

Oyster Farming

Regeneration of an Industry—
Scientific Methods must Supplant
Exploitation—Work of
Dr. Stafford

Oyster fishing must give place to oyster farming. The selfish exploitation of the valuable Canadian oyster beds in the early days of the industry has rendered this an absolute necessity if the fisheries are to be saved from complete destruction. Even under natural conditions the death rate amongst oysters is exceedingly heavy. It has been estimated, that in order to maintain the oyster population under natural conditions, the female oyster must deposit something like 16,000,000 eggs every year of her adult life. This indicates not only the magnitude of the death rate, but something of the magnitude of the causes which operate to bring about such a death-rate. Centuries of struggle have fitted the oyster to hold its own against its many natural enemies, but where man with his reasoned methods of fishing has interfered, depletion is sure to follow.

Consequently it has become necessary not only to pass restrictive legislation, but to take steps to maintain the oyster beds by artificial means. Although oyster culture has been practised for many years it is only comparatively recently that the life history of the young oyster has been traced.

Work of Biologists

American biologists first succeeded in propagating oysters by artificial fertilization of the eggs in 1879. This success led to extensive and eventually successful experiments in the raising of oysters.

But while the results of this research were of great value there was still one important period in the life of the oyster that was not clearly understood. There are roughly three important events in the life of the oyster that are of practical use to man. (1) The spawning or depositing of the eggs; (2) the swarming or swimming of the larvae; (3) the spatting or fixation of the full-sized larvae onto shells or other objects. Of these, a knowledge of the second is perhaps of most value in artificial oyster culture. This is so because it enables the culturist to determine more exactly when cultch should be planted for the oyster spat. Cultch, to be of any value, must be clean and fresh.

If planted too soon it becomes slimy before the spat settle; if not soon enough, it is worse than useless. By knowing the exact time when the maximum number of larvae swarm, the proper time for the planting of the cultch can be determined. This point was cleared up by the work of Dr. Joseph Stafford of McGill University. As a result of his research the catching of spat has been removed from the region of doubt and caprice to that of regularity and certainty. Dr. Stafford's

forthcoming report on oyster culture to be published by the Conservation Commission will explain in detail his discoveries in oyster culture. It should do a great deal to make oyster farming an increasingly valuable Canadian industry.

CANADA'S WATER AREA

"Canada has an estimated water area of 125,755 square miles. Hence as compared with the estimated area of 52,630 square miles of water area in the (continental) United States, Canada is seen to have nearly two and one-half times the water area possessed by the States. The estimated water area of Ontario is 40,354 square miles exclusive of any portion of the Great Lakes, or any arm of the sea, and this area is over 75 per cent. of the total water area of the United States, exclusive of Alaska, the Philippines, and other external possessions."

The Water-Powers of Canada.

It should be remembered however, that while such computations and comparisons are interesting and valuable for some purposes, they are apt to be very misleading, especially if associated with water-power resources. Water is not necessarily water-power.

Reports to be Issued

Some Particulars With Reference
to Forthcoming Reports of the
Commission

During the early part of July a report on *Animal Sanctuaries in Labrador* will be issued by the Commission of Conservation. The report is a supplement to an earlier report on the same subject, both of which have been prepared by Lt.-Col. Wm. Wood.

Late in August a report will be issued on *Forest Conditions in Nova Scotia*. The report will give the details of a reconnaissance forest survey of that Province which was carried out by Dr. B. E. Fernow, assisted by Dr. C. D. Howe and Mr. J. H. White.

Early in the autumn a statistical report on the *Water-works of Canada* will be published. This report is being compiled by Mr. Leo G. Denis, Hydro-Electric engineer for the Commission of Conservation.

About the same time it is expected that the proceedings of the recent meeting of the Fisheries' Committee will be published in book form.

A little later a pamphlet on *Oyster Culture* by Dr. Joseph Stafford will be published. In this report Dr. Stafford will tell of his valuable contributions to the science of oyster culture.

Mr. J. Walter Jones' report on *Fur Farming in Canada* will also be published before the end of the year.

The catch of shad in Canada has fallen from 10,707 bbls. in 1899 to 5,242 bbls. in 1910, a decrease of over 50 per cent. in eleven years.

