obtained from it have been corrected by the uniform subtraction of nine feet, in order to give them their proper position in the total section.

For the log of this well, with illustrative specimens, I am indebted to the kindness of W. R. Baker, Esq., Superintendent of the Manitoba and Northwestern Railway, who was one of those most deeply interested in the success of the well.

The record as given below is compiled from the log kept by the driller and the results of my examination of the specimens.

Height of Surface at Boring above Sea, 1300 Feet.					
No.	Description of Material passed through.	Thickness of layer in feet.	Depth of bottom of layer from surface.	Height above sea.	FORMATION.
1	Soft, dark gray clay shale.....	95	95	1205	Pierre (Millwood Series).
2	Fragmental limestone.....	4	99	1201	Niobrara.
3	Grey calcareous shale	124	223	1077	
4	Dark grey fissile shale.....	178	401	899	Benton.
5	Coarse sandstone, with pyrites....	19	420	880	Dakota.
6	Compact white limestone.....	120	540	760	Devonian.
7	Blue-grey clay shale.....	10	550	750	
8	White gypsum.....	15	565	735	
9	Red shale.....	110	675	625	
10	Shale and limestone.....	68	743	557	
11	Red shale	At	bottom.		

No. 1.—Specimens from 30, 48 and 91 feet show this to be a soft, dark grey, non-calcareous clay shale belonging to the Millwood series of the Pierre shales, similar to that seen in the naked and almost vertical cliffs washed by the river a few hundred yards above the trail crossing.

No. 2.—This is a hard band that was spoken of as "sandstone" by the driller. It consists almost entirely of fragments of the prisms of the shells of a large Inoceramus, mixed with fragments of *Ostrea congesta?* This evidently represents the band of sandstone-like limestone that outcrops on the Assiniboine river below the mouth of Cypress Creek, and is also seen at several places along the eastern face of the Riding Mountain. It lies at the top of the Niobrara formation.

No. 3.—Specimens collected from 146 and 164 feet shew this to be a mottled, blue-grey, calcareous clay shale or marl. Under the microscope it is found to be mixed with prisms of the shells of Inoceramus, fragments of the shells of *Ostrea congesta?*, minute portions of fish skeletons and quite a large number of foraminifera. These comprise such forms as *Globigerina cretacea* and several species of Textularia, and with them are associated many Coccoliths and Rhabdoliths. These evidently represent the characteristic shales and marls of the Niobrara formation.

No. 4.—Specimens obtained from 213–247 feet consist of a dark blue-grey, fine-grained, unctuous, non-calcareous clay shale, breaking down into thin flakes. These represent the typical Benton shales.