

passes within four miles, has so enhanced the value of about 150 acres of cedar, hemlock and hardwood bush upon it, that the proprietor has sold the timber for \$640 and still has the land left.

THE growth of the pulp business is most remarkable and promises in the near future to outvie its past record. The consumption of paper has grown so enormously of late that immense quantities of pulp are required by the paper makers, and in addition it is used for a great variety of fabrics hitherto made from other vegetable or animal materials. The outside world is looking more and more to Canada as a source of supply, but the temptation to meet this demand must not lead to prodigality in dealing with her spruce timber. Some leading lumbermen advocate an export duty to check the outflow.

THERE are a good many moose destroyed in connection with the lumber shanties every year. The men shoot them, or they are killed by settlers and others, who sell them to the lumbermen for food. As the killing of moose, elk, reindeer and cariboo is absolutely prohibited in the province of Ontario till October 25th, 1900, in order to prevent their utter extermination, notice has been issued by the government that the law will be strictly enforced, and lumbermen have been cautioned against violations of the statute. We trust the warning will be heeded, for their own sakes as well as for the preservation of this species of game. The penalty for infraction of the law is \$50.

DURING the past season only about two-thirds the quantity of logs taken across from Canada to Michigan last year were floated over to be sawed in Michigan mills. Two concerns which put 100,000,000 feet of logs into the Georgian Bay last season will not have more than 25,000,000 feet this year. Some of our contemporaries in the United States do not like this, and object to free lumber, which allows their men to cut up their logs in Canada and take over the lumber without having to pay duty, but if a duty was to be imposed, Canada would simply be obliged in self protection to impose an export duty on logs, and they would be no better off. It is wiser all round to leave things as they are.

TWO of the greatest fire fighters in America, Chief Bonner, of New York, and Chief Sweeney, of Chicago, have pronounced the sky scraping buildings of their cities huge fire traps, especially when their contents run largely to inflammable materials, and this although their construction is supposed to be fire-proof. The iron of such buildings is liable to expand and let the floors fall, causing a general collapse. Both these veteran fire chiefs pronounce in favor of buildings of brick and yellow pine. In such the fire burns more slowly, and there is a better chance of saving the contents. The dealers in yellow pine can afford to present these men with a handsome testimonial. They have given their business a valuable advertisement.

THE treaty between Great Britain, on behalf of Canada, and France, signed at Paris 6th February, 1893, came into force on the 14th of October, 1895. Under its provisions Canadian building timber in rough or sawn, wood pavement, wood pulp, flooring in pine or soft woods, furniture, staves, and wooden strips, when imported direct, accompanied by certificate of origin, will receive the advantage of the minimum of tariff on entering France, Algeria, or the French colonies. It now remains for Canadian lumber dealers to exploit this new field and work up a trade with France in our forest products. The importations of lumber into that country amount to about \$40,000,000 annually, of which Canada sends comparatively a small amount, the official figures for 1894 being \$117,682. Mr. Edward Jack, of Fredericton, N. B., who for years has been a student of French affairs, views the present situation as exceedingly hopeful, and suggests that the proper authorities send some one to France for the purpose of investigating the character, size and description of Canadian lumber which would suit the French market.



CHEAP wheat, oats, corn and potatoes do not encourage the farmers to launch out and erect new houses, barns and other improvements, thereby promoting the sale of lumber, but it does mean that poor people can have plenty to eat the coming winter, so I do not worry because the prices of farm produce are low.

I do not generally approve of monopolies, but Switzerland proposes to establish one which I am prepared to endorse. The government is the monopolist, but does not look for profit. It merely seeks a pretext for prohibiting entirely the manufacture of phosphorous matches, which produces disease and death to those engaged in it. Its results are said to be as bad as leprosy.

Some time ago I had occasion to visit a small saw mill which was worked by steam, and it struck me that the safety valve on the boiler was too heavily loaded. On enquiry it turned out that the man who was running it did not know much about safety valves or boilers, and a brief calculation showed that he was carrying a load of steam far beyond the safety point. I have no doubt there are many who have to do with steam machinery who cannot calculate the proper position for the weight on a lever safety-valve. To such I would commend a study of the interesting article on the subject to be found on another page.

Don't I wish I was a lumberman. They can talk of millions as glibly as I can about single dollars, and perhaps have a better right to. I read that Donald Grant, a Minnesota railway contractor, has, with half a dozen associates, secured a concession of 14,000,000 acres of land from Venezuela, and has organized a company with a capital of \$25,000,000 to work the limits, which contain some of the finest wood in the world, and are said to be worth \$50,000,000. The name of the chief promoter is of a Scotch flavour. I wonder if he does not belong to that canny race of which Max O'Rell tells such a good story as to their success in foreign countries. Well, if I cannot handle millions I am at least spared much anxiety, and with this I must console myself.

