over 1,400,000 pounds, but, nevertheless, landed value was only \$12,086 as against \$15,963.

Halibut catch also increased, amount nearly to 3,853,000 pounds as compared with 3,693,500 pounds in the previous April, but landed value was only \$372,350 as compared with \$393,723.

The salmon fishery, on the other hand, did substantially better as regards landed value as well as catch. The catch for April totalled about 725,000 pounds and landed value \$113,975 as compared with 432,000 pounds and \$72,772 last year.

There were also tidy gains, both as regards catch and landed value, in the case of ling cod, crabs, and clams and quahaugs.

On the Eastern Coast

In Prince Edward Island a very large increase in herring catch—total herring landings going beyond 846,000 pounds—made the month a much more successful one for the fishermen than April, 1929, had been, although April fishing operations are never on an extensive scale in this province. Similarly, in Quebec there is only very limited sea fishing in April.

(Continued on page 3)

SEEKING BETTER BAIT SUPPLY FOR B.C. MEN

**Fisheries Branch Arranges "Prospecting"
for Summer Bait for Halibut Fishery**

With a view to locating summer herring runs in northern British Columbia waters, so that the halibut fishermen may be assured in future of a supply of fresh herring bait in the summer months, the Dominion Fisheries Branch has made arrangements whereby "prospecting" will be carried on this summer by a British Columbia herring fisherman of long experience.

This departmental hunt for a fresh bait supply for the halibut fishermen has been decided upon following representations made by the Canadian Halibut Fishing Vessel Owners' Association, Prince Rupert, and the plan has been endorsed by the executive of the Deep Sea Fishermen's Association, Prince Rupert.

Fresh herring bait is much more satisfactory than frozen bait for halibut fishing but, heretofore, there has been uncertainty as to the availability of fresh bait except in the earlier part of the halibut season, say, in March and April. Some individual efforts have been made in the past to determine where herring could be caught in quantities in the northern areas in the summer months, and a sufficient and steady supply of fresh bait thus assured, but none of these efforts was successful.

Under the plan which the Fisheries Branch is adopting a contract has been signed with Robert Lloyd, a man who has been engaged in the British Columbia fisheries for a number of years, under which he will "prospect" for herring with a purse seine boat for several months in waters adjacent to the islands off the northern British Columbia coast. Where herring runs are located Mr. Lloyd will construct pounds so that his catches may be retained alive and then, as demand occurs, may be sold to halibut fishermen for use as fresh bait. The Branch has set aside a sum of money to meet the cost of the investigation but the amount which Mr.

(Continued on page 3)

DOMINION FISHERIES BRANCH PLANS SURVEY OF HUDSON BAY RESOURCES

Expedition Proposed during Summer to Investigate Commercial Fishing Possibilities of Great Northern Sea Larger than the Mediterranean

Letters reaching the Dominion Fisheries Branch in recent months have indicated that a good many eyes are being turned towards the fisheries possibilities of Hudson Bay and it is evident that there will be much interest in the survey of the bay's fisheries resources which the Branch is planning for the present year.

Hudson Bay has a water area greater than that of the Mediterranean Sea and if its fisheries resources should prove to be at all proportionate to its size their exploitation will add a good many dollars to the Dominion's annual production. Up to the present, however, there has been uncertainty as to the varieties of fish which may be present in these waters in commercial quantities, although some examinations in this regard were carried on in earlier years.

In 1914, for instance, an investigation was conducted in Hudson and James Bays under Fisheries Branch auspices. So far as Hudson Bay was concerned, the investigators reported that whitefish and other varieties of food fishes were to be found, in considerable quantities at least, in the rivers and in the estuaries of the principal streams, such as the Nelson and the Churchill, as well as for some distance along the shore to the north and south of these big rivers. Whitefish were stated to be the most abundant. Sturgeon were reported plentiful in the upper waters of the Nelson and Hayes rivers. There was said to be an abundance of rock cod in the vicinity of York Factory. Herring were to be taken in the southern part of the bay. Investigation in the deeper, off-shore waters was more difficult and no conclusive results were obtained.

More Information Gathered

During the summer of 1929 some further information was gathered by J. B. Skaptason, Supervisor of Fisheries for Manitoba, who was sent to the Hudson Bay region by the Fisheries Branch with this end in view. Supervisor Skaptason's trip was not for the purpose of attempting an investigation of the fisheries possibilities but, rather, to gather information available from persons well acquainted with the bay and tributary streams and to get together further facts which would be useful in mapping out

the plans for the investigation proposed for 1930.

A summary of Supervisor Skaptason's report to the Branch makes interesting reading, but it is to be kept in mind that the statements contained in the report were given subject to further investigation. Herring, trout, and whitefish are taken in the river estuaries and inshore fishing, the supervisor said. There was some information to the effect that the bottom of the bay itself might not be altogether favourable for cod, halibut, and other deep sea fish, although in Hudson Straits, as far as Salisbury Island, cod, trout, and Atlantic salmon were stated to have been taken and to seem plentiful. Cod and Caplin had been taken in the bay, according to the information obtained by Mr. Skaptason.

Herring apparently centre on the Nelson river, and occur in diminishing quantities to the north. There is some evidence that these fish are confined to the rivers and river mouths. The herring taken are somewhat longer than tullibee, with thicker, rounder bodies, firm and very fat, and with the appearance of being good smoking stock. The largest runs occur during the latter part of August, in September, and in the early part of October. When "freeze-up" time has come, the herring seem to have disappeared altogether.

The trout caught are similar to the Arctic trout. There is variation in the colour of the flesh, which ranges from light to dark or deep pink. The trout weigh from four to five pounds, although some are taken which weigh much more, and are of excellent quality for food. The trout are apparently most numerous in the Churchill and to the north.

Two Kinds of Whitefish

As to whitefish, Supervisor Skaptason reported that two different species have been taken—Coregonus Clupeformis and Coregonus Labradoricus. The fish are generally smaller in size than the average run of lake whitefish, and the flesh is apparently not of so fine a texture. Information available indicated that whitefish are not very plentiful—a condition different from that recorded in the report of the investigation made in 1914.

(Continued on page 4)

MARITIME FISHERMEN'S FEDERATION PLANNED

Delegations from Local Associations to Hold Convention in Halifax in June

Formation of a central fishermen's federation for the Maritime Provinces is now under way and a convention of delegates from local associations all over the provinces will be held at Halifax on June 25 and 26 for the purpose of setting up the central organization. Steps towards the establishment of the federation have followed the increasing attention which has been given to organization by the fishermen since the appointment of Dr. M. M. Coady as Promoter of Fishermen's Organization for the Dominion Fisheries Branch.

All told, there are now some 70 local associations in fishing communities in Nova Scotia, as well as a number in other parts of the Maritime Provinces, and the formation of similar bodies in districts where the fishermen are as yet unorganized is going ahead steadily. A number of the associations now established were formed several years ago but a good many of them have been organized by the fishermen following Dr. Coady's visits to different sections of the provinces when he has assisted the men in making their plans for organization. Among associations organized in the past week or two are several in the western counties of Nova Scotia, including those at Port Maitland, Pinkney's Point, Rockville, Wedgeport, Sandford, Overton, Shag Harbour, and West Pubnico. In the near future Dr. Coady will also go to the Magdalen Islands to assist the fishermen there in organization effort.

Consider Constitution

At the coming Halifax convention each local association will be entitled to representation by one delegate for every 20 members, or major fraction of 20 members. Preliminary to the convention, a rough draft of a possible constitution for the central federation has been sent to each local association so that it may be fully considered by association members and instructions issued to their convention delegates as to changes or additions which it is desired to have made in the draft. No definite scheme for co-operative commercial activities is suggested in the draft constitution. "It will be the work of the convention and the Central Board," says the conven-

(Continued on page 4)

AERIAL OBSERVERS VALUABLE AID TO FISHERIES WORK ON PACIFIC COAST

Seaplanes Increase Efficiency of Patrol in British Columbia—Help in Spawning Ground Examination and Inspection of Interior Waters

Three years ago seaplanes were added to the fisheries patrol service maintained in British Columbia by the Dominion Fisheries Branch and each succeeding season has given new proof of their usefulness in assisting in the enforcement of fisheries regulations and in the inspection of fishing waters.

Last year, for instance, one plane 'spotted' seven violators of the regulations in the Queen Charlotte Islands in a single week, and each of the seven was convicted by the courts.

It's one thing to elude a fisheries officer, no matter how efficient and zealous he may be, or to dodge away from a patrol boat in time, but it's quite another matter to escape the vigilance of a seaplane that travels the skies faster than a bird.

Not only are the seaplanes valuable in patrol work, however, but they are making possible an easier and more extended inspection of spawning grounds and interior waters generally. Because planes were available, says Major J. A. Motherwell, Chief Supervisor of Fisheries for British Columbia, in his report to the Fisheries Branch for 1929, "much valuable information was obtained at a great saving of time and cost."

Air Service Extended

Aerial patrol was first tried out by the Fisheries Branch in British Columbia in 1927 but, for various reasons, the flying-time length of the patrols totalled only about 92 hours. The experience of that first season, however, led to a renewal of the service in 1928 when the planes were on duty in the air for 261½ hours. Last year there was a further extension of the service. Three seaplanes were used, and they had a total flying time on duty of a little more than 408 hours.

"The air patrol," says Chief Supervisor Motherwell, "is particularly valuable for localities which are inadequately served in the way of telegraph or telephone communications or by mail arrangements. On the east and west coasts of the Queen Charlotte Islands, for instance, the fisheries patrol could not be made satisfactory until the flying boats were obtained. . . .

"Probably the greatest value of the flying service is the moral effect in the

preventing of violations. The fishermen's associations, which are showing each year a greater inclination toward working with the department's officers with a view to conservation, are very enthusiastic over the flying service as a means of preventing illegal fishing."

Service for 1930-31

A contract has now been awarded to Western Canada Airways, Winnipeg, for a seaplane patrol service on the Pacific coast for a further two-year period.

Under the contract two planes must be available for duty from July 1 to July 20 in each year and three planes during the period from July 21 to October 31. Each plane must have accommodation for at least three persons, a maximum speed of 100 miles an hour, air endurance of not less than six hours and a ceiling of 14,000 feet or more.

Bases for patrol must be established at Prince Rupert, Skidegate Inlet, Port Clements, Swanson Bay, Alert Bay, Quathiasqui Cove, and Port Alberni. Flights made in the patrol service are to be on the authorization and instruction of the Chief Supervisor of Fisheries and certain other designated officers.

APRIL SEA FISH CATCH—*Conc.*

Nova Scotia's catch for the month amounted in all to 20,073,000 pounds with a landed value of about \$883,950, a gain of some 2,300,000 pounds in catch, as compared with results for April of last year, and of over \$230,000 in landed value. The cod, hake and cusk, pollock, herring, alewives, and clam fisheries, as well as the lobster fishery, were more successful than a year ago, but the had-dock, halibut, and scallop operations rather less successful.

In New Brunswick the sea fishermen landed 4,338,500 pounds, or over 600,000 pounds more than in the preceding April. Landed value, \$44,712, showed a gain of slightly better than \$6,000. Sardine landings amounted to 9,624 barrels, nearly 1,000 barrels increase, but the landed value, \$15,938, was, roughly, \$1,400 less than a year ago. There were increased catches of herring and alewives but smaller landings of cod and clams.

EXCEPTIONAL CHANCE FOR CANADIAN FISH

Frederic Hudd, Canadian Government Trade Commissioner, New York, has recently prepared a very useful report on "Marketing Canadian Fish in New York City," and copies of it may be obtained on application to the Commercial Intelligence Service, Department of Trade and Commerce, Ottawa. "There are exceptional opportunities," Mr. Hudd says, "for shippers of Canadian fish to establish reputations for quality and create demands for their particular products through careful selection, intelligent handling, proper packing, selected grading, and accurate weighing. New York is essentially a quality market, with little or no demand for inferior goods. No other city in North America pays higher prices, but it demands in return the highest quality and full measure. Many Canadian concerns, recognizing the advantages of shipping only quality products and of identifying their names with these goods, have created a market which ensures ready sales and high prices for their consignments." Mr. Hudd's report gives full information as to the requirements of the New York trade, preferred methods of packing, grading essentials, etc., and must be very helpful to any persons in the fishing industry desirous of seeking business in this market.

SEEKING BETTER BAIT—*Conc.*

Lloyd may obtain from any sales of bait which he may make will be deducted from the payments due him from the Branch for the use of his boat and seine and for his own services and the services of the four men who will make up his crew.

So that the results of the investigation may be carefully followed, Branch officers and a representative of the Halibut Fishing Vessel Owners' Association will watch the operations as observers. They will make reports at regular intervals so that the information brought out from time to time may be used in making the investigation as effective as possible.

The investigation will be followed with a great deal of interest by the fishermen and the fishing industry since the bait problem is one of first rate importance in the halibut fishery. Should Mr. Lloyd's work result in the location of the summer herring runs, future operations in the British Columbia halibut industry will be greatly benefited.

DOMINION FISH CULTURISTS WORKING TOWARDS BUILDING UP TROUT STRAINS

Selective Breeding Being Followed at Eastern and Western Hatcheries to Produce Hardy Rapid- Growing and Prolific Fish

By means of selective breeding the Fish Culture Division of the Dominion Fisheries Branch is endeavouring to build up strains of trout which will be hardy, rapid-growing, and productive yielders, and as one of the steps in this connection some 2,512,000 eggs were stripped from the pond brood stock during the 1929-30 autumn and winter season at different hatcheries operated by the Division.

When the strains have been developed, resultant eggs and fry and fingerlings will be distributed in suitable waters in different parts of the country so that the fisheries resources may be enlarged and improved.

During the 1929-30 season recently passed 6,458 parent trout from the hatchery ponds were stripped, the largest numbers at the hatchery at St. John, N.B., and the hatchery at Florenceville, N.B. Eggs were collected from speckled trout, brown trout, hybrid brown, Loch Leven, and salmon trout, but chiefly from speckled trout.

At the Banff hatchery 9,500 salmon trout eggs were collected from seven fish. At the hatchery at Yarmouth, N.S., 1,105 Loch Leven eggs were collected and at the St. John hatchery 46,592, or a total of 47,697 eggs from 75 fish. At the St. John and Yarmouth hatcheries 120 hybrid brown trout yielded the strippers 43,276 eggs and from 775 brown trout 257,391 brown trout eggs were collected.

Collection of eggs of the speckled trout was carried on at the Antigonish, Margaree, and Yarmouth hatcheries in Nova Scotia, the St. John and Florenceville hatcheries in New Brunswick, the Kelly's Pond hatchery in Prince Edward Island, and at the Cowichan Lake plant in British Columbia. All told, about 2,154,000 of these eggs were collected.

Collection of steelhead salmon eggs in Allouette River, B.C., was undertaken for the first time by the Fish Culture Division of the Dominion Fisheries Branch this year and nearly 60,000 eggs were collected for the Cultus Lake hatchery. Forty-nine fish were taken between March 1 and March 26 and the eggs were collected between March 10 and March 29.

Largely increased collection of white-fish eggs was made during the 1929 season at the Cochin Fishing Station, which is operated by the Fish Culture Division of the Dominion Fisheries Branch on a creek adjoining Jackfish and Murray Lakes in Northern Saskatchewan. All told, upwards of 64,000,000 eggs were secured. Something like 21,000,000 of the eggs were sent to the Fort Qu'Appelle hatchery and the others were planted in the green stage on spawning grounds near the station.

DEPUTY MINISTER IS GIVEN HONORARY D.Sc.

