

with the Niagara. He instances falls on the European and African continents, particularly one described by Livingstone on the Zambesi. The waters of that immense river have fallen into a rock crevice about 60 feet wide, and the full span of the river, over 3,000 feet. For untold ages the waters have beaten the wall rock of that fissure, and erosion has not taken place; yet under such an erosion theory as set up by the scientists the waters should have increased the opening, even under a recession rate of three inches per annum, at least 7,000 feet; in other words it should have formed a similar gorge to the Niagara of that extent. The rock was "Basaltic," therefore much more friable and easier to erode than the limestone rock forming the bed of Niagara river and its gorge. This river was certainly coeval with the Niagara, and, at a recession of one foot per annum, it should have presented a gorge far in excess of the length of the Niagara. He claims the instances in our own country should have presented corroborative evidence of erosion, yet they do not. Speaking of the recent report of the engineers of the New York State Geological Survey of the cliff of the Falls, and its recession, Mr. Smith places it in many peculiar ways. For instance: The report states that the total superficial area of rock which has disappeared between 1842 and 1890 is, at the American Falls, 32,900 feet, or 755-1,000 of an acre, and at the Horseshoe Falls 275,400 superficial feet 6 32-1,000 acres. If, then, such was the case, as the superficial area must be multiplied by the rock, depth or fall of water, 164 feet, and divided by the number of days in the 48 years, there should be a daily loss of rock equal to 190 tons, yet, as he puts it, the vertical face of the rock at the Falls, as well as the rock forming the cascades, presents the same old moss-grown face which it has done each and every day during all time. If the rock eroded, how could the vegetable growth exist on any part thereof? Mr. Smith argues further that Goat island "presents a vertical face of 1,500 feet in length and 100 high on the line of the falls. It is similar in appearance to the rock surrounding and lining the "gorge." Evidently, then, that island was at one time produced across the chasm, and more than likely joined the main rock on the Canadian side. Now let these scientists take either horn of the dilemma. If that island joined the main rock, how did the waters get over the 100 feet high rock barrier to enable the formation of its present appearance? The American falls were open, therefore all waters must have flowed over at that time, the rock island could not have then been eroded. Extend the island even part of the way, and its appearance demands the production, therefore the waters would have flowed around to the west and over our Canadian park, making connection further down the "gorge." In no way could the island be eroded. Mr. Smith describes the formation as due to fracture. He