are of course faced with an alternative problem. Shall they merely top dress the roadways of the district, so making a yearly patchwork job of the traffic ways, or shall they each year undertake a section, and make and form it thoroughly? In the former case the available funds are usually more than absorbed in making the roads passable for winter traffic, and in the latter case, if a section is to be taken in hand and thoroughly formed, there will probably be no surplus of funds to maintain even a passable surface on the other portions of the district.

With the paving or traffic surface of city streets this article is not greatly concerned, for from the diversity of opinions held by the leading engineers of the various countries who are concerned about the road traffic problem it is very evident that road engineers are themselves still searching for the ideal surface that will stand best for all classes of city traffic.

We have lately had before us in the daily papers, long reports of the impressions of various Dominion engineers who have lately tripped over the Continent and England, gathering data as they went, as to the most favoured class of road surfacing in the various large cities, and as might be expected, even among these authorities, there is a very great diversity of opinion as to the best method to adopt in our Dominion city streets.

Wood blocks, stone setts, asphalt blocks, and the numerous bitumen surfaces all seem to have their advocates, and we can only suppose and hope that the long suffering public who move on wheels, will eventually get a good road surface in the cities by the slow process of the elimination of the unfit.

All those engineers however who have been abroad to study the road problem are unanimous on the subject of the road foundation, and Mr. F. W. Furkert, Inspecting Engineer of the Public Works Department, who attended the International Congress of Road Engineers held in London last year, is reported to have said in the course of an interview with a reporter of the "Dominion" on his return to New Zealand:—"The exceptionally fine roads of England and France are due not so much to any magic power contained in the up-to-dateness of their engineers, but to the foundations laid by hundreds, and in some cases even thousands of years of consolidation under traffic, with, in places feet of metal." In that statement we are given the prime factor of road construction, and as the trend of motor development is to still further increase the wheel load of vehicles, the question of road foundations is apt in the future to demand even more care than it is receiving in the present.

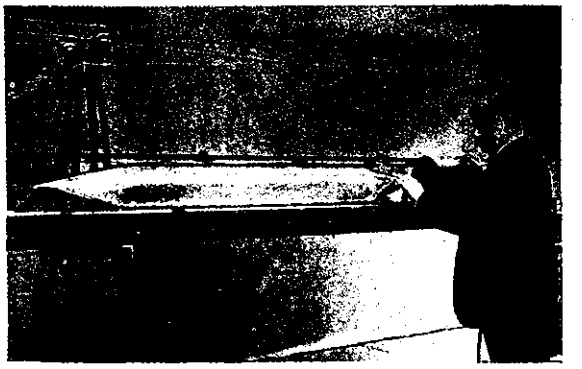
In the matter of pavements for city streets there are of course many things to be taken into consideration. There is first the question of the class of material that is available in the neighbourhood, the cost of laying, cost of upkeep, and the amount of skilled labour that each class of roadway requires in the laying.

Taking into consideration the number of paving systems offering, each doubtless with some points in its favour, and after reading the latest reports from our engineers, which all differ more or less, it would seem that the only way in which the vexed question can be finally settled, will be by resorting to the old rule of thumb method of trying them out.

Why has this method not been tried? Older countries than ours have freely admitted that without experiment they have been unable to arrive at definite conclusions, and our road engineers in order to keep abreast of the times must surely fall into line. The only satisfactory method of arriving at a definite conclusion, as to which system of road paving is best suited to our city streets is by selecting a thoroughfare carrying all classes of traffic, and laying sections of the various pavements along it. This will ensure that the same amount and class of traffic passes over all sections alike, and if first cost, maintenance, life, and suitability for tractive purposes are carefully noted, the question would in a comparatively short time be settled at first hand.

The Bachelet Electric Railway

The inventor of this Railway, Mr. Bachelet, which we illustrate herewith states that a speed of 300 miles an hour is a possibility! He terms his invention "Bachelet Levitated Railway System." There are no locomotives, no engines, no motors, no wheels, no gearings, and practically no friction. This model, we believe, has been constructed by Mr. Bachelet himself, and has been brought from the United States. It consists of a length of track consisting of a series of electro-magnets placed in a straight line, and above which the car runs. At each end is a narrow solenoid, through which the



Mr. Emile Bachelet and his Model Electric Railway

car passes. Over the track above the car is a central guide of channel brass, and each side of the track under the car is a similar guide. At the top of the car is a pair of brushes, one at each end, and at each end at the bottom is a pair of similar brushes. At each brush is a guide piece. The brushes and guide pieces run in the channel guides, the brushes making and maintaining electrical contact with the horizontal surfaces. The guides are divided lengthways into sections, the sections being separated at each interval by insulating material. The movement of the car, when supported in air, is very rapid; it travels almost instantaneously from end to end of the track. The term railway is somewhat of a misnomer, as the car does not travel upon rails.