

Newsprint – Canada's top product

About 60 companies in Canada operate some 140 mills, producing newsprint, pulp for sale to other paper companies, paperboard for packaging purposes, and a wide range of other papers and boards. Newsprint, the leading product, is shipped to newspaper publishers round the world. In fact, Canada produces about 40 per cent of the world's supply of newsprint.

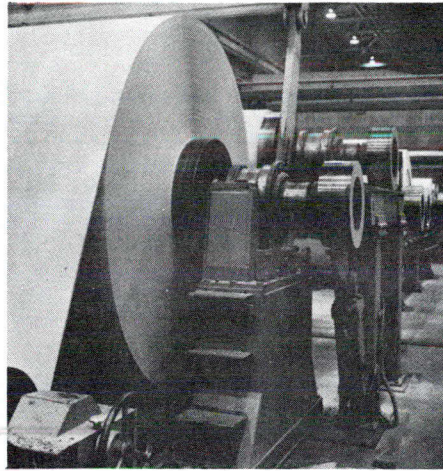
Most of the wood pulp sold is also exported, largely to the United States but increasingly in recent years to Japan and Europe, to mills that convert it to paper or paperboard. Some special highly refined pulps are shipped to the chemical industry, where they are used to manufacture rayon, cellophane, plastics, explosives and other products based on cellulose as a raw material.

In addition to paper, pulp and paperboard, the industry also produces a number of by-products that result from its manufacturing processes. These include alcohol, yeast, vanilla flavouring, cement additives, road binders, turpentine, industrial solvents and other chemicals.

Many companies also produce lumber, plywood, building board, shipping con-



White spruce – one of Canada's prime sources of fibre for making paper.



Newsprint comes off the papermaking machine in a continuous sheet at speeds up to 3,000 feet per minute.

tainers, packages and bags. Some generate electric power and operate shipping fleets. A growing number have established plants in the United States, Europe and other areas of the world to broaden and strengthen their position, and that of Canada, in the expanding international forest-products industries.

Pulp and paper

Pulp and paper is the largest single creator of wealth in Canada. It stands first among all the manufacturing industries in value of production, employment, wages paid and capital invested. It is a national industry, with mills in British Columbia, the Prairie Provinces, Ontario, Quebec and the Atlantic Provinces. Some 20 million tons of products with a value of about \$4 billion are produced each year. More than 75,000 people work in the industry's mills and offices, and many more are engaged in the huge task of harvesting wood in the forests and transporting it by water, road and railway.

First Canadian mill in Quebec

Although paper was first made in China nearly 2,000 years ago, Canada's first paper mill was built in 1805 in St. Andrews, a small village near Lachute, Quebec. The raw material at that time was rags, which were converted by hand into wrapping and printing papers. The first machine-made paper in Canada was produced at a mill built near Toronto in 1826. Throughout the nineteenth century the use of paper increased tremendously, and rags from

which to make it became scarce. About mid-century the industry was revolutionized when methods were developed for making paper from wood.

From trees to paper

One is so accustomed to finished smooth, white sheets of paper that it is hard to think of them as being made of millions of microscopic ribbons, but this is the case. These ribbons originally were tiny tubes of fibres packed side-by-side in the trunks of trees.

Although the fibres appear in cross-section as open tubes, in a piece of wood they have closed ends and each one is very short – about 1/8 of an inch in length – and very thin – about 1/1,000 of an inch in diameter. Separated from wood, they look like tiny needles.

To make paper from wood it is necessary to separate the fibres from one another, treat them in certain ways so



The surface of writing paper looks like this when magnified 220 times. Wood fibres, now flattened into tiny ribbons, overlap each other in all directions.

that the tubes collapse into ribbons, disperse them in water, and drain away the water on a fine screen. The fibres settle on the screen in a random fashion, crossing one another in every direction, but they all settle in the same plane on the screen.

Glue is not needed to stick the fibres together because they all carry on their surfaces a natural adhesive which, when the water is drained away and evaporated, bonds them together the same way as a postage stamp is bonded to an envelope.