actually taken place; and the appearance of the bank below the Falls where these changes had occurred within the memory of man is so precisely identical in character with the whole gorge for seven miles below, that a philosophical observer of the phenomena of nature would be irresistibly impelled to the conclusion that the great Fall formerly existed at Queenston, and that the river must have sawed its way through this whole distance—provided sufficient time were allowed for the completion of the work. Sir Charles Lyell concludes, after the most careful and repeated investigation of the recorded facts, as well as the varying nature of the strata, that the average recession was not more than one foot per year, and that consequently it must have taken 35,000 years for the retreat of the Falls from the escarpment at Queenston to the present site. It seems by no means improbable that such result would be no exaggeration of the truth, although we cannot assume that the retrograde movement has been uniform. At some points, owing to the greater softness of the strata and the lesser width of the ravine, it might be expected that quicker progress might be made; but on the other hand, it must be observed that at the commencement of the process the Fall must have been nearly twice its present height and consequently the amount of material to be excavated proportionally greater. This estimate of the time required for the scooping out of the gorge, as Hugh Miller remarks, is based upon exactly the same process of reasoning by which one would infer that a labourer who had cut a ditch two hundred yards long at the rate of ten yards per day and was still at work without intermission, had begun to cut it just twenty days previous.

This theory based upon historical, is amply corroborated by geological evidence. If we examine the structure of Goat Island, between the American and Horse Shoe Fall, we shall find that the superficial deposit consists of regularly stratified horizontal fresh water beds of gravel, sand and loam, in all about twenty feet thick, copiously charged with shells of the same species as now inhabit the waters of Lake Ontario and the Niagara river. These beds are entirely above the level of the water as it precipitates itself into the mighty gulf. Precisely the same formation will be found on the American side of the river exactly opposite, and extending for a considerable distance below the Falls on the top of the cliffs, and bounded towards the east by a distinctly traceable ancient river