

VII.—*On Certain Borings in Manitoba and the Northwest Territory.*

By GEORGE M. DAWSON.

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In Manitoba and in the Northwest generally, boring operations are likely each year, as settlement advances, to be undertaken with increasing frequency. The generally uniform character of the surface, coupled with the covering of drift deposits over large areas, due to the Glacial Period, renders boring necessary, whenever it is desired to ascertain the character of the underlying rocks. Most of the borings so far carried out have been for the purpose of obtaining water in localities where the surface supply is insufficient or unfit for use on account of dissolved salts. In a number of cases, the object in view has been attained, and it may be specially mentioned that a good supply of water for the City of Winnipeg has been secured, by wells sunk through the alluvium of the valley, at a comparatively moderate depth.

In too many instances, however, the strata passed through in these borings have not been noted with sufficient care to enable satisfactory sections to be given. The great importance attaching to such records, whether for the guidance of future sinkings for coal and lignite, natural gas or brine, and in explorations which may be attempted in search of petroleum, is my excuse for collecting in this paper such facts as I have been able to obtain and for discussing their bearings. Some of the results already arrived at are interesting from an economic point of view, as indicating the development in the near future of important industries; while, as will have been gathered from the remarks already made, all borings effected in Manitoba and the Northwest, the results of which are carefully recorded, possess a special value from a purely geological standpoint.

In addition to the borings now first reported on, and chiefly made by the Canadian Pacific Railway Company, several experimental borings, conducted under the auspices of the Geological Survey, are referred to in this paper. Details of these will be found in the Reports of Progress, as follows:—

Report of Progress, 1873-74, pp. 3, 12; 1874-75, p. 2, boring at Rat Creek, subsequently referred to; 1875-76, p. 281, boring at Carleton. This experimental boring was executed under the supervision of Mr. R. W. Ells, and was carried to a depth of 175 feet without passing through the drift deposits. 1875-76, p. 292, boring at Fort Pelly on the Assiniboine River. After passing through the drift, this boring penetrated the lower portion of the Pierre shales and ended at a depth of 500 feet in marly beds, evidently representing the Niobrara division of the Cretaceous (cf. Report of Progress, 1879-80, p. 1A.)