

(on the supposition that it is uniform) not more than 11.5 feet to the mile. The Archæan surface at Rosenfeld is 265 feet below the present sea-level, that in the southern part of the Lake of the Woods is 1,060 feet above the same datum. A further remarkable fact in this connection is afforded by the boring conducted at Rat Creek in 1874, by the Geological Survey, details of which will be found in the Report for 1874-75 (p. 3). This place is about seventy miles north-west of Rosenfeld. Here, after penetrating the superficial deposits, the surface of a buff Silurian or Devonian limestone was reached at about 103 feet below the prairie-level. This limestone proved to be only forty-two feet in thickness, and beneath it a fine-grained grey crystalline rock (apparently a quartzite) was bored into for a depth of about eighty feet. This rock evidently belongs to the Archæan, and is either Laurentian or Huronian. The Archæan surface at this place must be nearly 700 feet above the present sea-level. The relative elevation of the Archæan surface at these three points (Rosenfeld, Lake of the Woods and Rat Creek) would indicate a direction of about W.N.W. by E.S.E., as that of a level line drawn upon it in this part of its extent.

II.—BORING AT SOLSGIRTH.

This is a station on the Manitoba and Northwestern Railway, in the north half of section 30, township 17, range 25, west of 1st principal meridian, elevation 1,757 feet. I am indebted for particulars concerning it to Mr. Reginald Baker, General Superintendent of the railway. The information was obtained partly from an excavated well and partly from a boring. The notes were accompanied by a suite of specimens, which has been carefully examined. The section is as follows:—

|                                    | FEET. |
|------------------------------------|-------|
| 1. Loam.....                       | 2     |
| 2. Hard blue clay and gravel.....  | 42    |
| 3. Hard blue clay and stones.....  | 10    |
| 4. Hard yellow "hard pan".....     | 12    |
| 5. Softer bluish clay.....         | 16    |
| 6. " " ".....                      | 74    |
| 7. Layer of sand [with water]..... | —     |
| 8. Blue clay with stones.....      | 136   |
| 9. Grey clay (shale?).....         | 68    |
| —                                  |       |
| TOTAL.....                         | 360   |

The specimens received show the material to have been a hard grey boulder-clay in which small rounded fragments of fine grey Cretaceous shale, and of the white limestones of the Manitoba lake-region, are abundant. No. 9, of which one small specimen only was received, appears to be a grey, gritty, Cretaceous shale, resembling some parts of the Pierre shales, but it is not absolutely certain that it may not represent a laminated clay belonging to the drift. Excluding this lowest layer, however, the thickness of the glacial deposits is here rather remarkable, being no less than 292 feet.

From 76 feet below the surface, in the boulder-clay, a broken fragment, 1½ inches in diameter, of pale-grey, fine-grained, Cretaceous argillite, was brought up. Fragments of wood, for the most part soft and decayed, but not otherwise much changed, except from