Hudson Bay Railway

Features that will Concern the
Freight Department of the
New Road—Resources
of Keewatin

Railroads must have traffic both coming and going to be financial successes. This is a maxim in railroad operation. It is also a maxim that railroads must not be entirely dependent on interline traffic.

There are those who would tell us that in both these respects the proposed Hudson Bay railroad falls short. It will be built through a country which pessimists tell us is incapable of producing any natural product in commercial quantities. But the pessimists may be mistaken. They were mistaken some thirty years ago when they took to prophesying for the Canadian Pacific railway.

What then, are some of the conditions? In the first place it should be noted that only rough and imperfect estimates have as yet been made with respect to the commercial potentialities along the proposed line.

Nevertheless it is known that some of the lakes have in them abundance of whitefish and pickerel, so that the fishery industry should be very profitable as soon as the road is built. Again there is still considerable game, although more stringent regulations will soon be necessary to prevent exploitation. Further, there is reason to believe that the Keewatin Lake country may one day rival the Muskoka Lake region as a tourist resort. The timber resources are not of great value except for fuel, pulpwood, and mining purposes. Improved drainage would not only improve the forest growth in many localities but would make possible the growth of vegetables and small fruits in abundance.

But there is another source of traffic of more than special note of which the Hudson Bay road should eventually hold a monopoly. It is perhaps not common knowledge that the northern portion of Keewatin is rich in minerals, especially copper. It has even been stated that in all, there is, approximately, 250 square miles of such prospects on the mainland, southwest of Baffin island. The rock formations are of the same character as those found everywhere in the metalliferous regions of Eastern Canada. Further, at the present time New York copper magnates have men at work in these very regions, staking up everything that may prove capable of producing copper. To make mining possible a means of shipping ore to smelters must be secured. At present the only outlet is by way of Hudson Strait, and this is available for only some four months in the year. Here, then, is where the Hudson Bay line should secure much of its returning freight traffic. It is a long haul, but it is not as great a problem as with the development

of the route to Dawson. Thus such a class of freight would pay there need be no doubt. The wealthiest railroad companies in the United States are large carriers of mineral ores. Over 66 per cent. of the traffic carried by the Pennsylvania Railroad, the largest freight carrying road in the world, is made up of minerals.

Thus the new grain outlet for the West—the Hudson Bay railway—may be made not only to pay expenses, but dividends.

Committees of the Commission of Conservation

Committee on Fisheries, Game and Fur-Bearing Animals.—Dr. C. C. Jones, Chairman; Hon. O. T. Daniels; Hon. J. K. Fleming; Hon. W. H. Hearst; Hon. J. H. Howden; Hon. J. A. Mathieson; Dr. Howard Murray; Dr. J. W. Robertson; Hon. W. R. Ross.

Committee on Forests.—Senator W. C. Edwards, Chairman; Mr. Frank Davison; Dr. B. E. Fernow; Mr. John Hendry; Hon. Robert Rogers; Mr. W. B. Snowball, and the ex-officio Members of the Commission.

Committee on Lands.—Dr. J. W. Robertson, Chairman; Dr. George Bryce; Hon. Martin Burrell; Mgr. C. P. Choquette; Mr. F. Davison; Mr. E. Gohier; Dr. C. C. Jones; Hon. Benjamin Rogers; Dr. W. J. Rutherford; Dr. H. M. Tory and the ex-officio Members of the Commission.

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The ex-officio members of the Commission who are attached to the Committees on Forests, Lands and Minerals are as follows: Hon. Martin Burrell; Hon. Robert Rogers; Hon. Wilfrid B. Nantel; Hon. John A. Mathieson, K.C.; Hon. O. T. Daniels; Hon. James K. Fleming; Hon. Jules Allard; Hon. Wm. H. Hearst; Hon. James H. Howden; Hon. James A. Calder; Hon. Arthur L. Sifton; Hon. Wm. R. Ross.

The rural population of Canada in 1911 was 3,924,394 and the urban, 3,280,444. The former shows an increase of 62.25 per cent since 1911, and the latter of 17.16 per cent.