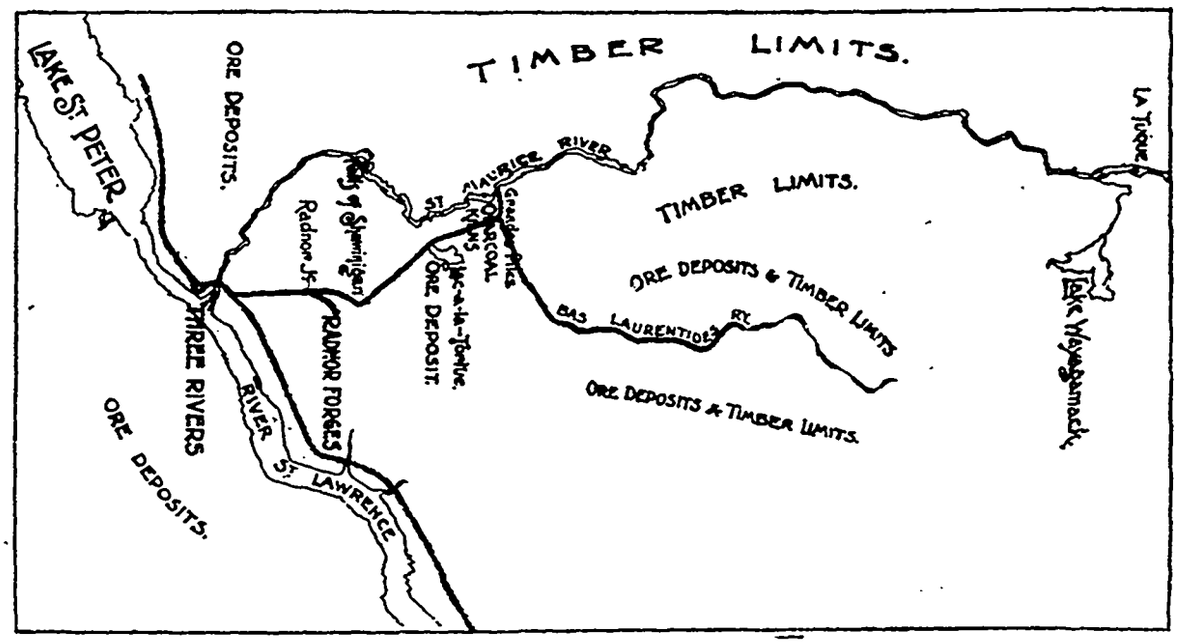
thing else. This disadvantage is now entirely overcome by the fact that the Canadian Pacific Railway connects the Radnor Forges, and shipment can be made by rail and water routes, the latter from the present Company's property and dock at Three Rivers.

In 1889 the Canada Iron Furnace Company, limited, acquired Radnor Forges, together with the extensive property and interests belonging thereto. The president of the Company, P. H. Griffin, M.E., of Buffalo, gave an interesting account of their operations at the recent International Mining Convention held in Montreal. In this paper he gave the following account of tests they made:

"Some years ago we were induced to test in our car wheel shops at Lachine and St. Thomas a quantity of Canadian charcoal iron, the product of an antiquated stone stack situated at the village of Fermont, or Radnor Forges, Champlain, Que. We were told that this iron was made from the bog and lake ores of Three Rivers' district, celebrated in the history of the Canadian iron industry, and that it had peculiar merits in strengthening mixtures for car wheels and other high class castings. At that time we were using largely 'Selected Salisbury' charcoal iron imported at a very heavy cost from the United States. We were loath to make any change in our mixtures, as we had always pursued a most conservative course in the selection of iron entering into our wheels, but we finally decided to enter upon a series of careful tests with Three Rivers Canadian iron. Several trials proved that it was an iron of undoubted merit, which if the ore and wood supplies of the district warranted, could and should be made in large quantities, not alone to the advantage of the parties operating the furnace, but to the advantage of every consumer of iron in Canada who required castings of special quality, and certainly to the great gain of the Province and Dominion. We found the iron soft, tough, clean, close in texture, and with fine chilling qualities—the higher grades admirably adapted for the manufacture of chilled car wheels, the medium grades for castings requiring great strength, and the lower grades soft enough for the finest stove work. To give some idea of the strength shown in these tests we give the following result of the experiments made by us:—

"The basis of strength on first-class standard car wheel mixtures is expressed by a strength of 50,000 pounds per square inch traverse strength, obtained from a bar 1 in. x 12 in., the bar being supported on the extreme ends. By the introduction of 33% of Three Rivers' iron into our car wheel mixtures we were able to secure a strength of 65,000 pounds without difficulty. It was impossible, however, to procure any considerable or regular supply of the iron, the capacity of the old Radnor furnace being very limited, and its operation irregular."

They did not at that time think it possible to develop the manufacture of any great quantity of this special kind of iron, but it was evident that a considerable quantity, say 3,000 to 5,000 tons, could be made annually with every prospect of the maintenance of this product for many years. Later work developed the fact that this particular iron can be made in very much larger



Map of St. Maurice District.

quantities, probably sufficient for any demand that may be made, and the company after looking about them bought up large tracts of these bog lands. They are now operating on a large scale and they will increase their output.

Regarding the origin of bog iron, Mr. Griffin says: "Beds of hard bog ore are invariably found on hill sides above which swamps or marshes exist, or in runs which lead to or from these swamps. Wherever this dark swamp water flows sluggishly, and especially where swamp moss, fine grass or decayed vegetable matter exists, it will gradually form a light film with every appearance of that caused by oil, which gradually becomes thicker and sinks to the bottom in some quiet spot, where it takes a yellowish and slightly rusty tinge. This gradually becomes thicker, and when the water becomes lower in the dry summer, it becomes denser and either sinks lower to the firmer beds below the grass, or hardens and becomes bog ore. One very large deposit of soft ore entirely filled a deep ravine leading from an immense swamp. This ravine was being drained with a view of removing the ore for the