

THE  
MISSISSIPPI VALLEY:

ITS  
PHYSICAL GEOGRAPHY,

INCLUDING SKETCHES OF THE

TOPOGRAPHY, BOTANY, CLIMATE, GEOLOGY, AND MINERAL  
RESOURCES; AND OF THE PROGRESS OF DEVELOPMENT  
IN POPULATION AND MATERIAL WEALTH.

BY

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CHICAGO, ETC., ETC.

ILLUSTRATED BY MAPS AND SECTIONS.

*"Rerum cognoscere causas."*

CHICAGO:  
S. C. GRIGGS AND COMPANY.

LONDON:  
TRÜBNER & CO  
1869.

depths on the bars are: at St. Louis, 2 feet; Memphis, 5 feet; and Natchez, 6 feet. The range between low and high-water is: at Rock Island, 16 feet; at the mouth of the Missouri, 35 feet; at St. Louis, 37 feet; at Cairo, 51 feet; at Carrolton, 14 feet; and at the head of the Passes, 2.3 feet.

The fall of the Lower Mississippi is about  $\frac{3}{10}$  of a foot per mile; of the Ohio,  $\frac{4}{10}$  of a foot; of the Missouri, below Fort Union,  $\frac{2}{10}$  of a foot; and of the Upper Mississippi, below St. Paul,  $\frac{4}{10}$  of a foot.

#### *EARTHQUAKE-ACTION IN THE MISSISSIPPI VALLEY.*

The series of earthquake-shocks which occurred in the Mississippi Valley, commencing near the close of 1811, and continuing to 1813, were of sufficient violence to modify its surface to a considerable extent, creating yawning fissures, and converting dry land into lakes, some of which are fifty miles in circumference. The telluric activity of which these events were a part, extended over half a hemisphere, and was manifested in a series of stupendous phenomena, such as the elevation of the island of Sabrina, one of the group of the Azores, to the height of 320 feet above the sea; the destruction of Caraccas, with 10,000 of its inhabitants; the eruption of the volcano of St. Vincent; and the fearful subterranean noises which

were heard on the Llanos of Calabazo, and at the mouth of the Rio Apure, and even far out at sea.

New Madrid, in the State of Missouri, and in the valley of the Mississippi, appears to have been one of the foci of this earthquake disturbance; and the shocks were repeated almost every hour for months in succession. Fortunately, the town as well as the surrounding region, was sparsely inhabited, and the houses (log cabins) were of a character little liable to be toppled over; but, so far as we can gather from the published accounts, and the personal recollections of those who were eye-witnesses of the scenes, we are satisfied that, if the same severity of shocks were to occur at this day, at St. Louis or Cincinnati, the destruction of life would be appalling, and those cities would become an undistinguishable mass of ruins.

Several years ago, in voyaging from Memphis to Cairo, I made the acquaintance of Mr. A. N. Dillard, who resided in the region of these disturbances, and who was a witness of the events which I shall record.

It was on the night of the 16th of December, 1811, that the first shock occurred. The weather had been warm and pleasant, and the air was filled with that peculiar haze characteristic of the Indian summer, except that it was more damp. About midnight, while the French, who constituted the

bulk of the population at New Madrid, were engaged in dancing and frolicking, the first shock came on, and was of sufficient violence to shake down many of the houses and fences. The greatest consternation prevailed. The entire population rushed into the open air; and there, in the midnight darkness, and upon the rocking earth, Protestant and Catholic, side by side,

“knelt down,  
And offered to the Mightiest”

solemn supplication;—for, in that fearful hour, human aid was unavailing.

“The shocks,” my informant continued, “extended over a period of twenty or thirty months. Sometimes, they would come on gradually, and finally culminate; again, they would come without premonition, and in terrific force, and gradually subside.

“In every instance the motion was propagated from the west or southwest. Fissures would be formed, six hundred and even seven hundred feet in length, and twenty or thirty feet in breadth, through which water and sand would spout out to the height of forty feet. There issued no burning flames, but flashes such as result from the explosion of gas, or from the passage of the electrical fluid from one cloud to another. I have seen oak

trees, which would be split in the centre and forty feet up the trunk, one part standing on one side of a fissure, and the other part on the other; and trees are now standing which have been cleft in this manner.

“My grandfather had received a boat-load of castings from Pittsburgh, which were stored in his cellar. During one of the shocks, the ground opened immediately under the house, and they were swallowed up, and no trace of them was afterwards obtained.

“I regard the region as still subject to these agitations. A few years ago, I saw the effects sufficiently violent to shake the bark off the trees, and to sway their tops to and fro.

“The region of the St. Francis is peculiar. I have trapped there for thirty years. There is a great deal of sunken land, caused by the earthquakes of 1811. There are large trees of walnut, white oak, and mulberry, such as grow on high land, which are now seen submerged ten and twenty feet beneath the water. In some of the lakes, I have seen cypresses so far beneath the surface, that, with a canoe, I have paddled among the branches. Previous to the earthquakes, keel-boats used to come up the St. Francis River, and pass into the Mississippi, at a point three miles below New Madrid. The bayou is now high ground.”

