

strengthened by innumerable roots of trees, and, in the flood of 1845, the surplus waters of the Mississippi poured through the cut with great velocity, yet failed to deepen it materially. By shortening the channel twenty-five miles, the fall of the river would be augmented, and the engineer flattered himself that the effect might extend as far up as the mouth of the Red River. By accelerating the current there it was hoped that a deeper passage might be kept open in the sand-bar, which now blocks up the navigation of that important tributary for the greater part of the year.

Some experienced pilots assured me, that the supposed shortening of the channel of the Mississippi, between its junction with the Ohio and New Orleans, was, in a great degree, a delusion. Instead of the boasted gain of fifty miles, they say that not a third of this distance has been realized. Immediately after the completion of a new cut-off, the Mississippi begins to restore the natural curvature of its channel by eating away one bank and throwing out a sand-bar on the opposite side.

Another fifty miles brought us to the mouth of the Red River, where I saw the formidable bar, before alluded to, covered, for the most part, by a growth of young willows and cotton-wood (*Populus angulata*). After leaving the mouth of Red River, we passed two bluffs on the left or eastern bank, one that of Fort Adams, a very picturesque line of precipices, the other called Ellis's Cliffs. In both I observed a predominance of white sand, similar to that seen in part of the bluff at Port Hudson.

At Natchez (where I rejoined my wife), there is a fine range of bluffs, several miles long, and more than 200 feet in perpendicular height, the base of which is washed by the river. The lower strata, laid open to view, consist of gravel and sand, destitute of organic remains, except some wood and silicified corals, and other fossils, which have been derived from older rocks; while the upper sixty feet are composed of yellow loam, presenting, as it wastes away, a vertical face toward the river. From the surface of this clayey precipice are seen, projecting in relief, the whitened and perfect shells of land-snails, of the genera *Helix*, *Helicina*, *Pupa*, *Cyclostoma*, *Achatina*, and *Succinea*. These