

# New Madrid Earthquakes

By Jerry Long  
c.2024



Reelfoot Lake State Park is located in the northwest corner of Tennessee . The 15,000 acre lake was created by a series of violent earthquakes in 1811-1812 that caused the Mississippi River to flow backwards for a short period of time, creating Reelfoot Lake.



**The Kentucky Encyclopedia, John E. Kleber, editor,  
The University Press of Kentucky, Lexington, KY, 1992**

page 461 – Jackson Purchase

... A series of massive earthquakes in 1811-12 caused drastic changes to the topography of the western Purchase; the most spectacular resulted in the formation of Reelfoot Lake. A portion

of the Reelfoot National Wildlife Refuge extends into Fulton County. Slippage along the New Madrid Fault is still a threat.

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The earthquake sequence that began on December 16, 1811, and continued for at least a year thereafter, in what is now northeastern Arkansas, southeastern Missouri, and northwestern Tennessee, is the greatest recorded sequence of earthquakes in the history of North America. The four major earthquakes of the sequence—two in the early-morning hours of December 16, 1811, one on the morning of January 23, 1812, and the largest one at 3:00 a.m. on February 7, 1812—were felt as far away as Hartford, Connecticut, to the northeast; Charleston, South Carolina, to the east; and New Orleans to the south. Closer to the epicenters of the events, in an area extending from Cairo, Illinois, to the north and Memphis, Tennessee, to the south, the land was severely disrupted by subsidence, uplifting, sand blows, landslides, and fissuring. Large tracts of forest were submerged as a result of the subsidence. The quake destroyed the settlements of New Madrid, Missouri; Little Prairie (now Caruthersville), Missouri; and Big Prairie, near the mouth of the St. Francis River, in what is now Arkansas.

Although the number of people killed or injured by the earthquakes is not known, the number was not large. The area of major devastation was very sparsely populated, and the manmade structures were log structures, which are very resilient to earthquake damage. In Kentucky the earthquake caused severe damage to homes and other structures in Henderson and Mortons Gap, and minor damage to structures in the central Kentucky communities of Louisville, Lexington, Frankfort, and Maysville. The lack of newspapers at the time of the events makes it difficult to document the effects throughout the remainder of sparsely populated Kentucky. However, recent geological investigations indicate that landslides occurred in the Hickman area. In addition to the four major upheavals, at least six other quakes were felt as far east as Charleston, South Carolina, and 197 were felt as far east as Louisville.

See James Penick, Jr., *The New Madrid Earthquakes of 1811-1812* (Columbia, Mo., 1976).

R.L. STREET



**Collins' Historical Sketches of Kentucky: History of Kentucky, Vol.II**

**Lewis & Richard H. Collins (Covington, KY: Collins & Co., 1878)**

**Fulton County chapter, pp.282-284:**

*The Earthquake of 1811* — the most alarming and extensive, and the most serious in its effects, that ever occurred within the United States east of the Rocky mountains—spent its greatest force in Kentucky, in Fulton county, and in the extreme s. w. portion of the county and state. After shaking the valley of the Mississippi to its center, and extending its vibrations all over the valley of the Ohio, to Pittsburgh and beyond, it passed the Alleghenies and their connecting “mountain barriers, and died away along the shores of the Atlantic ocean [Letter, dated Feb. 1, 1836, from Dr. Lewis F. Linn, U.S. senator from Missouri]. During the continuance of this appalling phenomenon—which commenced by distant rumbling sounds, succeeded by discharges as if a thousand pieces of artillery were suddenly exploded—the earth rocked *to and fro*; vast chasms opened, whence issued columns of water, sand, and coal, accompanied by hissing sounds, caused, perhaps, by the escape of pent-up steam; while ever and anon flashes of electricity gleamed through

the troubled clouds of night, rendering the darkness doubly horrible. The current of the Mississippi was driven back upon its source with the greatest velocity for several hours, in consequence of an elevation of its bed. But this noble river was not thus to be stayed. its accumulated waters came booming on, and, o'ertopping the barrier thus suddenly raised, carried every thing before them with resistless power. Boats, then floating on the surface, shot down the declivity like an arrow from a bow, amid roaring billows, and the wildest commotion.

"A few days' action of its powerful current sufficed to wear away every vestige of the barrier thus strangely interposed, and its waters moved on to the ocean. The day that succeeded this night of terror, brought no solace in its dawn. Shock followed shock; a dense black cloud of vapor overshadowed the land, through which no struggling sunbeam found its way to cheer the desponding heart of man—who, in silent communion with himself, was compelled to acknowledge his weakness and dependence on the everlasting God. Hills disappeared, and lakes were found in their stead; numerous lakes became elevated ground, over the surface of which vast heaps of sand were scattered in every direction; in many places the earth for miles was sunk below the general level of the surrounding country, without being covered with water—leaving an impression in miniature of a catastrophe much more important in its effects, which had preceded it ages before. One of the lakes formed is sixty or seventy miles in length, and from three to twenty in breadth; in some places very shallow; in others, from fifty to one hundred feet deep, which is much more than the depth of the Mississippi river in that quarter. In sailing over its surface in a light canoe, the voyager is struck with astonishment at beholding the giant trees of the forest standing partially exposed amid a waste of waters, branchless and leafless."

In a keel-boat moored to its small island in the Mississippi river, about 18 miles below the boundary line of Kentucky and Tennessee, the crew (all Frenchmen) were frightened almost to helplessness by the first terrible convulsion. This was before 2 o'clock in the morning of Dec. 16, 1811. At 2 ½ A. M. another, only less terrible, shock came on—a shock which made a chasm in the island four feet wide and over three hundred feet long. Twenty-seven shocks, all distinct and violent, were felt and counted before daylight; they continued every day until the 21st of December, with decreasing violence—indeed, they were repeated at intervals until in February, 1812. The center of the violence was ascertained to be about island no. 14, 22 miles below New Madrid, Missouri—which is opposite Fulton county, Ky.

A scientific English gentleman [John Bradbury, *Travels in the Interior of America*, pp.199-207] who happened to be upon the above keelboat, became cool enough to record his observations. He noticed that the sound which was heard at the time of every shock always preceded the shock at least a second, originated in one point and went off in an opposite direction. And so he found that the shocks came from a little northward of east, and proceeded to the westward.

The following vivid description of the horrors of the earthquake was written probably fifty years ago, but not published until 1842. An eye-witness, who was then about forty miles below New Madrid, in a flat-boat loaded with produce bound for New Orleans, narrated the scene. It must be premised that danger was apprehended from the southern Indians—it being soon after the battle of Tippecanoe; and for safety and mutual self-defense several boats kept in company:

“The agitation which convulsed the earth and the waters of the mighty Mississippi filled every living creature with horror. In the middle of the night there was a terrible shock and jarring of the boats, so that the crews were all awakened and hurried on deck with their weapons of defense in their hands, thinking the Indians were rushing on board. The ducks, geese, swans, and various other aquatic birds, whose numberless flocks were quietly resting in the eddies of the river, were thrown into the greatest tumult, and with loud screams expressed their alarm in accents of terror.

The noise and commotion soon became hushed, and nothing could be discovered to excite apprehension, so that the boatmen concluded that the shock was occasioned by the falling in of a large mass of the bank of the river near them. As soon as it was light enough to distinguish objects, the crews were all, up making ready to depart. Directly a loud roaring and hissing was heard, like the escape of steam from a boiler, accompanied by the most violent agitation of the shores and tremendous boiling up of the waters of the Mississippi in huge swells, rolling the waters below back on the descending stream, and tossing the boats about so violently that the men with difficulty could keep on their feet. The sandbars and points of the island gave way, swallowed up in the tumultuous bosom of the river; carrying down with them the cottonwood trees, cracking and crashing, tossing their arms to and fro, as if sensible of their danger, while they disappeared beneath the flood.

"The water of the river, which the day before was tolerably clear, being rather low, changed to a reddish hue, and became thick with mud thrown up from its bottom; while the surface, lashed violently by the agitation of the earth beneath, was covered with foam, which, gathering into masses the size of a barrel, floated along on the trembling surface. The earth on the shores opened in wide fissures, and closing again, threw the water, sand, and mud, in huge jets, higher than the tops of the trees. The atmosphere was filled with a thick vapor or gas, to which the light imparted a purple tinge, altogether different in appearance from the autumnal haze of Indian summer, or that of smoke. From the temporary check to the current, by the heaving up of the bottom, the sinking of the banks and sandbars into the bed of the stream, the river rose in a few minutes five or six feet; and, impatient of the restraint, again rushed forward with redoubled impetuosity, hurrying along the boats, now set loose by the horror-struck boatmen, as in less danger on the water than at the shore, where the banks threatened every moment to destroy them by the falling earth, or carry them down in the vortexes of the sinking masses.

