

### Early Transportation in Manitoba.

In a recent folder issued by the Canadian Northern Ry. some space is devoted to the early settlement of Manitoba and to the transportation facilities in pre-railroad days. The flat-bottom stern-wheel steamers of the Red river from U.S. points landed passengers and freight at various points along the river to Fort Garry, where Winnipeg now stands, and from thence the Red river carts transported it overland. Two of the illustrations given in the folder are reproduced on this page. One represents the arrival of the first locomotive and flat cars at Winnipeg on one of the Red river boats, and the other the departure of a string of Red river carts for distant points. In connection with the first-mentioned view it will be of interest to record that the equipment shown consisted of a wood-burning locomotive, 20 flat cars and one caboose, which were purchased from the Northern Pacific Rd. at Brainerd, Minn., and were shipped on the str. Dakota and tow barges, belonging to the Red River Transportation Co. The equipment was loaded at Fisher's Landing, Minn., in June, 1877, and was consigned to Joseph Whitehead, railway contractor, Winnipeg. Capt. A. Russell and W. Griggs, pilot, had charge of the steamer, and H. Swinford, now General Agent of the Northern Pacific Rd. at Winnipeg, was general agent of the R.R.T. Co. in Winnipeg at the time, and collected freight charges on this particular shipment. Someone who was in charge of the outfit got up steam on the locomotive and blew the whistle for hours on the way down. The flags on the steamer were flying and nearly everyone in town celebrated the event. The consignment was landed on the St. Boniface side of the Red river, opposite Winnipeg. The work for which the equipment was purchased consisted of the construction of the line from Cross Lake, Man., to Rat Portage, Ont., and the laying of track and ballasting from St. Boniface to Rat Portage. The locomotive bore a number when purchased, but was rechristened the Countess of Dufferin, in honor of the wife of the late Marquis, then Earl, of Dufferin, Governor-General, who made a visit to Winnipeg about that time.

The B. Greening Co. (Ltd.), Hamilton, Ont., manufacturer of wire, etc., has issued an attractive calendar, containing a view of the works, etc.



ARRIVAL OF FIRST LOCOMOTIVE AND CARS AT WINNIPEG.

### C.P.R. Acetylene Car Lighting.

The C.P.R. has adopted acetylene as the standard light for its cars. The system which has been selected is similar to the Pintsch system, but instead of using oil gas, acetylene gas is used, which is stored at a pressure of 10 atmospheres in tanks under the cars. This system has been in vogue on the Great Northern Ry. in the U.S. which, since Sept., 1899, has equipped about 225 cars with the system. Acetylene gas under a pressure of over two atmospheres will dissociate when heated to 1,430 deg. Fhr., but a tank filled with this compressed gas to 10 atmospheres can be crushed without danger under a steam hammer. The fundamental principle of this system of car lighting simply consists of letting the gas escape before it is heated to such a degree that it will dissociate, or, in other words, if in the presence of such heat, dissociation can be regulated by providing for an outlet for the gas from any pipe or tank containing it, all danger is avoided. This is done by the use of tanks with fusible seams and fusible plugs and the high pressure pipes under the car being also of fusible material which, when heated to about 450 deg., will melt and allow the gas to escape.

About 12 years ago the Pintsch Co. made a series of experiments and tests in Germany with compressed acetylene gas, which established as a fact that acetylene gas when heated to 1,432 deg. will dissociate. It was also found that no shock or blow given to a tank in which compressed acetylene gas is charged, will create an explosion of the gas. These facts were corroborated by a series of tests which were made at St. Paul, Minn., under the supervision of Max Toltz, then of the Great

Northern Ry.'s mechanical department, and now C.P.R. consulting engineer at Montreal, from the results of which this system of car lighting was established, and it is positively asserted that no explosion of the gas under the cars carrying this system can take place. But the main foundation of acetylene gas lighting is in the generating of the gas. It is claimed that this is the only system which generates gas under proper conditions, that is, the gas is generated under the lowest possible temperature. It is well understood that gas generated at or about 500 deg. will polymerize, or in other words, will change from acetylene gas to naphtha or benzene gas, and no cooling will bring these gases back to acetylene gas. Everyone is aware of the fact that such gases are very dangerous, besides they have not the illuminating power of pure acetylene gas. The mode of generating under this system is such that the temperature cannot be raised to more than 110 deg. Besides, the gas is perfectly purified, that is, the phosphorous and magnesia, the most dangerous substances in this gas, are taken out chemically. The gas is also condensed and dried, as the moisture plays havoc in cold weather by freezing and stopping up the burners. After this, the gas so manufactured goes through a three-stage compressor, in which the temperature is raised but very little to compression. From here the gas goes into storage tanks. Great stress should be laid on this mode of generating acetylene gas and authorities such as Prof. Lewace, Pictet, Caro and Dr. Wolf, have written on this subject, pointing out the necessity of generating the gas under the same conditions. From the storage tanks the gas is charged into tanks under the cars. Each car has two tanks,



A STRING OF RED RIVER CARTS.