At the annual encaenia of the University of New Brunswick, Fredericton, N.B., a few days ago, the honorary degree of Doctor of Science was conferred upon the Deputy Minister of Fisheries. The university is an institution maintained by the Province of New Brunswick.

DOMINION FISHERIES BRANCH —Conc.

Sturgeon do not appear to be known in the lower reaches of the Churchill but have been taken 70 miles up stream. A similar statement seems to be true, Mr. Skaptason reported, as to the presence of sturgeon in other rivers running into the bay so that the indications would seem to be that the sturgeon taken in the Hudson Bay area is not a variety of sea sturgeon or even a fish frequenting brackish waters.

MARITIME FISHERMEN'S—*Conc.*
tion announcement, "to set up the necessary machinery for commercial enterprises when we feel we are ready to undertake such things. As soon as we get our organization set up, then we can begin to formulate plans for commercial undertakings in both the field of production and consumption."

It is the intention to pool the convention railway fares and ask each delegate to pay the average fare. In this way all delegates will be put on an equal basis as regards expense. houses, etc.

ALL NATIONS BUYING B.C. CANNED SALMON

1929 Export Sales Above Annual Average For Three Preceding Years

Reckoning in terms of the 48-pound case, the shipments of British Columbia canned salmon from Vancouver to points outside of Canada in 1929 amounted in all to 1,213,697 cases and once again indicated the great importance of the Pacific canned salmon industry as a factor in the external trade of the Dominion.

Moreover, although the 1929 shipments were somewhat smaller than those which were made in the preceding year, they were slightly above the annual average for the three-year period, 1926-1928.

Australasian countries continued to be first among the purchasers, so far as total purchases were concerned. Nearly 308,000 cases—307,922, to be exact—were sold on the Australasian market, or almost 39,000 cases more than in 1928 and some 25,000 cases more than the average annual total in the five-year period, 1925-1929.

The second largest exportation in 1929 was to France, which took 251,075 cases. The United Kingdom was third among the buyers, with purchases totalling 194,172 cases, and Italy came next with 136,960 cases. The exports to Italy showed a large increase, as compared with 1928, but sales to France and the United Kingdom fell off somewhat.

All told, some 30 different countries were customers of the British Columbia canned salmon exporters last year. The following list of the export markets to which shipments were made is interesting reading as showing the widespread marketing of this Canadian food: Australasia, Belgium, British West Indies, Central America, South America, Ceylon, Greece, China, Denmark, Dutch East Indies, Egypt, Fiji, France, Germany, Holland, Italy, Japan, Malta, Philippine Islands, South Africa, Straits Settlements, Sweden, United Kingdom, United States, West Africa, West Indies.

All told, 3,410 persons were employed in the fishing industry in Prince Edward Island in 1929, including some 640 females. The capital invested was approximately \$870,780, representing canneries, boats, nets, lobster traps, ice

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Hon. CYRUS MacMILLAN,

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FIRST MINISTER OF FISHERIES IN OFFICE

Hon. Dr. MacMillan, War Veteran and
Former Member of Royal Commission
on Fisheries

Following the recent establishment of the Fisheries Branch and the Marine Branch of the former Department of Marine and Fisheries as separate departments of government, Hon. Cyrus MacMillan was sworn on June 17th as Canada's first Minister of Fisheries.

Hon. P. J. A. Cardin, who had been Minister of Marine and Fisheries from January, 1924, to June, 1926, and from September, 1926, onward, has now become Minister of Marine.

Hon. Dr. MacMillan, a Prince Edward Island man, was a member of the Royal Commission on the Fisheries of the Maritime Provinces and the Magdalen Islands in 1928. Previously, he had been a member of the Duncan Commission on Maritime Claims. In 1929 he was appointed by the Government of Prince Edward Island as the chairman of its Commission on Education.

Since 1910 he has been a member of the Faculty of McGill University, following his graduation from McGill and post-graduate work at Harvard University where, in 1909, he obtained the degree of Doctor of Philosophy. During the war years he had leave of absence from McGill and served overseas with the Canadian Expeditionary Forces. He assisted in organizing the 7th Canadian Siege Battery and left Canada holding the rank of Captain with that unit. In 1917 he was appointed to the command of the 6th Battery with the rank of major. Dr. MacMillan was twice mentioned in despatches for gallant conduct in the field. On his return to Canada he resumed his work at McGill and since 1925 he has been the head of the University's Department of English but a good deal of his time has been given to investigation of the fisheries and Maritime claims in his capacity of royal commissioner.

(Continued on page 3)

FISHERIES EXPORT TRADE OVER NINE TIMES GREATER THAN IMPORTATIONS

Dominion's Sales of Fisheries Products in Foreign
Markets Nearly \$36,000,000 Last Year with
All Nations Customers

There aren't very many corners of the world which don't buy Canadian fish in one form or another.

Last year, the calendar year 1929, Canadian fish and fish products found markets virtually all over the world and accounted for nearly \$36,000,000 of the export totals in the Dominion's trade returns.

Or to put the facts in another way: Canada's exports of fisheries products in 1929 amounted in value to more than nine times the imports.

Fisheries imports during the year had a total value of \$3,825,899, as shown by official trade statistics, and fisheries exports were valued at \$35,969,272. The sales to the United Kingdom alone were within \$142,000 of being equal to the total import trade in fish and fish products while the exports to the United States, \$15,368,000 in round figures, were four times as great as Canada's fish purchases from abroad.

A list of the countries which buy fisheries products from Canada reads a good deal like a gazetteer. There's the United Kingdom and the United States, of course, and then a host of other lands: South Africa, West Africa, Portuguese Africa, Egypt, India, Ceylon, the Straits Settlements, Australia, New Zealand, Fiji, British Oceania, China, Japan, Korea, Italy, Germany, France, Sweden, Denmark, the Netherlands, the Dutch East Indies, the Dutch West Indies, British Guiana, Dutch Guiana, Brazil, Chile, Colombia, Venezuela, Cuba, Porto Rico, San Domingo, Haiti, Mexico, the British West Indies, and so on and so on.

There is everything in the exports from frozen smelts and canned sardines to canned whale meat but the biggest single item, in point of value, is canned salmon, virtually all of it from the great canning industry of British Columbia. In 1929 over sixty and a half million pounds of Canadian canned salmon were

sold abroad, with the sales representing \$8,865,000 in value. Australia and New Zealand were purchasers to the amount of more than \$2,700,000. Sales to the United Kingdom had a value of \$1,780,000, in round figures, while purchases by France totalled \$1,709,000 and Italy took canned salmon to the value of \$738,000. Some 25 or 30 countries, all told, were buyers.

Sales of dried codfish are also factors of major importance in Canada's foreign trade in fisheries products. Exports of dried, salted, smoked, and pickled fish during 1929 had a total value of about \$9,980,000 and of this amount the exports of dried cod accounted for a little more than \$4,748,000. About 20 different countries were importers of Canadian dried cod—an Atlantic coast product—with Porto Rico, the United States, Italy, Cuba, the British West Indies, and Brazil the biggest purchasers. Large quantities of other dried fish such as haddock, hake and cusk, and pollock are also exported.

Big Sales to Orient

An interesting item in the export business is the big, and increasing trade with the Orient in dry-salted herring from British Columbia. Sales of this product to China, Japan, Hong Kong, and Korea during last year amounted to close to \$1,950,000.

The total sales of canned and preserved fish in foreign markets in 1929, including the exports of canned salmon, amounted to \$13,259,000, and canned lobsters, of course, were a very important element in swelling the figures. Altogether, the canned lobster exports represented a value of close to \$3,114,000. The United Kingdom was the biggest purchaser of this commodity—\$1,461,000. The United States purchases were \$853,000 while Sweden (\$283,000), France (\$256,000), Denmark, Germany, and Belgium were

(Continued on page 3)

DOMINION'S SEA FISHERIES FOR MAY SHOW GAINS IN CATCHES AND VALUE

Greatly Increased Landings on Atlantic Coast Feature of Month's Operations as Compared with Showing for May of Preceding Year

Canada's sea fishermen caught nearly 6,900,000 pounds more fish in May than they brought ashore in May, 1929, and their catches represented an increase of over \$91,300 in landed value.

The betterment was due to the greater success of the fishermen of the Atlantic coast where there was an increase of more than 6,185,000 pounds in catch and of nearly \$146,300 in landed value. This gain in landed value more than offset a decrease in British Columbia where, notwithstanding an increase of some 698,000 pounds in catch, the value of the catch to the fishermen was nearly \$55,000 less than a year ago—\$573,400 as against \$628,447 in May, 1929.

There were large increases in catch in Nova Scotia, Prince Edward Island, and Quebec, but some decrease in New Brunswick. All told, the Atlantic coast catch amounted to 89,225,000 pounds with a landed value of over \$2,375,140 as compared with landings totalling 83,040,000 pounds and value of \$2,228,847 in the preceding May.

Pacific Coast Operations

In British Columbia the salmon fishermen did better last month than they had done in May of a year ago, both as to catch and landed value. They caught slightly more than 2,169,000 pounds of fish with a landed value to them of \$226,885, an increase of some 628,000 pounds in catch and \$43,500 on the value side.

On the other hand, the operations in the halibut fishery—the second of the major fisheries of the province—were not so productive as in May, 1929. Halibut catch totalled only 2,876,000 pounds, in round figures, as compared with 3,639,200 pounds in the previous May and landed value of \$286,310 showed a decrease of about \$106,000.

There was also a decrease in herring landings—91,000 pounds being taken as compared with over 219,000 pounds in May, 1929,—and in the herring landed value. The value of the catch to the fishermen was approximately \$2,930, a drop of about \$1,100.

Landings in some of the other fisheries, however, showed increases so that the total catch for the month was 7,247,000 pounds as against only 6,548,500 pounds in the same month of last year.

On the Atlantic Coast

In Nova Scotia there was a total catch of 32,256,000 pounds and a landed value of \$1,463,375, which meant a gain of about 2,730,000 pounds in landings and \$42,200 in value to the fishermen. The cod, alewives, and lobster fisheries all showed substantially larger returns, both as to catches and landed values, while the greater success of the mackerel fishery—as compared with the result of operations in May, 1929—was outstanding. Mackerel landings for the month amounted to more than 832,000 pounds, or more than three times as large a quantity as was taken in May of last year. The increase in landed value of mackerel catch to the fishermen was from \$13,480 in May, 1929, to \$24,865 in May, 1930, or \$11,275. Catches of haddock, hake and cusk, pollock, and herring were all below the landings for May of last year but in the case of haddock the value to the fishermen was \$73,395 as against \$69,067. Halibut catch, on the other hand, was larger than a year ago—483,200 pounds as against 478,000—but landed value dropped by something more than \$3,000 to \$53,265.

Landings in Prince Edward Island during the month consisted of cod, herring, lobsters, and clams and quahaugs, and in each case there were substantial increases over the catches for May, 1929, with corresponding gains in landed values. Combined, the landings amounted to 8,095,000 pounds and landed values to \$295,965, which represented an increase of 1,400,000 pounds in catch and nearly \$27,000 in value. There was a 637,000 pound increase in lobster catch, and the increase in cod landings was relatively very large, only 10,400 pounds having been caught in May, 1929, and over 429,000 pounds in the May just past.

Sardine and lobster landings in New Brunswick both went above the figures for the previous May but the sardine catch of 25,421 barrels had a landed value of only \$35,640 as compared with a value of \$42,828 for a catch of 21,414 barrels a year ago. The lobster catch of 3,243,700 pounds was larger by more than half a million pounds than the catch in May, 1929, and landed value of \$266,250 showed a gain of about

(Continued on page 3)

CONTINUE CHAMPLAIN FISH INVESTIGATIONS

Canadian and United States Commissioners to Carry on Summer Observations

Continuing the joint fact-finding investigations by the Dominion and the United States into Lake Champlain fisheries, the two commissioners, J. A. Rodd, Director of Fish Culture for the Dominion Department of Fisheries, and Dr. John Van Oosten, of the United States Bureau of Fisheries, will carry out a program of summer observations on Champlain waters during the next few weeks. Subsequently, there will be further investigations in the autumn. The prime purpose of the inquiry is to investigate the pickerel, or pike-perch or dore, fisheries but any other questions that may have bearing on the fisheries of the lake and its expansion will be covered.

During the past winter and spring the inquiry went on continually. Five investigators were at work under the direction of the commissioners. The United States investigators were H. J. Deason and J. P. Snyder, and the Canadians were S. J. Walker, Supervisor of Fish Culture; M. N. Jordan, and Dr. R. H. McGonigle. The commissioners made a general survey of the ice fishery and each investigator studied the fishery closely for some time. Mr. Walker remained in the field continuously to observe seining operations in Missisquoi Bay.

In April the investigations were resumed on a large scale. Attention was given to observing the spring fishery and the tagging of some 10,000 fish. From the results of this tagging it is hoped to ascertain the facts as to the migratory movement of pickerel in the Champlain waters. The three Canadian investigators and two representatives of the United States were at work.

Mr. Walker was almost continuously engaged in the inquiry from early in the year until the end of May. It was this special but important work which prevented him from making his usual winter and spring trips to the Prairie Provinces as Supervisor of Fish Culture.

A veritable "whale" of a lobster was landed by a fisherman at Shelburne harbour, N.S., a week or so ago, tipping the scale at 18½ pounds. A lobster weighing a pound and a half or two pounds is ordinarily rated of good size.

PRAIRIE PROVINCE FISH PRODUCTION DOUBLES IN VALUE IN FIVE YEARS

Total Marketed Value of Fish Taken in Manitoba, Saskatchewan, and Alberta Passes \$4,000,000 Level with Increases Shown in All Provinces

Continuing the noteworthy advance of recent years, fisheries production in the Prairie Provinces in 1929 went beyond the four million dollar mark in marketed value for the first time.

Put in another way, the total marketed value of the fish caught in the commercial fisheries of Manitoba, Saskatchewan, and Alberta last year was more than half a million dollars greater than in 1928 and was not far short of being twice as great as in 1924.

In the calendar year 1924 the figures for marketed value totalled \$2,054,162; in 1928 they were \$3,528,897; and in 1929 they mounted still higher and reached \$4,050,290. The 1929 figures are given subject to revision by the Dominion Department of Fisheries and the Dominion Bureau of Statistics, but it is unlikely that the final checking will change them materially.

There has been steady progress in the Prairie Province fisheries in the past few years, and with new fishing waters being opened up year by year and transportation facilities improved and extended the prospects are that even more marked progress will take place in the years that are just ahead.

Gains Made Everywhere

Nineteen hundred and twenty-nine saw increased catch, increases in marketed value in each of the provinces, though principally in Manitoba which is the "big" producer among the three, increases in the number of fishermen, and increases in the value of the equipment employed.

Total catch in the three provinces in 1929 was approximately 562,000 hundredweight as compared with about 441,000 hundredweight in 1928, the number of men engaged in the fisheries was 7,500, in round figures, an increase of over 800, and the value of the equipment in use was \$1,986,000 or almost half a million dollars more than in the preceding year. So far as varieties of fish are concerned, whitefish continued in first place in point of marketed value of catch—\$1,404,000—although in Manitoba pickerel held the lead with a value of about \$988,500.

While there has been marked fisheries progress in the Prairie Provinces generally in the past five years the greater gains, so far as marketed value at least is concerned, have been in Manitoba

and in Alberta. In both provinces the annual value of the fisheries production has considerably more than doubled since 1924. In that year the marketed value figures for Alberta were \$339,107 while in 1929 they were \$732,214, and in Manitoba there was an increase from \$1,232,563 in 1924 to \$2,745,205 last year. In Saskatchewan the increase has been smaller, the 1929 total being \$572,871 as compared with \$482,492 five years previously but expansion is continuing in the province as new waters are coming under fisheries development. Extension of the fisheries northward in Saskatchewan, indeed, is one of the notable changes that has been occurring in the industry in the past few years.