"Many boats were overwhelmed in this manner, and their crews perished with them. It required the utmost exertions of the men to keep the boat, of which my informant was the owner, in the middle of the river, as far from the shores, sandbars, and islands as they could. Numerous boats wrecked on the snags and old trees thrown up from the bottom of the Mississippi, where they had quietly rested for ages, while others were sunk or stranded on the sandbars and islands. At New Madrid several boats were carried by the reflux of the current into a small stream that puts into the river just above the town, and left on the ground by the returning water a considerable distance from the Mississippi. A man who belonged to one of the company boats, was left for several hours on the upright trunk of an old snag in the middle of the river, against which his boat was wrecked and sunk. It stood with the roots a few feet above the water, and to these he contrived to attach himself, while every fresh shock threw the agitated waves against him, and kept gradually settling the tree deeper into the mud at the bottom, bringing him nearer and nearer to the deep muddy waters, which, to his terrified imagination, seemed desirous of swallowing him up. While hanging here, calling with piteous shouts for aid, several boats passed by without being able to relieve him, until finally a skiff was well manned rowed a short distance above him, and dropped down stream close to the snag, from which he tumbled into the boat as she floated by.

"The scenes which occurred for several days, during the repeated shocks, were horrible. The most destructive ones took place in the beginning, although they were repeated for many weeks, becoming lighter and lighter, until they died away in slight vibrations, like the jarring of steam in an immense boiler. The sulphurated gases that were discharged during the shocks tainted the air with their noxious effluvia, and so strongly impregnated the water of the river, to the distance of one hundred and fifty miles below, that it could hardly be used for any purpose for a

number of days. The bottoms of several fine lakes in the vicinity were elevated so as to become dry land, and have since been planted with corn [American Pioneer, i, 129].

New Madrid, Missouri—which, in 1805, contained between 300 and 400 inhabitants—was almost depopulated, the people fleeing from the scene. The reason why so few were destroyed, was owing to the materials of their dwellings being of wood, and not of brick and stone. The bluff bank upon which it stood, fifteen or twenty feet above the summer floods, sunk so low that the next rise covered it to the depth of five feet.

Near St. Louis, Mo., the "great shake"—as the old settlers still call it—was so severe that domestic fowls fell from the trees as if dead; crockery and china ware fell from the shelves and was broken, and many families left their cabins, from fear of being crushed beneath their ruins.

At Cape Girardeau, Mo., the walls of several stone and brick buildings were cracked from the ground to the top, and wide fissures left.

At Louisville, [see description on page 000.]

In Fulton county, Ky., on the opposite bank of the Mississippi river from New Madrid, a great and singular lake which previously had no existence was formed—Reel-Foot lake, now seventeen miles long and from three-quarters-of a mile to two and a half miles wide. Some call it fifty miles long, but they probably include Obion lake, which connects with it. After the lapse of sixty years, it is still over twenty feet deep in places. It was formed by sand blown out of a chasm opened by the earthquake, and deposited near the mouth of Reel-Foot creek—causing a sudden damming of its waters, which spread over the adjacent low grounds, forming the lake, and deadening all the timber growing along the banks of the creek. The course of the lake can be traced, where its waters can not be seen, by the tops of the dead timber. it is a great resort for all kinds of water fowl, lizards, cotton-mouth and other snakes, and mosquitoes, and full of excellent fish.

"Earth-cracks" can be distinctly traced in the bluffs on the Kentucky side of the Mississippi, for a quarter to a half mile, twenty to seventy feet wide—bounded on either side by parallel banks one to five feet above the sunk ground, the trees still growing firmly rooted in the soil. These earth-cracks are still more conspicuous on the Missouri side, near New Madrid, and in Obion county, Tennessee. In the latter, are still visible depressions one hundred feet deep, and varying from a few feet to a hundred feet wide—which are said to have been more than double this depth when originally formed [Kentucky Geological Survey, i, 119].



**History of Daviess County, Kentucky**  
**(Chicago, IL, Inter-State Publishing Co., 1883) p.60:**

The earthquake of 1811 was perceived by all the residents in this region. Articles suspended from the wall or ceiling were swung about like a bell on an animal's neck. The superstitious element of human nature was excited, and many are the amusing experiences witnessed on that occasion. For example, one Anthony Thompson, a pious Methodist, thinking that the world was coming to an end, met with his neighbors and prayed and sang and shouted. Byrd Wall, father of Banister, was appealed to by one of these excited believers, and he replied : "Oh, you needn't give yourselves any uneasiness. This earth is hung on axles like a horse-mill shaft, and I will insure its running safely for a thousand years yet to come."



**The Register of the Kentucky Historical Society, Vol. 67, No.3**  
**(Frankfort, KY: Kentucky Historical Society, July 1969) pp.191-196:**

## Audubon and the New Madrid Earthquake

By James P. Jones\*

AS JOHN JAMES AUDUBON rode through the Kentucky barrens one afternoon in January, 1812, the western sky suddenly darkened. Audubon spurred his mustang "Barro" forward hoping to find shelter before the thunderstorm, which he momentarily expected, drenched him. After a mile the naturalist heard a distant rumbling which he thought was a tornado. Urging Barro on again, Audubon was bewildered to see the animal almost halt and then place "one foot after another on the ground with as much precaution as if walking on a smooth sheet of ice." Next Barro began groaning, "hung his head, spread out his four legs as if to save himself from falling, and stock still, continued to groan." Afraid the animal would die, Audubon prepared to dismount when the trees and bushes began to move and the "ground rose and fell in successive furrows like the ruffled waters of a lake." It was only then that Audubon realized that he was caught in an earthquake.(1)

The New Madrid Earthquake, which Audubon describes, was a massive series of shocks lasting one year, called by seismologist Charles Davison "one of the world's great earthquakes." More recently seismologist Charles Richter, whose scale is used to measure earthquake magnitude, labeled one of the shocks "the largest known earthquake" in the history of the continental United States.(2) The name "New Madrid" is usually given to the earthquake since the shock's epicenter lay near the Missouri town.

Audubon's account of his experience in the earthquake is continued graphically. He knew earthquakes by description, "But what is description compared with reality?" The naturalist found man and horse rocking back and forth "like a child in a cradle." He was terrified at the ground's undulation and expected it to open and swallow him. After a few minutes, however, the tremors passed, the sky brightened, Barro steadied himself and Audubon raced on afraid that family and friends might have suffered from the shock.(3)

Though Audubon's description of the effect of the earthquake is valuable since it is seen through the eyes of a man already trained to observe the natural world, his chronology is faulty. His *Journals* and *Episodes*, one of which is entitled "The Earthquake," were written several years after the event and inaccurately dated. Audubon begins: "Travelling through the Barrens of Kentucky. . . in the month of November," and gives no year.(4) The New Madrid Earthquake's first shock did not occur until December 16, 1811, and by November, 1812, the vibrations had all but ceased.(5) There had been no shock of the magnitude described by Audubon since the spring of 1812. When the earthquake began in December Audubon was in Pennsylvania on business.(6) His return to Kentucky did not begin until early January, 1812, when he left Pittsburgh aboard the riverboat of Vincent Nolte, a New Orleans merchant. Audubon and Nolte descended the Ohio to Maysville and then rode overland to Lexington where they parted. The shocks reported by Audubon came after he left Lexington and before he arrived at his home near Henderson. In his *Memoirs* Nolte describes his adventures in the earthquake as occurring after he had left Audubon and while he was riding near Frankfort.(7) Since Jared Brooks, who recorded the shocks at nearby



Louisville, listed tremors there every day in January, the earthquake Audubon described could have come any day that month. Brooks listed shocks on the 10th, 13th, 18th, and 22nd as being particularly heavy and the tremors of January 23 and 24 are generally considered among the most severe in the year long series.(8)

One mystery in Audubon's description is the absence of any indication of shocks experienced earlier than on his trip through the barrens. Likewise, Nolte's first mention of the earthquake is from the same period. The entire eastern seaboard had been first rocked on December 16 by a severe tremor and every day for the rest of that month and into January the earth's agitation was reported. Louisville, Cincinnati, Chillicothe, Pittsburgh, and Philadelphia all reported the tremors and Audubon must have been aware of them before his ride through the barrens.(9) Yet his words seem to indicate complete surprise.

It is also not possible that this was the first shock in the New Madrid series, making Audubon's surprise understandable. Not only was Audubon in Pennsylvania in December, but the New Madrid Earthquake also began at slightly after 2 a.m. on the 16th, not in the afternoon as Audubon indicated.

When the earth stilled Barro resumed his gallop homeward. Audubon arrived to find everyone unharmed. For days after he first felt the earthquake, shocks continued. Audubon became so accustomed to the shocks that he took little notice of them other than to "enjoy" the fears of others. For a year the tremors became a way of life in the Ohio and Mississippi Valleys. Tremors, other than major shocks, hardly provoked comment.

There were occasions when the earthquakes could cause havoc and Audubon concludes his episode with an account of one of these. While attending a wedding at a friend's home in Kentucky a shock occurred. The earthquake struck after everyone had retired and the rumbling noise preceding the tremors sent the party, shivering from fear and cold, into the grass enclosure outside the house. There it huddled, partially clothed, while the "earth waved like a field of corn before the breeze and the birds left their perches, and flew about not knowing whither."

