

nected with permanent bench marks and that these, where possible, be connected with sea level datum; further, that the Council take into consideration the best method of securing permanent records in regard not only to levels, but also to all trigonometrical surveys, and to confer with the Government with a view to having them instruct their officers to mark all bench marks permanently" was recommended to Council with instructions to interview the Government. The matter was discussed by Colonel Anderson, Messrs. Kennedy and Lordly. Mr. Lordly explained that it was difficult to get permission to put in permanent bench marks. Mr. Kennedy said that all could assist in this matter by making bench marks as permanent as possible.

At the close of the business meeting, Cecil B. Smith, Toronto, read a paper descriptive of the Canadian Niagara Power Co.'s plant at Niagara Falls. The paper was illustrated by numerous lantern slides.

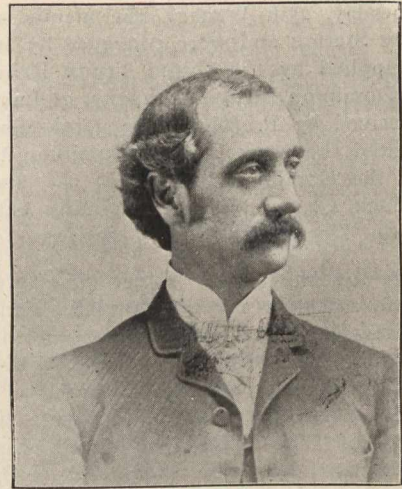
Votes of thanks were passed to the various railways and to the companies visited at Lachine.

At the evening session an address was given by James White, Geographer of the Dominion Government, Ottawa, on "Maps and Map-Making in Canada." Mr. White first gave a brief review of mapping in Canada and outlined the work which has been done by the various departments of the Dominion Government in publishing maps. Owing to the fact that the several departments of our Government have been working independently, the results obtained up to this time are not as satisfactory as could have been desired, and obviously the interests of the country demand that a general scheme for the Dominion as a whole should be promptly undertaken. The department has already done a considerable amount of work in this direction, and is preparing plans whereby it is hoped that all the information available may be utilized to the utmost. In connection with his address, Mr. White exhibited a most instructive and interesting collection of maps of North America, and Canada in particular, dating back as far as 1505, this being the date of the first map on which the name "America" appears.

At the close of Mr. White's address, Dr. E. Haanel, Superintendent of Mines, read a paper on "The Electro-Thermic Production of Iron and Steel," in which he summarized briefly but most lucidly the work of the Commission recently appointed by the Department of the Interior to examine the leading smelting plants of Europe and the Ruthenburg plants in the United States. Each plant was described and its working costs were re-calculated for Canadian prices of material, labor and electric power. Dr. Haanel then showed conclusively that electric manufacture of high grade steel is already commercially practicable; that the manufacture of ordinary steels, if not yet practicable is likely to become so almost immediately, and that in localities having good ores and ample water power even pig iron can now be made at a cost but little greater than that of pig iron made with coke. In conclusion, Dr. Haanel predicted a rapid development of electric methods. The older ways of making iron and steel have probably almost reached their limit of economic development, and no very startling reductions in cost are probable, whereas electro-thermic methods, although new, have already been so successful as to justify the belief that they will soon become of great commercial importance. In this event, Quebec and Ontario, and probably some of the more northern parts of Canada, will benefit enormously. Ores occur abundantly in many localities, but their use is impossible because of the lack of cheap fuel. Whenever we could replace fuel by electric energy we shall have an unprecedented development of our mineral resources, and in the opinion of the lecturer this day is not far distant.

Votes of thanks were passed to the authors of the papers.

The members of the Canadian Society of Civil Engineers to the number of 150, visited the new works of Allis-Chalmers-Bullock, Limited, Montreal, on January 25th. They expressed surprise at the progress of the company, and at the amount and character of electrical work under construction. They were given an interesting demonstration on the construction and operation of drills, coal cutters and compressors. On leaving each member was presented with a handsome leather card-case as souvenir of the visit.

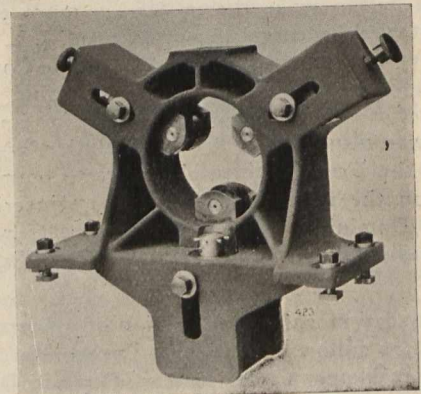


ERNEST MARCEAU.

A biographical sketch of Ernest Marceau, president-elect of the Canadian Society of Civil Engineers appeared in our issue of February, 1897. An appreciative sketch also appeared in the Engineering News, New York, in its issue of 26th ult. It regards Mr. Marceau's election as a "good index of the harmonious co-operation of the French and English races which distinguishes the eastern provinces of the Dominion of Canada." Like Lieut.-Col. Anderson, the retiring president, he has been in public service throughout his professional career, and both are identified with navigation service, though in different branches; Lieut.-Col. Anderson is at the head of the Dominion Department of Marine and Fisheries, while Mr. Marceau is in charge of the canals of the Province of Quebec. Mr. Marceau is descended from an old French family of Poitiers, one of his forefathers having established in Canada at the beginning of the eighteenth century. Mr. Marceau was born at Danville, Que., in 1852. He studied engineering at the "Ecole Polytechnique," Montreal, and got his first Government appointment as assistant to the resident engineer of the Grenville Canal in 1877. He received the Gzowski medal for his paper on the Carillon Dam, a portion of which he rebuilt. He is one of the faculty of arts of Laval University, and president of the Ecole Polytechnique de Montreal, and is a member of the Société des Ingénieurs Civils de France. He has been a member of the Canadian Society since its foundation in 1887.

#### HIGH SPEED FOLLOWER REST.

Experience has shown that for roughing, bars of even as great as 8-in. diameter require some substantial support (a Follower Rest), to obtain the greatest possible results from high speed steels. After using several different metals for



the jaws of such a Follower Rest, only to have them cut out, the Lodge & Shipley Machine Tool Co., of Cincinnati, hit upon the roller plan, clearly shown in the illustration. The rollers are hardened tool steel and are mounted upon hardened and ground steel shafts, upon which they are fixed by screws through the face of the rollers. Liberal oiling facilities are provided for the journals of the roller shafts. A