FISHERIES EXPORT TRADE—*Conc.*

among the other quantity buyers. Canned sardines, put up in New Brunswick, and canned pilchards, a British Columbia product, and canned clams, which are prepared both on the Atlantic coast and on the Pacific coast, are other canned fish which are becoming increasingly important in export business. Canned sardine exports in 1929 had a value of slightly more than \$578,000 and clams a value of nearly \$205,000. Canned pilchard exports totalled approximately \$174,000.

Of course, Canada's fish export business is not a business in dried and canned only, far from it. There is a very big trade in fresh and frozen fish which amounted, in all, in 1929 almost to \$11,725,000. The sales of fresh lobsters to the United States, which is the principal purchaser of Canadian fresh and frozen fish, had a value of \$2,266,000. Whitefish, from the inland provinces, to the value of a million dollars and a half, and more, was exported. There were also large sales of salmon, halibut, lake and sea herring, trout, mackerel, etc.

Among the by-products of the Canadian fisheries which find increasing market abroad is fish meal, manufactured both on the Pacific coast and the Atlantic coast, which has been found to be a very valuable stock and poultry food. During 1929 the exports of fish meal totalled upwards of \$2,500,000 pounds, with a value of \$826,000. The United States, Germany, Japan, and the Netherlands were the principal buyers.

FIRST MINISTER OF FISHERIES—*Conc.*

Ministers of Past

At the time when the first Minister of Fisheries has just taken office it may be of interest to read over the names of the former holders of the old portfolio of Minister of Marine and Fisheries. Incidentally, it may be noted that, years ago, Fisheries and Marine were separate departments although under the one minister. For a long time past, however, they have been branches of the single department.

When Confederation became an accomplished fact in 1867 Hon. Peter Mitchell, New Brunswick, became the Dominion's first Minister of Marine and Fisheries. He was followed by Sir Albert J. Smith, New Brunswick, who, in turn, was followed by Hon. J. C. Pope, Prince Edward Island. The subsequent succession of ministers holding this portfolio has been as follows: Hon. A. W. McLellan, Nova Scotia; Sir George E. Foster, New Brunswick; Sir Charles Hibbert Tupper, Nova Scotia; Hon. John Costigan, New Brunswick; Sir Louis Davies, Prince Edward Island; Hon. James Sutherland, Ontario; Hon. Raymond Prefontaine, Quebec; Hon. L. P. Brodeur, Quebec; Hon. Rodolphe Lemieux, Quebec; Sir Douglas Hazen, New Brunswick; Hon. C. C. Ballantyne, Quebec; Hon. Ernest Lapointe, Quebec; and Hon. P. J. A. Cardin, Quebec.

DOMINION'S SEA FISHERIES FOR MAY—*Conc.*

\$33,000. Operations in the other fisheries of the province were, generally speaking, less successful than in the preceding year.

In Quebec the fishermen did much better than a year ago. Their total catch for the month was nearly 16,883,000 pounds as compared with 14,112,500 pounds in the 1928 month and landed value figures reached \$148,530 as against \$101,643. Lobster landings were over 1,220,000 pounds and landed value was \$91,105 while in May of last year the catch was a little less than 895,000 pounds and the value of the catch to the fishermen was \$63,948. Herring returns were better than a year ago. Over 128,000 pounds of cod and 33,500 pounds of salmon were taken, whereas, in May, 1929, no cod were landed and the catch of salmon was only 19,000 pounds.

Pickerel fishing on Lesser Slave Lake in the latter part of May was very successful. "At one time," Inspector W. H. Bannister reports, "the fishermen had to stop fishing for two days as the fish were coming too fast for the plants to handle."

LIVE LOBSTER TRANSPORT SERVICE ON EASTERN COAST GETS USEFUL RESULTS

Over 3,000 Crates of Lobsters in Shell Carried to Boston up to Mid-June by Service Arranged by Dominion Fisheries Department on Eastern Nova Scotia Shore

Some 3,000 crates of live lobsters were carried to Boston, up to the middle of June, by the vessel service which the Dominion Department of Fisheries established in Eastern Nova Scotia this spring for the collection of lobsters at various points along the shore and their transportation to the United States market.

The service was instituted on April 30th and the fishermen have reported that it has brought them largely increased business and returns.

Fishermen in Guysboro county, for instance, stated to Major D. H. Sutherland, Supervisor of Fisheries for District No. 2, Nova Scotia, who has been giving special attention to the service, that they had gained from \$5 to \$9 a crate by shipping their lobsters on the collecting vessels. Cape Breton fishermen have also expressed much satisfaction with the service, one letter reporting that returns from one shipment had been more than twice as large as would have been obtainable had the collection system not been in operation.

In Good Condition

On part of the Eastern Nova Scotia coast the lobster season has now ended but on the remaining section fishing will continue until July 1st and the collection service will be carried on until that date, and a few days longer in order to take care of remaining shipments of lobsters taken prior to the season's close. Three collecting vessels have been in operation for most of the time since the service was inaugurated. The charge to the fishermen for transporting their lobsters to Boston is at the rate of \$3 per crate of 150 pounds, this cost including the return carriage of the empty crate. Whenever necessary on the boats' trips the plan of "drinking" the lobsters has been followed in order to ensure the consignments reaching Boston in good condition; that is, at some point en route the crates have been hoisted overboard, placed in the sea for some time, and then brought back on board. Generally, the condition of the lobsters on arrival at Boston has been very satisfactory.

The service was established as an experiment but the results have been such as to give a great deal of satisfaction.

Some difficulties natural to the first test of a new plan have been encountered but for the most part they have been overcome, and the experience gained in this season's operations will make possible the avoidance of difficulties in the future.

Lobstermen Do Well

Data gathered by the Department of Fisheries show that the lobster fishermen in all the Atlantic coast provinces have been faring well this year, getting larger catches and more in landed value of catches than in 1929.

Up to the end of May, the 1930 landings of lobsters on the coast amounted to nearly 24,460,000 pounds, or some 3,890,500 pounds more than in the corresponding previous period. (In each case the total landings include some lobsters taken in Bay of Fundy waters of New Brunswick in the season beginning on November 15th). In the landed value of the catch to the fishermen there was an increase this year of about \$359,500, the figures standing at \$2,619,500, in round numbers, for the 1930 period as compared with \$2,260,085 in 1929. All the figures for this year are subject to final revision but they may be taken as approximately correct.

Largely increased landings featured the May lobster fishing. The total catch in the four provinces—Quebec, Prince Edward Island, New Brunswick, and Nova Scotia—was about 20,075,000 pounds as against 17,118,100 pounds in May of last year, an increase of some 2,956,000 pounds. On the landed value side there was an increase of over \$98,000. For May, 1929, the landed value total was \$1,608,196 and in the May just past it was \$1,706,500.

During May there were gains in the fishery in each of the provinces. In Quebec the landings were slightly more than 1,220,000 pounds, as compared with only 894,600 pounds in May, 1929. Prince Edward Island lobstermen caught over 4,184,000 pounds, an increase of better than 635,000 pounds. The New Brunswick catch was 3,243,700 pounds as against 2,682,200 pounds a year ago. In Nova Scotia 11,426,700 pounds were taken as compared with 9,924,300 pounds.

The landed value of the catch for the month, by provinces, as compared with

the showing for May, 1929, was as follows:

		Increase
Quebec	\$ 91,105	\$ 7,157
Prince Edward Island	254,154	22,656
New Brunswick	266,249	33,244
Nova Scotia	1,094,995	25,250

CURBING HAIR SEALS IN BRITISH COLUMBIA

Increased Number of Bounty Claims Paid by Fisheries Department Last Year

During the year which ended on March 31st last the Dominion Department of Fisheries paid 5,944 claims to the bounty which it gives for the destruction of hair seals in the Pacific coast waters where this seal is a serious cause of loss to fishermen in the salmon fishery and other branches of the fishing industry. There was an increase of several thousand in the number of claims paid during the year, as compared with claims in the previous year. The bounty is \$2.50 for each hair seal destroyed, and the claims last year came from all sections of the coast.

Departmental efforts to keep down the number of hair seals and sea lions in British Columbia waters are due to the certainty that both the seals and the sea lions are greatly destructive. They do damage to nets and devour a great many fish which they find in the nets. To allow their numbers to increase unchecked would mean that the fishermen of the province would suffer very heavily, and it is for this reason that protective steps are taken by the Department. Complaints as to the destructiveness of hair seals have come particularly from the areas in which salmon gill-netting is carried on, and it is believed that the operation of the bounty system in the past few years will result in improved conditions in future seasons.

The hair seal bounty payments are being continued in British Columbia during the current year. A similar bounty is also paid on the Atlantic coast, where the hair seal is also a cause of considerable loss to the fishermen.

"There is no question that Canada offers the finest fishing waters on this continent," writes Courtney Ryley Cooper, prominent United States writer and sportsman, who has visited many of the angling and game territories of North America. Mr. Cooper recently spent some time on the Medway river, one of the salmon streams of Nova Scotia, where he found excellent sport.

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A HALF YEAR IN CANADA'S SEA FISHERIES

Following is a statement which shows, subject to final revision, the Total Catch of Sea Fish by Canadian fishermen in the half year, January 1 to June 30, 1930, and the Landed Value of the Catch to the Fishermen, together with the totals for the corresponding period in 1929:

Province	Catch lbs.	Landed Value \$
Nova Scotia.....	114,650,200	4,256,155
New Brunswick.....	50,144,300	1,312,015
Prince Edward Island.....	14,105,600	503,530
Quebec.....	26,296,900	500,742
British Columbia.....	97,387,300	2,928,665
Total, Jan.-June, 1930.....	302,584,300	9,501,107
Total, Jan.-June, 1929.....	280,975,800	9,371,227

While catch and landed value for the past six months were greater than in the first half of 1929, there was some decrease on both sides of the account in June, as compared with June, 1929. Total sea fish landings for June, 1930, were 84,424,500 pounds and the landed value was \$3,026,457, a drop of some 6,500,000 pounds in catch and of something more than \$139,000 in value.

On the Pacific coast the catch, 11,051,600 pounds, was a million and a quarter pounds larger than a year ago but landed value to the fishermen was only \$913,665 as compared with \$958,269 in June, 1929. Atlantic coast catch fell off from 81,149,800 pounds in June of last year to approximately 73,373,000 pounds and the landed value was \$2,112,792 as against the earlier \$2,207,355.

Good Year for Lobstermen

June lobster fishing—an Atlantic coast fishery only—was not so successful as in the same month of last year but, on the other hand, taking operations as a whole since the late autumn season of 1929, the lobstermen have done much better than a year ago.

The total catch of lobsters in the period between the opening of the late 1929 season and the end of June was 34,588,500 pounds, a gain of more than 3,000,000 pounds as compared with the like period of a year ago, and the landed value was about \$3,302,085; an increase in return to the fishermen of upwards of \$204,000. The lobster fishery was aided materially by the operation of a collection and transportation service by the Dominion Department of Fisheries on part of the coast.

June in British Columbia

On the Pacific coast in June the salmon catch and landed value were larger than in June, 1929, and the clam fishery showed substantial gain, but, on the other hand, the halibut and herring fisheries both showed sharp decreases.

Halibut catch for the month was only 2,896,500 pounds, as against 3,751,500 pounds in the previous June. Landed value showed a drop of nearly \$120,000 standing at \$293,430 as compared with \$413,406 a year ago.

The catch of salmon was 5,530,800 pounds, an increase of upwards of half a million pounds, and the landed value total was \$545,765, a gain of nearly \$52,000.

Over eighty-five hundred barrels of clams were taken, with a landed value of \$21,920, as compared with 897 barrels and a landed value of \$2,483 in June of last year.

On the Eastern Coast

Among the Atlantic coast provinces Quebec showed larger June catches and landed value than in June, 1929, but none of the three Maritime Provinces did quite as well as last year.

There were gains in practically all of the Quebec fisheries, and total landings of upwards of 9,362,000 pounds represented an increase of some 1,570,000 pounds over the figures for the previous June, while landed value for the month was \$347,595, an increase of \$98,595. In the case of mackerel alone, among the principal fisheries, were operations less successful than in June, 1929. A feature of the month in Quebec was a

(Continued on page 3)

EXPEDITION STUDIES HUDSON BAY FISHERIES

Dominion Department Sends Fishermen and Scientist to Investigate Bay and Strait

Under charter to the Dominion Department of Fisheries, the steam trawler *Loubyrne* sailed from Halifax a few days ago for Hudson Bay where investigation will be made into the fisheries resources of that water. As far as may be feasible, investigation will also be carried on in Hudson Strait.

The object of the expedition is twofold: To determine by actual fishing what varieties of sea fish are present in Hudson Bay and Strait, and whether or not they are present in quantities of commercial importance, and, second, to obtain all the scientific data possible from the fishing operations. Representing the Department of Fisheries, H. B. Hachey, one of the scientists on the staff of the Biological Board of Canada, is in general charge of the investigation but the actual fishing operations will be directed by Captain Sorensen, master of the *Loubyrne*, who is a man thoroughly experienced in the fisheries.

All sections of the bay are to be covered by the investigation and, as far as possible, fishing will also be done in Hudson Strait both on the trip to the bay and on the return voyage.

Will Salt Fish

Fish of commercial value which are caught by the expedition are to be split, cleaned and salted and stowed in the vessel's hold. "These fish are to be so split and salted," the Department has instructed Capt. Sorensen, "that they will be suitable for and ready for drying for the dried fish markets when the trawler returns to a Nova Scotia port."

In order that hand-lining and hand-trawling may be tried, as well as trawling, the *Loubyrne* has been equipped with two fishing dories and with lines and hand-trawls which are to be used by members of the crew who are experienced dory fishermen. The vessel also carries half a dozen gill-nets which

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WHITEFISH, HERRING, JACKFISH, LING TAKEN IN MACKENZIE DELTA WATERS

Reports to Dominion Department of Fisheries Tell of Food Resources of Famous Northern River Area and Vast Great Bear Lake

There's very little commercial fishing 'way up in the Mackenzie delta in Canada's far northwest, but the fish are there.

A report made to the Dominion Department of Fisheries by Dr. J. A. Urquhart, Medical Officer of Health for the North West Territories and Yukon Branch of the Department of the Interior at Aklavik, tells of the presence of quantities of whitefish, herring, jackfish, ling, and some salmon trout, in the area from Arctic Red River, on the Mackenzie, northward through the delta to Kittigazuit on the east and Herschel Island on the west. Farther eastward, there is a "very good run of salmon" in the Coppermine River.

Actually, there is at present practically no commercial fishing carried on in the district of which Dr. Urquhart writes, "though the Indians do put up and sell a certain amount of dry fish in the summer months." Population is small and opportunity for local sale of fish very limited. Lack of transportation facilities in the hundreds of miles of territory which stretch southward between the delta and British Columbia and Alberta is a barrier to exploitation of the fisheries. But good fish are in the waters, and one of these days in Canada's future may see commercial development of these remote fisheries resources. Recent decades have seen some amazing northland progress in the Dominion.

"A rough estimate of the fish caught in this district each year could be taken as, say, 275,000," says Dr. Urquhart's report. "The fishing is done entirely by gill nets in the summer and by hooking after freeze-up, with probably twenty per cent of the nets continued under the ice until about the end of November. The fishing is carried out by individuals or families and is for the double purpose of feeding the dogs and getting a supply of eating fish for the winter.

