traffic of horses and iron-tired wheels. The fracture of a unit of slag in a road means its disintegration into a number of small particles. These may to some extent be cemented or held together by the flow of the tar, which has considerable viscosity, but even in this, the most favorable case, a weak spot is created. Natural stone, on the other hand, is not so liable to fracture. Even if fracture occurs, it does not necessarily carry with it the disintegration which invariably follows the fracture of slag when subject to repeated blows, such as from horse traffic. Whether natural stone or slag be used, care should be taken to select a good sample. The writer has seen some granites far inferior to a medium slag for the purpose of road construction. Slag varies in quality far more than natural stone. The slag from a blast furnace will often vary in quality very considerably in 24 hours. This very property is an index as to how a furnace is running and the quality of the iron produced. Therefore, it is very necessary, in using slag as a matrix, to keep the quality up to standard.

The penetration of the tar into the matrix is not an essential in preparing the material. As a matter of fact, the penetration of tar into any medium likely to be used for roads is small. The oily product in the tar will penetrate to a slight extent into soft granite limestone or slag, but as this has no binding properties and in no way strengthens the matrix, it can be left out of consideration. The use of tar is simply and solely as a surface binder and should only be considered as such. The application of it to the matrix is carried out in various ways. The matrix should be dry and also in order to obviate the possibility of over-charging it with tar, which would be waste of material and also have a softening effect on the road, it is undoubtedly better to heat it. This also ensures a better spreading of the tar on the surfaces of the matrix.

The writer has inspected a plant at blast furnaces where slag is put through the crushers and arrives at the tar plant at a convenient temperature. This would be an ideal condition were it not for the fact that selection of good slag has to be made by an inspector at the crushers. If this is not done there is no check on the material road contractors are buying. Mixing is best done in rotary tubular mixers and there are improved additions to a machine of this description which render the process very perfect.

A summary of the above remarks is as follows:—

The best matrix for tar macadam is natural stone selected for the same purpose as ordinary macadam. Where slag is used as a matrix careful selection should be made.

It is not recommended for incessant and mixed traffic, it being particularly unsuitable for constant horse and iron-tired wheel traffic.

BEARING VALUE OF SOILS.

The American Society of Civil Engineers has appointed a special committee to codify the present practice on the bearing value of soils for foundations and to report upon the physical characteristics of soils in their relations to engineering structures. The committee has prepared three sets of questions asking (1) for results of tests for bearing value of soils; (2) for data as to the bearing value of soils from existing structures; and (3) for local practice as to the bearing value of soils. Answers to any or all of these series of questions are requested from every one having information concerning them. The lists of questions will be sent to any one willing to answer any of them, by Robert A. Cummings, chairman of the committee, 221 Fourth Avenue, Pittsburg, Pa.

Coast to Coast

Toronto, Ont.—The expenditure on colonization roads in New Ontario will be $306,000 this year, compared with $562,959 last year.

Toronto, Ont.—The estimates of the Dominion Department of Public Works, which passed in the House on April 3rd, included over $1,000,000 for a new post office to be erected in Toronto.

Regina, Sask.—There is under contemplation the construction of a subway under the C.P.R. tracks at Hamilton St. The subway will be one block in length and its construction will probably be proceeded with this year.

Victoria, B.C.—The last section of the concrete flow line of the Sooke Lake water supply system is now being laid by the Pacific Lock Joint Pipe Co., and a few miles more of pipe are required to complete the undertaking. It is expected that it will be finished early next month.

Maisonneuve Que.—The Montreal Water and Power Co. has made the suggestion to the city that it buy the waterworks plant owned by the company within its confines. The suggestion is the result of a request from the city that the company reduce its water rates.

Cisco, B.C.—Ballasting operations commenced a few weeks ago on short stretches of the Canadian Northern Pacific line left unballasted between this point and Yellow Head Pass last winter. These stretches total about 250 miles of unballasted track. A number of stations, water tanks and sidings are also being constructed.

Winnipeg, Man.—The city has $467,000 available for expenditure on local improvements this year. The Main St. subway will be paved at a cost of about $20,000. Outer waterworks extensions will cost $7,500. About $60,000 will be spent on street and lane openings. The balance of the amount was divided up among the seven wards of the city.

Vancouver, B.C.—Proposals have been advanced for reclaiming 42 acres of the False Creek flats. The Vancouver Harbor Commission has been granted this tract of land by a Dominion Order-in-Council, and it is stated that it will be converted into an industrial area. A 200-ft. channel on the south side and a 350-ft. channel on the north side, 12 ft. and 20 ft. deep respectively is planned. Bulkheads will protect the area. It is estimated that about 80,000 ft. of lumber will be used in the construction of the latter, and about a million yards of filling will be required in the reclamation work.

Montreal, Que.—Grand Trunk Railway grade separation is again a live subject of debate in this city. The civic officials suggested numerous modifications to the plans prepared by the G.T.R. for the elevation of its tracks, but any progress has been held back as the Dominion Railway Commission has not been supplied with details regarding these modifications. A municipal committee, under the presidency of Mr. Alfred Lambert, has submitted another proposition, that of eliminating the objectionable level crossings by reconstructing between Notre Dame St., the canal, and Bonaventure Station, the tracks and sidings, and driving tunnels under the canal instead of bridges over it. The plan, however, did not meet with very enthusiastic support.