

been traced over the lake region; but until 1893 all attempts made at determining the rate of terrestrial changes defied investigation. The north-eastward movement is still continuing, as recently determined by Prof. Gilbert. Under these conditions further changes in the drainage of the upper lakes become imminent: thus the rocky barrier at Niagara Falls should be lifted so high in 600 or 700 years as to flood the country about the head of Lake Erie, and raise its surface to the same level as that of Lake Huron and Lake Michigan. In 1,000 or 1,200 years they should be high enough to overflow the low divide near Chicago into the Mississippi drainage. In about 2,400 years all the waters of the upper lakes promise to be diverted from Niagara to the Mississippi. The Chicago canal is not considered in this calculation, but will shorten the time of the last-named events. These calculations, based upon geological data, are very close to those of Prof. Gilbert, based upon other measurements. In the meanwhile the waters about Buffalo will rise somewhat higher than now, but in 5,000 years the whole of the Niagara river and the eastern end of Lake Erie will be turned into dry land, traversed only by insignificant streams. From the time when the whole discharge will be turned into the Mississippi, there will be but little further excavation of the Niagara gorge. Before this change is accomplished, the Falls will have receded scarcely two miles farther southward; and thus for only a small proportion of their life history will they have been of use to man, or their grandeur remain as one of the wonders of the world.

The birth of the Falls was subsequent to the commencement of the lake history, which was posterior to the ice age proper. Upon the computation of the age of the Falls (32,000 years) it has been found that the end of the ice age was more than 50,000 or 60,000 years ago.