"The bulk of the fish caught are jackfish and whitefish, or varieties of the white, though there are at times some very good runs of herring both in the river and on the coast. The whitefish are used for eating almost exclusively by the Indians and the whites in the delta, and on the coast the Eskimo are

very fond of the herring. These two varieties probably account for thirty per cent of the fish caught. The jackfish are eaten at times when there is a scarcity but are used mostly for dog feed. In the fall quite large quantities of losh or ling are caught, mostly through the ice with hooks, and are used exclusively for dog feed. The occasional salmon trout here is a delicacy but quite rare."

Seals and White Whales

In addition to these several varieties of fish, the natives also catch seals "in fair quantities" at such places as Kittigazuit and near Herschel Island while a hundred or more white whales (beluga) are taken each season at White Fish Station, just east of Shingle Point in Mackenzie Bay. "The Eskimo consider the (whale) flesh and oil a delicacy, also use the skin for waterproof boots."

In the delta itself, says Dr. Urquhart, there are about forty white men who engage in fishing, as well as much larger numbers of Indians and Eskimo. "At Arctic Red River the Mission and the Police get between seven and eight thousand fish, the Mission curing most of the whitefish and shipping them to Aklavik to the school. A few of the Indians fish there but the bulk of them go down the East Channel to Big Rock and put up dry fish and hung fish in the fall. This is about the only place in the delta that fish are caught in sufficient quantities to be sold. . . . At MacPherson the fishing is very poor. . . . Aklavik has a moderate amount of fish, but a large number to supply. . . . with the result that the individual catches are not very large. . . . At Shingle Point the fishing is good, there being each year a very good run of fish and, some years, a very large herring run. The Mission school there, together with the Police from Herschel Island, and a few Eskimo do very well. At Kittigazuit the run is exceptionally good."

At Great Bear Lake

Some interesting pieces of information in regard to the fisheries resources of Great Bear Lake, a huge body of water lying some 350 or 400 miles north of Alberta, has also been obtained by

the Department of Fisheries from A. W. Boland, a fur trader in the lake district.

"In the main body of the lake," Mr. Boland states, "lake trout are the principal catch. At any spot where open water occurs, or thin ice is found during the winter, the so-called Bear Lake herring may be caught in large quantities. Where rivers enter the lake, at the foot of bays, whitefish are fairly numerous during the summer months. Very little attempt is made to catch whitefish during the winter season."

The only point where fishing is carried on year after year, Mr. Boland reports, is at the head of Bear River. The catch is exclusively herring, and Mr. Boland estimates the annual catch at 150,000 fish, weighing, on the average, a pound and a half each. This fishery is carried on by means of gill nets, which are also used in the summer fishing for trout in the lake. Winter fishing for trout is done with baited hooks. There is no commercial fishing in Great Bear Lake and the fish which are taken are caught by natives and a few trappers.

Mr. Boland adds the interesting information about the Great Bear Lake district that "the native population for such an area is probably the lowest per capita of any inhabited lake in Northern Canada, and eight white trappers is the highest white trapper population we have had to date. With the exception of the settlement at Fort Franklin, the natives are very rarely in the same localities more than two consecutive years, and this characteristic of theirs in itself acts as a closed season on fish and fur-bearing animals."

CONTINUE SEARCH FOR MORE SCALLOP AREAS

Continuation of scallop investigations in Atlantic coast waters was resumed for the 1930 season toward the end of June when the new vessel built for this work, the *A. Halkett*, went into commission on the South Shore of Nova Scotia. The *Halkett*, named in honour of Andrew Halkett, for many years the Naturalist of the Dominion Fisheries Department, is commanded by Captain E. C. Mack, of Lunenburg, N.S.

It is the intention to continue the South Shore investigations easterly along the coast of Lunenburg county from Port Medway, Queens county, where exploratory work stopped last year. Dragging will be carried on in all bays and inlets where there are prospects of finding scallops.

B.C. CANNED SALMON SHOWS SOME GAINS

Production on Skeena and Naas to Early
July Bigger than Year Ago

Figures recently prepared under the direction of the Chief Supervisor of Fisheries at Vancouver, covering the production of canned salmon on the Naas and Skeena rivers and Smiths and Rivers inlets, show a net increase in output in the 1930 period ending on July 5 as compared with the production in the corresponding period of 1929.

All told, the production in these four major territories of British Columbia up to July 5 was 31,629 cases as against 28,046 cases in the 1929 period.

Output showed a decline both in Smiths and Rivers inlets but these decreases were more than offset by the gains on the Naas and Skeena.

The greater part of the net gain came in the production of Springs—a total of 6,665 cases in the four districts as compared with 3,139 cases a year ago. There were gains in Spring output in all four of the territories in question, with the Skeena and the Naas the big producers. Sockeye made up 23,231 cases of the total output while in the 1929 period only 21,942 cases of Sockeye were put up. The big production of Sockeye was on the Skeena, 12,371 cases as compared with 7,312 cases last year. There was also an increase of some 1,900 cases in the sockeye production on the Naas but a drop of 4,500 cases, in round figures, at Rivers Inlet and of about 1,100 cases at Smiths Inlet. The principal output of Coho was on the Skeena but it was 1,400 cases less than in the 1929 period, or 1,219 cases. More Coho was put up in each of the other three districts than a year ago, but the total quantity was not large.

In Charlotte, St. John, and Albert counties and the Bay of Fundy watershed of Westmorland county, New Brunswick, over \$102,000 was received in 1929 from the sale of fish livers, fish oil, herring meal, and fish fertilizer. Altogether, 35,534 buckets of fish livers were sold.

Saskatchewan's catch of fish in the commercial fisheries in 1929 was 6,126,000 pounds, or about 67,000 pounds less than the catch of 1928. On the other hand, the marketed value of the smaller 1929 production went \$10,000 and more above the figures for the preceding year and reached a total of \$572,830.

A HALF YEAR—*Conc.*

gain of more than 100 per cent in salmon landings and landed value. The catch was 767,900 pounds, as compared with 333,000 pounds last year. The landed value was \$102,065, as compared with \$48,723.

Total figures for each of the other Atlantic coast provinces for the month, as compared with the returns for June of last year were as follows:—

	Catch Lbs	Landed Value
Nova Scotia—		
June, 1930. . . .	50,031,300	\$1,140,205
June, 1929. . . .	53,475,100	1,273,822
New Brunswick—		
June, 1930. . . .	9,143,600	450,420
June, 1929. . . .	14,732,700	465,227
Prince Edward Island—		
June, 1930. . . .	4,836,300	174,573
June, 1929. . . .	5,150,400	219,086

In all three of the Maritime Provinces the herring fishery was less successful than in June of last year. The had-dock fishery, carried on principally by Nova Scotia fishermen, also showed a substantial drop in catch but an increase in landed value. There were decreases, too, in the case of the halibut fishery, and in New Brunswick's sardine fishery the landings for the month were only 3,073 barrels, as compared with 15,940 barrels in June, 1929.

In Nova Scotia mackerel landings and value showed gains but in New Brunswick and Prince Edward Island there were decreased mackerel returns. Lobster operations in Prince Edward Island were more successful than in the preceding June, but less successful in the other two provinces. Generally speaking, the hake and cusk fishermen and the pollock fishermen did better than in June, 1929, although hake and cusk landings in New Brunswick showed a drop.

EXPEDITION STUDIES—*Conc.*

will be used in ascertaining whether or not herring are present in the bay. If herring are found in any quantity the nets will provide an additional means of obtaining bait. Three of the nets are of three-inch mesh and others of two and a half inches.

A daily record is to be kept as to the fishing that is done, the latitude and longitude of the areas fished, the kinds of fish taken, the quantity caught, the bottom conditions found, the depth of water, etc. By means of radio Mr. Hachey will communicate with the Department each day, giving a summary of the day's fishing and its results. At the conclusion of the investigation, he will prepare a complete report which it is intended to publish for general distribution.

STUDY HUDSON BAY ESTUARIAL FISHERIES

Dominion Department Carrying on Invest-
igation in Estuaries of Rivers Entering
Inland Sea

With a view to obtaining more accurate information as to the fisheries possibilities of the estuarial waters of Hudson Bay, the Dominion Department of Fisheries has begun an investigation it will continue throughout the summer.

The investigation is being carried on by S. J. Walker, Supervisor of Fish Culture for the Prairie Provinces, who left Ottawa for Hudson Bay several weeks ago. With Mr. Walker are several experienced Manitoba fishermen, with their boats. The party will remain in the field until September and will carry on practical fishing operations.

Most of this summer's investigation will be carried on in the Churchill estuary but attention will also be given, as far as time permits, to the Nelson and other waters.

There is increasing popular interest in the fisheries possibilities of the Hudson Bay region and, in addition to the investigation by the Walker party in estuarial waters, the Department of Fisheries is also conducting an investigation in the deep-sea area of the Bay. This latter investigation is being conducted by an expedition which was sent to Hudson Bay by the Department on a steam trawler.

CATCH FISH WITH STONES

Eskimos may be a primitive sort of people but the only mechanical devices employed for catching fish in the waters of the Northwest Territories are made and used by Eskimo fishermen. The white men in the territories use gill-nets and lines, but J. A. McDougal, district agent for the Department of the Interior at Fort Smith, in writing to the Dominion Fisheries Branch, reports that the Eskimos make "a rather elaborate trap from stones." No other mechanical means or traps, he says are used in the fisheries of the territories. Mr. McDougal's report is one of several obtained by the Fisheries Branch in expanding its information as to the fisheries resources and possibilities of the Northwest Territories which include within their boundaries such large lakes and rivers as Great Slave and Great Bear lakes and the Slave and Mackenzie rivers.

140 LOCAL UNIONS JOIN IN CENTRAL FISHERMEN'S ASSOCIATION IN EAST

General Furtherance of Interests of Fishermen and Fish-workers and Development of Co-operation Feature Program of Organization Covering Maritimes and Magdalens

Approximately 140 local unions are federated in the "United Maritime Fishermen" which has now been organized by the fishermen of the Maritime Provinces and the Magdalen Islands.

The objects of the federation are defined in the constitution as follows:—

"(1) The study and practice of the principles of co-operation in all our industrial activities; (2) to further the interests of fishermen and fish workers in all branches of the fishing industry; (3) to promote and secure necessary and just legislation; (4) to promote social intercourse, a higher standard of community life and the study of economic and social questions bearing on our interests as fishermen and citizens; (5) to settle disputes between members without recourse to law, whenever possible; (6) to take into consideration any member's case of grievance, hardship or litigation and to defend our members as far as it may be possible and just; (7) to use the influence of the association to promote the well-being of our Maritime Provinces and the Dominion."

Formation of the United Maritime Fishermen was carried through in Halifax at the end of June when something like 200 fishermen—most of them delegates elected by the different locals—met in convention, adopted a constitution for the federation, and elected officers and directors. Chester McCarthy, Tignish, P.E.I., who has been the managing executive of a very successful fishermen's co-operative lobster cannery in Tignish for a number of years past, was elected president and Robert Meagher, of Canso, N.S., vice-president. Mr. Meagher has been a leader in the fishermen's movement in Eastern Nova Scotia for some years.

The important office of secretary-treasurer, which will be the chief executive position in the organization, will be filled by an appointment made by the directors, or "Central Board." It is expected that the appointment will be made by the Board at a meeting in early August.

The Central Board, which "shall manage the business of the association," is made up of the president and vice-president and twenty-two directors. Each director is representative of a particular zone in the Maritime Provinces or the

Magdalens and is elected by the delegates from his zone in attendance at the annual convention. At the Halifax meeting seventeen directors were chosen—two from the Magdalen Islands, three from Prince Edward Island, four from Cape Breton, five from the mainland of Nova Scotia and three from New Brunswick; of the remaining five directors, three will be representative of New Brunswick and two representatives of zones in Nova Scotia.

The management of the federation's affairs is in the hands of the Central Board but the board may delegate its powers to an Executive Committee which, for the present year, consists of President McCarthy, Vice-President Meagher, Director Norman Sallows, of Port Maitland, N.S., Director Dennis Cormier, of Grand Etang, Cape Breton, and Director Patrick G. Richard, of St. Edward, N.B. The Executive is to be called together by the president as often as the business of the federation may require, and in no case may more than three months elapse between meetings.

The funds necessary for the conduct of the association's business are to be obtained through payments made by the local unions which will each pay into the central funds at the rate of \$2 a year for each member on its roll. Provision is made by the constitution for an audit of the association's books by a qualified accountant and for the proper bonding of the secretary-treasurer.

While the U.M.F. is a federation of local unions the constitution also permits the creation of "District Associations" within the central body. "District associations may be formed, if deemed necessary," the constitution says, "in order to assist in carrying out the objects of the central association, by any number of locals grouping themselves together on the basis of a useful combination for marketing or community purposes or on such other basis as the Executive may approve."

More Locals Forming

Of the one hundred and forty or so local unions now united in the federation over ninety are in Nova Scotia,

about thirty in New Brunswick, a dozen in Prince Edward Island, and five in the Magdalens. Organization of several others is in progress. A number of the locals have been in existence as separate entities for several years past but most of them have been formed since the appointment of Dr. M. M. Coady as Promoter of Fishermen's Organization for the Dominion Department of Fisheries in the late summer of 1929.

At the Halifax convention, which, by will of the fishermen, was presided over by Dr. Coady, the Deputy Minister of Fisheries, W. A. Found, was present, as well as all the Supervisors of Fisheries in the Maritime Provinces and most of the inspectors from the Maritimes and the Magdalens. J. J. Cowie, Director of Fisheries Promotion and Education, and H. F. S. Paisley, Director of Fisheries Intelligence and Publicity, were also in attendance from Ottawa. At the open sitting of the two-day session Mr. Found spoke briefly, emphasizing the Department's interest in the organization effort and its desire to assist the federation in every way feasible.

INCREASE WHITEFISH RESOURCES IN WEST

Distribution of whitefish fry from Prairie Provinces hatcheries of the Fish Culture Division of the Dominion Department of Fisheries for the 1930 season has been over twenty-eight per cent larger than the 1929 output, or a total of 217,114,000. The fry have been distributed, in the free-swimming stage, in the waters of Manitoba, Saskatchewan, and Alberta, thus increasing the future supplies of whitefish in these provinces.

Whitefish eggs are handled at four western hatcheries—Gull Harbour, Manitoba; Winnipegosis, Manitoba; Fort Qu'Appelle, Saskatchewan; and Lesser Slave Lake, Alberta. The largest distribution this season was from the Lesser Slave Lake hatchery, 70,671,000 fry. From the Winnipegosis plant 66,733,000 fry were distributed, from Gull Harbour 65,100,000, and from Fort Qu'Appelle 14,610,000.

The Gull Harbour hatchery also handles pickerel and during the season just past 8,274,000 pickerel fry from this establishment were placed in waters in various parts of Manitoba. At the Swan Creek hatchery, on Lake Manitoba, pickerel operations are on a much bigger scale than at Gull Harbour and 98,940,000 fry have been produced there this year and successfully distributed.

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THE MINISTER OF FISHERIES

Hon. Edgar N. Rhodes, who was sworn as Minister of Fisheries on August 13, has been in public life since 1908, when he was elected in the general Federal election as the Member of Parliament for his native county of Cumberland, Nova Scotia.

From July 16, 1925, until he took office as Minister of Fisheries Hon. Mr. Rhodes was Premier of Nova Scotia.