At the first sign of danger, Audubon's host, a doctor, sought safety with the others in the yard. Suddenly, the doctor remembered his medicine jars inside the house. He had only recently saved them from a severe shock and now he "ran to his shop-room, to prevent their dancing off the shelves to the floor." This time the doctor panicked and instead of closing the doors of the cases, he spread his arms in a vain attempt to push back the falling jars. When the tremor ended most of the medicine had crashed to the floor.(10)

In addition to his humorous observations of the effect of the later earthquakes on humans, Audubon's comments on the reactions of animals to the shocks are valuable. The reactions of Audubon's mount support theories of several seismologists that animals are often disturbed by minor foreshocks unknown to humans. Robert Iacopi in *Earthquake Country* indicated that dogs, cats, and horses feel tremblings before humans and become uneasy.(11) Flocks of birds are also known to have taken off just before earthquakes were first felt by humans. Nicholas Heck in *Earthquakes*, states that "Japanese investigators have found that such ordinarily placid and unresponsive creatures as certain catfish are more sensitive for several hours before an Earthquake."(12)

Most firsthand accounts of the New Madrid Earthquake add to Audubon's description of his horse's strange antics and the aimless and disturbed flight of birds. The *Kentucky Gazette* of Lexington reported fowl shaken from their roosts and "the whole feathered tribe gave the alarm of approaching danger."(13) One traveler near Chickasaw Bluffs on the Mississippi when the earthquake struck on December 16 observed that water fowl remained constantly in flight

throughout the day.(14) William L. Pierce, who was near the earthquake's center on the 16th wrote "nothing could have exceeded the alarm of the aquatic fowl. They were extremely noisy and confused, flying In every direction without pursuing any determinate course."(15)

Two scientists who added comments on the effect of the earthquake on animals were John Bradbury, an English botanist, and Timothy Flint, an American geographer. Bradbury was on a flatboat near New Madrid on December 16 and his terror was magnified by the screaming of wild fowl on the river. Flint visited the region a few years later to collect information. He uncovered one of the strangest bird' reactions when he wrote that during the tremors "birds descended from the air and took shelter in the bosoms of people that were passing."(16)

The reported reactions of domestic animals are similar to Barro's. The editor of Dayton's *Ohio Centinel* observed that animals were very nervous just before the great shock of February 7, 1812.(17) Most accounts tell of dogs barking and cattle bellowing during the tremors. Despite the violence of the shocks and their obviously unsettling effect on both birds and domestic animals, few of these animals seem to have been killed or injured. The only injuries were reported from southeastern Missouri where many cattle died in the wake of the shocks. These deaths seem to be due to neglect after farmers fled the area rather than to any direct destruction during the quakes.

Not so fortunate were the fishes of lakes and rivers in the Mississippi and Ohio Valleys. A Chillicothe newspaper told of "numerous quantities" of fish lying dead along river banks.(18) Eliza Bryan, a resident of New Madrid, described the devastating effect of the shocks on the Mississippi. Banks caved in, rapids formed in the river, and a "great many fish were left on the banks being unable to keep pace with the water."(19) Finally, Sir Charles Lyell, famed geologist, who visited the area several decades later and interviewed residents, reported lakes abounding in fish were drained in minutes leaving fish stranded.(20)

The draining of lakes in some places was balanced by the instant creation of new lakes and marshy areas. Lyell talked to a hunter who regarded the earthquake as a blessing. The newly created marshes and lakes had stimulated an active fur trade. He reported 50,000 raccoon skins, 25,000 muskrat skins, 12,000 mink skins, 1,000 skins of both bear and otter, 2,500 wildcat skins, 40 panther skins, and 100 wolf skins taken in a single year along the Missouri-Arkansas border. Though the hunter reported almost no beaver in the area, he told Lyell of an island in the "sunk country" of northern Arkansas created by the earthquake which contained a herd of 300 to 400 buffalo as late as 1844.(21)

The New Madrid Earthquake, despite its great force and long duration, caused comparatively little damage. This is due in part to the sparsity of the population. Because there were so few people concentrated near the earthquake's center, it is fortunate that men accustomed to close observation such as Bradbury and Audubon were there and wrote of their experiences. Audubon's episode is written with humor at human reaction to disaster. It is even more valuable in its description of animal reaction to earth tremors which buttresses the view that animal awareness of shock precedes that of man. Audubon's narrative adds significantly to man's knowledge of America's greatest earthquake.

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1 John James Audubon, *Delineations of American Scenery and Character* (New York, 1928), 48.

2 Charles Davison, *Great Earthquakes* (London, 1936), 54; Charles F. Richter, *Elementary Seismology* (San Francisco, 1958), 593.

3 Audubon, *Delineations*, 49.

4 *Ibid.*, 48.



- 5 Myron L. Fuller, *The New Madrid Earthquake. U. S. Geological Survey Bulletin No. 494* (Washington, D. C., 1912), 10ff.
- 6 Alexander B. Adams, *John James Audubon: a Biography* (New York, 1966), 140-145.
- 7 Vincent Nolte, *The Memoirs of Vincent Nolte* (New York, 1934), 180.
- 8 Henry McMurtrie, *Sketches of Louisville and Its Environs* (Louisville 1819), 283-258. Jared Brooks' record of shocks in Louisville appears In McMurtrie's appendix.
- 9 Fuller, *New Madrid Earthquake*, 8.
- 10 Audubon, *Delineations*, 50.
- 11 Robert Iacopi, *Earthquake Country* (Menlo Park, California, 1964), 39.
- 12 Nicholas H. Heck, *Earthquakes* (Princeton, N. J., 1936), 11.
- 13 *Kentucky Gazette* (Lexington), January 7, 28, 1812.
- 14 John Bradbury, *Travels in the Interior of America in Early Western Travels, 1748-1846*, V. ed. by R. C. Thwaites (Cleveland, Ohio, 1904), 204.
- 15 *Connecticut Courant* (Hartford), February 19, 1812.
- 16 Bradbury, *Travels*, 204; Timothy Flint, *The History and Geography of the Mississippi Valley*, 3rd ed., I (Cincinnati, 1833), 311.
- 17 *Ohio Centinel* (Dayton), February 13, 1812,
- 18 *Chillicothe Supporter*, February 22, 1812.
- 19 Lorenzo Dow, *History of Cosmopolite*, 5th ed. (Wheeling, Va., 1848), 344.
- 20 Sir Charles Lyell, *A Second Visit to the United States of North America* (New York, 1849), II, 177.
- 21 *Ibid.*, 179.



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**The Winter The Mississippi Ran Backwards:  
 Early Kentuckians Report the New Madrid, Missouri, Earthquake of 1811-12**

By Dr. Wayne Viitanen

During the early morning hours of December 16, 1811, the first of three bone-jarring earthquakes shook the lower Mississippi Valley. At about 2:00 A. M., residents from St. Louis to Natchez and from the mouth of the Ohio to Louisville were shaken into startled alertness. But this was only the beginning of a winter-long nightmare. Two more hard shocks struck – one on January 23, 1812, and another on February 7, 1812. In addition, some 1800 lesser tremors rattled the lower Mississippi Valley between December 16, 1811, and March 15, 1812.(1) These cataclysmic disturbances, now known as "the New Madrid earthquake of 1811-12," constitute one of the worst natural disasters of its kind in American history. And although the earthquake had its epicenter in southeastern Missouri, we shall see that it had a considerable impact on Kentuckians as well. Furthermore, Kentuckians and visitors to Kentucky were responsible for many of the first reports of earthquake devastation which reached contemporary newspapers including the Cincinnati *Western Spy*.

New Madrid, at the center of the disturbance, is about 150 miles southeast of St. Louis and some 270 miles southwest of Louisville. If just one of the New Madrid hard shocks were to recur

today, both cities would be seriously damaged. While the Alaskan earthquake of 1964 exceeded 8.0 on the Richter Scale and while the well-known San Francisco earthquake of 1906 reached 8.25, few people realize that the New Madrid upheaval reached an equal intensity – not only once, but on three different occasions. We all know about the San Francisco earthquake because the Bay city was a thriving commercial and cultural center of some half-million citizens at the turn of the century. New Madrid, on the other hand, was a tiny frontier village in 1811, almost entirely isolated from centers of population on America's eastern seaboard. In fact had it not been for the earthquake and a passing reference to the river town in Samuel L. Clemens' ["Mark Twain"] *Life on the Mississippi*, few people would have heard of New Madrid even today.



Yet this earthquake released a prodigious amount of energy. Not only were buildings destroyed in this region, but the very geography of the Mississippi delta was changed. From present-day Cairo, Illinois, to Blytheville, Arkansas, a distance of some 140 miles, even the

Mississippi River was wrenched into new paths. It is not surprising, then, that potentially rich farmlands were torn apart, stream courses changed, great new swamps and lakes appeared while former lakes and streams dried up. Islands as large as 200 acres crumbled and floated away down the Mississippi and Ohio, while landslides slipped fifteen acre slices of river bank into the roaring maw of the Mississippi. It was even reported that the great inland waterway flowed upstream. This is not just a tall tale, for evidence suggests that this indeed happened in localized areas.

