

may be in a man and bring out for circulation and use the veins of gold which may be imbedded in his hidden mines. If he be faithful, honest, honorable, his early straitness of condition will be an everlasting blessing. It is a soil which will yield to appropriate cultivation the richest and most lavish fruit. But it will involve care, thought, labor, purpose and unshrinking honor to prevent its becoming not merely a perplexity in occupation, but a poison to the soul.—*U. S. Economist.*

### Wood Pavement in London.

At the last ordinary meeting of the session of the Institution of Civil Engineers, in London, on May 28th, Sir J. W. Bazalgette, C.B., president, in the chair, the paper read was on, "Wood Pavement in the Metropolis," by Mr. Geo. H. Stayton, Assoc. M. Inst. C.E.

The author directed attention to the nature and extent of the various wood pavement in the metropolis, and to a comparison of the results obtained. The aggregate length of the streets of London was 1,966 miles, of which, excluding 248 miles in course of formation, 1,718 miles were thus maintained by various authorities, namely:

Macadam	573 miles
Granite	280 "
Wood	53 "
Asphalt	134 "
Flints or gravel	798 1/2 "

The existing area of wood pavement was 980,533 square yards, and its estimated cost £600,000. Not more than 4.38 per cent was east of the city or south of the Thames. The method of construction adopted by the author was described and illustrated. His practice was to set out the levels of the channels so as to allow a rise to the crown of the road equivalent to 1 in 36 above the mean channel-level. The inclinations of the channel should not exceed 1 in 150, and numerous street gullies should be provided. An extra cost of 4 per cent for gully was money well spent. The foundation of the Chelsea pavements consisted of a bed of concrete 6 in. deep, composed of 5 1/2 parts of Thames ballast to one part of Portland cement; the entire cost for materials and labor, when completed, was 2s 3 1/2d per square yard. The use of old broken granite as a substitute for Thames ballast, although cheaper, was not recommended. Concrete made from that material was less homogeneous than pure ballast concrete.

The greater part of the wood pavement in London was composed of rectangular blocks of yellow deal. Before adopting wood pavement the author inspected the various kinds of pavement then laid, and came to the conclusion that a plain but substantial system was the best. The blocks were 3 in by 9 in by 6 in, and were specified to be cut from close and evenly grained well-seasoned and thoroughly bright and sound Swedish yellow deals (Gottenburg Thirds). The author knew no more suitable wood in the market which so satisfactorily stood the wear of traffic and atmospheric changes. Of hard woods, pitch pine took a high place in point of wear, the ascertained annual vertical wear of the section in King's Road during four and a-half years being 0.055 in only. Neither elm nor oak blocks would withstand the atmospheric changes to

which street surfaces were exposed; larch would probably take a high position, but the available supply was limited. In many pavements the blocks had been dipped in a creosote mixture; in a few instances they had been creosoted or mineralized, but at least one-third had been laid in their natural condition. The ordinary dipping process was of little value as a preservative, but might be utilized as an external discoloration for inferior blocks. The author had tried creosoted blocks, but experience had convinced him that they were not more durable than plain, that their surfaces were less clean, that the system was 20 per cent. more costly, and that it tended to produce premature internal decay. The wood pavement in Chelsea required forty and one half blocks per square yard; they were laid upon the concrete in their natural state, with the fibres vertical, and with intervening spaces 3/4 in wide. The joints were filled with cement grout composed of three parts of Thames sand to one part of Portland cement; they were kept parallel by means of three cast-iron studs fixed in each block, which rendered the pavement firm and steady until the grout was thoroughly set. A top-dressing of fine gritty material completed the work. If practicable, traffic should be excluded from a newly-laid pavement for at least one week after completion. The result of five years was convinced the author that the plain system comprised all the essentials of a sound pavement; that it provided a quiet and smooth surface for vehicles, and safe foothold for horses; that the cement joint adhered to the wood, effectually resisted wet, did not unduly wear below the wood surface and thereby allow dirt to accumulate in the joints, neither did it displace the blocks. The net cost was 10s 6d per square yard, and but comparatively slight repairs had been found necessary. The blocks were originally 5-87 in deep, but their present average depth was 5-22 in in King's road, and 5-60 in in Sloane street, their probable life being seven and eight years respectively.

It was strongly urged that local authorities should adopt measures for ascertaining the weight of traffic before laying down wood, that great discretion was necessary in accepting tenders for construction and maintenance, and that no reasonable expense should be spared in supervision. On the whole, the author submitted that wood pavement was economical and convenient, that notwithstanding many failures the modern system had achieved a fair amount of success, and that there was no apparent reason why its use should not be extended.

The paper includes tables and statistics showing the first cost and annual cost of various wood pavements, the comparative vertical wear of wood in various streets as reduced to a traffic standard, together with the ascertained and estimated life of the blocks.—*Industrial World.*

Prices of all kinds of East India coffees have for a long time past been about at bottom, and although they have been in moderate request all along, but little anxiety has been shown by buyers to lay up a large stock. It now looks as if there would be an upward turn of prices, and those who have supply will not part with it readily until the crop prospects are more settled.

### PORTAGE LA PRAIRIE.

The new time table on the M. & N. W. R. took effect on Tuesday last. They now carry a daily mail from here west as far as Minnedosa which will be a great convenience to all the towns along the line.

The crops along the line of the M. & N. W. R. look well and a large yield is anticipated. Market quotations are: wheat 90 to 95c; oats 23c; barley 30c; eggs 20c; butter 15 to 18c; potatoes scarce and wanted at 75c.

The Marquette Planing Mills have been leased by W. McBurney, who will manufacture all kinds of sash, doors, mouldings, etc. This mill is the largest west of Winnipeg. Mr. McIlvanie will have the management.

Captain Burnett left on Monday for Westbourne with a crew of men to fit up Mr. Pratt's steamboat for this season's navigation on Lake Manitoba. The boat leaves this week with a party of government engineers who are going to the north end of the lake to lay out timber limits.

The stock of Campbell & Fulton, furniture dealers, was sold *en bloc* by the creditors on Monday by public auction, and was bought by W. J. M. Pratt, who subsequently re-sold it to Mr. Broadfoot, of Scaforth, Ont., who was a creditor. Mr. Pratt was \$300 ahead on the transaction.

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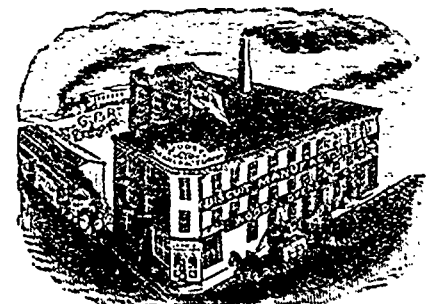
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