## PRODUCTION AND MANUFACTURE OF PULP-WOOD IN CANADA DURING 1914.

A VALUABLE report has recently been issued by the Forestry Branch, Department of the Interior, on the pulpwood production last year. This report, prepared by R. G. Lewis, B.Sc.F., shows the quantity and value of pulpwood produced in the various provinces, kind of wood used and the method of manufacture. It also gives the quantity and value of pulpwood exported from Canada and from the several provinces in an unmanufactured state. Another section gives the value of wood-pulp exported from and into the Dominion.

The sixty-six active pulp-mills in Canada in 1914 consumed altogether 1,224,376 cords of pulpwood, valued at the mill at \$8,089,868. In addition to this home consumption a total quantity of 972,508 cords, valued at \$6,680,490, was exported in the unmanufactured state from Canada to the United States, making altogether a total production of pulpwood of 2,196,884 cords, valued at \$14,770,358.

In spite of the widespread disturbances to industry in general occasioned by the war, the manufacture of wood-pulp in Canada is still on the increase. During the calendar year 1914 the quantity of wood used in this industry showed an increase of 10.4 per cent. over the preceding year.

The woods most commonly used in pulp manufacture in Canada vary but slightly from year to year. The increased manufacture of sulphate, or kraft, pulp has enabled the manufacturers to use increasing proportions of jack pine. The use of balsam fir has increased steadily in past years. Hemlock is used to a greater extent than any other wood in British Columbia. In every other province but British Columbia, spruce heads the list of woods converted into pulp.

The proportion of wood used in the manufacture of chemical fibre in Canada is steadily increasing. In 1910, only 22 per cent. of the wood was converted into pulp by the chemical processes. In 1914 this proportion had increased to 47.3 per cent., almost half the total.

In the mechanical process, where the fibres are more or less broken and their strength impaired, only the best quality of pulpwood can be used. The machinery, however, is comparatively cheap and easily installed, and as long as the supply of good pulpwood was convenient this process was largely used. Of late years the quantity of wood used in the sulphite process has steadily increased in spite of the high cost of installing the necessary plant. In this process the wood requirements are not so exacting, and the higher price for the pulp produced compensates for the greater cost of the plant.

The introduction of the sulphate or kraft process for the manufacture of coarse, strong, dark-colored pulp for wrapping-papers has permitted the use of jack pine and other so-called inferior species in a greater proportion than had hitherto been possible.

In 1913 the wood used in the mechanical process for the manufacture of ground-wood pulp formed 54.1 per cent. of the total consumption. This proportion was reduced to 52.7 per cent. in 1914. The proportion in the case of sulphite pulp increased from 33.1 to 35.5 per cent., but a decrease took place with the sulphate or kraft process from 12.3 per cent. to 11.5 per cent. The only actual decrease in quantity was in the case of wood used in the soda process.

During 1914, Canada exported 126,714 tons more of manufactured wood-pulp than in 1913, an increase of 42.5 per cent. While the increase in the exportation of ground-wood was 36.4 per cent., that of chemical fibre was 63.5 per cent. This increase is partly due to the general advance of the industry in Canada and partly to the fact that while the capacity of pulp-mills has increased in the last year, the paper industry has not kept pace with the supply of pulp, and the surplus of manufactured fibre has found a market in other countries. The United States has been our most important purchaser of pulp in the past, and the proportion of Canadian pulp exported to that country in 1914 was almost 70 per cent. of the total. Great Britain also buys large quantities of Canadian wood-pulp, and these two countries together usually take the bulk of the exports from Canada. France imported Canadian pulp in 1914 for the first time since 1910. Other countries, including Belgium, Mexico, Australia, Cuba, New Zealand, and Newfoundland, have imported small quantities of woodpulp from Canada in the last five years, but the trade with these countries has varied greatly from year to year. The average price of exported wood-pulp changed very slightly. That of ground-wood pulp decreased by a few cents, and that of chemical fibre increased by about one dollar a ton.

In spite of the fact that Canada in 1914 produced nearly a million tons of wood-pulp, valued at approximately twenty million dollars, and exported pulp to the value of eight million dollars, we still import this commodity from other countries. The importations of woodpulp in 1914 were valued at \$426,601, an increase over the imports of 1913 of 19 per cent. Although the greater part of the material comes from the United States (51 per cent.), the value of imports from that country decreased by \$87,182 in 1914. A decrease took place in the value of imports from Great Britain, and no pulp was imported from Germany, but increases are to be noted with the other countries on the list, especially Sweden.

Closely related to the preservative treatment of wood against decay by creosote or zinc chloride is the fireproofing of wood. While sprinkler systems are considered the best protection in any type of building, the fact remains that fire retardants are desirable under certain conditions. Realizing this condition, the National Fire Protective Association has recently published an excellent report on "The Use of Wood in Building Construction," which contains results of experiments with various fire retardant materials, including shingle stains, paint, and various mineral salts. It is impossible to summarize this report other than it shows that there is very little difference in the inflammability of various kinds of untreated wood, and that ammonium salts and sodium borate gave more satisfactory results than other chemicals, and that paint is considered a good fire retardant.

Yellow pine, according to American Forestry, has been more extensively treated against decay than any other wood. In 1914 10,600,000 yellow pine railroad ties were treated out of a total of 44,000,000, the only wood used to a great extent being oak. For construction timbers of all kinds, particularly bridges, trestles and marine work treated yellow pine leads the list with Douglas fir second. New uses for treated yellow pine are being developed. It remains to extend a more general knowledge of the possibilities of wood preservation to the smaller consumers. Railroads and other large corporations are at least partially awake to the possibilities, but it is difficult to make retail distribution of treated lumber at the present time, because the user doesn't know what he wants, and the retail yard man doesn't carry it in stock, and the big treating plants and lumber manufacturing companies have not developed this class of trade.