From one of the fissures formed during these convulsions, was ejected the cranium of an extinct musk-ox (*Bootherium bombifrons*), now in the possession of the Lyceum of Natural History of New York.

Reel-foot Lake, on the opposite shore, in Obion county, Tennessee, nearly twenty miles long and seven broad, owes its origin to the sinking of the ground during this period. The trunks of dead cypresses are seen standing in the water; and the fisherman, as he plies his occupation in his canoe, floats above their branching tops.

Timothy Flint visited this region seven years after the occurrence of these terrible events, at a time when the recollections of the inhabitants were yet vivid. As the work in which he recorded his information has become rare, I may be pardoned for transcribing his graphic account almost entire:

"From all the accounts," he says, "corrected one by another, and compared with the very imperfect narratives which were published, I infer that the shock of these earthquakes, in the immediate center of their force, must have equaled, in the terrible heavings of the earth, any thing of the kind that has been recorded. I do not believe that the public have ever yet had any adequate idea of the violence of the concussions. We are accustomed to measure this by the buildings overturned and the mortality that results. Here, the country was thinly settled. The houses, fortunately, were frail, and of logs,—the most difficult to overturn that could be constructed. Yet, as it was, whole tracts were plunged in the bed of the river. The grave-yard at New Madrid, with all its sleeping tenants, was

precipitated into the bend of the stream. Most of the houses were thrown down. Large lakes, twenty miles in extent, were made in an hour; other lakes were drained. The whole country, to the mouth of the Ohio in one direction, and to the St. Francis in the other, including a front of three hundred miles, was convulsed to such a degree as to create lakes and islands, the number of which is not known, and to cover a tract of many miles in extent, near the Little Prairie, with water, three or four feet deep; and when the water disappeared, a stratum of sand, of the same thickness, was left in the place. Trees split in the midst, and lashed one with another, are still visible over great tracts of country, inclining in every direction, and at every angle to the earth and the horizon. They described the undulations of the earth as resembling waves, increasing in elevation as they advanced, and when they had attained a certain fearful height, the earth would burst, and vast volumes of water, and sand, and pit-coal were discharged as high as the tops of the trees. I have seen a hundred of these charms which remained fearfully deep, although in a very tender alluvial soil, and after a lapse of seven years. Whole districts were covered with white sand, so as to become uninhabitable. The water at first covered the whole country, particularly at the Little Prairie; and it must, indeed, have been a scene of horror, in these deep forests, and in the gloom of the darkest night, and by wading in the water to the middle, for the inhabitants to fly from these concussions, which were occurring every few hours, with a noise equally terrible to beasts and birds, as to man. The birds themselves lost all power and disposition to fly, and retreated to the bosoms of men, their fellow-sufferers in the general convulsion. A few persons sank in these chasms, and were providentially extricated. One person died of affright; and one perished miserably on an island which retained its original level in the midst of a wide lake created by the earthquake. \* \* \* \* \* A number perished, who sank with their boats in the river. A bursting of the earth just below the village of New Madrid, arrested the mighty stream in its course, and caused a reflux of its waves, by which, in a little time, a

great number of boats were swept by the ascending current into the mouth of the bayou, carried out, and left upon the dry earth, where the accumulating waters of the river had again changed the current. There were a great number of severe shocks, but two series of concussions were particularly terrible, far more so than the rest; and they remark that the shocks were clearly distinguishable into two classes: those in which the motion was horizontal, and those in which it was perpendicular. The latter were attended with the explosions and the terrible mixture of noises that preceded and accompanied the earthquakes in a louder degree, but were by no means so desolating and destructive as the other. When they were felt, the houses crumbled, and trees waved together, and the ground sank, and all the destructive phenomena were conspicuous. In the interval of the earthquakes, there was one evening—and that a brilliant and cloudless one—in which the western sky was a continued glare of vivid flashes of lightning and of repeated peals of subterranean thunder, seeming to proceed, as the flashes did, from below the horizon. They remark that the night, so conspicuous for subterranean thunder, was the same period in which the fatal earthquakes of Caraccas occurred; and they seem to suppose those flashes and that event parts of the same scene.\*

Flint confirms the observations of others, that the chasms in the earth were in a direction from southwest to northeast, and were of an extent to swallow up not only men but houses; and that they frequently occurred in intervals of half a mile. The people felled the tallest trees at right angles to these chasms, and placed themselves upon their trunks, by which precaution many escaped destruc-

tion; for more than once the earth opened beneath, and would have engulfed them in the abyss.

So great was the destruction of property, and so irretrievably ruined were many of the farms by this series of events, that Congress, at a subsequent day, passed a law granting to each proprietor who had sustained serious loss, a section of land in what was known as the Boone-Lick country, on condition of his relinquishing his desolated farm to the Government.

Earthquake shocks yet occur in this region, and blasts of air and gas yet find their way to the surface through many of the half-filled fissures, but there has been no repetition of the terrible phenomena witnessed in 1811-12.

\* "Recollections of the Last Ten Years in the Mississippi Valley." (1826.) P. 224