

to sustain so high a figure except the general guesses of certain people who "entertain no doubt that man has been on the earth one or two hundred thousand years."

The problem may be attacked in quite a different way. We have noted vast erosions which have taken place during the history of the world. If we could only obtain a clew to the rate of any one of these erosions, we could soon calculate how much time was required for the work. Now, the Niagara gorge presents a specific and measurable amount of work; and, if we can determine how much of that work is accomplished yearly, we shall have the age of the gorge. This problem is so intelligible that it has received the attention of many investigators. But their results have been widely divergent. The whole gorge is seven miles long. Mr. Robert Bakewell made its age 12,300 years. Messrs. Lyell and Hall made it 35,000 years. Mr. E. Desor, who assumed much too low a rate of erosion, assigned 1,232,000 years. Mr. Jules Marcou found data to make it 64,842 years. These wide discrepancies arise from the difficulty of ascertaining the rate of recession. Within a few years that has been well settled at about *three feet a year*. Professor James Hall, in 1842, caused to be made a trigonometrical survey of the falls, and fixed permanent landmarks. In 1875, Mr. James Gardner, Director of the New York State Trigonometrical Survey, repeated the survey of the Falls, and ascertained that there had been a recession of at least one hundred feet in thirty-three years. This rate would give 12,300 years as the age of the whole gorge, from Lewiston. The three miles below the "whirlpool," where the new gorge intercepted the old one, would have required 5,280 years. As we may fairly assume that the old gorge extended some distance above the whirlpool, we may conclude that the work of the modern river has extended over a period between 5,280 and 12,300 years. From what I have stated in Talk XLVIII, you will understand that the work of the modern river is post-glacial work, and these numbers concern the duration of the post-glacial period.

I have said that the old gorge from St. David's was the