In spite of severe damage to property and to the land itself between Fort Massac, on the Lower Ohio, and a point about thirty miles below present-day Caruthersville, Missouri, the New Madrid earthquake soon faded from the headlines. The War of 1812 attracted immediate interest, and, during the halcyon days of the nineteenth century, few paid any attention to stories of a disaster that had occurred in and around an obscure frontier village. Even near New Madrid, successive waves of settlers ignored stories which pioneers retold of their experiences during the hard shocks. Unfortunately, by the time scientists and historians focused their attention on this subject in 1900, most of the eye-witnesses had died.

Yet there is a considerable body of information about the earthquake, much of it firsthand, scattered throughout libraries and historical archives, especially in Missouri and Kentucky. As we shall see, Kentuckians have been responsible for some of the most vivid and accurate descriptions of how the earthquake affected people throughout the lower Mississippi Valley.

Many of these eye-witnesses recalled afterwards that a number of peculiar events preceded the earthquakes. Eliza Bryan, a resident of New Madrid, remembered something about the weather. In a letter to the famous frontier preacher, Lorenzo Dow, she wrote that "this country was subject to very hard thunder, but for twelve months before the earthquake there was none at all, and but very little since."<sup>(2)</sup> A writer describing the experiences of Nicholas and Lydia Latrobe Roosevelt as they made their way down the Ohio in the autumn of 1811 elaborates on the unusual weather preceding the shocks. These members of the prominent American family were on the Ohio and Mississippi rivers during the earthquake because Roosevelt was commanding the *New Orleans*, the first steamboat to ply the inland American waters, on its maiden run from Pittsburgh to New Orleans. The writer quotes a witness who declared of the weather that while they were on the lower Ohio "there was a dull misty sky without a cloud. . . . the meaning of which would have been better understood at Naples under the shadow of Vesuvius . . . . The sun, when it rose looked like a globe of red hot iron, whose color brightened at noon, to resume the same look when it sank below the horizon. All day long, one might have gazed on it with unflinching eyes."<sup>(3)</sup>

Another writer, William Brown of Mount Gilead, Kentucky, remembered that the weather was warm, dull, and cloudy just before the earthquakes.<sup>4</sup> But Jared Brooks, a naturalist living at Louisville, recorded that December 15 was much as one would expect any late autumn day to be, the temperature just above freezing, the sky cloudy, and a light mist falling.<sup>(5)</sup>

Jared Brooks was more than a weather watcher, however. Once the earthquakes began, he had the presence of mind to set up crude pendulums to record as many tremors as possible. There were so many, in fact, that he devised a six-point scale into which he grouped these disturbances. On this spectrum, number-one-rated tremors were the most severe. These were capable of destroying a town if they continued long. During the most severe shocks, buildings rocked and ground against one another, walls split, and chimneys, parapets, and gable roofs collapsed. Sixth-rated shocks, on the other hand, were hardly perceptible. Fortunately, only eighteen were of the first or second-rated power. Had more of them been violent, or had these eighteen lasted longer, the young city of Louisville might have been destroyed.<sup>(6)</sup>

While some people remembered the peculiar weather that preceded the earthquakes, others recollected the strange behavior of horses, cattle, and even wild animals. It seemed somehow that they were able to detect earthquakes before men could. A remarkable example of this phenomenon comes to us from John James Audubon, the famous ornithologist. While riding through the Kentucky "Barrens," he "remarked a sudden and strange darkness rising from the western horizon."(7) Thinking that a thunderstorm was about to break, he spurred his horse toward a nearby shelter. But suddenly his mount stopped and refused to go any further. He

placed one foot after another on the ground, with as much precaution as if walking on a smooth sheet of ice. I thought he had suddenly foundered, and speaking to him, was on the point of dismounting and leading him, when he all of a sudden fell a-groaning piteously, hung his head, spread out his four legs, as if to save himself from falling, and stood stock still, continuing to groan. I thought my horse was about to die, and would have sprung from his back had a minute more elapsed, but at that instant all the shrubs and trees began to move from their very roots, the ground rose and fell in successive furrows, like the ruffled waters of a lake, and I became bewildered in my ideas, as I too plainly discovered that all this awful commotion in nature was the result of an earthquake.(8)

Many others seconded Audubon's experience. They, too, said that their horses had been completely unmanageable before the "hard shakes." Yet the strangest manifestation of animal prescience occurs in the story of the migrating squirrels. Charles Latrobe, an Englishman and a distant relative of Commander Roosevelt's wife Lydia Latrobe, reported having heard that during the autumn of 1811

a spirit of change and recklessness seemed to pervade the very inhabitants of the forest. A countless multitude of squirrels, obeying some great and universal impulse, which no one can know but the Spirit that gave them being, left their reckless and gamboling life . . . and were seen pressing forward by tens of thousands in a deep and solid phalanx to the South. No obstacles seemed to check their extraordinary and concerted movement. The word had been given them to go forth, and they obeyed it, though multitudes perished in the broad Ohio which lay in their path.(9)

Something had alerted the horses and frightened the squirrels, but no one then understood the connection between the eccentric animal behavior and the earthquake that followed.(10)

Perhaps the warm, dry weather that most eye-witnesses said preceded the earthquake encouraged boatmen to move their cargoes down the Ohio and Mississippi that autumn. At any rate, several accounts assert that all along the river from present-day Cairo, Illinois, to Caruthersville, Missouri, boatmen were shaken awake by the first booming retorts of the quakes. Yet these shocks passed so quickly that sometimes crewmen did not realize that they were caught in an earthquake. Instead, they thought that collapsing river banks had roiled the Mississippi.(11) But when the second quake struck at 8:00 A. M., there was no longer any doubt about what was happening. This time the Mississippi seemed to take a deep breath and pull back from the shallow waters on either shore. Some boats were stranded on newly-exposed mud banks, while others bobbed atop an incredible wave that rose as much as thirty feet above normal river level. A few moments later, the pent up waters rolled upstream, spreading out for as much as three or four miles inland before coming to rest.(12)

The Mississippi churned past New Madrid and Little Prairie, too, but their citizens were not primarily concerned with the river. Instead, they struggled with falling chimneys, dangerously weakened houses, and fires caused in part by the damaged chimneys. When they fled from their

houses into the blackened streets, the earthquake sent undulating waves along the ground, knocking everyone to his hands and knees.

From a letter written by a gentleman in New Madrid to his friend in Lexington, Kentucky, we learn that many who endured the first severe shocks at New Madrid prayed that relief would come at dawn. He wrote that it seemed at first their prayers would be answered, for the earth quieted for a time at about 6:30 A. M. He learned that during this interlude, one resident had ventured into the streets to see how his neighbors had managed. But before he had a chance to inspect the damage, an especially hard shock knocked him to the ground. By 7:00 A. M., the situation had become serious indeed, for now the earth began rolling in four-foot high horizontal waves. Occasionally, a burst would spew mud, water, and sand high into the air. Only with much difficulty did he manage to return to his family. He was with them when at 7:15 A. M. the hardest blow of all struck. This time the earth twitched in short vertical spasms. Dust and vapor flew into the air while ear-splitting explosions shattered the morning calm. When these last shocks subsided, rail fences lay prostrate, brick chimneys were scattered across village lots, and houses everywhere lay ruined.(13)

This description of destruction at New Madrid is similar to that given by passengers of the *New Orleans* when they put in for a brief stopover at New Madrid. As we know, passengers and crewmembers of the *New Orleans* had noted the warm weather and the sun's sombre glow when they anchored below Louisville. But the first real sign of trouble came when they stopped at Yellow Banks, near present-day Owensboro, Kentucky, to take on coal. While the crew was busy with its task, squatters came down to the river and asked them if they had not recently felt a trembling of the earth. No, they had not; neither had they heard any rumblings that the "land lubbers" had reported.(14) From this, it seems that the squatters may have been describing some of the early December 16 tremors, but since there are no precise dates given in these reports, it is impossible to know for certain. In any event, the *New Orleans* moved downstream without any difficulty until the second day out of Yellow Banks. Then the pilot knew that something serious was happening, for the river channel had changed so much that he could not tell where he was. And though there was no wind, the travelers stared at trees waving on both banks of the Ohio.(15)

