

understood, together with some external agencies of sales economy.

The field of demand may be local, state, national, or world-wide, requiring adequate shipping facilities and storage at home and elsewhere. In local distribution, the evolution of horse trucking into automobile trucks, is becoming a great aid; as also for suburban and interurban shipments. In state or nation wide and even foreign shipments the freight rates, continuity of transit and tariff enter the problem. The continuity of transit will exclude the northern waterways at certain periods; a staple as well as staple article, however, will overcome this handicap; the factory can keep on running, the goods can be stored until shipment can be made; the article is a staple and finds a ready sale. However, if the article is not a staple one, sales must follow manufacture quickly, and water rates, however low, are unavailable.

Articles destined for foreign countries with a fluctuating or uncertain tariff, must be disposed of quickly. Reciprocity treaties now in force or pending will help overcome this in part. The quantities shipped at one time is an important factor in freight rates, large quantities making for economy in almost all ways.

PERSONAL.

J. D. McBEATH, assistant engineer, city of Medicine Hat, has tendered his resignation, to be effective at the end of March.

R. O. WYNNE-ROBERTS, consulting engineer to the city of Regina, has tendered his resignation, to take effect on May 31st next.

R. B. PYPER, of the engineering staff of the city of Medicine Hat, becomes acting city engineer this week, when Mr. A. K. Grimmer withdraws from office.

A. W. CHARLES, for some years chief draftsman for the Anaconda Copper Mining Co., Butte, Mont., has been appointed chief draftsman for the Canadian Copper Co. at Copper Cliff.

J. E. A. MOORE and V. G. MARANI, graduates of '91 and '93, respectively, of the School of Practical Science, Toronto, have established a consulting, civil and mechanical engineering firm in Cleveland, Ohio.

G. A. McLEOD, engineer for Foley Bros., Welch and Stewart, on the first unit of the Halifax Ocean Terminals, delivered an address on "Accounting" before the Nova Scotia Society of Engineers last week.

E. G. M. CAPE, president of E. G. M. Cape and Co., Ltd., engineers and contractors, Montreal, and a major in the 21st Battery, Montreal, is at present taking a special military course at the R.M.C., Kingston.

W. SANFORD EVANS, chairman of the Georgian Bay Canal Commission, addressed the Ottawa Branch of the Canadian Society of Civil Engineers on February 25th, his subject being "Economic Conditions Governing Transportation in Canada."

WILLIAM NEWMAN, Naval Architect for the Polson Iron Works and Shipbuilding Co., Toronto, has received a lieutenant's commission in the Twenty-third Regiment, Northern Pioneers, Owen Sound. Lieut. Newman has already held the rank of N.C.O. in the Fourteenth Prince of Wales' Own Rifles and in the Forty-eighth Highlanders.

FRANK DARLING, architect, Toronto, has been nominated by the Royal Institute of Architects as candidate to receive the King's Gold Medal, an honor granted annually

to the most distinguished architect in any country by His Majesty. The presentation will likely be made in June.

W. G. MILLER, LL.D., provincial geologist of Ontario, has been awarded the gold medal of the Institution of Mining and Metallurgy, London, England. Dr. Miller is the first Canadian resident to receive this distinction and is the second geologist to receive this recognition for eminent service.

TORONTO BRANCH, CANADIAN SOCIETY OF CIVIL ENGINEERS.

A large attendance at the meeting of the Toronto Branch on February 25th heard an interesting address by Mr. W. McNab, principal assistant engineer of the Grand Trunk Railway System, his subject being the construction of the Grand Trunk Pacific Railway.

The meeting was presided over by Mr. A. F. Stewart, of the Canadian Northern Railway, and chairman of the Branch last year, Mr. J. R. W. Ambrose, of the Toronto Terminal Co., and chairman this year, being absent from the city.

The reading of correspondence included a letter from Hon. W. J. Hanna, Provincial Secretary of Ontario, asking for the views of the Branch as to how far farm bridges should be included in the cost of drainage under the Drainage Act. A committee consisting of Messrs. Wilkie, Oliver and Barber was appointed to deal with the matter.

Mr. McNab's address was preceded by the presentation of a motion picture of the completion of track-laying on the Grand Trunk Pacific Railway. The scenes clearly illustrated the placing of ties and rails and the handling of equipment generally in the closing-in of the G.T.P. The meeting of the east and west track-laying gangs in the final spurt was very spectacular. Other views showed development work at Prince Rupert and the arrival of the first train at the Pacific terminal. The exhibition of the picture before the Toronto Branch of the Society marked its first public presentation.

In his address, which was illustrated throughout by a large number of lantern views, Mr. McNab reviewed Canada's entrance upon her great era of development. He was encouragingly optimistic in his forecast of twentieth century expansion. Substantial reasons were cited for the remarkable development in transportation facilities. The speaker mentioned in a very interesting way an instance which dates back to 1846, when it took a letter 1½ years to come from Fort McLaughlin, on the Pacific coast, to a point not fifty miles from Toronto.

Railway construction in Canada had its start between the years 1853-56 as a result of the Guarantee Act of 1849. The speaker referred with considerable pride to the evolutionary process in location, construction, maintenance and operation by which the Grand Trunk Railway worked out its own experience, sometimes even at a high price. He recalled the stage of development when steel was a very expensive material, which induced the G.T.R. to experiment with steel top rails—a head fitting over the web of the rail. The development in steel rail manufacture from that time up to the present was traced in brief. Bridge construction was another topic concerning which the speaker made some very interesting remarks. Some of the bridge structures on the G.T.R. had been renewed three times, due entirely to the subjection of heavier loads. It was stated that the road-bed itself had been constructed so substantially at the outset as to have been found to amply answer the requirements of subsequent development in this respect.

The gauge originally adopted was 5 ft. 6 in., while for the most part United States roads were gauged 4 ft. 8½