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The New Orleans *American Lumberman* calls in question our criticism of Southern pine as a material for car sills. It claims that it is not brittle or lacking in toughness of fibre, that experiments prove it to rank very high as a weight carrying wood, and that its specific gravity is considerably less than that of white oak.

SEVERAL kinds of hardwood lumber are gradually coming into use which a few years ago were unnoticed. Beech is one of them. It is cheap and abundant, while the more popular hardwoods are becoming comparatively scarce and consequently high priced. Beech has a fine grain, is quite durable, and is used in the manufacture of school and church furniture, chairs, and to a certain extent in furniture. The red variety has a handsome appearance and can be made to imitate cherry.

A Winnipeg correspondent says:—Building continues fairly active, but only for actual requirements, not for expectations. The speculative element is generally absent. Carpenters and laborers are far in excess of demand. The drives down the Red River are arriving slowly, Mr. Sprague being the only one who has received a respectable instalment. There is low water this season; the same condition prevails on the Assiniboine, but if anything in a greater degree. Much of the stock will, no doubt, be carried over to next season.

THE QUESTION OF WASTE.

There is more absolute waste in the manufacture of lumber than in that of any other line of goods. In this respect the lumbermen are far behind all other manufacturers. Their enterprise and sagacity seem to be exhausted in increasing the amount of their output and decreasing the amount of the saw bill, while 30 per cent. of their logs go to waste and is absolutely worthless. What small proceeds are obtained from slabs sold are eaten up by the expense of getting rid of edging and sawdust. Here and there the more enlightened saw mill men have attempted to make something of what they call nothing, but in the usual run of mills the effort has been to get the cost of throwing it away down to the lowest point. One concern in Minnesota grinds up all its edgings and small slabs, and runs the grindings together with the sawdust by means of conveyors to a dumping ground where they lie and rot until winter, when they are used under the boilers of a neighboring machine shop. Most of the large mills run their edgings, bark and sawdust into burners where "their fire is not quenched" from May till December. At Minneapolis the stuff is dumped into the river, and causes much profanity and many legal proceedings on the part of the St. Paul people below.

The amount of fuel thus destroyed every year is simply stupendous. Anyone who has watched ton after ton of material, good to make steam with, to make paper fibre of, to extract wood acids from, dumped into a $10,000 burner, run at a pretty heavy expense, cannot help feeling that terrible waste is one of the characteristics of the manufacture of lumber. Impressed with this conviction, the *Lumberman* has watched with closest interest, and has always noted all efforts to utilize the waste. Among others, it has been especially interested in the experiments of Mr. W. H. Smith, of this city, carried on during the last three years. Mr. Smith has been backed up financially by several Chicago lumbermen, among whom the Messrs. Houghteling, of the Menominee River Lumber Company and the Mackinaw Lumber Company have been been most active. These gentlemen, incorporated under the name of the Smith Consolidation Company, have been unwilling to bring the process and machinery before the public until its value was fully demonstrated to their own satisfaction and to that of other competent judges. We are now glad to bring before the manufacturers a process so practical and so well backed up by practical lumbermen.

Mr. Smith's experiments demonstrate that the sawdust from saw mills can, at a total expense of 70 cents per ton, be consolidated into blocks weighing from 60 to 65 pounds to the cubic foot, and having a steam producing capacity equal to Illinois and Indiana lump coal. One ton of this consolidated sawdust will make more steam than two and a half cords of slabs, and will take up but one-tenth as much room. The fuel makes no preceptible smoke, no clinkers, and has no sulphur or other ingredient injurious to flues. It can be made of any size and shape, and makes a clean fuel for domestic purposes. The company has a written tender for 1,000 tons a year from one house in Chicago, made after undergoing a rigid competitive trial with a dozen kinds of coal. The company claims that Chicago will use hundreds of thousands of tons as soon as it is introduced. The fact of it being a smokeless fuel ought certainly to make it a favorite.

The process of consolidation is as follows: The sawdust is run through a drier and the moisture expelled, and the dust warmed up to a point where the resin is softened and exudes from each particle. While in this sticky condition it is run into the consolidator and impacted into solid blocks, the exuding resin becoming the medium of cohesion. No foreign substance is in any case admixed. The consolidator consists of a heavy steam hammer operating upon the material contained in one of the group of three steel molds. The molds being passed through one-third of a revolution at each movement brings them under the hopper for filling, the steam hammer for consolidating, and the discharging hammer for discharging the mold of the block just formed, in such manner that the three operations occur simultaneously. One blow of the hammer usually suffices to consolidate the block, which weighs from ten to thirty pounds. Four blocks per minute can be readily made. The capacity of the machine represented is 3,000 pounds of fuel per hour from white pine sawdust. It has just been finished for the Rathbun Company, of Deseronto, Ont., who cut about 50,000,000 feet of lumber and who have expended thousands of dollars in the utilization of its waste, which investment is paying handsomely.