In spite of misgivings, "Commander" Roosevelt pressed forward. On the morning of their third day downstream from Yellow Banks, the voyagers approached the junction of the Ohio and Mississippi rivers.(16) As they hove within sight of the junction, they saw that the current had slackened, the water had backed up and was now flowing among trees that at this time of year were usually surrounded by dry land.(17) As they proceeded downstream, the river remained over its banks. Arriving at New Madrid about midday, they found the village in chaotic ruins. Though much damaged, some of the houses were said still to be standing. Passengers on the *New Orleans* also remembered how residents of this ravaged village fled from the river when the steamship approached. For those who had never seen a boat that rattled, hissed, roared, and belched fire, she was indeed an awesome sight. But nonetheless, some of the braver souls approached the steamboat and begged for passage away from this land of earthquakes. Roosevelt decided, though, that he could not take anyone with him. Since most of those who wanted to leave were penniless and without any place to stay once they reached Natchez or New Orleans, he thought it best that they stay in New Madrid where at least there seemed to be plenty of food.(18)

Below New Madrid, the crew proceeded cautiously, for they still had to avoid snags and sawyers which had been churned up by the earthquakes. "After many dangerous days," however, the *New Orleans* reached Natchez in early January. She was given a tumultuous welcome by the

frontier town, for especially after the earthquakes had begun, few expected ever to see the *New Orleans* on the lower Mississippi.(19)

Returning once again to accounts by those who endured the winter of 1812 in or near the Missouri bootheel, we learn that as Sunday, December 16, wore on, the shocks gradually subsided. Yet lesser tremors continued throughout the month. Some reports claim that there were over 200 minor disturbances during the last two weeks in December. There was, apparently, a lessening of earthquake activity in early January, but in mid-month there was another outburst of violence, climaxing in the hard shock of January 23.(20) Little is known about this earthquake except that it was one of the most severe. In late January, earthquake activity declined again, but during the week ending February 9, 1812, there was another series of shocks. On February 7, 1812, during this last frenzied burst of earthquakes, the most destructive blow of all struck the lower Mississippi Valley.(21)

During these "hard shakes," Matthias M. Speed, captain of a flatboat convoy from Kentucky, found himself a few miles above New Madrid. He wrote that, as on December 16, the earthquake struck during the early morning hours. Speed said that he awoke at 3:00 A. M. to booming cannonades saluting the hard shocks. To make things worse, the small island to which his boats had been anchored began to disintegrate. To avoid being pulled under by the crumbling sand bar, he ordered his men to cast off and to keep to the middle of the river. There his boat was tossed first one way and then another "like a wooden chip in a mill race." Then, as they lurched into sight of New Madrid, they faced a new challenge. There, extending across the entire Mississippi spilled a six-foot high waterfall. This was unbelievable. None was listed on his map, yet there it was, pulling them ever closer to its cascading waters. Sucked over its edge, they were nearly swamped. By frantic efforts, though, they managed to keep afloat until they put in at the now shattered village of New Madrid. But shaken by his harrowing experience, Speed sold his cargo for a small fraction of its value at New Madrid and returned with his men to Kentucky.(22)

Although residents of New Madrid agreed with travelers that the February 7 earthquake was "the" hard shock, they had little to say about its destructive force. We do know that it was after this time that they decided it was unsafe to remain even in the vicinity of New Madrid. Godfrey Lesieur wrote that survivors salvaged what personal belongings they could and moved some thirty miles northwest to Tywappety Hill.(23) Here they camped until early spring when the tremors became less frequent and severe.

There were other periods of earthquake activity following the February 7 outburst, especially in mid-March and again in early May, but none were of the magnitude of those three hard shocks of December 16, January 23, and February 7. Yet in spite of the tremendous force of these blows, only a handful of people were killed or injured. While Godfrey Lesieur wrote that he knew for certain of two residents of New Madrid who died from causes directly attributable to the earthquakes, no one was lost at Little Prairie. On the other hand, he heard that a family of seven drowned in the Mississippi below New Madrid. And judging from the wrecked flatboats and debris floating past New Madrid, Lesieur supposed that some boatmen must have drowned, too, but he did not know how many.(24)

In all, probably fewer than one hundred were killed in this awesome upheaval. In contrast, the March, 1812, earthquake at Caracas, Venezuela, took 10,000 lives. One reason, of course, that so few were killed in the Mississippi Valley was that not many lived there. Louisville and St. Louis were the nearest large towns, and even they were too far away to be seriously threatened. Another life-saving factor was the log cabin. These structures absorbed all but the most severe earthquakes. Even though they, too, eventually collapsed, no one was trapped and killed inside one.

But regardless how durable the log cabins, virtually all were destroyed in the region of most severe damage in southeast Missouri. Here it was years before life returned to normal. Minor shocks continued throughout the region, forcing residents to live in makeshift huts for some eighteen months following the major shocks.(25) During this time, land sharks descended on the panicked victims and bought entire farms for the price of a mule or a horse, so anxious were people to get away. Those who remained were no better off, for they were exploited by rustlers who stole their cattle. Even worse, it was several years before they were able to cultivate their torn and fissured farms on any large scale.

Away from Missouri's "bootheel", the economic impact of the hard shocks was less pronounced. At St. Louis, the earthquake was in one report described in a somewhat humorous manner. It was said that dishes rattled during the shocks, that furniture walked across rooms, pictures swayed drunkenly, and chickens fell off their roosts. But an observer who took the matter more seriously wrote that he was quite startled to be awakened by a noise like that of a hundred wagons clattering through the streets. Nonetheless, he wrote, damage was limited to banging unlatched doors opened and closed.(26)

Louisville, Kentucky, about 270 miles from the center of the quakes, experienced much the same effects as did St. Louis. But in Louisville, it was the February 7, 1812, shocks which were most severe. Had these quakes lasted longer, the frontier city would have been destroyed. As it was, parapets and gable roofs fell in, while brick buildings ground against one another and cracked from floor to ceiling.(27) Even as far east as Frankfort, Kentucky, there was some structural damage. There, the court house chimney was knocked down, and it was reported that severe damage was done to the state penitentiary.

At Cincinnati, too, it was the February 7 shock which was most destructive. Plaster fell down from the grand jury room in the court house, and there were loud noises, "first like the clashing of rocks together and next like the roaring of a furnace, or the passing of a tornado." Though these shocks lasted only a few minutes, "several people were effected with nausea, and as to one gentleman, in particular, it excited vomiting."(28)

At one time or another during the winter of 1811-12, the New Madrid earthquake rattled windows all across the eastern United States. And while no one knows how much of the West was affected, Indians living in the upper Missouri territory in the foothills of the Rocky Mountains later told explorers that they distinctly felt earth tremors during that unlucky winter.(29)

Across much of America's western frontier in 1812 the immediate reaction to the earthquakes was one of consternation and terror. But since the shocks continued for so many months, another reaction had time to set in even before the earthquakes ceased. This was the religious response to the disaster. Sometimes people turned to God during the first severe tremors, while others did not have time to think about the significance of the shocks until after the earth had quieted again. In any event, both white men and Indians attached metaphysical overtones to the severe earthquakes of 1811-12.

Several stories purport to be Indian legends about why the earthquake struck when and where they did, but one of the most authentic comes to us in Edwin James' history of the Major James Long expedition to the Rocky Mountains in 1819-20. Edwin James wrote that the Long party learned from Western Indians that earthquake tremors had indeed been felt in the Rocky Mountains. When asked what might have caused the tremors, the Indians replied that they had been sent to punish French trappers who had killed an Indian under special protection of the Great Spirit.(30)



White men, too, were awed by the shocks and many thought that the earthquakes were sent by an angry God. Peter Cartwright, the famous frontier preacher, liked to tell this story about a pioneer gentleman who forgot all about family responsibility during the earthquakes. The story concerns a certain Valentine and Tabitha Cook, a couple who lived near Russellville, Kentucky. They had been asleep when the earthquake hit their cabin, but in a moment, Cartwright said, Valentine leaped up and lurched toward the door. The hysterical settler stumbled outdoors with nothing on but his night clothes. Scrambling across a nearby field, he cried out, "My Lord is coming! My Lord is coming!" Not wanting to be left behind, his wife followed him pleading, "Oh Mr. Cook, don't leave me! Don't leave me!" "Oh, Tabby," he replied, "My Lord is coming. I can't wait for you, Tabby."(31)

The Reverend James B. Finley, also of Kentucky, was one of many preachers who found conversions easier in 1812. Although he said there had been signs of a revival before the earthquakes, conversions swelled after people had been frightened by the shocks. At Rush Creek, Kentucky, for example, Finley noted a great change among the youth. Whereas before the earthquakes they had been given to dancing and drinking, 'afterwards they much preferred prayer meetings instead.(32)

But Finley's most remarkable wave of conversions followed the day when he preached an especially effective sermon on the occasion of a house raising. Climbing upon a new table in the center of the log house, he addressed his listeners, citing the text, "for the great day of His wrath is come, and who shall be able to stand?" That night a brisk tremor rattled the community, making it a time that the unregenerate never forgot. He wrote that many sinners, seeing the power of Cod in fulfilling this prophecy became converts and remained true to their commitment for the rest of their lives.(33)

Preachers must have had similar experiences all across the lower Mississippi Valley in 1812 and 1813, for church membership leaped upward in those years. In "The Earthquake of 1811 and Its Influence on Evengelistic Methods in the Churches of the Old South," Waiter Brownlow Posey shows that memberships in the Western Conference of the Methodist church jumped some fifty percent in 1812. On the other hand, Methodist gains in other parts of the country were at the more modest rate of about ten percent. It is interesting to note that the Western Conference included almost every state and territory affected by the earthquakes: all of Tennessee and Kentucky, as well as settled parts of Mississippi, Arkansas, Illinois, Indiana, Ohio, and West [then Western] Virginia.(34) It would seem, then, that the earthquake did indeed exert at least a temporary influence on church attendance.

