

## AN ENORMOUS RAFT.

Experiments are what develop all practicable possibilities, and experiments are from day to day developing the fact that the saw mills on the Saginaw river are not to be dependent entirely on the availability of the log supply of the streams tributary to the Saginaw river, or even on the log supply of the lower peninsula itself. The problem has long been discussed as to whether saw logs could not be transported to the mills on the Saginaw river direct, — where they can be converted into lumber better than at any place on earth and to the best market in the world—cheaper than to cut them at other points, and transport the lumber.

All sorts of devices have been resorted to for towing logs, and patent log cribs have been invented with this special object in view. But it has just been demonstrated that logs may be towed in the ordinary boom sticks of enlarged size devoid of the cross pieces, and the entire raft bunched in one solid body of logs, with a considerable degree of safety.

A raft of 3,000,000 feet of logs covering about six acres of water surface, has just reached the Saginaw river, from the Lake Superior, and the logs deposited in the boom at the mouth of the river, without the loss of a single log, notwithstanding the fact that the enormous raft encountered one of the worst blows of the season during its run of 60 miles on Lake Superior.

The logs were cut on Hurricano and Big Two Heart rivers and are said to be as fine a lot of logs as was ever towed into the Saginaw river. They were owned by R. K. Hawley, and H. C. Thurber, and were towed through the lakes by the tug Winslow, being nine days in the passage from the rivers where cut to Bay City, having made the passage of the rapids of Sault Ste Marie in the meantime. It will take about four days to return the boom sticks, consuming therefore about 13 days for the round trip. At \$125 per day, or \$1,625. Add to this, the harbor towing at the "Soo," and we have a total expense \$2,025, or less than 70 cents per thousand. We furnish the above figures for the purpose of showing the apparent pecuniary feasibility of the undertaking.

The description of the raft which has thus raised the hopes and anticipations of our mill men is as follows. It is surrounded by boom sticks as in an ordinary raft, but they are much larger than those in ordinary use, being three or four feet in diameter and securely bound together by chains. The logs are floated in, all in one compact mass but only one deep, and they are said to become so firmly bound together by being in one solid body, that the heavy seas have no other effect on them than to give them an undulating motion, so slight that the bark on none of the logs ten or twelve feet from the edges of the raft is even chafed. The logs are so arranged that the boom sticks joined together form a pointed prow for the raft which reduces the resistance and makes the towing comparatively easy. — *Lumberman's Gazette.*

## LOG DRIVERS NOMENCLATURE

The Stillwater, Minn., *Gazette* recently had the following: "During the course of a long trial in the district court, a few weeks ago, in which important matters relating to log driving were under consideration, there were very many terms used by the witnesses, who were mostly men familiar with the logging business—which had a strange and peculiar sound to ordinary landmen, of whom the jury were mostly composed. Even the attorneys were a little slow in catching on to the correct idea in many cases, and had to be corrected and kept up to the text in numberless instances. 'Wing jam' was the first thing that began to give the jurors trouble. But inquiry developed the fact that a collection of logs on the shores of a stream is known as a wing-jam; while a 'centre' is a jam of logs on an island in the centre of the river. 'Breaking a centre', of course, is dislodging logs that have hung up on an island. 'Tow-head' is another name that confused the crowd, except that part of the crowd composed of loggers. Any of the latter class will tell you that a tow head is a very small island, invisible at high water, but sticking up above the surface as the water recedes, just enough to stop the downward course of floating logs. Why it is thus named does not seem so clean. A 'sweeper' is an uprooted tree which

has fallen into the stream, and oftentimes as a log or a boat containing the men comes upon such an object unexpectedly, the poor fellows are swept off into the flood. But when a witness, asked how long time was required to perform a certain piece of work, replied: 'I think it was one day and a lunch,' all the non-professionals looked blank. It seems the men on the drives expect to put in all the hours of day light at solid work. Consequently breakfast is served about half past five in the morning the first lunch at 10 or half past; the second at two or three in the afternoon, and supper when the day's work is finished. So that a 'lunch' in the division of time means one third of a day."

## FROM THE WEST.

A correspondent of a contemporary writes from Keowatin as follows:

The Rainy Lake Company's mills at Rat Portage have not yet started up. The company has sold all its last year's cut, and has from 8,000,000 to 10,000,000 feet of old logs on hand. F. T. Bulmer & Co. have sold all their lumber on hand. They have a stock of new logs, about 3,000,000 feet, which will arrive about August 1st, when the mills will likely begin.