The canal mule and his driver are to be displaced by that ever encroaching power electricity. The test made at Tonawanda, in moving boats on the Erin canal by the trolley system, seems to have demonstrated its practicability, and the approval of Mr. Chas. R. Barnes, state electrician, a practical man of twenty years experience, has been given. Mr. Lamb, the inventor of the system, is receiving well deserved congratulations. Three and a half miles an hour at the start is a very good gait. I am pleased for the mule's sake, for few animals had a harder life than he, I am also glad for the forwarder's sake, for a saving of 88 per cent. in towing by mule and of 70 per cent. by steam is a consideration these hard times.

A CROP bulletin issued by the Department of Agriculture for Ontario recently reports a falling off in the hay crop this year of over 700,000 tons, which represents a loss to the farmers of more than the value of the entire wheat crop of the province. It also means something to the lumberman, for a short crop must result in high prices. But the price will not go up as it once did, for railways are great equalizers, and hay can be brought from where it is more abundant at a comparatively small cost for freight. But if the hay crop was light oats gave an extraordinary yield and are cheap, so that lumbermen will simply have to feed less hay and more oats. When the new steam logger comes into use the price of fodder will be of small moment. All it requires is wood and water, which can always be found on the spot. And

this is a world of compensations. Though hay for the horses may be dear provisions for the men are cheap.

MR. G. W. HOTCHKISS, a veteran lumber journalist, rather startled his companions on the recent Hoo-Hoo excursion to Duluth, by asserting that there were some present who would, before their business career terminated, handle African and Siberian lumber. He said that the great forest of white pine in the latter country, said to be 3,000 miles long and 1,000 miles wide, the only *pinus strobus* in the world, so far as known, outside this continent, would be cut into lumber and laid down in New York, when the Nicaragua canal and the trans-Siberian railway, the latter promised for 1897, are opened, at as low a figure as Pacific coast lumber can be supplied for to-day. As for Africa, while it is importing timber from America to-day, it has large forest wealth of its own, and the tide of business may soon be turned, as it has been in many another instance. Conditions change rapidly nowadays, and Mr. Hotchkiss' prediction may come true, and that before very long.

#### FORESTRY FOR FARMERS.

THIS is the title of a pamphlet lately published by the U.S. Department of Agriculture, the author being Mr. B. E. Fernow, chief of the division of Forestry, who is well and favorably known to Canadians interested in the important matter of which he treats. In this pamphlet he begins in a very logical way by showing how trees grow—their food, materials, growth, soil and light conditions, and physiology of tree growth. In treating of the question of "sap up and down," he says:—"The growing tree in all of its parts is more or less saturated with water, and as the leaves, under the influence of sun and wind and atmospheric conditions generally, transpire, new supplies are taken in through the roots and conveyed to the crown. This movement takes place even in winter, in a slight degree, to supply the loss of water by evaporation from the branches. In the growing season it is so active as to become noticeable, hence the saying that the sap is "up" or "rising," and when toward the end of the season the movement becomes less, the sap is said to be "down." But this movement of water is always upward, hence the notion that there is a stream upward at one season and in one part of the tree, and a stream downward at another season and perhaps in another part of the tree, is erroneous. The downward movement is of food materials, and the two movements, of water upward and food downward, take place simultaneously. In the part which describes how a forest is to be planted, the writer discusses the subject of what trees are to be planted, and the adaptability of the trees to climate and soil, the mutual relations of different species, with reference especially to their relative height, growth and light requirements. He makes the very just remark that "Mixed forest plantations (made of several kinds) have so many advantages over pine plantations (made of one kind) that they should be preferred except for very particular reasons. Mixed plantations are capable of producing larger quantities of better and more varied material, preserve soil conditions better, are less liable to damage from winds, fires and insects, and can more readily be reproduced."

Any person who has noticed a sapling of the white pine, growing in a pasture by itself, cannot fail to see how many branches it usually has in the middle or lower portion of its trunk, and how much it differs from the same kind of tree when it stands in the thick woods. The reason of this is that as the lower limbs have abundance of air and light, their growth is much more vigorous than if the light and air were partially excluded from the lower part of the tree, when that vigorous growth which is wasted on the branches would be spent on the development of the crown and trunk. He finds that our sapling pines in New Brunswick grow best on sandy soil, more especially when they are found associated with the white birch, which, when the pines become tall and overshadow them, die out and leave the field to their long-lived associates.

Mr. Fernow points out the manner in which the farmer should treat the wood lot, and concludes by giving directions as to how the wood crop should be cultivated. On the whole this little work of 60 pages is probably the best on practical forestry which has yet made its appearance in America.

Fredericton, N. B.

EDWARD JACK.

The lumber cut at Duluth for 1895 will aggregate nearly 500,000,000 feet. The mills will run till ice compels them to stop.

The Jackson saw mill at Tonawanda, which was burned on Oct. 27th, is the last of the log mills at that point. It had not been run for a year on account of the falling off in demand for the long bill stuff that it used to cut.