

VIII.—BORING AT CASSILL'S (8TH SIDING)

This station on the Canadian Pacific Railway is thirty-eight miles west of Langevin, at an elevation of 2,493 feet, or only 22 feet above Langevin, and here, as at that place, two holes were bored. Mr. R. G. McConnell obtained a section of the first to a depth of 700 feet in 1883. The second, put down under the superintendence of Mr. W. E. Swan, was carried to a depth of 1,000 feet. No specimens from either were examined, and as the names used to denote the strata, as obtained from the workmen, are very perplexing, and, moreover, as this section agrees very poorly with that furnished by Mr. Swan, I have adopted the latter, which is as follows (the boring was begun one foot below the level of the railway grade):—

	FEET.
1. Dark clay loam	2
2. Yellow clay	10
3. Blue clay	40
4. Blue shale	110
5. Grey shale	38
6. Drab sand rock	3
7. Blue shale	85
8. Brown shale	6
9. Coal	2
10. Grey shale	134
11. Brown sand rock	3
12. Black shale	257
13. Grey shale	135
14. Brown sand rock	5
15. Blue shale	85
16. Grey sandy shale	40
17. Grey shale	45
TOTAL	1,000

Feeling that some uncertainty may attach to the above section, I do not propose to discuss it in detail. It may be sufficient to state that the first three beds are supposed to represent the drift deposits with a total thickness of 52 feet. Layers 4 to 8 inclusive, with a thickness of 142 feet, appear to represent the lower part of the Pierre, and correspond very well with its known character on the adjacent portion of the Bow River. The coal (No. 9) stated to be 2 feet in thickness, is given as 3 feet in the first-mentioned section and placed about 50 feet nearer the surface. It represents, with little doubt, the Grassy Island seam which, fourteen miles distant on the Bow River, is 4 feet 6 inches in thickness. The underlying beds, with a thickness of 706 feet, are supposed to represent the Belly River series though the great development of "black shale" represented by No. 12 is anomalous.

In layer 6, a small supply of water was met with, and in layer 14 a rather copious flow of combustible gas, which has since continued without perceptible diminution.

IX.—BORING AT GLEICHEN STATION (14TH SIDING).

This station is fifty-two miles west of the last, at an elevation of 2,926 feet above sea-level. It is known to be in the centre of a large area of Laramie rocks, which has a