Hon. Mr. Rhodes was born at Amherst, N.S., in 1877 and was educated at Amherst Academy, Horton Collegiate Academy, Acadia University, and Dalhousie University. At Acadia he graduated with the degree of Bachelor of Arts and at Dalhousie he obtained the degree of Bachelor of Laws. In his college days he was one of the outstanding football players of the Maritime Provinces. Following the completion of his college courses and his admission to the Bar of Nova Scotia he practised at Amherst for a number of years, and in 1916 he was appointed a King's Counsel by the Government of Nova Scotia. He has also been associated with several important business and industrial enterprises as a director and officer.

Following his election to Parliament in 1908 Mr. Rhodes was re-elected in Cumberland county at the general election of 1911, and again in 1917. In 1916 he was elected Deputy Speaker of the House of Commons. In 1917 he was chosen Speaker of the House, and he was re-elected to the Speakership in 1918. Hon. Mr. Rhodes was not a candidate in the Federal election of 1921 but in 1925 he became the Leader of the Liberal-Conservative Party in Nova Scotia. He was victorious in the provincial election of June, 1925, and a few days later he took office as Premier and Provincial Secretary.

The Minister is a member of the Board of Governors of Acadia University and an honorary vice-president and member of the Dominion Council of the St. John's Ambulance Association. He has been a member of both the Dominion and Nova Scotia ex-

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BRITISH COLUMBIA FISHERIES SHOW REMARKABLE DEVELOPMENT SINCE 1900

Tremendous Expansion of Fishing Industry on Canada's Pacific Coast one of Outstanding Features in Progress of Dominion

Amazing expansion in the fishing industry in British Columbia has been a major development in the economic progress of the Dominion so far in the Twentieth Century.

Figures covering the marketed value of British Columbia's fisheries production in 1900 and in 1929 tell the story in brief. In 1900 the production had a value on the market totalling \$4,878,820, and in 1929 the figure was five times as great, or approximately \$24,000,000, an amount equalling nearly 45 per cent of the total value of the fisheries for all Canada during the year. As a matter of fact, indeed, even the 1929 total has twice been exceeded in recent years.

Commercial exploitation of the British Columbia fisheries dates back for a hundred years but it was not until the '80's and '90's of the last century that the rapid progress began. In 1880 the fisheries products of the province had a marketed value of slightly more than \$713,000. By 1886 the total had more than doubled and there was steady progress from that time forward. The story of expansion since 1900 is graphically told by the figures showing the marketed value of the fisheries production by decades and the marketed value of three principal varieties of fish:

Total Values		
1900..	.....	\$ 4,878,820
1910..	.....	9,163,235
1920..	.....	22,329,161
1929..	.....	23,930,692
Salmon		
1900..	.....	3,451,744
1910..	.....	2,108,703
1920..	.....	15,129,348
1929..	.....	14,265,795
Halibut		
1900..	.....	213,050
1910..	.....	939,330
1920..	.....	4,104,869
1929..	.....	4,517,235
Herring		
1900..	.....	48,350
1910..	.....	79,208
1920..	.....	1,228,131
1929..	.....	1,486,655

The record of progress is emphasized also by the facts as to the development of the pilchard fishery and the production of by-products such as oil, meal

and fertilizer. Little effort was made to develop the pilchard fishery until 1917 and the value of the catch in that year was only \$14,536. Subsequent utilization of pilchards in producing fish meal and oil in reduction plants, however, as well as expansion of canned pilchard business, has made the fishery a greatly increasing source of revenue in the past few years. In 1920 the marketed value of the pilchard catch was more than \$540,000, or between thirty and forty times as much as the value of the catch in 1917. Last year the catch had a marketed value four times as great as in 1920, or a total of nearly \$2,200,000. The production of pilchard oil in 1929 was 2,856,579 gallons, and of all varieties of fish oil 4,066,015 gallons; all told 21,084 tons of fish meal and fertilizer were produced.

Capital Mounts Up

The figures as to capital investment in the fishing industry of the province bring out in a striking way how great has been the progress since 1920. Including vessels, boats, gear and canning and curing establishments, the equipment employed in the industry in 1900 represented an investment of slightly less than \$3,000,000. Last year the total investment was more than \$36,000,000.

In 1929 the total number of persons employed in the industry in the province was 20,353. The increase in the number of employees since 1910 has been only approximately 3,000, but the development of the motor-boat and other labour-saving machinery and devices in recent years have made possible a tremendous expansion in operations without a proportionate increase in working force.

Over 18,000 gasoline boats, valued at more than \$7,890,000, were employed in the fisheries of Canada in 1929. The number of gas boats has doubled in comparatively few years.

LARGE INCREASE IN PACIFIC SALMON LANDINGS SWELLS JULY FISHERY TOTAL

Net Gain of Upwards of \$500,000 in Landed Value of Sea Fish Taken by Canadians Last Month as Compared with July, 1929

Greatly increased catches of salmon in British Columbia were the vital factor in making the Dominion's sea fisheries operations in July more successful than they had been in July, 1929.

Salmon landings in British Columbia during the month amounted, all told, to more than 45,990,000 pounds, an increase of better than 20,971,000 pounds over the total for July of last year, and this gain more than offset smaller catches of some other varieties of Pacific coast fish and a decrease of over 7,815,000 pounds in the quantity of fish caught in Atlantic coast waters.

The grand total of Canadian sea fish landings for the month, as shown by unrevised figures of the Dominion Department of Fisheries, was slightly more than 107,256,000 pounds and had a landed value to the fishermen of nearly \$4,125,560. As compared with the figures for July, 1929, there was only a small increase in catch, under 350,000 pounds, but on the landed value side the increase was \$467,550.

British Columbia Operations

Pacific coast landings of all varieties of fish during July amounted nearly to 57,087,000 pounds, or about 8,146,000 pounds more than in the preceding July. The landed value of the combined catches was \$3,145,760 as compared with \$2,651,975 a year ago.

As has been stated, however, the gains were due to greater success in the salmon fishery. Halibut landings were smaller than in July, 1929, and the pilchard landings very much smaller. The pilchard runs were late in setting in this year and the July catches amounted only to 7,234,000 pounds, with a landed value of \$36,170, as against catches totalling 19,430,000 pounds, in round figures, and landed value of \$116,610 in July of last year.

The halibut catch for the month was some 350,000 pounds less than the catch in the previous July, and totalled 3,082,000 pounds. The landed value was \$289,650 as compared with \$387,275.

In the Atlantic Provinces

On the Atlantic coast the Prince Edward Island fishermen, as a whole, did somewhat better during the month than they had done in July, 1929, and

the Quebec fishermen considerably better but, on the other hand, there were decreases both in catch and landed value in the two other provinces—Nova Scotia and New Brunswick. The net result was that the Atlantic coast catch was 50,170,000 pounds, as compared with 57,985,000 pounds in the preceding July, and total landed value of \$979,800 showed a decrease of a little more than \$26,000.

The figures by provinces for the two months are as follows:

	July 1930	July 1929
Nova Scotia		
Catch... ..Lbs.	25,146,000	31,104,800
Landed Value... ..\$	439,383	529,213
New Brunswick		
Catch... ..Lbs.	10,119,800	15,196,000
Landed Value... ..\$	201,618	245,391
Prince Edward Island		
Catch... ..Lbs.	3,596,800	3,443,600
Landed Value... ..\$	47,568	39,020
Quebec		
Catch... ..Lbs.	11,307,100	8,240,600
Landed Value... ..\$	291,231	192,410

In Nova Scotia there were decreases in catch in all the principal fisheries except mackerel and salmon. Mackerel landings of 724,000 pounds were upwards of 300,000 pounds greater than a year ago and the salmon catch for the month was over 455,000 pounds as compared with 328,000 pounds in the previous July. So far as the haddock fishery was concerned, however, there was an increase of several thousand dollars in landed value (\$62,555) despite a drop in catch.

In New Brunswick there were decreased catches in all the main fisheries, save the herring fishery, which yielded over 3,280,000 pounds as against considerably less than a million pounds in July, 1929. The landed value of the herring was \$11,025 as compared with something more than \$6,000. Sardine landings for the month were 12,155 barrels, with a landed value of \$22,978, a drop of nearly 7,300 barrels in catch and of more than \$10,000 in value. The cod fishery showed a sharp drop.

Quebec showed increased catches of cod, herring, mackerel, and salmon. The cod catch had a landed value of \$192,920 as compared with \$113,725 in July, '29, the salmon catch a value of \$60,325 as compared with \$39,910, and the mackerel landings were worth \$7,200 to the fishermen as against only \$1,880 a year ago.

(Continued on page 4)

FLYING BOATS BIG AID IN FISHERIES PATROL WORK IN B.C.

Flying boats are again busy with patrol duties in the British Columbia fisheries, and once again are proving their effectiveness.

Under a contract with the Dominion Department of Fisheries for 400 flying hours, Western Canada Airways, Limited, are operating in the patrol service from various bases located at the most suitable points along the British Columbia coast. This year the aerial service has been further extended and it is intended to cover all fishing areas with this form of patrol.

The sea-plane has proven especially effective in the British Columbia fisheries. Its extra mobility renders it invaluable during the weekly closed seasons, and its presence in fishing areas acts as a strong deterrent to any fishermen who might otherwise be tempted to disregard the law.

HATCHERY ASSISTANTS TAKE BIOLOGY COURSE

A course in elementary biology, combined with some practical studies of artificial and natural propagation of sockeye salmon, was given to fish hatchery assistants of British Columbia in July. The studies were conducted under the direction of Dr. W. A. Clemens, director of the Pacific Biological Station at Nanaimo, and were held in the Applied Science building at the University of British Columbia. Assisting Dr. Clemens were Dr. R. E. Foerster, Pacific Salmon Research Station at Cultus Lake, and L. F. Smith, of the Prince Rupert Fisheries Experimental Station. The course concluded with a dinner, at which were representatives of the industry, the Department of Fisheries, and of fisheries organizations.

THE MINISTER—*Conc.*

executives of the Canadian Patriotic Fund since its inception. In 1916 he was one of the Canadian representatives at the Empire Parliamentary Association Conference in London.

Hon. Mr. Rhodes married Miss Grace Pipes, a daughter of the late Hon. W. T. Pipes, formerly Attorney-General of Nova Scotia, and has two children.

CANADA'S FISHERIES SHOWING IN 1929

Canada's fisheries production in the calendar year 1929 had a marketed value of \$53,518,521, or a million and a half less than in 1928 but more than four million above the figures for 1927. The decrease in 1929 was mainly due to a drop in salmon production in British Columbia. The following table shows the value of the 1929 fisheries, by provinces, and makes comparison with the showing for 1928:

	Marketed Value in 1929	Increase or Decrease as Compared with 1928
British Columbia.....	\$23,930,692	—\$2,632,035
Nova Scotia.....	11,427,491	— 254,504
New Brunswick.....	5,935,635	+ 933,994
Ontario.....	3,919,144	— 111,609
Quebec.....	2,933,339	— 63,275
Manitoba.....	2,745,205	+ 504,891
Prince Edward Island.....	1,297,125	+ 100,444
Alberta.....	732,214	+ 7,164
Saskatchewan.....	572,871	+ 9,338
Yukon Territory.....	24,805	— 26,860
	\$53,518,521	—\$1,532,452

FISH CLIMB 59-FOOT
HEIGHT BY FISHWAY

Although many experts have declared fifty feet to be the maximum height which it is feasible to overcome by means of a natural fishway, the fish in the Mersey River, Nova Scotia, are successfully ascending a fishway, recently constructed from plans prepared by the engineers of the Dominion Department of Fisheries, which overcomes a 59-foot height. In actual length the fishway is more than 850 feet.

Some big industrial works have been under construction on the Mersey in recent months and, in compliance with the fisheries laws, a fishway became necessary on what is known in the industrial program as Mersey Development No. 3 so that fish might be able to make their way up the river unhindered. The plans for the fishway were made by the Fisheries Department and the work of construction was carried out by the Nova Scotia Power Commission.

There were sceptics who doubted that fish would be able to climb any such height as fifty-nine feet unless "elevators" such as are used in connection with some fishways were included in the plans. Recent reports from fisheries officers on the ground, however, have been to the effect that the natural fishway planned by the departmental engineers is working most successfully and fish are making the climb up river without difficulty. For instance, in his regular district report of a week or two ago, Inspector J. P. Buchanan stated that salmon and grilse were passing up the fishway "in large quantities."

TRINIDAD NOW BUYING
CANADA'S FROZEN FISHSalmon, Halibut, Cod and Sole Well
Received in West Indies

Successful sale of fresh frozen halibut, salmon, sole, and cod in Trinidad has been one of the interesting developments in Canada's fish trade in the past few weeks.

Trinidad, like other islands of the West Indies, has been a big purchaser of Canadian dried fish in the past but the marketing of frozen fish from the Dominion is a new venture which has been made possible by improved transportation facilities.

In a report to the Department of Fisheries at Ottawa the Canadian Government Trade Commissioner at Port of Spain says that "within recent weeks fairly large supplies of fresh frozen salmon, cod, halibut, and sole have been arriving in Trinidad by the Lady boats of the Canadian National Steamships." The fish were "very favourably received by the public" and there are apparent prospects that the sales will show an increase in the near future.

While the frozen fish has been "very favourably commented upon" in the Trinidad market, and sales are likely to increase as time goes on, there is no expectation that the marketing of the frozen product will affect the sale of Canadian dried fish in the island since the demand for dried and the demand for fresh frozen fish come, for the most part, from different groups of the population.

PILCHARD RUN LATE
BUT NOW INCREASES

The run of pilchards, which visit the west coast of Vancouver Island annually, were late in arriving this year and in consequence the production of meal and oil for the current season in British Columbia is quite a bit below the average. By the first week in August, however, catches were increasing and the quality of the fish was better. There is still time, states Major Motherwell, Chief Supervisor of Fisheries for the Dominion Department of Fisheries in British Columbia, for a satisfactory pack.

CURB DAMAGE DONE
TO SALMON FISHERY
BY SEA-LION HERDS

Covering fishing grounds in the vicinity of Rivers and Smiths Inlets, C. G. S. "Givenchy", of the British Columbia fisheries patrol service of the Dominion Department of Fisheries, made a total bag of 1,068 sea-lions on its annual sea-lion hunt which was completed a few weeks ago.

Sea-lions exist in large numbers in these areas and cause a good deal of destruction in the salmon fishery. On a previous cruise in these waters, for instance, Captain Henderson, master of the "Givenchy", reported seeing a huge sea-lion with a twenty-pound salmon in its mouth, an incident indicative of the manner in which these mammals prey upon the salmon fishery. Fishermen have this year sent to the office of the Chief Supervisor of Fisheries at Vancouver renewed assurances of their approval of the annual sea-lion hunt. Not only fish catchers but operatives in the salmon canning industry have written expressing the view that the hunt should continue to be a regular annual operation.

During the 1930 cruise of the "Givenchy", landings were made at Virgin and Pearl Rocks, famous breeding grounds and machine guns and rifles were used in destroying the lions. The purpose of the annual hunt is not the extermination of the sea-lions but simply the prevention of their increase in such numbers as would jeopardize the salmon fishery.

N.S. FISHERMEN USE CO-OPERATIVE PLAN

Salmon Collecting and Marketing Plan Put in Operation by Union

Collecting and marketing the fish co-operatively under a plan originated by the Arisaig Fishermen's Association, thirty-five fishermen in Antigonish county, N.S., handled some 60,500 pounds of fresh salmon in the four weeks from June 29 to July 27.

The salmon were collected from the men at several fishing settlements and carried by motor truck to Antigonish for shipment to fresh fish markets. Some assistance in the collection service was rendered the association by the Dominion Department of Fisheries. Most of the fish was marketed in Boston and Montreal but some was sold in Toronto.

