## HOW PAPER IS MADE.

From the Napanee Standard.

It is not many years since Mr. John Thompson, the urbane Superintendent of the Napanee Mills, supervised the erection and equipment of the Windsor Mills Paper Manufactory, which was the precursor of all other manufactories in Canada, and by the success which there attended the enterprise of the development of an industry which has added much to the wealth and progress of this Dominion. Let the reader follow in imagination the bundles of rags and cords of wood, which constitute the raw material, from their entrance to their exit, and then endeavor to estimate the advantages which have accrued from the utilization of the paper thus produced for newspapers and book-making purposes. We venture to affirm that there is not an intellect on this mundane sphere which can fathom the depth, scale the heights, or measure the boundaries of the stupendous problem. Paper has been an indispensible requisite from the time the ancient Chinese made and used it until the present day, but at no time in the world's history did it constitute such a factor in the preservation and advancement of civilization that it does now.

But, passing from paper in the abstract, to the operations of the Napanee Paper Mills Co. in particular, there is

MUCH TO AFFORD GRATIFICATION

to the country at large, and a great deal of pardonable sectional pride to the people of this county. The company was formed in 1873, by letters patent, and its capital fixed at $50,000 in 50 shares of $1,000 each. The property, (saw mills, etc., with water power) known as the "Yankee Mills," was purchased from H. M. Wright & Co., and the buildings torn down. By April, 1874, there was erected instead a large stone mill, divided into five large compartments, representing a cost of $30,000. Other property, including real estate and workmen's cottages, was acquired at a cost of $10,000, and the machinery, motive power, and other requisites, swell the total to $100,000. Shortly after the commencement of operations it was found that $50,000 was not sufficient capital, and consequently it was agreed that, instead of paying dividends, the amounts should be added to the shares and treated as paid up capital. In this manner the mill and equipments have been

COMPLETED AT A COST OF ONE HUNDRED THOUSAND DOLLARS,

so that the shares, instead of being only worth $1,000 each, will very shortly be worth $2,000. The buildings consist of furnace room, 50x100 feet; machine and finishing room, 30x120 feet; engine (preparation) room, 80x20 feet; store room, 40x100 feet; rag room (detached), 30x40 feet; besides the draining room, or cellar, and passages. In the furnace room there are two furnaces and two "liquor vats," 35x8 feet, which are employed to reclaim the chemical liquid blown off the pulp and taken from the vertical boilers in which the chips and rags are reduced to pulp. When the soda ash is first used it is white; when reclaimed by boiling down in the "liquor vats" it is black, and is used over again in the proportion of two parts black to one part of white (fresh) ash.

A GREAT REDUCTION IN COST

is thus made. Twelve hands are constantly engaged in this room, keeping up heavy fires and attending to the liquid and residue. In the engine room, which is more particularly described below, there are six hands, and in the "chip" room five hands. The motive power is supplied by either water or steam, as most convenient. During the period of high water, which covers about half the year, water can be used without cessation. There are two 56-inch Lafelle water wheels in connection with the machinery. Last fall, at an expenditure of over $1,500, another wheel was put in. The saving of fuel and labor thereby effected caused the extra wheel to

PAY FOR ITSELF IN THREE MONTHS,

and since that time it has been a material source of profit. At low water the escapes of the dam are closed during the day and steam applied. During the day enough water is collected to run the mill all night, when steam is again used, and the collection of water carried on. But this is not the whole of the economy of power and fuel. Up to a few months ago a 40-horse power engine was in use, but it consumed an enormous quantity of fuel without, at all times, supplying all the power required, so it was determined to replace the engine with a

100-HORSE POWER VARIABLE CUT-OFF ENGINE,

from the noted foundry of Woswick & Co., Guelph. The determination was carried into effect, and has given the most complete satisfaction, double the power being obtained from one-half the amount of fuel. As regards motive power, the mill is in a most satisfactory condition. About

SIX THOUSAND CORDS OF WOOD

are consumed annually; 400 cords per month as fuel, and 100 for paper, and many tons of rags per month. The rags are picked and sorted in the rag room, where seven hands are employed. Ten men are employed in peeling the bark from the bass-wood, which is delivered as cordwood, and conveying it to the chip house. The bark is used as fuel.

PAPER MAKING.

The bass-wood having been peeled and conveyed to the chip house, it is there put into a logwood chipper and cut across the grain into chips about half an inch in length. These chips are then elevated to the room above, whence they are carried in large baskets and thrown promiscuously into the boilers, and reduced to a fine, smooth pulp by boiling in a strong lye of caustic alkali. The pulp is then emptied into immense vats for cleansing. The action of the