

**RAILWAY TIES.**

There are now fully 148,000 miles of railroad track in the United States, and therefore about 891,000,000 ties, and the average consumption for renewals should be about 53,000,000, or the product of 569,000 acres of land, at 100 ties per acre, requiring 126,800,000 acres equal to 26,000 square miles, equal to less than half the area of North Carolina, if, as reported, it takes 30 years to grow tie timber.

Mr. Hicks says that the reports to the Forestry Department show that it takes an average of thirty years to grow timber large enough for ties, and that the product is about 100 ties per acre, while the average cost of ties to the railroads is 35 cents. This is a product worth \$35, as the return of an acre for 30 years. If this is all, then with money at 5 per cent. no cost of cultivation and no taxes, it will pay to grow ties on land already wooded worth \$3 per acre, and on land worth \$7 per acre if interest is 36 per cent.

If 113.3 acres of woodland are required to maintain the ties of every mile of railroad, the question with the railroads, says the *Railroad Gazette*, is not simply whether they should produce their own ties, but also whether they may not profitably diminish their consumption. The experience of Germany indicates that an average life nearly three times as long can be had by preserving the ties with chloride of zinc, or crocoting (so called for there is usually little or no crocote in the oil used). But even if the product of 60 acres per mile is required, it does not follow that the only escape from a famine will be the cultivation of timber. If land planted or stocked naturally with trees which will make 100 ties in thirty years is worth \$20 an acre—and in many parts of the country it is worth as much as that—at the end of the thirty years required to grow the trees it will represent with interest at six per cent., \$118, and with interest at five per cent., \$88; and if then the land after the ties are cut is still worth \$20 an acre, the \$100 ties, before cutting, will have cost \$98 in the one case and \$68 in the other. But the taxes meanwhile would probably have cost \$50 or \$60 more, and there would be some expenditure for care. If then the land is not cheaper than \$20 per acre, the railroad will probably do better to depend upon some metallic substitute than to grow tie timber, even if it gets 14 years' life out of a tie.

**THE TANITE CO.**

The dull times and blue outlook have not lessened the activity of this substantial concern. The recent visit to Europe of Mr. T. Dunkin Parot, the President of the Company, completed arrangements by which its European trade will be doubled during the coming year, and shortly after be quadrupled. In view of this fact, and of the successful business transacted this year, (which most manufacturers have found a bad one) the Company is now arranging for a large extension of its factory. This factory was started in the year 1867 by the erection of a stone building 45 feet long and 32 feet wide, two story and attic, with boiler shed extension. The total floor room of the original buildings amounted to 5,550 square feet. The flooring used at the present time is 34,190 square feet. The new buildings, for which preparations are now making, will be an extension of, and the same size as, the original stone building. It will be a substantial structure of stone, supported by heavy iron arches which are to span the wheel pit and overflow.

In order to extend and more thoroughly control the water power, and to secure timber and stone for further operations, the Company bought during last month from Mr. Robert Huston his farm of 130 acres which adjoined the Company's original property. The total amount of land now connected with The Tanite Factory is about 180 acres, and the Pocono creek flows through it for the distance of about one and three quarter miles.

On the property recently purchased the Company is now cutting timber for the preliminary work connected with the improvement of its water power. A new breast work, cribbing, and flumes are to be erected at the dam, and now Fore-bay and Penstock at the factory. This latter is to be larger and more substantial

than the present one; the heavier, or corner and sill timbers, being 14x16 white oak. At present the factory has, in addition to its steam power, a 42 inch Jonval Turbine; but, in the new Penstock, a 24 inch Stevenson Duplex Turbine will be added, and by means of these three motors the various departments can be run independently when desired.

During the last summer the Company put in operation a complete fire system. Iron pipes are laid under ground all around the buildings, and are connected with three pumps situated in different buildings, one detached; one double acting Worthington Steam Pump, one Niagara Steam Pump, and one powerful Pump run by Water Power. Five Plug or Hose houses stand scattered around at a safe distance from the buildings, containing in all twelve plugs or nozzles, and 650 feet of 1½ inch, and 200 feet of 2 inch hose. Fire-axes are in all these houses, and fire-palls and axes liberally distributed through the buildings. Streams of water have been thrown upon the buildings in one minute and twenty seconds after the first signal was given.

For the benefit of such readers as may not have seen any previous notice of The Tanite Co., we will say that it manufactures Solid Emery Wheels and the varied machines with which such wheels are applied, and that its goods are shipped to all parts of the world. It has agencies in all the principal cities of the United States, and also in Canada, Australia, and France, besides sub-agencies in many European and other countries.—*Stroudsburg, (Pa.) Jeffersonian.*

**ARRIVALS IN ENGLAND.**

The timber ship arrivals between the 2nd of July and the 9th inclusive comprised 100 bar one, of which 50 are sailers and 49 steamers. There are 13 arrivals from Quebec, altogether from the St. Lawrence ports 22, a good instalment of the spring fleet, and much in excess of last year at the same date, when there was a pretty full list of 77 vessels one with another. While our imports are falling off in other produce, timber seems to come forward with all the energy of an impatient market, one reason for which is, no doubt, that, as it is not a perishable article, the time to bring it forward is while freights are low, and it will be sure to be wanted some time or other, perhaps at a better price than can be got for it now.

