

suction boxes with perforated tops, over which the wire travels. Before leaving the wire the paper passes between a pair of rollers, called "couch rolls" which press the fibres together and squeeze out more water. In some machines, a suction roll is used at this point. It is this roll or the lower one of the pair, which drives the wire.

The paper is now made, so far as the interweaving of the fibres is concerned, and it contains about 90 per cent. of moisture. In order to improve the firmness, texture and finish and to remove more water, the sheet is passed through several pairs of "press" rolls, carried by fine woollen felts.

Evaporating the Water,

Most of the water is removed by evaporation, the paper passing over steam-heated drums called "dryers." This, of course, is expensive, so as much water as possible is removed by mechanical means, although the best that can be accomplished is to deliver a sheet about 35 per cent. dry to the dryers. As the finished paper will contain from seven to ten per cent. of moisture, nearly two tons of water must be evaporated.

Smoothing the Surface.

The finishing, or smoothing of the surface, is done by the part of the machine called the calender, a stack of nine to thirteen special steel rolls. The friction and weight of the rolls on the paper as it winds down through the stack really "irons" out the roughness, presses down the frizzy fibres and gives a surface flat enough to take the ink properly from type and cuts in the press room. The endless sheet is then wound on reels and from these, in turn, is passed through a set of rotary shears that divide it into strips of the proper width, and these strips are wound on

cores in rolls of the correct width and diameter, for the newspaper presses. Any breaks are carefully joined and a "flag" or signal is placed in the roll at that point to warn the pressman of some defect in the roll. Wrapping the roll is comparatively simple, yet this and the loading into the cars must be conscientiously and carefully done if the paper is to arrive in good condition.

Some newspapers require paper in sheets. To accommodate them the mill must have another department, where the paper from the rolls is passed through a cutter, whose revolving knife cuts the strip into pieces the desired length. The sheets are then counted by reams and packed in bundles.

For special effects an extra high finish is sometimes required. To get this, the strips are passed through the super-calender, a calender stack made up of alternate rolls of steel and compressed paper or cotton. A very high luster can thus be obtained, the paper often going through several times. The product is called "super news" and is largely used for pictorial sections of the paper.

When it is necessary to produce a special color or some other effect requiring a fundamental treatment of the stock, the necessary materials, color, sizing, clay, etc., are added in the mixer or the beater.

For other grades of paper, the operation of the paper machine is practically the same as described, but such papers usually require special additional processes for the preparation of the raw material and the finishing of the paper. The selection of stock is of greatest importance, and more care is required at most points in the process.

Forest fires drive out population.
There are no jobs in dead forests.

Canada has not one acre of timber to throw away.