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STREET PAVING MATERIALS.

BY J. J. BELL.

It is clear that the experimental stage has not yet been passed in determining what is the best material for street paving. So many points have to be considered—durability, facility of repair, noise, sanitation, cost, etc., that it is difficult to determine what material combines these qualities in the greatest degree. What is suitable for one kind of traffic may be unsuitable for another, what is a success in one climate may be totally unfitted for another, a cost which is possible on a great business thoroughfare, or a fashionable residential street, may be out of the question on the poorer streets, where property owners cannot afford an expensive pavement. A good deal has yet to be done in the way of experiment, and the material employed must vary according to local conditions.

Wood and stone are the two natural materials which suggest themselves for street paving. The noise produced by traffic over a stone pavement precludes its use on residential streets, except in the form of macadam, while wood, so far as used hitherto in this country, is not sufficiently durable for heavy traffic. There is, however, a growing tendency to go back to wood in European cities, especially Berlin, and it is said that before long three-fourths of London will be surfaced with this material. The wood employed there is the Australian jarrah, which has displaced all kinds of wood except Baltic fir, which it is rapidly driving out. Jarrah is an exceedingly hard wood

and is said to be equal in wear to granite. It is impervious to moisture, and being a species of eucalyptus is antiseptic and therefore no objection can be urged to its use on sanitary grounds. Another Australian wood, karri, is second only to jarrah, and the Tasmanian blue gum has stood very satisfactory tests in Glasgow. Of course none of these woods are likely to come into use in America, as it would cost too much to import them, where other suitable material is so abundant.

The experience of cities on this continent seems to point to asphalt as the best all-round paving material, cost being the principal objection. Laid on concrete it is durable, clean and easily repaired, and heavy traffic seems to harden and consolidate it. It is liable to rot from water lying on it, but this may be overcome by giving the roadway sufficient crown to allow the water to run off freely and by substituting stone or other material for gutters next to the curb. Asphalt will not answer for track allowances or the strip close to the rails, where the jarring of the cars rapidly disintegrates it, but with granite blocks, or better still, so far as bicycle traffic is concerned, scoria or brick on the tracks, asphalt makes an almost ideal street. An objection is the tendency of horses or bicycles to slip. With a thin coating of ice or snow, or in muddy weather, they are liable to do so, but there are comparatively few days in the year when such conditions exist to an extent to cause inconvenience. An interesting test of the merits of different pavements for slip was made in London, England, some time ago, when a record of the accidents for 50 days showed asphalt 1,066, granite 719, wood 542. On streets of steep grade asphalt cannot be employed. In Halifax concrete is used on grades and asphalt on the level. In New York asphalt is being substituted for granite on some of the streets, the asphalt surface being laid over the granite just as it is, instead of removing it and putting down concrete foundations.

So far as sanitation is concerned, an interesting fact is stated with regard to Buffalo, N.Y., which has more asphalt pavement than any city in the world. It is asserted that since the introduction of asphalt the death rate has decreased, especially among children. This, if verified by the experience of other cities, should go far to encourage the use of asphalt.

Next to asphalt in favor as a permanent paving material, and rapidly winning its way, is brick. In Toronto it is somewhat cheaper than asphalt, and could a good vitrified brick be supplied at a reasonable figure it would come into general use in replacing the cedar blocks which were so extensively laid down some years ago and which have proved such a failure. Brick is somewhat noisy, but it is not so slippery as asphalt, and is easily repaired and durable. A section of brick pavement at the intersection of six streets in Richmond, Indiana, which has been down for six years, and subject to heavy traffic, has not cost a single cent for repairs, and looks as if it was good for six years more. Asphalt and brick are likely to be the two favorite paving materials for city streets in the future.

Macadam will always be employed more or less for