We note that out of the largest fleet of vessels arriving from the St. Lawrence the first four sailing vessels to enter the port of London from Quebec were for Messrs. Bryant, Powis, & Bryant. Of these, we understand, the Commander Svend Foyn has gone into the Millwall Docks to discharge, so that with this company will rest the credit of having unloaded the largest cargo imported during the season. We believe the 1,100 standards this ship delivers will not be equalled unless one of the big steam liners loads up a full and comple cargo of wood. The Deepdale, that came the year before last from Pascagoula, with 990 standards on board, was the next largest to the sailing ship above mentioned.—*Timber Trades Journal.*

**A STRONG MONEY BOX.**

Mr. William H. Vanderbilt's treasure vault, in which it is said he recently stowed away some \$100,000,000 in securities, is one of the most redoubtable works of defence on the American continent, though you may not be entirely certain of that by surveying his mansion from the outside. Its foundations were blasted out of the rock; the front wall is 5 ft. in thickness, and the side and rear walls 3 ft., the material used being pressed brick with brown stone trimmings. The beams, girders, and main pillars are iron, incased in fire proof material. The doors, window frames, and minor partitions are iron, marble, and glass. No wood is to be found in the structure. The great vault is 36x42 ft., of wrought iron, steel, and Franklinito iron, is imposing in strength and proportions, and is situated on the ground floor. Its four outer doors weigh 8,200 pounds each, and have every effective and known improvement in defensive devices. A massive wall of masonry surrounds the iron work. A vault, which is burglar, fire and water proof, constitutes a distinct building in itself.—*Scientific American.*

**BOBBIN HEADS MADE FROM PULP.**

A new industry has been established in Oxford county by Prescott & Forbes who have leased the mill and power at Snow's Falls, Paris, and commenced the manufacture of bobbin heads from pulp. It is claimed these goods are superior to wood, as they do not warp, crack, or splinter by use. The power at Snow's Falls is a safe and reliable one, there being a direct fall of forty feet to the two turbines. Prescott & Forbes manufacture the pulp, which is converted into bobbins and spool heads. Poplar slabs are placed in a press which forces them upon revolving emery wheels. The wood is ground into a fine powder, which is washed off through tubes by a constantly flowing stream of water. By draining and evaporation, the moisture is partially extracted. The pulp is then placed in a large tank or vat and still further dried. It then passes to a cylindrical hydraulic press. A certain amount of pulp is allowed to enter this press, then a wire screen is admitted, then more pulp and another screen, and so on till a press is full. Then pressure is applied until the whole mass is hard and unyielding. This extracts most of the remaining moisture. When this press is opened, the pulp comes out in discs about two feet in diameter and nearly an inch in thickness. These discs are again subjected to pressure and dried in a dry house until "bone dry." They are then tempered with water until suitable for cutting. Next they are passed to a cutter where dies stamp out the bobbin heads, as soles are cut out in a shoe shop. The heads are about five and one-quarter inches in diameter, and one-fourth of an inch thick, with an inch hole in the centre. After being thus cut out, they are again subjected to pressure in a press which is heated by steam so that they are compressed and dried at one operation. In this condition they are shipped to the manufacturers of bobbins, who place them on spindles, turn them to uniform size and finish them with shellac or paint.—*Main Industrial Record.*

**A NEW USE FOR ROSIN.**

Mr. S. M. Thomas, of Laurinburg, N. C., has written to the *Ashville Citizen*, concerning the best way to improve the country roads in Buncombe. The suggestion merits attention and seems to be a good one. It is to get a charter, from a joint stock company and during the summer, grade the main roads leading into Ashville, making them 16 feet wide and 10 inches higher in the centre than on the edges, and "when the roads are solid and dry put one barrel of pulverized rosin evenly over 50 yards of the road, which would be 35 barrels per mile; a car load would be sufficient for two miles. The cost of the rosin would not exceed \$2.25 per weight barrel (280 lbs.), delivered at your depot. An application of rosin would be necessary every ten or fifteen years. He says he knows in Richmond county of roads that have not been wet except on the surface in sixteen years. He says: "If the above plan were carried out I am fully satisfied that your roads would be as solid in winter as they are in summer. The streets of your city and the side-walks and private walks could be made solid in the same way."