The price received by the fishermen varied somewhat but in the last week of the month it averaged about \$12 per hundredweight, net. At the close of the month United States buyers were offering \$23 per hundredweight, f.o.b. Boston, which was equivalent to about \$16 f.o.b. Antigonish.

FISHWAY HELPS MANY SOCKEYE PAST FALLS

Bound for the spawning grounds on the upper reaches of the stream, more than 9,000 sockeye salmon made their way past Stamp River Falls, B.C., in the daylight hours of the period between June 11th and July 20th by aid of the fishway constructed and maintained by the Dominion Department of Fisheries.

Count was made by the Fisheries Guardian at the falls during ten hours of each day in the six-week period and the figures as to sockeye "traffic" may be taken as approximately correct. As compared with the number of sockeye using the fishway in the corresponding period of 1929, there was a very large increase this year. In 1929 the total was 3,512 as against 9,061 this year.

The fishway overcomes a height of some forty feet of turbulent, crashing water and is a means of ascent for many salmon which might otherwise not be able to battle their way to the spawning areas. This year a very large number of sockeye have been able to make their way over the natural falls.

HELPING THE TROUT POPULATION TO GROW

A little glimpse at fish culture activities of the Dominion Department of Fisheries is given by an extract from one of the July reports of Inspector H. H. Beadnell, of Comox, Alberni:

"On Monday I met Mr. H. Ryder, who arrived at Courtenay by train with 200,000 Kamloops trout eggs. We travelled till dark on the trail to the Forbidden Plateau and camped for the night. On the following morning we made an early start and arrived on the plateau by noon. During the afternoon we planted 40,000 eggs in the creek running into Lake Helen McKenzie. Next day 10,000 eggs were planted in the outlet from Frances Lake, 40,000 in Circle Lake, 40,000 in a creek running into Meadow Lake, which is connected with Lake Beautiful, besides two other lakes unnamed, and 10,000 eggs were planted in a stream flowing into Marie Wood Lake. On the following day 20,000 eggs were planted in the stream flowing from Lake Frances to Lake Isabel, and 40,000 in streams at Johnston Lake.

"When making an inspection of Panther, McKenzie, Pearse and Douglas Lakes—these being seeded down last year with Kamloops trout eggs—we found trout in very fair numbers, running from three or four inches to ten inches in length. They appeared to be particularly well fed and in very good condition."

MULTIPLY TROUT EGG COLLECTION BY SIX

Over 201,000 Rainbow trout eggs were collected in Cameron Lake, Waterton Lakes Park, Alberta, this summer by the Fish Culture Division of the Dominion Department of Fisheries, or six times as large a collection as was made in 1929 when Rainbow eggs were first collected in that district. The eggs were placed in the Waterton hatchery. All told, 329 fish were stripped between June 5th and July 2nd, and yielded a total of 201,066 eggs.

Goitre is less prevalent in coastal districts than in inland areas. The reason is that coast dwellers eat more fish, and fish is rich in iodine which is a preventive of goitre. Inland people should see to it that they get more sea fish.

SOCKEYE PACK WELL ABOVE 10 YEAR LEVEL

Heavy Run of Pink Salmon Also Reported in B.C. Waters

Sockeye salmon are running heavily in northern British Columbian waters. Up to early August, this valuable species had yielded a pack of 308,000 cases, the largest since the brood year of 1925, which is the proper comparison. Major J. A. Motherwell, Chief Supervisor of Fisheries for the Dominion Department of Fisheries in British Columbia, points out that the total average catch of sockeye for the complete season during the past ten seasons is 304,000 cases. This average total had already been exceeded by 4,000 cases by the end of the first week of August this year and fishing was to continue for a considerable period. Unusually heavy, also, is the run of pink salmon in practically all the areas frequented by this variety.

These large packs of splendid salmon are particularly gratifying, states Major Motherwell, in view of the fact that there has been enforced an unusual length of closed seasons for the purpose of conservation, much greater in the aggregate this year than in the brood year of 1925. This would appear to demonstrate the efficacy of conservation measures employed by the department.

LARGE INCREASE—Conc.

Prince Edward Island fishermen brought ashore much smaller catches of haddock and herring than in July of last year, but somewhat larger catches of hake and cusk and mackerel and considerably larger landings of cod.

Lobster fishing was carried on in Nova Scotia and Quebec during the month, but in both provinces with less success than a year ago. In Nova Scotia the catch for the month was slightly over 385,000 pounds, with a landed value of \$23,110, as compared with 441,900 pounds and landed value of \$32,905. Quebec's catch was 104,500 pounds as against 280,300 in July, 1929, and the landed value was \$8,545 as compared with \$20,685.

For the period between the opening of the late autumn season of 1929 and the end of July the total catch of lobsters in all four provinces amounted to 35,078,200 pounds with a landed value of \$3,333,735, an increase of some 2,800,700 pounds in catch and of about \$181,600 in landed value as compared with the corresponding period of 1928-29.

FISHERIES NEWS BULLETIN

Minister:
Hon. EDGAR N. RHODES, M.P.

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MINISTER SPEAKS TO FISHERY CONVENTION

Departmental Exhibit Illustrates Various
Phases of Fisheries Service

Hon. E. N. Rhodes, M.P., Minister of Fisheries for the Dominion, was one of the speakers at the first joint convention of the Canadian Fisheries Association and the United States Fisheries Association at Montreal a few days ago, and a large exhibit by the Department of Fisheries, illustrative of Canada's fisheries resources and fishing industry, was one of the displays shown during the convention sessions. In his address Hon. Mr. Rhodes touched upon various fisheries subjects, pointing out, among other things, different instances of co-operation by the United States and Canada in dealing with fisheries questions of common interest.

W. A. Found, Deputy Minister of Fisheries, who was also to have been a speaker at the convention, was prevented by illness from being present.

The departmental exhibit, which attracted a good deal of attention both on the part of the Canadian delegates and the visitors from the United States, had as a background a large map of the Dominion, thirty-two feet long, which showed the principal fishing grounds, both sea and inland, the sites of Dominion fish hatcheries, etc. The map was made by the National Development Bureau of the Department of the Interior in co-operation with the Fisheries Department. In the booth itself were several displays of fish specimens prepared by the Fish Culture Division of the Department of Fisheries, models of jacketed freezers and a smoke-house made by the Biological Board staff, samples of fish barrels of the type approved by the Department's Fish Inspection Division, various nets, etc. Cartons of fish and shellfish frozen according to the Biological Board's "rapid freezing" system were also shown.

A similar exhibit is being displayed at the fisheries exhibition at Lunenburg, N.S., which opened on September 30.

CANADIAN FISHING GROUNDS PROBABLY MOST EXTENSIVE IN ALL THE WORLD

Brief Glimpses at Salient Facts Touching Great Fisheries
Resources of Dominion and Departmental
Organization for Administration

Canada's fishing grounds are perhaps the most extensive in the world. From Grand Manan to Labrador, on the Atlantic Coast, the shore line measures over 5,000 miles, exclusive of lesser bays, and fish are to be taken everywhere. There are 15,000 square miles of inshore waters. In the Bay of Fundy, the Gulf of St. Lawrence, and ocean waters adjacent to Canada there is an area of 200,000 square miles and more, or four-fifths of the area of the fishing grounds of the North Atlantic. Great fishing "banks" lie close to ports of Canada.

Inland, there is a great series of lakes which contain more than half the fresh water of the globe and abound in fish. Northward are other great lakes and rivers where fisheries development waits only on the advance of settlement and the creation of transportation facilities.

On the Pacific Coast is a shore line of more than 7,000 miles bordering waters enormously prolific of salmon and other fish.

What fisheries resources exist in Hudson Bay with an area greater than the Mediterranean, is not yet definitely known and is at present the subject of investigation by an expedition which has been sent to the Bay by the Department of Fisheries. The presence of commercial fish in Hudson Bay is known but in what quantity they occur remains to be established.

Fisheries Control

All fisheries regulations for Canada are made by the Dominion authorities, but in many cases the administration of the fisheries is in provincial hands. The tidal fisheries of British Columbia, Nova Scotia, New Brunswick, and Prince Edward Island are administered by the Dominion, as are the fisheries of the Magdalen Islands, in Quebec, and those

of the Yukon Territory. By agreement with the Province, the Dominion also administers the non-tidal fisheries of Nova Scotia. In Quebec, apart from the Magdalen Islands, and in Ontario and in Manitoba the fisheries are under provincial control. The fisheries of Saskatchewan and of Alberta, at present controlled by the Dominion, will pass under provincial authority at the end of the present month.

The March Forward

At Confederation the annual value of the fisheries production of the new Dominion was \$6,000,000, or less. At the beginning of the present century the figure had become \$21,500,000. In 1910 it was nearly \$30,000,000. Increase has continued steadily. In the five-year period, 1920-1924, the average annual marketed value of fisheries production was \$42,615,000 and in the past five years it increased to \$53,000,000.

In the calendar year 1929 fisheries production had a marketed value of \$53,520,000 in round figures. Sea Fisheries production was \$44,930,000 and Inland Fisheries production \$8,590,000. The salmon fishery yielded the largest return—\$15,009,000. The lobster fishery was second in point of marketed value of product, \$5,696,000—and the cod fishery third, \$5,394,000. Whitefish production was first in the Inland Fisheries with a marketed value of \$2,455,000.

By provinces, the marketed values in 1929 were as follows:

British Columbia	\$23,930,692
Nova Scotia	11,427,491
New Brunswick	5,935,635
Ontario	3,919,144
Quebec	2,933,339
Manitoba	2,745,205
Prince Edward Island . .	1,297,125
Alberta	732,214
Saskatchewan	572,871
Yukon Territory	24,805

(Continued on page 3)

GAIN IN AUGUST SEA FISH CATCHES BUT LANDED VALUE SLIGHTLY LOWER

**Pacific Coast Landings Bigger than for August, 1929,
While Atlantic Catches Smaller and Value
Figures Less on Both Coasts**

Canada's catch of sea fish in August was larger by nearly 9,000,000 pounds than in August, 1929, but the landed value of the fares to the fishermen amounted only to \$3,490,000, in round figures, as against \$3,831,946 a year ago.

Pacific coast landings of 147,518,500 pounds were larger by some 19,350,000 pounds than the catches in the previous August but on the Atlantic coast, with 67,331,000 pounds brought ashore, there was a decrease of nearly 10,385,000 pounds.

Landed value totals decreased on both coasts. The Atlantic total was \$1,120,500, a drop of approximately \$205,000. On the Pacific coast the figures were \$2,370,000, roundly stated, or a decrease of something more than \$136,000.

In all cases the 1930 figures are given subject to revision but they may be taken as approximately correct.

British Columbia Results

There was a noteworthy increase in salmon catch on the Pacific coast during the month and though the gain in landed value was not on the same scale the total of nearly \$1,681,000 represented an increase of about \$130,000 over the figures for August, 1929. The catch was 62,696,500 pounds as compared with 37,233,200 pounds in the same month of last year.

On the other hand, the catch of halibut, 3,125,000 pounds, was smaller by some 94,000 pounds than in August, '29, and there was a sharp decrease in landed value. In August of last year the catch had a landed value to the fishermen of \$369,372 while in the August just past the value figures were only \$240,156.

Returns from the pilchard fishery also decreased. The catch was something more than 81,000,000 pounds and landed value was \$405,245 while in the preceding August the catch was over 86,700,000 pounds and landed value amounted to \$520,500. Pilchard runs were late in setting in this year but since the middle of August the fish have been present in British Columbia waters in fair abundance.

On the Atlantic Coast

In all the Atlantic provinces save Prince Edward Island the month's

catches were smaller than in August of last year, and in all four of them—Nova Scotia, New Brunswick, Prince Edward Island, and Quebec—there were decreases in landed value.

Prince Edward Island's catch was 3,303,500 pounds, an increase of a little more than 300,000 pounds—a change which was due principally to larger landings of cod. Catches of mackerel, haddock, and clams and quahaugs, as well as cod, were bigger than a year ago. Landings of hake and cusk, lobsters, and herring showed decreases. Total landed value decreased by \$13,000, in round figures, and amounted to \$73,615.

In Quebec the landings for the month totalled a little more than 10,507,000 pounds and the landed value was \$223,415. There was a decrease of about 2,800,000 pounds in catch and of upwards of \$57,000 in landed value.

The New Brunswick catch for the month was approximately 23,360,000 pounds as against 27,965,500 pounds in August, 1929, and the landed value total was \$269,085 as compared with \$395,647. The sardine fishery, one of the major New Brunswick fisheries, was much less successful than a year ago. Catch totalled 6,680,000 pounds, a decrease of about 2,846,000 pounds, and landed value was only \$37,185 as compared with over \$59,000 a year ago. Salmon catch and value also fell off, and the same condition held true in the cod, haddock, mackerel, hake and cusk, and lobster fisheries. Herring catch showed an increase but the landed value decreased very substantially.

In Nova Scotia there were smaller catches, and smaller returns in landed value to the fishermen, in most of the principal fisheries such as the cod, haddock, pollock, halibut, mackerel, and lobster fisheries. Herring catch and value were approximately the same as a year ago. The hake and cusk fishermen and the salmon fishermen did rather better than in August, 1929. An outstanding feature of the month's operations, however, was the greatly increased success of the men engaged in sword-fishing. The catch was 1,006,500 pounds as compared with only 439,600 pounds in the previous August and landed value amounted to \$114,820 as compared with \$38,783.

N.S. SWORDFISHERMEN HAVE BANNER MONTH

**Some Get Thrills Thrown in as Big Fish
Drives Sword Through Boat**

Statistical returns of the Dominion Department of Fisheries show exceptional catches by Nova Scotia's swordfishermen in August.

Some of the fishermen had thrills as well as big catches, as witness the case of two men fishing off the Cape Breton coast whose boat was nearly sunk by a furious wounded fish which drove its powerful sword through the craft's side almost as though it were paper.

August is the month of major swordfish production off Nova Scotia and this year it yielded a catch of slightly more than 1,000,000 pounds as compared with 439,600 pounds in August of last year, 499,900 pounds in the same month of 1928, 361,700 pounds in August, 1927, and 767,400 pounds in August, 1926.

So far as landed value is concerned, that is, the value of the catch to the fishermen as landed, the following table tells the story for each August in the 1926-1930 period:

1930..	\$114,820
1929..	38,783
1928..	59,227
1927..	34,744
1926..	76,963

In Demand in U.S.

Swordfish are taken off Nova Scotia in mid-summer and the earlier autumn months. They are not caught in any other Canadian waters. The record landings were made in 1926, a year when fishing generally was particularly good in Canada, and totalled 1,293,600 pounds, with a landed value of \$146,416 and a marketed value of over \$207,000.

The catch is marketed chiefly in the United States, where swordfish are in demand. The fish are sold in the fresh form, and this summer, to assist the fishermen in marketing their catches to advantage, a service was maintained under the auspices of the Department of Fisheries whereby landings of swordfish—and halibut as well—were gathered up by collecting boats along part of the Nova Scotia shore and transported to Boston on these vessels. A charge was made for the carriage of the fish, of course, but the service gave the fishermen a ready means of getting their catches promptly to market.

Regular use of fish in the diet means fewer doctor's bills in the mail.

CANADIAN FISHING GROUNDS PROBABLY MOST EXTENSIVE—*Concluded*

Capital and Workers

Capital investment in the Canadian fishing industry is about \$62,335,000. It has more than doubled since 1915. Since 1900 it has increased by more than 450 per cent.

