

# MUNICIPAL DEPARTMENT

## IMPROVEMENTS IN PAVING.

An important change is rapidly spreading over the roadways of London and other large towns—the change from soft to hard wood paving. For many years there has been a difference of opinion as to the comparative merits of granite pitchers, so-called macadam, asphalt, and wood paving. The latter was originally the fad of the dentist, and the first essays were all failures. Tradesmen, however, supported the pavement because it was noiseless, and the engineers and surveyors of the metropolitan parishes have done their best to make it answer for practical purposes. All the earlier wood pavements were laid with Baltic deals and cement joints, these being the materials most readily dealt with. It was in 1839 that the first wood pavement worthy of record was laid in the Old Bailey. Many thousands of square yards were subsequently put down, and over thirty patents taken out for modes of performing that operation, until in 1884 the wood pavements had increased to the extent of fifty-two miles. Since that date the advance has been continuous. But the shrinkage, decay, rapidity of wear, and the insanitary conditions due to the absorption of water and of organic foulness by the soft woods have led to troubles and difficulties, which have all been endured for the sake of diminution of noise in the arterial street traffic.

In 1887 came the Indian and Colonial Exhibition at South Kensington, and there, in the West Australian courts, were shown magnificent samples of the eucalyptus hard woods from the great Darling Range, which covers a tract of over 30,000 square miles, the most notable being the Karri and the Jarrah, more particularly the *Eucalyptus marginata*. This wood was then already known for its excellent qualities in ship building and harbor works. It was first used in repairing His Majesty's ship *Success* in 1829. It was also esteemed in railway work, as one of its most marked qualities was freedom from wet or dry rot. It was on the occasion of the exhibition referred to that it was introduced into the English market for wood paving. The advantages of a hard, almost non-absorbent, fibrous material for this purpose were singularly striking, and in the following year a section of the Watworth road was laid. In 1889 the Jarrah, now known in the trade as "Jarrah-dale" Jarrah, was put down in the Westminster Bridge road, noted for its incessant and exceedingly heavy traffic. The paving is still in good condition, although the traffic over it toward Westminster is reckoned at 1,002 tons per yard of width of roadway from 6 a.m. to 6 p.m., during which time 3,574 vehicles

pass. The traffic on the other side of the road is stated at 699 tons and 3,014 vehicles.

The annual wear of the wood has been under 0.2 inch. This same parish of Lambeth has subsequently used seven millions of blocks. St. Pancrass, St. Giles, Southwark, St. George the Martyr, St. Martin's in the Fields, Streatham, Wandsworth, Fulham and other large London parishes have more or less adopted it for their heavy traffic, with the result that there are now in the metropolis over twenty miles of Jarrah-dale Jarrah alone. The same wood is in use in Paris, Berlin, Glasgow, Manchester, Nottingham, and other cities and towns. In the Government Hand-book of Western Australia these forest products are put foremost as a source of great wealth to the colony, and the most valuable woods are stated to be the Jarrah, the Karri and the Tuart. Jarrah timber is obtainable through more than five degrees of latitude, and the present forest holdings are within easy access to shipping ports. The leading timber stations of the colony are the "Jarrah-dale," with a forest holding of 250,000 acres, connected with the port of Freemantle by a railway; the Karridale Timber Mills, near Cape Leuwin, with 150,000 acres, and satisfying a large demand; the Canning Jarrah Mills, with railway from Guildford to Freemantle and 100,000 acres of holding; the Torbay Mills, near Albany; the Quindalup Mills, near Geographe Bay, and the Bunbury Mills.

The forests from which timber is now exported from Western Australia are altogether at its south-western extremity, doubtless through the climate subject to moist currents of air from both south and north. The best Jarrah wood is found in the hill ranges, and not nearer than fifteen or twenty miles from the coast. The areas occupied by the principal species of West Australian eucalyptus are white gum (*E. redunca*), 10,000 square miles; Jarrah (*E. marginata*), 14,000; Karri (*E. deversicolor*), 2,500; Tuart (*E. gomphocephali*), 500; red gum (*E. calophylla*), 800, and York gum (*E. loxophleba*), 2,400 square miles. The white gum grows in profusion east of the Darling Range, but this wood does not seem to be as yet an article of export. The Tuart timber is extremely hard, twisted and gnarled; it is the strongest wood known. West Australia has been the first to furnish Europe with

hardwoods for paving, and still holds its own in the markets of England, France and America. The hardwoods of other countries have failed, so far, to get a footing, although the natural desire of public bodies to try cheaper materials is inducing purchases of small parcels. The scientific and practical research department of the Imperial Institute some time ago invited inspection of a number of Queensland woods—crows ash, iron bark, spotted gum, blood wood, blue gum, black butt and tallow wood, but nothing much has come of the effort.

## THE CORNWALL ARBITRATION.

The arbitrators in the matter of the expropriation of the plant of the water-works company by the corporation of the town of Cornwall, Ont., have made an unanimous award, placing the value of the plant and system at \$78,620, which, with the 10 per cent. allowed by law, brings the expropriating price up to \$86,491.73. The cost of the arbitration will be about \$8,000. The council intend submitting to the ratepayers, as soon as possible, a by-law to authorize them to take over the works. The arbitrators were Mr. John Kennedy, of Montreal, for the town of Cornwall; His Honor Judge Carman, of Cornwall, for the company; and Judge McDougall, of Toronto, as referee.

A new Northey pump has been put in operation at Valleyfield, Que. It has a capacity of 1,100 gallons per minute. This, with the power provided by the new water wheels, will give the town an ample water supply for both domestic purposes and fire protection.

An experiment is being made in Toronto, which, it is expected, will produce a much more durable and better asphalt pavement than has hitherto existed. Some trouble has been caused, under the old style of construction, by water getting between the wearing surface and the concrete foundation. One of the contractors for laying the asphalt thinks he can obviate the difficulty by the emplacement of a layer of chipped stone, coated and bedded in pitch, which is a simple process. The asphalt pavements, as a rule, have not been entirely satisfactory, and from an economical point of view the idea may prove valuable.

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