**WHAT IS DISCOUNT.**

In answering an inquiry, the *New York Journal of Commerce* says: The word "discount" has almost wholly lost its technical meaning. It was originally used to describe an allowance made for the payment of money before it became due, and in this sense is as much as that money, if put to interest, would gain in the same time and at the same rate. Thus \$100 present money will pay a debt of \$100 due one year hence, the discount being made at 6 per cent. The discount, in this sense, on any sum is less than its interest. Thus the discount on \$100 due a year hence, is \$6, while the interest is \$6.36. But the interest laws of the several States have allowed the banks to deduct the interest instead of the discount, and to pay the borrowed instead of the present worth only the not remainder after such deduction. Thus if a man makes a note for \$1,000 twelve months, and gives it to a bank for discount, instead of paying him \$943.30, which is a sum that at 6 per cent. would amount to \$1,000 in a year, they give him only \$940, thus charging him more than 6 per cent. for the sum he receives. In plain terms, they deduct the interest instead of the discount. Out of this has grown the modern use of the word discount, which has simply come to mean a deduction of a given rate per cent. from a given principal. To "discount a note at 6 per cent." is now only to take off 6 per cent. interest. To allow a discount is take off the rate from the face of the sum.

**YELLOW PINE.**

As a proof of the growing demand there is in the market for the better grades of yellow pine we may mention that the stock in first hands are fetching at the present time really good brands, very fair prices; Quebec 1st bright regulars sells for £24 10s. and best board pine, £30 10s., undersized realising £21 10s. Seconds are also in request, the prices demanded, for 12 and 13 ft. 3x11, being £17 5s., which sellers have no difficulty in obtaining. The pine, ex Lauderdale, in Wednesday's sale, was not by any means a good parcel of 1st dry floated, and fetched very fair prices considering. Quebec freight continues low, and the prospect of their improving is a diminishing one. The same will apply to north of Europe tonnage, which can still be secured at rates that a few seasons back would not have been considered out of the way if reconed by the load instead of the Petersburg standard.—*Timber Trades Journal.*

**A New Science.**

At the London health exhibition Francis Galton has established a laboratory for the "measurement of human faculty." Each visitor will leave a record of name, age, sex, occupation, place of birth, color of hair and eyes, height standing and sitting, weight, length of span of arms, strength of squeeze and pull, swiftness of direct blow, capacity of chest, acuteness of vision, conditions of color, sense and acuteness of hearing, and will take away a duplicate. Mr. Galton regards the art of measuring human faculties as the dawn of a new and interesting science.

**LIVERPOOL STOCKS.**

We take from the *Timber Trades Journal* the following Comparative Table showing Stock of Timber and Deals in Liverpool on July 1st, 1883 and 1884, and also the Consumption for the month of June 1883 and 1884:—

	Stock, July 1st, 1883.	Stock, July 1st, 1884.	Consumption for the month of June, 1883.	Consumption for the month of June, 1884.
Quebec Square Pine.....	88,000 ft.	401,000 ft.	23,000 ft.	33,000 ft.
Waney Board.....	90,000 "	320,000 "		
St. John Pine.....	8,000 "	22,000 "	00,000 "	19,000 "
Other Ports Pine.....	26,000 "	62,000 "	18,000 "	2,000 "
Red Pine.....	11,000 "	67,000 "	1,000 "	1,000 "
Pitch Pine, hewn.....	571,000 "	472,000 "	90,000 "	278,000 "
Sawn.....	724,000 "	590,000 "	140,000 "	183,000 "
Planks.....	51,000 "	71,000 "	23,000 "	17,000 "
Dantzig, &c., Fir.....	71,000 "	57,000 "	40,000 "	18,000 "
Sweden and Norway Fir.....	0,000 "	07,000 "	0,000 "	10,000 "
Oak, Canadian and American.....	130,000 "	271,000 "	18,000 "	25,000 "
" Planks.....	218,000 "	250,000 "	60,000 "	55,000 "
" Baltic.....	33,000 "	12,000 "	0,000 "	1,000 "
Elm.....	22,000 "	20,000 "	50,000 "	3,000 "
Ash.....	0,000 "	17,000 "	0,000 "	4,000 "
Birch.....	40,000 "	71,000 "	38,000 "	39,000 "
East India Teak.....	15,000 "	41,000 "	18,000 "	4,000 "
Greenheart.....	121,000 "	55,000 "	9,000 "	8,000 "
N. B. & N. S. Spruce Deals.....	11,037 stds.	14,857 stds.	6,600 stds.	7,808 stds.
" Pine.....	678 "	1,451 "		
Quebec Pine & Spruce Deals.....	4,623 "	6,415 "	1,893 "	1,910 "
Baltic Red Deals, &c.....	3,061 "	3,055 "	490 "	1,050 "
Baltic Boards.....	143 "	40 "	85 "	20 "
" prepared Flooring.....	5,714 "	3,765 "	1,645 "	893 "