The number of persons directly employed in the industry last year was 80,400. Of this number, about 64,000 were engaged in the primary operations of catching and landing fish, and the others in fish canning and curing plants.

Fisheries and Foreign Trade

Exports of fish and fish products in 1929 had a value of \$35,970,000, and importations were worth \$3,826,000. Since 1900 the value of the annual fisheries export business has increased by 235 per cent. The exports include all varieties of fresh and frozen fish, smoked, canned, pickled, drysalted, mild-cured, and dried fish of various kinds, and fish products such as oil, meal, and fertilizer.

Exports in 1929 went to every continent. The largest single item, in point of value, was canned salmon—\$8,865,000, Canada's biggest export business in fish was done with the United States which made purchases totalling over \$15,367,000.

Research and Experimentation

Four scientific stations for the study of fisheries problems are maintained by the Dominion and are conducted by the Biological Board of Canada. Two are biological stations, one at St. Andrew's N.B., and one at Nanaimo, B.C., for the study of questions of fish life. Two are experimental stations, one at Halifax, N.S., and the other at Prince Rupert, B.C., and are engaged in the examination of practical problems of the fishing industry and in experiments for the development of improved methods of handling and processing fish. A permanent staff of scientists is employed by the Board.

Departmental Work

At Ottawa, the Fisheries Department which is presided over by Hon. Edgar N. Rhodes, M.P., as Minister, with W. A. Found the Deputy Minister, has five branches or divisions performing particular duties: Accounts, Fisheries Promotion and Inspection, Fish Culture, Fisheries Intelligence and Publicity, Engineering. In addition to the duties of these divisions there is, of course, the general administrative work of the Department, the issuance of different

kinds of licences, the maintenance of patrol services both by shore officers, patrol vessels, and airplanes, the enforcement of regulations in those areas in which the fisheries are under Dominion control, etc. As its name indicates, the Accounts Division carries on the departmental accounting. The Promotion and Inspection Division is largely concerned with the inspection of fish products under the Fish Inspection Act and the Meat and Canned Foods Act, helping to ensure quality production. Inspection work is done by fisheries officers who have been required to take special courses of study in this field and to show, by passing examinations, that they are fully qualified for duties of this kind. The division also serves the industry by instructing fishermen in improved methods of operation through the agency of fisheries experts. The Fish Culture Division operates over 40 fish hatcheries and related plants and distributes eggs, fry, etc., by the hundreds of millions annually to maintain and increase the stocks of fish in Canadian waters. The Intelligence and Publicity Division is responsible for the collection and checking of all fisheries statistics and for the preparation and distribution of publicity matter of various kinds. Departmental engineering matters are handled under the direction of the Fisheries Engineer Purchasing and contract details are carried out by a departmental Purchasing and Contract Agent. Another headquarters officer, Head of the Western Division, has to do with administrative matters in western fisheries under the Department's control.

1929 COD LIVER OIL YIELD 91,000 GALLONS

Rich in health making properties, over 91,000 gallons of medicinal cod liver oil were produced in fisheries by-product operations in Canada last year. Virtually all of the oil was exported to the United States.

Quebec led in quantity of production, with 42,184 gallons to its credit. Nova Scotia accounted for 30,620 gallons and New Brunswick for 18,218 gallons. All told, the marketed value of the oil was slightly more than \$83,000. In addition to the medicinal oil there was also produced a total of nearly 170,000 gallons of cod oil for other uses.

FILLET WHITEFISH TO GOOD EFFECT IN B.C.

Product from Burns Lake Area Finds Ready Provincial Sale

Featuring a greater exploitation of commercial fisheries inland in British Columbia during the winter of 1929-30 was the filleting of some 9,000 pounds of whitefish in the Burns Lake district and the successful marketing of the fillets in towns along the line of the Canadian National Railways between Prince George and Prince Rupert.

Owing to heavy Prairie Province production of fish common to western inland waters, the operators at Burns Lake and other lakes in the vicinity found that market conditions were a bit difficult and they looked about for new avenues for the disposal of their catch. At the end of January, when the weather was becoming milder and the sale of whitefish was not brisk, the operators undertook whitefish filleting. The product was wrapped in waxed paper, and proved very acceptable on the local markets, bringing a price of about 12 cents a pound, f.o.b. Burns Lake.

A total production of about 62,000 pounds of fresh water fish, including lake trout valued at \$4,575 f.o.b. Burns Lake, was secured this year by 27 licensed fishermen in the Burns Lake district as compared with only 8,145 pounds valued at \$746 taken by 13 fishermen in the same period of 1928.

B.C. PILCHARD RUNS LATE BUT INCREASE

Oil and Meal Production Only Slightly Below Averages of Recent Seasons

In spite of a very late start the pilchard fishing off the west coast of Vancouver Island, one of British Columbia's important fisheries, came almost up to the average in the latter part of August. By August 23 the total pilchard production was 6,425 tons of meal, 1,137,403 gallons of oil, and 26,727 cases of the canned fish. This production was only slightly below the output for the respective corresponding periods of the four or five preceding years.

Good runs of these fat fish set in about the middle of August, keeping fifteen reduction plants busy. Subsequently, two more plants commenced operations.

RECORD OUTPUT OF CANNED SALMON IN PROSPECT IN B.C. IN PRESENT YEAR

Big Increase in Sockeye Production, Largest Output in 15 years, Outstanding Feature of Operations up to Early Part of September

Present indications point to a record production of canned salmon in British Columbia this year.

The pack up to September 6 was 1,679,638 cases, or more than double the pack put up in practically the corresponding period of 1929, and upwards of 300,000 cases above the production up to approximately the same date of 1926, the record-making year in the British Columbia salmon industry.

With two months and more of operations yet to come, the prospects are that the total production of canned salmon this year will go beyond the 1926 record mark of 2,065,198 cases.

An outstanding feature of the 1930 operations up to September 6, as brought out in a pack bulletin prepared by the office of Major J. A. Motherwell, Chief Supervisor for the Dominion Department of Fisheries in British Columbia, is that the production of canned sockeye, the most valuable variety of British Columbia canned salmon, had reached 416,103 cases, or very considerably more than the total pack of this variety in any full year since 1915.

Another striking feature is that the pack of pinks had mounted far beyond even the pack of 1928 when the previous record in pink production was made. In the full year 1928 the canneries put up 792,362 cases of pinks, and broke all records for pink production in the province, but by September 6 the 1930 output had reached 1,080,582 cases, and, of course, these figures will be somewhat increased before the year is out.

"There has been an enormous run of pink salmon," says a statement from the Chief Supervisor's office, "to practically all waters in British Columbia which, in previous (pink) cycle years, have received this variety."

Sockeye Pleasant Surprise

In referring to sockeye operations the Chief Supervisor says that "while it was expected that a reasonably good run would occur in most areas, apart from the Fraser and, possibly, the Naas, the quantity which did arrive was a pleasant surprise. On the Naas, Skeena, and rivers and Smiths Inlets the catches were excellent, and preliminary reports from the spawning areas were entirely satisfactory.

"During the last two weeks of August there was a large run of sockeye through Puget Sound, on the way to the Fraser river, when large quantities were taken by American seiners. Early in September sockeye were apparently commencing to enter the Fraser.

"Lack of rain in some parts of the northern district," the Chief Supervisor's statement goes on, "necessitated closing of some areas during the latter part of August. At this time the channels of these areas were full of pinks, waiting for a chance to get to the spawning grounds. On September 3 the Department of Fisheries was able to declare open those areas south of Turtle Point to Cape Caution in this district.

"To date," the Chief Supervisor adds, "the quality of salmon of all varieties has been excellent."

Conservation Valuable

A point of much interest and importance in connection with the large production of canned salmon this year is that the big output has been taking place notwithstanding strict conservation measures put into effect by the Department of Fisheries. Weekly "close times," when fishing was not permitted, were lengthened, areas at the mouths of creeks and elsewhere were closed to fishermen, and fishing seasons were shortened, all with the object of ensuring adequate escapement of parent fish to the spawning grounds for purposes of reproduction.

Experience is proving that conservation steps previously taken by the Department have been of much value in safeguarding the salmon fishery and preventing jeopardization of this wonderful national asset through unreasonable exploitation. Preliminary inspections of spawning areas this year have indicated that the conservation measures enforced by the Department during the 1930 operations have also been effective in ensuring proper seeding of these grounds.

London fish dealers who handle chilled salmon from New Brunswick recently reported very gratifying response to their offerings. There is opportunity to expand the trade, with advantage to Canada and New Brunswick.

BIG INCREASE MADE IN LOBSTER CATCHES

Landings for Eight Months Much Ahead of Totals for Year Ago

Canada's lobster fishermen have been meeting with a larger measure of success this year than came to them in 1929.

Between January 1 and August 31 the landings of lobsters, which are taken in Atlantic coast waters only, amounted to more than 36,565,000 pounds, or some 2,970,000 pounds more than were caught in the corresponding period of last year.

Expressed in another way, the catch up to the end of August was only 716,700 pounds less than the total catch in the full calendar year 1929 and was over 4,320,000 pounds greater than the catch in the full year 1928.

So far as the landed value of the catch to the fishermen is concerned, there was an increase of \$78,000 in the January-August period just past. In the like period of 1929 the landed value totalled \$3,189,208 and this year the figure was \$3,266,307.

August Results

Taking the month of August alone, there was a catch of 2,063,100 pounds with a landed value of \$120,770—a gain of a few thousand pounds in catch, as compared with August, 1929, but a decrease of \$61,800 in landed value.

The largest August production is in New Brunswick but while the landings for the month (1,366,700 pounds) showed an increase of some 50,000 pounds the value of the catch as landed was only \$77,120 as against \$113,216 a year ago.

Prince Edward Island lobstermen caught 505,500 pounds during the month, or some 65,000 pounds less than in the previous August. Landed value was \$30,515 as compared with \$56,974. In Nova Scotia the catch was 178,800 pounds and landed value \$11,930, a gain of about 52,000 pounds and about \$1,800. Quebec's catch, something more than 12,000 pounds, was less than half the catch in August, 1929, and landed value was \$1,210 as compared with \$2,240.

Investigations made at the Atlantic Biological Station of the Biological Board of Canada have shown that haddock skin is valuable in human diet in increasing the secretion of gastric juice. The investigations indicate that the skin of the fish causes about fifty per cent more secretion than the flesh itself.

FISHERIES NEWS BULLETIN

Minister:
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W. A. FOUND

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NEARLY 40,000 VESSELS AND BOATS USED IN DOMINION'S COMMERCIAL FISHERIES

Supplying Equipment Necessary to Fishermen Source of Business for Many Canadian Industries and Employment for Large Number of Workers in Different Parts of Country

Bring together all the vessels and boats used in Canada's fisheries each year and there would be a fleet of nearly 40,000.

Last year, for instance, they numbered 39,708 and represented an investment of approximately \$19,200,000.

And because vessels and boats are needed in the fisheries in such numbers, and require equipment and supplies of various kinds, the fishing industry means business for many other Canadian industries and work and wages for a great many people besides the fishermen.

Included in the 1929 fishing fleet were steam vessels and tugs, steam trawlers, sailing vessels and gasoline vessels, gasoline boats, sail and row boats, and carrying smacks and scows. Most of them, of course, were used in the Sea Fisheries but more than 5,500 were engaged in the Inland Fisheries and had a value of over \$2,200,000. Gasoline boats made up the largest single class of craft in use, with about 16,500 in operation in the Sea Fisheries and more than 1,500 in the Inland fishing waters. The use of gasoline-powered vessels for fisheries purposes has been increasing rapidly in recent years and in 1929 their number was greater by some 2,300 than it had been in 1925.

Helps Many Sections

These facts and figures as to the Dominion's fishing fleet give some indication of what the fishing industry means to other Canadian enterprises in the way of creating business for them and making work for their employees. To build and equip fishing craft means work for lumbermen, shipyards, makers of sails and rigging, metal plants and machine shops, engine makers, and so on, and so on. At the same time, the operation of steam and gasoline boats and vessels means demand for the miner's coal and the refinery worker's

oil and gasoline, as well as employment for the transport trades in carrying these commodities from purchaser to user.

Similarly, the production and distribution of lines and nets and seines for the fisheries means business for various factories and work for many hands. Perhaps the average Canadian has only a very hazy idea as to the number of nets and other appliances for catching fish which are put to work in the Dominion's commercial fisheries. Probably he does not realize, for instance, that if the gill nets used last year in British Columbia alone, to say nothing of other kinds of nets and other provinces, were put end to end in a straight line they would extend for a distance of about 540 miles, or farther than from Winnipeg to Saskatoon. Nor does he know that the number of lobster traps used by Atlantic coast fishermen goes well into six figures—over 1,600,000 traps in 1929. All told, over 105,000 nets and seines were in use in the Sea Fisheries alone last year, as well as 59,000 hand lines, over 21,000 tubs of trawl, 1,626,437 traps of all kinds, 422 weirs, and more than 1,800 oyster rakes and scallop drags. Nets, traps, seines, and weirs used in the Sea Fisheries were worth more than \$8,000,000, and in the Inland Fisheries the nets, weirs, lines, and other fish-catching appliances employed had a value of very little less than \$2,650,000.

Nor is it to be forgotten that the business and employment resulting from the fishermen's demand for equipment and supplies do not go to one part of the country only. All over the Dominion, in urban centres as well as in the rural districts, many different classes of business and many different groups of workers find orders, in the one case, and employment, in the other, because the fishermen must have boats and vessels and equipment and supplies and oilskins and sou'westers.

FISHERIES MINISTER, DEPUTY, GO TO B.C.

Honourable Mr. Rhodes to Study Pacific Coast Fisheries Conditions at First Hand

The Minister of Fisheries, Honourable Mr. Rhodes, being very anxious to acquaint himself as speedily as he can with the problems affecting the fishing industry on the Pacific, as well as the Atlantic coast, proposes a visit to British Columbia during the coming month. He expects to reach Vancouver on or about November 15 and contemplates spending about a week on the coast. He will be accompanied by his Deputy Minister, W. A. Found.

While at this time of the year it will not be possible for the Minister to see much of the actual working of the industry, this visit will enable him to come into personal contact with, at least, representatives of those engaging in the different branches of the industry and to discuss the whole situation with them. The Minister intends to visit the coast again next summer, when the industry is at its height, to enable him to gain an understanding of the various methods employed.

Following the close of each fishing season, the Deputy Minister visits the coast and holds meetings with those engaging in the industry at different places to discuss desirable changes in the industry in the light of the experience during the fishing season just closed, and of the volume of the runs of fish. Mr. Found will hold such meetings at Vancouver, New Westminster, Nanaimo and Prince Rupert. Hence it will likely be necessary for him to remain in the Province a longer time than it will be possible for the Minister to spend there on this occasion.

Following such conferences with the industry, changes in the regulations for the coming year are decided upon, thus doing away with the need of changes in the regulations after preparations for a coming season's operations have been made, or during the season.

9 MONTH CATCH OF SEA FISH SHOWS GAIN BUT LANDED VALUE DECREASE

**September Landings in British Columbia also Bigger
than Year Ago—Atlantic Coast Provinces Make
Smaller Catches—Month's Figures for
Dominion Down**

Canada's catch of sea fish and shellfish in the first nine months of this year was some 30,000,000 pounds larger than the catch in the corresponding period of 1929 but the fish brought smaller return to the fishermen in total landed value, or \$20,566,000, in round figures, as against \$20,656,000 a year ago.

The combined catch of all varieties of sea fish and shellfish in the January-September period just past was approximately 818,570,000 pounds as compared with 788,201,700 pounds in January-September, 1929.

