ton, where it is just large enough to contain the rapid current of water, accords well with the same hypothesis, and there is no ground for suspecting that the excavation was assisted by an original rent in the rocks, because there is no fissure at present in the limestone at the Falls, where the moving waters alone have power to cut their way backwards.

I have already remarked that there will always be insuperable difficulties in the way of estimating with precision the rate of the retrogression of the Falls in former ages, because at every step new strata have been successively exposed at the base of the precipice. According to their softer or harder nature, the undermining process must have been accelerated or retarded. This will be understood by reference to the annexed section (fig. 4.), where the line *b*, *c*, *d*, represents the present surface of the river along which the Falls have receded. The strata (1, 3, and 7,) are of soft materials; the others, (2, 4, and 8), which slightly project at their termination in the escarpment, are of a more compact and refractory kind. It has been necessary to exaggerate the southward dip of the strata in this diagram, which is in reality so slight as to be insensible to the eye, being only, as before mentioned, about twenty-five feet in a mile, the river channel sloping in an opposite direction at the rate of fifteen feet in a mile. These two inclinations, taken together, have caused, as Mr. Hall has pointed out in his Survey, a diminution of forty feet in the perpendicular height of the Falls for every mile that they receded southward. By reference to the section, the reader will perceive that when they were situated at the Whirlpool (*c*), the quartzose sandstone (2), which is extremely hard, was at the base of