The Ontario and Minnesota Company's mill is not yet ready for sawing, but it is expected to be so by the middle of August. This company has from 10,000,000 to 12,000,000 feet of logs now being towed in. The concern was unfortunate when the rivers opened, in having its logs carried down against the ice of the Lake of the Woods, but it ultimately got them secure without much loss.

R. Cameron & Co. have been sawing since the first of June. Their last year's cut is all sold. Their supply for this year will be about 4,000,000 feet, principally Norway.

Dick, Banning & Co., of Keowatin, have sold out their last year's cut, and began June 15th to saw. Their log supply will be from 3,000,000 to 4,000,000 feet, principally old logs that have been hung up for three seasons, but now nearly all out of the creeks. The leading member of the firm, W. W. Banning, died suddenly June 7th, and is much missed. He was an old settler of Winnipeg, a successful man of business, and of strict integrity.

The Keowatin Company has 7,000,000 to 8,000,000 feet of one and two year old lumber on hand. The mill started up May 18th. The log supply will be 10,000,000 feet, of which a large proportion is from Minnesota. The company has just landed a splendid raft of 1,400,000 feet, and is at work cutting up into railway timber for the railways now being constructed in the west.

Several firms have been pushing sales and lowering prices, making it a struggle for the survival of the fittest. A large part of the old stock is now worked off and there are indications that what remains will meet a better market, as a fair demand has begun lately in western Manitoba and the Territories.

Rat Portage and Keowatin have now six mills, with an aggregate cutting capacity of 50,000,000 feet, so that there is no longer any necessity for western Canada purchasing at the mills in Duluth or Minnesota.

## FROM SAGINAW VALLEY.

The *Northwestern Lumberman* says:—A late visitor at Menominee, Mich., was struck with the fact that a number of Saginaw lumbermen were there looking after stock, and that there was much being said about the movements of Saginaw men in that district. The *Menominee Herald* speaks of Saginaw men being "thick as bees" on the streets of that city. These men have discovered that logs are plentier in the Menominee region, and can be had at lower prices, than in older sections of the lower peninsula, while the all lake carriage of lumber to eastern markets is as cheap, or cheaper, than from the interior of the lower peninsula, which necessitates a partly rail transportation and transshipment at Saginaw, Bay City, Detroit or elsewhere. Besides, the owners of stumpage and logs in the Green Bay districts are not so jealous of their property as are the Saginaw valley men, who have the pine of the older districts well "cooped," and want to make the most of it. The buyers for eastern markets

who are at present operating in the Menominee district, can get logs cut into boards and thick stuff in the "through and through" fashion demanded by the eastern market, and this is the reason why they are in Menominee. This movement of Saginaw valley men northwestward is bound to increase, so that the time is not far distant when they will be seen not only in the Green Bay country, but along the shore of Lake Superior all the way to Duluth. The emigration of lumbermen, as it were, shows that the eastern trade is no longer to be satisfied with Saginaw and Huron shore lumber, but will compete more and more in the scramble for pine northwestward of Lake Michigan.

## SHORTAGE IN MAINE'S LUMBER CROP.

Serious news comes from the lumber region of the destruction of forests and a falling off the supply of lumber, averaging about fifty per cent. since last year. Gen. J. M. Haynes, the most extensive operator and manufacturer of lumber on the Kennebec waters, says that the cut last winter was less than usual, and that there being no old logs carried over last year as compared with last about 50,000,000 short. The season has this year been unusually dry, hardly any rain having fallen this spring. All the water for driving has been derived from melted snow on the upper waters of the Moose River. Not less than 2,000,000 logs have already been abandoned. The logs on the north and south branches of Dead River are practically abandoned, together with a large amount of logs at Long Falls without water to take them over. The number that will be left back on Dead River is not less than 10,000,000, so that to the 50,000,000 of shortage from last year is to be added 30,000,000 of the stock not driven this year, which leaves the stock for the present year just about one half of what it was in 1884, the stock of that year was only an average one.

Recently on account of the drought, forest fires have raged in the Dead River country, burning over large tracts of timber, which will necessitate great activity in that region next season to get burnt timber into market before it is destroyed.

The cut of logs by the Penobscot lumbermen the past winter was unusually small, not exceeding 60,000,000 to 70,000,000 of spruce, with perhaps 25,000,000 of pine. The drives on the Penobscot waters are, on the whole, better than those on the Kennebec, but with the short cut on the Penobscot and the logs hung up there for want of water, the stock on that river is not more than one half the usual quantity.