The machine will take up, in connection with the drier, a floor space of 12x18 feet, and will require about thirty-five horse-power. The profits of consolidating sawdust should be very large. The fuel costs 70 cents a ton delivered on board of car or vessel at point of manufacture, and is worth about three times as much per ton as slabs are worth per cord. At Menominee, Mich., slabs sell in large quantities to tow boats, propellers, etc., at $1.25 per cord, which would make the consolidated fuel worth over three dollars per ton. A machine turning out 15 tons per day would clean up a net profit of say $2 per ton, or $30 per day; or, say $5,000 for the sawing season. It might be said further, that the process applies equally well to planing mill shavings, and furnishes a solution of the difficulty of disposing of the bulky offal of city planing mills. The mill would also save the present cost of disposing of the sawdust.

The usefulness of the present process is not limited to sawdust, but extends to all kinds of loose, coarse and bulky materials. The table given below is based upon three years' careful investigation and practical experiment:

COMPARATIVE TABLE SHOWING THE REDUCTION OF VARIOUS MATERIALS BY CONSOLIDATION.

	Bulk unconsolidated per ton of 2,000 lbs. Cubic ft.	Bulk consolidated per ton of 2,000 lbs. Cubic ft.	Wt. unconsolidated per cubic foot. Pounds.	Wt. consolidated per cubic foot. Pounds.
White pine saw-dust	400	33	5	60
White pine shavings	800	33	2½	60
Yellow pine saw-dust	333	31	6	64
Yellow pine shavings	666	31	3	64
Tan bark	125	31	16	64
Bran	163	28	13	70
Middlings	76	32	26	70
Ground feed	76	31	26	64
Corn meal	57	...	35	64
Cotton compressed	...	...	...	...
Hay, straw and grasses in mow	500	31	4	60
Hay, in common bale	142	31	14	60
Bituminous coal dust	40	25	50	80

The *Lumberman* has been fully posted in the facts of the case by the president of the company—J. L. Houghteling, treasurer of the Mackinaw Lumber Company—to whom we would refer those of our readers who desire to investigate the matter further.—*Northwestern Lumberman.*

THE PACIFIC HEMLOCK SPRUCE.

Great forests of the Pacific hemlock spruce (Morton's) extend along the coast from California to Alaska. It is one of the most beautiful and delicately-foliaged of evergreens, and very spiry, with a broad ground base. They are even more spiry than the eastern Canadian. These tall spruces, farther north, are clad in denser masses of darker green verdure, clothed from the base 100 to 150 feet upward, or more. The body is from two to six feet, and occasionally eight feet in diameter. But along the coast territory mentioned the tree is only from 60 to 75 feet in height, and rarely over two feet through. The thickened lower branches aid in tempering the clime in all seasons, and the foliage, unlike redwoods and their like, precipitates little moisture. It is noteworthy how admirably this tree rallies and thickens in the [illegible] when broken off by the tempest—which often takes the conceit out of its too ardent aspirations, nature's testimony that it bears training to any reasonable extent, responsive to the bidding of the Master. It is one of the best shelter trees known, wherever it will flourish at all, whether for the orchard, garden, yards, or for game of all sorts.

Contrary to experience and observation relative to most other timbers, the old matured heart-wood is more perishable than the young and sappy poles and branches where they are exposed to the seasons, the latter being less shaky, and absorbing and retaining moisture less readily. For this reason the heart-wood is almost solely used for interior work, where it is little subjected to the extremes of outer temperature, as in the case of rude rafters, where, duly seasoned with the bark on, they are singularly lasting and very elastic, with much of the snap and spring of the yew and cedar, combined with a due degree of strength.

Only in the cold forests of California, contiguous to rivers or cold creek banks at the southern limit of its growth, is the Pacific hemlock spruce never found much over 2 ft. in diameter, and about 60 or 80 feet high. Up to extreme age it preserves the perfect, symmetrical, spire form, and is altogether less marred by unsightly dead limbs, than its kindred of the east. The same observation applies to Alaska. If the tree were more exposed than in its native coast clime, it might take on a somewhat broader conic style. In the young state, say from 10 to 14 feet high or more, the bark is relatively smooth and even, branches exactly level, thin, fan-like, long and slender, with cherry-brown bark.—*Lumberman's Gazette.*