

MACADAMIZED ROADS AND DUST*

One of the requirements of a macadamized road on which horse traffic is used is that it shall be slightly elastic. Theoretically an unyielding surface may be better for vehicles; but practically a considerable amount of wear will ensue both to the road and to the vehicle unless the road surface is slightly responsive to any jar. For the horse a slightly yielding surface is imperative. This vital requirement of elasticity is really one of the chief causes of the trouble experienced with dust.

It has been pointed out that a cubic yard of metalling 2 in. to 2 1/4 in. cube, when screened and laid down in regular layers of 6 in. thick, contains no less than 40 per cent. of interspaces. These interspaces have to be filled with smaller material, some of it gravel or sand, but most of it fine dust or mud, accord-

ing to the state of the weather and the character of the road stone. The function of this soft intervening material is to form a cushion to preserve the stone from the heavy blows of the traffic and to absorb the shock that would otherwise be unpleasantly felt by the horse or the vehicle. The character of the intervening cushion thus becomes important, for if when the road surface dries it is converted into a fine mobile dust that is easily dispersed, a stone gets kicked out, and an opening is made which, if not quickly attended to, will soon result in the disintegration of the road. The way in which some of the material used for metalling is affected by water adds to this process. It therefore becomes obvious that the best road surface will be that where the material filling the interspaces has a high specific gravity, is not easily pulverized by shocks, and is not reduced to fine dust or mud by the action of the weather.

Another common defect arising also from the same source is that a macadamized road surface rarely for long retains the even convex shape in which it was left by the steamroller. The soft material interspersed between the stones will be greater in one part than in another; consequently, as it gives way or comes out, especially if a stone or two is loosened from the road surface, the road wears away and a hollow is formed.

It has been said, and is very generally believed, that motor-cars are the cause of dust. But motor-cars would not raise the dust if the dust were not already there, either on the surface or in the interstices of the metalling. Everyone will agree that the dust raised by cars is a great nuisance, making other road-users as well as residents by the roadside utterly miserable; but it is better to get at the cause of the trouble than blame the instrument, and the cause is undoubtedly the

*Part of a paper by Mr. A. P. I. Cotterell, M. Inst.C.E., P.S.L., read at the recent Bristol Congress of the Royal Sanitary Institute.

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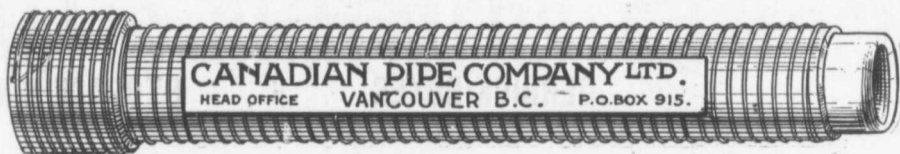
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