Notwithstanding this failure of supply, the market for manufactured lumber is not yet as strong as the condition of affairs would seem to demand. This is largely due, according to Gen. Nagres, to the large imports of lumber into New York from St. John. While there is not a large supply on the river, the St. John manufacturers have been early in our market with the last season's product of logs, forced thereto by the depression in the English deal trade. "If, as may be reasonably expected," says Gen. Nagres, "the imports from St. John should be exhausted during the present season, there must eventually be a sharp advance toward the close and the early part of next season." In the matter of imports from St. John, American lumbermen are very restless and uneasy. They believe that a great deal of foreign lumber gets in free of duty, under the provisions of law which admits free of duty lumber grown on American soil but manufactured in the province of New Brunswick.—*N. Y. Sun.*

## FOREST FIRES.

If forest fires keep on destroying the woodlands all through the summer at the same rate as they have done during the past month, there is every indication that the loss incurred in this manner by the national resources will throw every other form of fire losses into the shade. The average citizen takes but little interest in the quantity of buildings and manufacturing establishments that are consumed monthly by fire; this is partly due to indifference, and partly to the knowledge that his property is insured; but the interest he takes in forest fires is practically nil. Indeed, what does he care whether thousands

and thousands of acres of woods are burned? That does not concern him; it is none of his loss. But when an agitation is instituted against the lumberman to prevent their cutting the trees—ah—that is something entirely different; the subject is to him about as clear as stove blacking, but of course he understands it all, and joins heartily in the wholesale condemnation of these horrid lumbermen who want to rob us of our fine forests. As woods are not insured against fires, there is no collection of statistics to show the annual losses, but if they could be obtained we are fully convinced that the total aggregate would be enormous. What are we going to do about it? Let things go as they have gone, without even an attempt to offer some form of check? We have laws, and fortunately they are enforced, to guard against incendiaries, but our forests are considered universal property, and if by accident or carelessness somebody starts a fire, why, they are only trees, such man thinks, and there is no harm done. How many acres of woodlands are burned up during the dry season ignited by sparks from locomotives? How often is a forest fire started because some mighty hunter did not think it worth his while to put his foot on a piece of burning gun wadding? There are dozens and dozens of conditions where a large conflagration could have been prevented by even a very small amount of care. Nobody takes an interest in it. And where is the law that so effectually protects our other property? Why not have it apply to forests as well? They represent money. It seems that a constant agitation of this subject is necessary to insure the amount of attention that must, as a matter of course, precede the institution of any active measures to prevent the constant waste of our forest resources by destructive fires.—*Lumber World.*

## EFFECTIVE TEST FOR A STAY BOLT.

According to the *Railroad Gazette*, F. M. Wilder has in use on the New York, Lake Erie and Western railroad a simple and very effective test for stay bolt iron. Instead of testing the iron for ultimate tensile strength in a testing machine, Mr. Wilder puts a piece from 30 to 36 inches long into a vise and bends it back and forth about 90 degrees each way and notes the number of such bends which the iron will stand before breaking. His requirement is that a sample of iron shall stand twelve such bends before fracture. Different brands of iron stand from 4 to 16 bends. This test had its origin in the fact that the fractures, coming as they do on the inner edge of the outside fire box sheet, indicated that they were caused by a bending or transverse strain concentrating at that point. It was at first attempted with success to imitate the effect of these strains by vibrating the upper end of a stay bolt in a shaper, giving it a throw of one-eighth of an inch, which was assumed to be the maximum to which they were exposed in practice by the expansion of the fire box. It was found that from 2000 to 8000 such vibrations produced such fractures as were found to result from ordinary use. The above is a very simple, inexpensive, and rational way of testing material for such purposes. When all tests are made under the conditions of actual use, as nearly as can be done, we shall hear of fewer accidents by failure of engineering.

## Crimson Stained Wood.

The following is a crimson stain that is frequently used for musical instruments. Groat Brazil wood, one pound; water, three quarts; cochineal, half an ounce; boil the Brazil with water an hour, strain, add the cochineal, boil gently for half an hour, when it will be fit for use. This is first applied, and then the varnish, consisting of rectified spirits of wine, half a gallon, six ounces of gum sandarac, three ounces of gum mastic, and half a pint of turpentine varnish; put the above into a tin can by the stove, frequently shaking till well dissolved; strain and keep for use. If it is harder than is wished, thin with more turpentine varnish.

Is a four-inch and a two-inch shaft are both solid and each make 100, or any other given number of turns in one minute or other specified time, six times as much power will be consumed in turning the larger as in turning the smaller shaft.