

CONSERVATION, THE HOPE OF CANADA'S FUTURE

Large Increase in Canada's Nickel Refining Capacity

New Plants Producing 30,000,000 lbs. Yearly Soon to be in Operation

It was pointed out at the first annual meeting of the Commission of Conservation in 1910 that, although Canada was assessed of the richest portion of the world's supply of nickel, we were deriving only a comparatively small amount of benefit from it. The most expensive portion of the work of recovering nickel from the raw ore was done in other countries. This anomaly is now in course of being remedied. As the result of constant agitation and discussion we are able to see by far the greater part of the work done in Canada.

The British American Nickel Corporation has under construction near Sudbury a new electrically-operated smelting refinery which will have a capacity of 2,500 tons of ore daily and a nickel production of 20,000,000 pounds per annum. The smelter will produce a matte carrying 80 per cent copper and nickel, which will receive final treatment in the refinery.

The International Nickel Company is constructing a new refinery at Port Colborne at a cost of \$4,000,000, which will be in operation in a few months. The initial capacity will be 15,000,000 pounds of nickel per annum, but it can be expanded in a few years to produce 60,000,000 pounds. The new plant, according to the company, will be able to supply the needs of the whole British Empire.

GRAND RIVER STORAGE

Chairman of Commission of Conservation Points to Experience of Quebec

Speaking before the ninth annual meeting of the Commission of Conservation on Nov. 27th, Sir Clifford Sifton, the chairman, said that for some years it had been a matter of public knowledge that the Grand River valley in Ontario had been suffering more and more from a diminished flow in that river. "I am not at all able," he continued, "to give an expert opinion upon the subject from an engineering standpoint, but it seems clear that the time has arrived when the Ontario government should make a thorough scientific examination of the subject with a view to ascertaining whether conservation works can be constructed which will remedy the evil. The experience of Quebec shows that where such works are practicable, they can be constructed without placing any burden upon the public exchequer."

SHOULD SAVE SLACK COAL

In the Canadian semi-anthracite mines and in practically all the sub-bituminous and lignite mines, the proportion of coal wasted as slack varies from 12 to 35 per cent. Everything possible should be done to encourage the use of this class of fuel and it would seem advisable to exact a royalty on total output and rebate all a portion of the royalty on slack coal

provided the same is utilized or marketed.

Under the present leasehold system, royalty is exacted on merchantable output only, which, therefore, tends to encourage the waste of slack coal.

Slack is produced during mining and handling of the coal and the amount produced is reduced by the use of mining machines and by care in handling.

TWO AND HALF CENTS AN ACRE IS COST OF SURVEY

Two years ago, New Brunswick inaugurated a survey to find out just what it possessed in the way of forest resources. To date, 1,200,000 acres have been covered, of which 600,000 were surveyed this year at a cost for the field work of only 2½ cents an acre. The J. B. Snowball Company is co-operating with the Provincial Government by making available to it the information which the company obtained in a survey of its forest properties.

The estimated amount of spruce and balsam in New Brunswick is only about 30 times the present annual cut for lum-

ber and pulpwood. One of the principal objects of the survey is to manage the forests on a permanent basis so that no more than the annual growth will be cut each year. Coniferous species are being heavily over-cut as compared with hardwoods.

DOMINION COAL LEASES DO NOT DISCOURAGE WASTE

Considerable Tonnage Wasted by Get-Rich-Quick Mining—Other Countries Have Taken Steps to Stop Waste

Coal-mining rights on Dominion lands are disposed of by the Dominion Government under leases, the provisions of which are so liberal as to afford the operator every encouragement. They do not, however, give any consideration to the relation of the coal seams, the order in which they should be worked to prevent waste, the quality of the coal in the several seams and the coal content in the leased areas. The result is that a tremendous tonnage of coal is wasted.