Salmon catch for the past nine months showed a landed value increase of more than \$1,400,000, or a total of \$7,619,435, and lobsters, haddock, and mackerel also yielded larger returns to the fishermen. On the other hand, cod, hake and cusk, halibut, herring, mackerel, sardines, pilchards, and oysters, among the principal fish and shellfish, showed decreases. The largest decrease was in the case of halibut which dropped to approximately \$2,283,000 as compared with \$3,206,798 in January-September, 1929. Cod value, amounting to a little more than \$2,615,000, fell off by about \$445,000. Pilchard landed value, \$732,625, was almost \$210,000 under the 1929 figures, a condition partly due to the lower prices prevailing for pilchard oil.

September Results

In the month of September the Pacific coast catch showed an increase over the landings in September of last year but landed value showed some decline. On the Atlantic coast there was decrease both in catch and landed value. For the two coasts, together, there was a drop of some 32,900,000 pounds in catch and of \$953,000 in the value of the catch as landed. The following table gives the September results on each coast for the two years, the 1930 figures being subject to revision:

<i>Pacific Coast</i>		
	September, 1930	September, 1929
Catch.	95,714,300 lbs.	90,416,000 lbs.
Landed		
Value.	\$ 1,580,856	\$ 2,036,052
<i>Atlantic Coast</i>		
	September, 1930	September, 1929
Catch.	65,790,700 lbs.	104,010,200 lbs.
Landed		
Value.	\$ 1,260,659	\$ 1,759,100

In British Columbia

Pacific coast salmon and pilchard landings for September were both well ahead of the totals for the same month of 1929, but in each case the landed value was less than a year ago. Salmon catch amounted to about 33,643,000 pounds, a gain of over 600,000 pounds, but landed value of \$965,690 was some \$260,000 under the figures for the previous September. In the case of pilchards the catch was 58,240,000 pounds and landed value was \$291,210 as compared with a catch of 50,826,200 pounds and value of \$305,164 a year ago.

The month's halibut fishery was much less productive than the halibut operations in September, 1929. Some 2,874,000 pounds were caught as against 3,493,800 pounds in 1929, and landed value was \$272,100, a decrease of about \$156,000.

On the Atlantic Coast

None of the four Atlantic coast provinces did as well in the September fishery as they had done in the preceding September. Catch and landed value decreased in each province. On various stretches of the coast fish were reported scarce, and weather hindered operations in some cases.

A comparative statement follows, and here, too, as in the case of the table given above, the 1930 figures are printed subject to revision:—

<i>Nova Scotia</i>		
	September, 1930	September, 1929
Catch.	40,877,000 lbs.	52,430,400 lbs.
Landed		
Value.	\$ 784,755	\$ 1,021,525
<i>New Brunswick</i>		
	September, 1930	September, 1929
Catch.	18,075,200 lbs.	39,689,500 lbs.
Landed		
Value.	\$ 289,150	\$ 403,206
<i>Prince Edward Island</i>		
	September, 1930	September, 1929
Catch.	1,805,700 lbs.	3,452,000 lbs.
Landed		
Value.	\$ 60,200	\$ 127,029
<i>Quebec</i>		
	September, 1930	September, 1929
Catch.	5,033,000 lbs.	8,438,300 lbs.
Landed		
Value.	\$ 128,560	\$ 207,340

(Continued on page 4)

SMOKED FISH OUTPUT BRINGS IN \$2,000,000

**Forty Per Cent. of Dominion's 1929 Output
Sold in Export Markets**

Fish smoking operations, which have an important place in the Canadian fishing industry, resulted last year in a production of nearly 22,400,000 pounds of smoked fish and smoked fillets with a marketed value of approximately \$1,900,000.

Above sixty per cent of the production was sold on the domestic market and forty per cent was exported. By far the greater part of the exportation was to the United States but sales were also made in some of the West Indian islands.

Twenty-two and a half million pounds of fish is rather a tidy quantity, but the production of smoked sea foods in Canada will become greater as their excellence is more widely realized. A good many inland people, particularly, in Canada do not know what tasty dishes may be made from the Dominion's different varieties of smoked fish.

For the most part, fish smoking in Canada is carried on in Atlantic coast districts, but there is some production in British Columbia, and in the Prairie Provinces smoked goldeyes are put up as well as a small quantity of smoked tullibeas. On the Pacific coast the fish which are smoked are principally herring and black cod. Salmon, pilchards, red cod, ling cod, halibut, and cod are also smoked in British Columbia, but most of them in very small quantities.

More than 10,000,000 pounds of smoked herring were produced on the Atlantic coast last year, with New Brunswick accounting for something over three-fifths of the total. Over 4,600,000 pounds of smoked cod and over 3,800,000 pounds of smoked haddock were marketed. Other Atlantic coast fish which are put up in the smoked form include hake and cusk, alewives, salmon, and halibut. The quantity of smoked salmon and halibut put on the market is small.

In 1929 the lobster fishery of the Atlantic coast was second among the fisheries of Canada in point of marketed value of production. The salmon fishery of British Columbia came first (about \$14,000,000) and the lobster production amounted to nearly \$5,700,000. The cod fishery was third—\$5,395,000.

FISH CULTURE WORK ADDS TO STOCKS OF FISH IN MANY CANADIAN WATERS

Success of Introduction of Rainbow Trout in Maritime Lakes Case in Point Showing Value of Fish Cultural Operations Carried on by Dominion

What fish cultural operations can do in the way of adding to the stocks of fish in lakes and streams is indicated by the success of the Fish Culture Division of the Dominion Department of Fisheries in introducing Rainbow trout into Pisquid Lake, in Prince Edward Island, and Clear Lake, New Brunswick.

A few years ago, Pisquid was a depleted speckled trout water, and Clear Lake contained only sticklebacks and suckers and smelts. For the purpose of extending the angling season in these regions, the Fish Culture Division in 1925 introduced into both waters some Rainbow trout, which are at their best in the late summer and the early autumn, and now the two lakes boast fine, gamey fish which run in some cases to as much as four or five pounds in weight.

Rainbow trout are not indigenous to the Maritime Provinces, and can be placed in certain waters only, but two, or two and a half, years after they were first introduced into Pisquid numerous fish weighing two and three pounds were landed. Last year five-pound fish were caught.

The results apparent in Clear Lake are almost equally as gratifying as those seen at Pisquid. In 1929, four years after the introduction of the fish into the lake, a departmental officer, fly fishing for test purposes, caught, among other fish, a female Rainbow measuring twenty inches and weighing three pounds, a male weighing three and a half pounds and measuring over twenty inches, and a 22-inch female which weighed four and a half pounds, all spent fish.

Stock Many Waters

Very satisfactory results have also followed from similar action by the Fish Culture Division in other parts of the country—in the Cypress Hills country in Saskatchewan, for instance, where streams have been successfully stocked with Loch Leven trout and brown trout, in Battle and Armstrong creeks in Saskatchewan where distributions of Rainbow have created excellent sport fishing in districts where it was previously lacking, and in Jasper National Park, Alberta, where the Medicine-Maligne Lake

system has been stocked with eastern speckled trout which have done extremely well in their new environment.

Similarly, in the commercial fishing field, of course, the Fish Culture Division has done valuable service in assisting to maintain the supply of fish and in stocking various waters which were previously barren of food fishes. In order to obtain the eggs, fry, fingerlings, etc., which it uses in helping to maintain and build up the fish resources of the country the division has been operating more than forty fish hatcheries and related establishments in different parts of the Dominion. These establishments carry on the propagation of Atlantic salmon, Pacific salmon (sockeye, coho, spring, steelhead, and Kennerley's), trout, including the speckled, brown, Loch Leven, Rainbow, cutthroat, and Kamloops varieties, pickerel, and whitefish. In 1929 the distribution of eggs, fry, etc., from the hatcheries was over 570,287,000.

HATCHERY HEAD DIES

John McIsaac, superintendent of the Dominion Government fish hatchery at Pitt Lake, British Columbia, since April, 1923, died recently after a period of failing health. Through Mr. McIsaac's death the fisheries service lost an employee described by the Director of Fish Culture, of the Dominion Department of Fisheries, as "an efficient and faithful public servant." Mr. McIsaac, who was about 66 years of age, entered the fisheries service in 1912 when he joined the staff of the hatchery at Harrison Lake, B.C. He was transferred to Pitt Lake in 1915.

There is a market for sun-dried squid in China. Several thousand barrels of these dried fish were exported to the Chinese market by Newfoundland last year.

During 1929 the Dominion Fisheries Branch spent \$5,363 in clearing obstructions from British Columbia streams in order to enable salmon to reach their spawning grounds.

PROTECTS FISH FROM STREAM POLLUTION

Fisheries Department Vigorously Enforcing Law Regarding Sawdust Dumping

In order to prevent injury being done to fish life through the dumping of sawdust and other mill refuse into waters frequented by fish, energetic steps are being taken by the Dominion Department of Fisheries to enforce strictly the law against such pollution where the fisheries are under Dominion administration. Imperative instructions have been given that pollution be stopped and that proceedings be taken against any offending mill operators.

Sawdust may be injurious to fish life in several ways, as, for instance, in covering spawning beds. "Probably the most important effect of all," it has been pointed out by Dr. A. G. Huntsman, Senior Director of the Biological Board of Canada, "is the decomposition of the sawdust where it accumulates on the bottom in the quieter regions of the streams and rivers. This decomposition uses up the oxygen, which is so important for the fish, and the amount in the water may be reduced to such small proportions as to kill fry. There would be the probability of this result wherever sawdust accumulated in large amounts."

FIND RADIO HELP

Atlantic coast fishermen continue to testify to the usefulness of the radio service arranged by the Dominion Department of Fisheries whereby weather and bait and ice reports are broadcast regularly from several stations. In a recent letter to the department a director of the United Maritime Fishermen—the federation of fishermen's unions in the Maritime Provinces and the Magdalen Islands—speaks of the reports as "a great benefit." Weather reports are broadcast twice daily throughout the year from Station CFBO, St. John, N.B., the Halifax Lightship, and the Marconi station at Louisburg, Cape Breton; bait and ice reports are put on the air twice every day from the lightship and Louisburg during the period from early April until January. The reports are also rebroadcast during part of the year from C.G.S. Arras, one of the Atlantic coast fisheries cruisers.

BRITISH COLUMBIA CANNED SALMON PACK FAR BEYOND TOTAL OUTPUT OF LAST YEAR

Latest available complete figures show that by October 11th British Columbia's 1930 pack of canned salmon had reached 1,990,509 cases, or more than 590,000 cases above the pack total for the full year 1929 and only 74,689 cases less than the quantity put up in the year of record production, 1926.

There have been large increases this year in the pack of all varieties of salmon in British Columbia, except cohoes, and the output up to October 11th was more than 865,000 cases greater than the total pack to approximately the same date in 1929. Sockeye pack increased by over 187,000 cases. Pink production has more than doubled, as has the production of springs. There have been substantial gains in the case of chums, bluebacks, and steelheads, although the pack of steelheads is never large. There is little question that the pack for the full year will set a new record for the British Columbia canned salmon indus-

try. Unfortunately, however, world marketing conditions are very unsatisfactory and both in the export and domestic fields, British Columbia canners report, the trade is slow.

The following comparative statement as to production of canned salmon in 1930 and 1929 is made up from figures compiled at the office of the Dominion Department of Fisheries' chief officer in British Columbia, the Chief Supervisor of Fisheries, Vancouver:

	1930 (up to Oct. 11)	1929 (up to Oct. 12)
	Cases	Cases
Sockeye,	463,225	275,393
Springs,	35,885	16,721
Cohoos,	135,123	152,996
Pinks,	1,090,827	474,280
Chums,	222,298	180,860
Bluebacks,	41,712	24,078
Steelheads,	1,434	755
Total,	1,990,509	1,125,083

NEW B. C. SUPERVISOR

Filling the vacancy created by the death of Supervisor E. G. Taylor, the Civil Service Commission has appointed Fisheries Inspector J. F. Tait as supervisor of District No. 3, British Columbia. The headquarters of District No. 3 are at Nanaimo.

Supervisor Tait is a veteran of the Great War and has been employed in the Dominion fisheries service in British Columbia since shortly after the war's end. For a time he was inspector for the Alert Bay sub-district. Latterly he has held the inspectorship of the Pender harbour sub-district.

Fish scales may sometimes seem a nuisance to the housewife but some of them have value, just the same. For instance, New Brunswick fishermen marketed over 220,000 pounds of herring scales in 1929. The scales are used in the production of an essence from which artificial pearls are made.

Over 26,000,000 pounds of greyfish, or dogfish, were landed by Canadian fishermen last year and were used in the manufacture of fish fertilizer, etc. Capture of dogfish serves the double purpose of supplying raw material for reduction plants and of lessening the damage which these fish do to various fisheries.

9 MONTHS CATCH—Con.

Decreases were fairly general in virtually all the principal fisheries, although Quebec and Nova Scotia both fared considerably better as regards the mackerel fishery than they had done in September, 1929, and there was increased success in Nova Scotia's halibut operations. The landed value of Nova Scotia's haddock catch, \$52,875, represented a gain of nearly \$8,000, though haddock landings were smaller than in the previous September.

Lobster Operations

The major lobster fishing of the month was in New Brunswick and the catch there was nearly 1,997,000 pounds as compared with 1,311,400 pounds in September, 1929. Landed value, however, was only \$112,580 as against \$118,026 last year.

The total catch of lobsters on the coast as a whole since the beginning of the late fall season of 1929 has been 40,105,200 pounds with a landed value of \$3,625,107 while in the preceding corresponding period the landings totalled only 36,498,900 pounds and the value of the catch as landed was \$3,546,780.

Fish meal made from lobster bodies was produced experimentally by a Nova Scotia reduction plant last year. The meal, which has been found useful as a fox food, is stated to have a value of about \$50 per ton.

U. S. BOATS FORFEITED FOR UNLAWFUL ENTRY

Four Foreign Fishing Craft Condemned by B.C. Vice-Admiralty Court

Finding that they had entered British Columbia waters for a purpose not permitted by the law of the Dominion, Mr. Justice Martin, sitting in Vice-Admiralty Court at Victoria, has ordered four United States salmon trolling vessels forfeited to the Crown.

What disposition will be made of the confiscated boats has not yet been decided. At present they are held in custody at the Digby Island Fisheries Station, British Columbia.

The vessels were seized early in June by the Fisheries Patrol Launch *Rivadis*, of the Dominion fisheries service, when they were found anchored in territorial waters off the Queen Charlotte Islands. The seizures followed others made in 1929 when it seemed that on certain sections of the British Columbia coast unlawful use of Canadian waters was being made by fishing craft of other than Canadian ownership. In 1929 and again this year special patrols were established in order to put a stop to abuses of this kind.

Foreign-owned vessels are not permitted to fish in British Columbia waters but entry for such purposes as obtaining shelter is allowed. The proceedings for the condemnation of the vessels seized by the *Rivadis* were taken under the Customs and Fisheries Protection Act on the ground that the boats had entered territorial waters for a purpose not allowed by law. Mr. Justice Martin condemned all the boats and in a written judgment dealing with three of the cases he found that the vessels had come into Canadian waters for a purpose not permitted by the Customs and Fisheries Protection Act or by the Customs Act since, in the particular circumstances existing, there was no "stress of weather or other unavoidable cause" within the true meaning of the provisos permitting entry under certain conditions.

Experimental production of aluminum cans for fish products has been undertaken in Norway. Aluminum is much more expensive than tin, of course, but it is believed that this difference in cost may be offset by the fact that as aluminum can be embossed printed paper labels may not be necessary when aluminum cans are used.