While many turned to God during these awesome months, others, though momentarily disturbed by the earthquakes, later learned to take them in stride. One of these was John James Audubon. In fact, he experienced so many tremors that he began to look forward to them so that he could enjoy his friends' confusion. Audubon liked to tell the following story about an incident which occurred when he was a guest at his doctor friend's wedding. The ceremony took place in western Kentucky at a time when a wedding was a great social event, with people coming from miles around to celebrate the occasion. The ceremony went smoothly, and afterwards everyone enjoyed a fine supper. Then, the fiddler tuned up, and soon the living room was filled with whirling couples.

Eventually the celebration ceased, and everyone went to bed. But then a rumbling came from under the ground, accompanied by vibrations that rattled the log house. Audubon, who had weathered several of these shocks before, knew that he must prepare to go outdoors until they were over. Other guests, though, unused to such disturbances, frantically bounded from their beds and

rushed out onto the doctor's front lawn. The moon was full, but in all the confusion no one minded being out-of-doors in his night clothes.

Then, as the tremors continued, the doctor remembered that his precious jars and phials were standing exposed on open shelves in the living room. Running inside, he saw his specimen jars and glass medicinal phials toppling off their shelves and crashing to the floor. Instead of simply closing the glass doors on the shelves, though, he tried to save the tipsy jars by holding them in place. But his frantic efforts were in vain. When the tremors were over, hardly a jar remained intact. The doctor's behavior struck Audubon as highly amusing, for usually his friend acted in a most calm and rational manner. Audubon also noted how quickly everyone became sensible to modesty once the shocks were over. The women, especially, were scandalized when they realized that they had run outdoors dressed only in their night clothes.(35)

While it is a matter of record that Methodists and Baptists alike shared in a rich spiritual harvest in 1812 and 1813, it is also well known that many of these converts became backsliders shortly after the earthquakes passed away. There were so many of these backsliders that they earned the name "earthquake Christians" from the fact that they attended church neither before nor long after the earthquakes.

The following, probably apocryphal story, about Louisville, Kentucky, concerns an entire city of "earthquake Christians." The writer of this article which appeared in the *Bedford Pennsylvania Gazette* stated that though it was a good-sized town in 1811, Louisville had no church. No one seemed concerned about the omission, he goes on to say, but after the December 16 earthquake, some people began to worry about the condition of their souls. As a result, they began to collect money for the construction of a public church. In a few days, they raised \$1000. But nothing more was done until the January 23 shock came along. This time the earthquake shook another \$1000 loose for the church. Yet nothing was done about its construction. The same scenario followed the February 7 earthquake. But since no more shocks seriously disturbed the people of Louisville, they forgot all about the house of worship. According to this story, they concluded that the "devil would not send for them for a few years more and, in the meantime, determined to be merry. They immediately built a theater which cost them seven thousand dollars..."(36)

There have been, then, many reactions to America's worst earthquake, many of them having been reported for us by Kentuckians or visitors to Kentucky. Some victims were helplessly terrified, while others soon recovered and saw to their family's and neighbors' needs. Some found the earthquakes a curious phenomenon that produced peculiar reactions among their friends. Others, of a more meditative turn of mind, perhaps, turned to God for spiritual support. Regardless of how they reacted, the earthquakes devastated everyone's property in southeastern Missouri, northeastern Arkansas, and western Kentucky and Tennessee. Fortunately, there were few people living in this region at the time, and only a handful were killed or injured. And though Congress eventually passed an earthquake relief act in February of 1815, by then most Americans had lost sight of one of our most severe natural disasters. Since then, 'the story of the New Madrid earthquake has remained an unknown event to most Americans.

That is has received so little attention, either in the scholarly world or among the general public, is unfortunate. If more research were done on this subject perhaps seismologists could determine if and when another earthquake of this magnitude will strike the now densely-populated lower Mississippi Valley. If historians knew more about it perhaps today we would have a more complete accounting of what actually happened to the people during those terrifying months. If folklorists knew more about this earthquake perhaps we would know whether or not any

earthquake stories have entered the mainstream of American folk tradition. If the general public were more aware of what had happened before in this earthquake-prone region, perhaps they would insist on schools and churches that could withstand the effects of severe quakes should another hard shock strike.

As we have seen, much of what we do know about the earthquake has come to us from visitors to Kentucky including Audubon and from Kentuckians themselves, two of whom, Jared Brooks, and the flatboat captain, Matthias Speed. The problem now is to determine whether or not there are any accounts of the earthquake which have not yet been published. Some of these stories may be lying in someone's attic simply because the owner is not aware of their historical value. I would like to appeal to anyone who might know of letters, ballads, prayers, stories, or legends about the New Madrid earthquake to notify me by writing to this publication or else to notify his state historical society that he has material pertinent to this subject. We know that there were travelers in the lower Mississippi Valley in 1812, several of them from Kentucky, but we do not by any means have a complete account of all who were there. Kentuckians have done much to help preserve this story for posterity, perhaps with an additional effort they can do even more.

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- 1 Jared Brooks, appendix to Henry McMurtrie, *Sketches of Louisville and Its environs*. . . (Louisville, Kentucky: S. Penn, 1819), II p. 255.
- 2 Eliza Bryan, 1816 letter, in Robert Sidney Douglass, *History of Southeast Missouri* (1912; rpt. Cape Girardeau, Missouri: Ramfre Press, 1961), p. 225.
- 3 J [ohn] H [azlehurst] B [oneval] Latrobe, "The First Steamboat Voyage on the Western Waters," *Maryland Historical Society Publication*, No. 6 (Oct. 1871), p. 19.
- 4 William Brown, rpt. in William Allen Pusey, "The New Madrid Earthquake - an unpublished contemporaneous Account," *Science*, 71 (1930), 285-286.
- 5 Jared Brooks, p. 233.
- 6 Ibid., p. 255.
- 7 John James Audubon, *Audubon and His Journals*, ed. Maria R. Audubon (London: Constable and Company, 1898), II 234.
- 8 Ibid., p. 235.
- 9 Charles Joseph Latrobe, *The Rambler in North America: 1832-1833* (London: R. B. Seeley and W. Burnside, 1885), pp. 102-103.
- 10 Personal letter of November 23, 1971, from Professor Otto W. Nuttli, Department of Earth and Atmospheric Sciences, Saint Louis University. Professor Nuttli suggests that the "horse felt the P wave, or the first wave from the earthquake, whereas the rider felt the larger amplitude surface waves which would have arrived one or two minutes later..."
- 11 Zadok Cramer, *The Navigator, in An Ohio River Anthology*, ed. by Ethel C. Leahy (Cincinnati: E. C. Leahy, 1931), p. 179.
- 12 Firmin La Roche, rpt. in "A Sailor's Record of the New Madrid Earthquake," *Missouri Historical Review*, 22 (1928), 269.
- 13 George Ruddell in the Cincinnati *Western Spy*, 15 Feb. 1812, n. pag.
- 14 Charles Joseph Latrobe, *The Rambler In North America*, pp. 102-108.
- 15 Ibid., p. 108.
- 16 Ibid.

- 17 J. H. B. Latrobe, "The First Steamboat Voyage," p. 23.
- 18 Ibid., p. 28.
- 19 Charles Latrobe, p. 109.
- 20 Myron L. Fuller, "The New Madrid Earthquake," *United States Geological Survey, Bulletin* 494 (Washington, D. C.: Department of the Interior, 1912), p. 34.
- 21 Ibid.
- 22 From the Bairdstown (Kentucky) *Repository*," rpt. in the Cincinnati *Western Spy*, 28 March 1812, n. pag.
- 23 In Firmin A. Rozier, Rozier's *History of the Early Settlement of the Mississippi Valley* (St. Louis: C. A. Pierrot and Son, 1890), p. 205.
- 24 Ibid., p. 208.
- 25 Eliza Bryan in the Douglass *History*. . . . p. 225.
- 26 "Earthquake," St. Louis, Missouri, *Louisiana Gazette*, 21 Dec. 1811, p. 335.
- 27 Jared Brooks, p. 239.
- 28 "More Earthquakes," the Cincinnati *Western Spy*, 8 Feb. 1812, a. pag.
- 29 Edwin James, *Account of an Expedition from Pittsburgh to the Rocky Mountains, performed in the Years 1819, 1820* (1823; rpt. in Reuben Gold Thwaites, ed. *Early Western Travels*, XV, Cleveland: Arthur H. Clark, 1904), p. 57.
- 30 Ibid.
- 31 James Ross, *The Life and Times of Elder Reuben Ross* (Philadelphia: Grant, Faires and Rodgers, 1882), p. 209.
- 32 *Autobiography of James B. Finley or, Pioneer Life In the West*, ed. W. P. Strickland (Cincinnati: Cranston and Curts, 1854), p. 239.
- 33 Ibid., p. 240.
- 34 *The Tennessee Historical Magazine*, Series II, 1 (1931), 111 and 113.
- 35 *Audubon and His Journals*, II, 236-237.
- 36 Maude Ward Lafferty, *The Lure of Kentucky* (Louisville: The Standard Printing Co., 1939), pp. 223-224.



