face is composed, or the way in which it is laid, are unimportant, but that these are very largely a part of a system of drainage. Underdrainage is one of the first points to consider. It is the native soil which must really support the weight of traffic, no matter what material is used to form the surface. Gravel, stone, brick or asphalt are not sufficiently strong to bridge over a wet and yielding sub-soil. If this natural soil is kept in a dry state, it can support any weight, and to this end underdrainage is necessary. Underdrains may be made of common field tile, 4 inches in diameter, placed on each side of the carriage-way, underneath the gutters, at a depth of about three feet. This "lowers the water-line" and secures a good foundation.

There must be surface drainage, and for this the surface must be crowned, or rounded up, covered with a hard surface metal, and open gutters provided to carry away this surface water. The surface metal (gravel, broken stone, or other material) resists wear so that the surface of the road remains smooth, permitting the water to flow readily to the sides of the road. But a further object to be attained by the surface covering is to have a coating that will not allow water to pass through to the natural soil beneath. By crowning the surface, rolling it to make it compact and smooth, water will be at once shed to the open gutters at the side of the roadway.

A great many of the macadam streets in Winnipeg are too flat to properly drain the road surface. Roads must be sufficiently crowned, must be given a sufficient camber, to shed the water from the centre to the sides, where it may be carried in the gutters to a proper outlet. Nor should depressions or ruts be allowed to exist in the road to interefere to any extent with this surface drainage. The real secret of good streets is good drainage, and good drainage is obtained by removing all surface and sub-soil water as quickly as possible, before it can soften either the surface or foundation. For this purpose catch-basins should be placed at shorter intervals than at present, so as to discharge the water quickly and in small quantities.

Gutters and underdrains are useless, unless outlets are provided, and care must be taken to see these do not become obstructed. On Spadina Avenue and Portage Avenue and, in fact, most of the recently improved streets, the catch basins were left in the former ditches and water channels. The narrowing of the roadway has left them some distance from