

# Conservation

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## Perpetuating the Supply of Pulpwood

Pulp and Paper Companies Co-operate with the Commission of Conservation in studies of Tree Growth

Canada produces annually about \$100,000,000 worth of pulp and paper products. During the past ten years, especially, the industry has made rapid progress, until it is now one of the most important in the country. The three outstanding requisites for the maintenance of the industry are large accessible forest areas, particularly of spruce and balsam, adequate cheap power, preferably water-power, and a plentiful supply of labour. As to the two former, nature has been prodigal in her gifts to Canada. Water-power is not only abundant but is widely distributed. The virgin coniferous forests of Eastern Canada were of vast extent, and it is perhaps not entirely surprising that the early settlers and explorers considered them to be all but illimitable.

But, for at least thirty years, keen observers have foreseen the possibility and, indeed, the probability, of exhausting the natural supply of pulpwood. The rapid growth of the paper industry has brought the time within measurable distance. The larger producers of paper, particularly in Quebec and Northern Ontario, where the industry is mainly centred, have scented the danger and have taken initial steps to put the pulpwood forests on a permanent basis.

It goes without saying that it is a great advantage to have an adequate supply of pulpwood forests at the "back door" of the mills. Consequently, extensive planting of cut-over lands has already been undertaken.

What is of at least equal significance and importance, scientific studies of forest conditions are being carried out as quickly as possible; guesswork is to cease. Even expert estimates, valuable as they are in the absence of more exact data, are to be supplemented by both extensive and intensive studies of tree growth, the relations that exist in forest stands between different species of trees, the effect of different methods of cutting and slashing on the future forest crop, the range and control of injurious insects and plant diseases, and the influence of climate on the reproduction of forests.

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Photo by G. A. Malloy.

Cat No. 192

## MAKING PERMANENT RECORDS OF FOREST GROWTH

The man in the picture is determining the position of the trees by means of an alidade attached to a plane-table. Each tree has a number painted on its trunk and corresponding numbers are placed on the map. This is a material assistance in keeping a permanent record of the trees and simplifies the study of the progress made by them under different conditions from year to year. The portion of the plot shown in the picture has been slashed and the slash burned. For purposes of comparison the remainder of the plot has only been slashed.

## A WORD OF CAUTION

"Lest we forget" were the words of caution which went far and wide about a year ago when the epidemic of influenza cut a swath through Canada and brought suffering and distress and carried away tens of thousands of our loved ones. A timely word or two may not be out of place to health authorities and the public generally.

The benefits of fresh air, healthy living and the early medical attention to colds and catarrhs should not be forgotten as some of the preventive measures which should claim our personal attention.

Let each one of us, like a good scout, "Be prepared" against what may happen and the worst may never materialize.—C.A.H.

## RECORD CATCH ON SKEENA

On the Skeena river, which enters the Pacific just below the city of Prince Rupert, the salmon run is the greatest in the history of the salmon fisheries. For some days the average take of fish on the Skeena was approximately 140,000 to 150,000, about evenly divided between the sockeye and the humpback.

The canneries and cold storage plants are finding it difficult to take care of the fish. Prices paid the fisherman are the highest ever known and with the increase in the cost of cans it is apparent that canned salmon will necessarily sell at a high figure.—U. S. Commerce Report.

Where hygiene is practically applied, crime diminishes.

## Imitating Nature in Hatching Salmon

B. C. Fish Culture Expert Incubates Fry in Gravel—Good Results Obtained

The Commission of Conservation, through its publications, has repeatedly drawn attention to the diminishing resources of sockeye salmon in the Fraser river. The depletion is, in fact, so serious that these fish are threatened with extermination in that locality. To meet the situation two things are necessary. First, there must be a drastic limitation of the fishing for a term of several years, which can only be accomplished by international agreement. (An article on this subject appeared in the July number of *Conservation*.) Second, the sockeye must be aided, by artificial hatching, to regain their former numbers.

The great difficulty with the hatchery system has been that, although very efficient as regards the proportion of eggs that are hatched, the fry have proved to be much less fitted to take care of themselves than those hatched naturally. On the other hand, in natural spawning, a great many eggs are lost by less thorough fertilization, by being left high and dry when the water goes down, by destruction owing to freshets and by falling a prey to their natural enemies.

Mr. A. Robertson, superintendent of the Harrison Lake, B.C., fish hatchery has devised a method of incubating salmon spawn in gravel, which, it is claimed, combines the advantages of both the natural and the artificial methods of hatching.

Mr. Robertson's method consists, essentially, of placing layers of gravel and soft eggs in a box through which a constant supply of spring water is made to circulate. When carefully laid, the soft eggs adapt themselves to the shape of the interstices in the gravel. The fry being hatched in the dark, are light-shy, and have consequently developed their natural hiding instinct. Nor have they become accustomed to the movements of the hatchery attendants and they are therefore more alert than fry bred in a hatching trough. Fry hatched in gravel instinctively burrow down and remain till the sac is absorbed and often make considerable growth before they emerge.

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