**The Register of the Kentucky Historical Society, Vol. 72, No. 4  
(Frankfort, KY: Kentucky Historical Society, October 1974) pp.398-402:**

**A Letter From James McBride Regarding The Earthquake Of 1811-1812  
(This copy has been presented by the Cincinnati Historical Society.)**

To Miss Mary M. Roberts  
(Copy) Mississippi River – April 1, 1812

Dear Aunt,

About the first of March last I received a letter from you, and omitted answering it until now, which was not occasioned, or owing to negligence, but because I thought the intelligence I would have to give, if I wrote truly, would occasion you some little uneasiness, as at that time I was engaged in making preparations to make a voyage to New Orleans and am now so far on my way. Last winter I entered into a co-partnership with Joseph Hough of Hamilton with the intention

of carrying on the business of merchandizing, we purchased a quantity of flour and whiskey in the Miami Country and loaded two flat boats on the Miami river which we have brought out of that stream, and are thus far on our voyage, when we go to New Orleans, we shall sell our cargo, go round by sea to Philadelphia and purchase goods, and return with them to Hamilton.

As you had no doubt heard very alarming accounts about the Earthquakes and other dangers of descending the Mississippi river, I suppose you would have looked upon me as going to certain destruction. Thank kind providence I think we have now passed those dangers, and if some untoward accident does not overtake us, shall pass safely to New Orleans, and if flour bears the price, which I understand it does, we shall make something very handsome. Our cargoes consist of seven hundred barrels of flour and some whiskey and pork which we purchased in the Miami Country on very reasonable terms, as the reports prevailing, of the dangers to be encountered from the Indians, and the Earthquakes had so much frightened the people that none would venture to encounter them. These stories I considered improbable: but have since found too much reality to exist in them, particularly those relating to the Earthquakes.

I shall give you some little account of what I saw and experienced although it must be a very cursory account, as I was only on shore at certain points, and then but a short distance from the river. The following is extracted from the Journal which I kept.

Soon after entering the Mississippi River we began to discover the effects of the Earthquake the region of which we were now approaching. Above New Madrid on the west side of the river is a grove of cotton wood and willow trees, two or three miles long these were all bent up stream and stripped of their leaves and branches in a singular manner. It is said that at the time of the most violent shock the river at this place for some time ran up stream with great velocity, and from the appearance I have no doubt of the fact, as I know of nothing else that could have produced the appearance here exhibited. We were now experiencing considerable shocks every few hours.

We passed New Madrid in the afternoon, intending to land before night. Mr. Hough had command of one boat and myself of the other, we each steered our own boat and had only two other hands, on each boat to row. Mr. Hough was rowing to shore to land on the west side of the river, discovering that the landing place would be a critical situation by signs, motioned me to keep out, I immediately turned my boat and rowed for the middle of the river again. I made every effort to land on the other shore but was unable, at dark I made a willow island in the river and fastened to the willows, where we remained all night in a very exposed situation. The island was all overflowed, but barely sufficient where we lay to float our boat which drew somewhat over three feet of water. The river was falling and myself and hands were obliged frequently during the night to jump overboard into the water, cold as it was, to push off the boat and prevent her getting fast aground. As soon as day dawned we put off from our dangerous harbor, in a dull rainy morning and at ten o'clock landed at the Little Prairie about miles below New Madrid. Here had been a small village of some twenty houses and a settlement extending back six or eight miles from the river, principally French and Spaniards. On landing we soon discovered that the place where we were moored had been part of the town, now the bed of the Mississippi river, a considerable portion, several acres, on which part of the town had stood had sunk down, with the building and the river flowed over the place. The place where we made fast our boat was a burying ground, part had sunk into the river, and coffins were exposed along the bank. The tenants had been Roman Catholics, as the cross was erected at the head of each grave. A large cross made of strong cyprus wood placed, no doubt at the grave of some pious Christian, was broken and prostrated to the earth. Although it rained considerably after securing our boat I wrapped myself in my great coat and

went on shore to see what discoveries I could make. Of about a dozen houses and cabbins which I saw, not one was standing, all was either entirely prostrated or nearly overturned, and wrecked in a miserable manner, the surface of the ground cracked and fractured in every direction. At the back part of the village I found three French men who were sheltering themselves in a temporary booth of boards, taken from some of the desolate houses. They informed me in broken English that the late beautiful village and settlement was now wholly destroyed. The inhabitants had fled with what property they could take with them. They, and only they, were left, to tell the passing stranger of the melancholy fate of the place. I continued my excursion about two miles back from the river, although it was with considerable difficulty and at every step witnessed some new phenomena of the desolating effects of the Earthquakes. The surface of the ground was cracked in almost every direction and stood like yawning gulphs, so wide that I could scarcely leap over them, at other places I came to spaces of ground several poles in width sunk down two or three feet below the common level of the ground. But what particularly attracted my attention were circular holes in the earth from five or six to thirty feet in diameter, the depth corresponding with the diameter so as to be about half as deep as wide, and surround with a circle of sand two or three feet deep and a black substance like stone coal but lighter, probably carbonized wood. I took some pieces of them to the boat on putting them on the fire I found they would burn at the same time producing a strong and disagreeable sulphurous smell. These holes I presume must have been produced by a strong current of air issuing from the bowels of the earth throwing up sand and water, and this black substance, which was perhaps wood long imbedded in the earth, prostrating the trees, and every thing else where they happened and producing the most horrible disorder. I observed in several instances where small explosions had ocured under large trees, that the trunk of the tree was split up ten or twelve feet and separated two or three feet wide at the ground and thus remained standing. The day was dark and gloomy with light, I heard and felt from time to time the rumbling noise of these explosions, all nature around me had the most melancholy appearance. A sudden dread came over me all at once and I returned to the boat. I lay at Little Prairie until the afternoon of the next day during which time we experienced eight or ten shocks, some of them severe, so as to shake from their places loose articles in the boat. Each shock continued about two minutes and was preceded by a rumbling noise like distant thunder or the discharge of a cannon at a great distance. We experienced slight shocks at intervals for the distance of one hundred miles above and below Little Prairie. The shores of the river in the region presents a most melancholy spectacle, the banks cracked and fractured, trees broken off and fractured, and in many places acres of ground sunk down so that the tops of the trees just appeared above the surface of the water. All nature appeared in ruins, and seemed to mourn in solitude over her melancholy fate.

In the afternoon of the next day, Mr. Hough with the other boat made his appearance. The place where he had to land was in the head of an outlet so far down that he was unable to put out and gain the channel of the river again from that place, but the next day with great labor and the aid of some friendly Indians who came along they towed the boat some twenty or thirty rods up stream, from whence they were able to regain the channel.

I am now lying at shore on the bank of the Mississippi river, I suppose about one hundred miles above Natchez. Yesterday a violent storm compelled us to land here, it continued all night so violent as required us to be up to prevent the waves from dashing our boats on shore. The high wind still continues today, and the river so rough that we cannot pursue our voyage. I therefore devote the day to writing you this letter intending to put it in the Post office when I arrive at Natchez. You may suppose that I am not in a very comfortable situation for writing, nor do I feel in a mode for writing after the fatigue I have undergone. I have brought a boat loaded with 350

barrels of flour from the Miami to this place with only two hands. Labor, watching and anxiety has at times reduced me to almost exhaustion. Dear Aunt, your affectionate Nephew  
James McBride



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SHAKE, RATTLE AND ROLL: AN UNFINISHED  
HISTORY OF EARTHQUAKES IN DAVIESS COUNTY

By Aloma Williams Dew

This is an unfinished history, not because I ran out of time or energy and did not finish my research, but because the story is not finished. Any day now, or perhaps not for years, we can expect a large earthquake along the New Madrid fault, infamous for that spectacular series of quakes that occurred from December 1811 to March 1812, causing the Mississippi River to run upstream and creating the 20,000-acre Reelfoot Lake in Tennessee. The New Madrid Fault - thought to run through Cairo, Illinois - may extend as far north as Evansville, and have connections with other mid-western faults, particularly some in Northern Kentucky. Some seismologists now think it may run in a northeasterly direction into New England, a continental rift.

