

by the next tide ; but when carefully filled up by gently deposited new material, and hardened into stone, there is no limit to their duration.

Let us inquire how this may take place, and the tidal flats of the Bay of Fundy and Basin of Minas may supply us with the information desired. In the upper parts of the Bay of Fundy and its estuaries the rise and fall of tide, as is well known, are excessive. I quote the following description of the appearance they present from a work of earlier date :—

“The tide wave that sweeps to the north-east, along the Atlantic coast of the United States, entering the funnel-like mouth of the Bay of Fundy, becomes compressed and elevated, as the sides of the bay gradually approach each other, until in the narrower parts the water runs at the rate of six or seven miles per hour, and the vertical rise of the tide amounts to sixty feet or more. In Cobequid and Chiegnecto Bays these tides, to an unaccustomed spectator, have rather the aspect of some rare convulsion of nature than of an ordinary daily phenomenon. At low tide wide flats of brown mud are seen to extend for miles, as if the sea had altogether retired from its bed ; and the distant channel appears as a mere strip of muddy water. At the commencement of flood a slight ripple is seen to break over the edge of the flats. It rushes swiftly forward, and, covering the lower flats almost instantaneously, gains rapidly on the higher swells of mud, which appear as if they were being dissolved in the turbid waters. At the same time the torrent of red water enters all the channels, creeks and estuaries ; surging, whirling, and foaming, and often having in its front a white, breaking wave, or ‘bore,’ which runs steadily forward, meeting and swallowing up the remains of the ebb still trickling down the channels. The mud flats are soon covered ; and then, as the stranger sees the water gaining with noiseless and steady rapidity on the steep sides of banks and cliffs, a sense of insecurity creeps over him, as if no limit