All other important coal-mining countries which dispose of coal-mining rights under a system of leasehold have found

What Provinces Are Doing To Improve Forest Services

Ontario, British Columbia, Quebec and New Brunswick Keeping Abreast of Times

Ontario has thoroughly reorganized its forestry service and put itself on a par with other up-to-date provinces whose forest services are under expert technical direction. New Brunswick is also swinging into line. A well-qualified forester, Mr. P. Z. Caverhill, has been appointed as the head of the forest service and is now making a survey of its forest resources as a basis for laying down permanent lines of forest policy. In this work, the Commission of Conservation has been assisting the province in an advisory capacity.

British Columbia and Quebec have long been in the forefront of the provinces that have had an efficient technically qualified forest service. Although Nova Scotia's forests have been nearly all cut over, an efficient forest service would be an investment for the province that would pay for itself many times over in conserving and utilizing the forest resources remaining. Two-thirds of the land area is better adapted to forest growth than to any other use and should be re-forested.

CO-OPERATIVE FOREST PROTECTION IN QUEBEC

Quebec has made a distinctive contribution to forestry work in establishing the success of co-operative fire protection associations. In these, the timber owners band themselves together to protect their limits from fire, sharing the expense on an acreage basis. The provincial government also contributes towards the expenses in consideration of the protection afforded unlicensed Crown timber lands. One great advantage of the association idea, especially when the provincial forest service is appointed for political reasons instead of for merit, is that the owner-members of the association see that only competent rangers are employed. Quebec now has under co-operative fire protection fully 67,000 square miles of forest lands, comprising the greater portion of the licensed Crown timber lands as well as a large portion of the Crown granted lands. Under this arrangement, the St. Maurice Forest Protective Association, the pioneer in the movement, looks after the St. Maurice district, the Ottawa River Association guards the large territory bordering on the Ottawa, and the newly formed Laurentian and Southern St. Lawrence Associations protect the districts on the north and south of the St. Lawrence river, respectively, in the eastern portion of the province.

DEPEND ON U.S. COAL

The total coal production of Canada in 1916 was 14,500,000 tons, while the imports were 17,500,000 tons. This shows our dependence on the United States and the necessity for retaining public control of water-powers.

TECHNICAL TRAINING AND CONSERVATION

It cannot be said that in Canada we have yet arrived at a proper conception of the economic utilization of our resources. We still persist in a great degree in the crude and wasteful methods naturally characteristic of a country where resources are abundant and where many of those who are engaged in their exploitation are totally lacking in the scientific education which is necessary in order to make the best use of that which is placed in their hands. We are still largely dominated in Canada by the idea that any ordinarily capable amateur can do the work which ought to be done by a trained scientific man, and until we eradicate this fallacy thoroughly, and in its place implant the view that men who are technically trained are the only men competent to deal with technical problems, we shall not begin to attain to general success in making the best use of the materials which are at our disposal.—Sir Clifford Sifton, before Ninth Annual Meeting of Commission of Conservation.

POWDERED FUEL

A large proportion of Canada's reserves of coal is unsuitable for use in the ordinary way as locomotive fuel. The coals of Manitoba, Saskatchewan and portions of Alberta are lignite or sub-bituminous, high in moisture, and owing to excessive 'sparking,' cannot be used as locomotive fuel because of their inability to set fires. There is a possibility that pulverization will overcome the disabilities of this type of fuel, and Mr. W. J. Dick, mining engineer of the Commission of Conservation, is investigating the problem and compiling information respecting the use of powdered coal and peat as a fuel for locomotives, stationary boilers, cement plants and metallurgical purposes. This class of fuel has already been used with eco-

nomie success in a few plants. If it can be proven to be a success generally, it will mean that we can utilize much low-grade coal that, heretofore, has been largely wasted, and will lessen the ever-increasing cost of generating power from high-grade coals and fuel oil.

B. C. Abolishes Patronage

British Columbia has again taken the lead in forestry administration by abolishing the patronage system in its appointments to the field force of the forestry system.