Within the next twenty-five years a catastrophic earthquake could occur in this area. It has been estimated that 6,000 deaths could occur, 27 per cent of them school children. Owensboro is one of the cities that would be affected and has been in the past. Dr. Otto Nuttli of St. Louis University compares the New Madrid Fault to heart disease. The small tremors are like chest pains, they serve as a warning, but they do not save one from a heart attack. The longer the time that elapses until its occurrence, the greater will be its magnitude.

More than one million tremors occur each year throughout the world, an average of one every 30 seconds, day in and day out. Most of these are tiny tremors, but 3,000 a year move the surface noticeably, more than twenty per year cause severe damage. Between December 16, 1811 and August 22, 1974, 143 earthquakes occurred within 200 miles of Owensboro. Most had a Mercalli reading of five or above. Not all were felt in Owensboro, however.

Will Durant has written, "Civilization exists by geological consent, subject to change without notice." I am reminded of a cartoon strip which hangs on my refrigerator door, in which the planet Earth is talking with another planet and says, "I've tried to shake the little twerps off with earthquakes, but I must have static cling or something." And yet we know of entire civilizations which have been destroyed by earthquakes. We tend to scoff unless we are affected. In the fall of 1985 Mexico City was partly devastated by an 8.1 earthquake. The epicenter was 250 miles from the city, about the same distance that Owensboro lies from Marked Tree, Ark., the epicenter of the great New Madrid earthquakes.

In July, 1980, the Sharpsburg quake in Eastern Kentucky was listed as the strongest ever recorded in Kentucky. It registered 5.1 on the Richter Scale and caused damage to over 200 buildings in Maysville. It was felt by many of our neighbors in Hancock County although no damage was reported. It was not reported as being felt in Daviess. Considerable damage was done by this quake which was totally unexpected, as it was not centered in the vicinity of a known major fault line.



We need drive only a few miles along the Green River Parkway to milepost 53, near the Hartford exit, to see vividly the uplifting in the rock strata know as the Rough Creek Fault. There are other fault zones in the area as well, such as the Shawneetown - Uniontown zone and the Curdsville zone which tend to run roughly from northeast to southwest, while the Rough Creek fault system runs east and west. Larger fault zones which affect us are the New Madrid, Wabash Valley and St. Genevieve faults. Owensboro is listed in Zone 2 for calculating earthquake risks in the New Madrid fault area, which is considered an area susceptible to moderate damage, but within the edge of Zone 3, the area of major damage. All land within fifty miles either side of the Ohio River is designated a Red Zone, because damage would be more severe in these areas due to the composition of the alluvial soil along the river, soil which is subject to liquification. But although this is the direction from which a large quake is expected, and of the other faults could also become active and probably have figured in Owensboro' s past geologic history. There have been at least fifteen quakes strong enough to be recorded in the Owensboro area since 1811. The most famous of these, and the one we know least about in Owensboro, was the Great New Madrid earthquakes.

These were the most widely felt earthquakes in the recorded history of North America. Jared Brooks of Louisville, an engineer and surveyor, counted a total of 1,874 shocks between December 16, 1811 and March 15, 1812. The strongest of those has been estimated at 8.6 on the Richter Scale. Shocks continued intermittently for three years. One can only assume that what occurred in Louisville was at least as strong here. Brooks recorded that eight of the shocks could be classed as violent, ten as very severe, and thirty-five as moderate but alarming.

The 1883 *History of Daviess County* records that locally "articles suspended from the wall or ceiling were swung about like a bell on an animal's neck." Anthony Thompson, described as a "pious Methodist," thought the world was coming to an end and met with his neighbors praying, singing, and shouting. Mr. Byrd Wall, approached by one of such mind replied, "Oh, you needn't give yourself any uneasyness. This earth is hung on axles like a horse-mill shaft, and I will insure its running safely for a thousand years yet to come." Wall's optimism was not shared by all, however.

Adding to fears that the world was ending were strange lights recorded by many witnesses, and a distinct odor of sulphur, as if Hell itself had been exposed in one of the chasms. The next year the appearance of Haley's Comet in the sky would add to these dire prophecies.

There were probably only a few structures in Yellow Banks in 1811, including Bill Smothers' cabin and a store, and these buildings were all of log construction. Cabins and frame houses were strongly built, yet elastic enough to "give" with the vibrations of an earthquake, and so were probably not severely damaged.

Samuel Latham Mitchell, who in 1815 compiled a *Detailed Narrative of Earthquakes which Occurred on the Sixteenth Day of December, 1811*, cites from a letter from Red Banks, Ky., (later called Henderson). The writer stated that as of January 4, 1812, "there had been from 20 to 30 shocks of earthquakes." He said that they began about 2 a. m. on December 16. The first one, followed by another at sunrise, were the most violent, he recorded. "We had to flee our houses. Several chimnies (sic) were thrown down, and many others so wrecked and cracked as to be dangerous. The noise which accompanied the several shocks is said to have come from the west," he wrote.

Mitchell also recorded another unknown letter from Kentucky in which the writer stated that on the night between the 15th and 16th of December, 1811, "the shock of an earthquake was sensibly and alarmingly felt." On December 30 a more severe shock than any preceding occurred. "It overturned almost every brick or stone chimney in Henderson County, or the region thereof;

situated on the Green River down to its confluence with the Ohio." In Christian County a spring of water was observed to run muddy for several hours. After it had settled it was discovered to be strongly impregnated with sulphur.

These quakes were felt as far away as Quebec, damaged the capitol building being constructed in Washington, D.C., and caused shaking strong enough to ring the bells of the North Church in Boston. In New Orleans, clocks stopped, and in Charleston, S.C., furniture moved and people were forced from their beds.

John James Audubon was on his way through the "barrens" of Kentucky, journeying from New Orleans to Henderson, when the quakes began. He first noticed a strange and sudden darkness along the western horizon, but assumed it to be an impending storm. He encouraged his horse to speed up a bit. He next heard a distant rumbling which he thought might be a tornado. Efforts to hurry his horse were to no avail instead, the horse nearly stopped and took careful and deliberate steps, placing one hoof carefully in front of the other. The animal then stood still and began a pitious groaning. Just as Audubon was sure the horse was dying and was preparing to dismount, "all the shrubs and trees began to move from their very roots, the ground rose and fell in successive furrows, like the ruffled waters of a lake," he would later write.

People were consumed with the fear that the earth would open up and swallow them. A cause for these fears is recorded by Herbert and Edward Quick in their book *Mississippi Steamboatin'* They were enroute down the river from Louisville in the steamboat New Orleans when the quakes occurred. They reported that " great fissures opened in the ground, and through some of them spouted torrents of muddy water."

Equilibrium was affected in many people. In New Madrid people were thrown down upon the ground, in other areas they were buffeted, but less severely. Symptoms included giddiness, nausea, vomiting, debility, trembling knees, and pains in the knees and legs.

For some of the quakes which were felt in Owensboro, little and sometimes no information seems available other than the fact that they occurred. There were quakes in 1838 and 1843 felt in Owensboro, but no comments can be found. About bedtime on April 4, 1850, citizens of Daviess felt "a sensible shock of earthquake," and the Daviess County *History* observed that " all the citizens were alarmed." This quake was felt all over the state and although no damage was reported, people in Louisville fled into the streets in fright.

Area residents would once more be shaken on August 7, 1860. According to Collins' *History of Kentucky* a severe shock lasting eight or ten seconds was felt at Henderson and it caused much consternation in the area.

In addition to shortages and Civil War guerillas, 1862 saw Daviess Countians rocked twice in one week - on December 3 and again on December 6.

There then seems to have been a long period of "terra firma" remaining that way, throughout the rest of the war and until August 31, 1886. This earthquake did a great deal of damage to Charleston, South Carolina.

As the Kentucky General Assembly prepared to sign the new State Constitution in September of 1891, Owensboro experienced two distinct earthquake shocks, coming on the 26th of that month. The first was a slight vibration accompanied by a rumbling sound, the second shock was more violent. Windows rattled, timbers creaked, plaster cracked and fell and people were jostled about in their chairs - similar, the *Messenger* reported, to a "steamboat riding its own waves."

People in the upper stories of buildings felt dizzy. Hanging lamps rocked to and fro as did other objects. Many people rushed from buildings into the streets.

The second shock lasted about three seconds, and was accompanied by "convulsive vibrations of alarming violence." The shock seemed to move from north to south. The newspaper office was soon besieged with calls and visitors. Captain Jim Cox said he was almost thrown out of his bed and his light was put out by the occurrence. It was reported by some gentlemen, with certain mischievousness no doubt, that all the women of Fourth Street were out on "white dress parade," meaning in their nightclothing. The quake had visited the town at 10:50 p.m., when most conservative souls were already asleep. The town was generally aroused by the unwelcome activity.

The next evening at 8:28 p.m. Evansville had what was reported as the "most distinct earthquake ever felt" there. It was preceded by a rumbling noise like distant thunder, followed by severe quaking lasting several seconds. The motion seemed from north to south. Strangely, there was no mention of an earthquake that day in Owensboro. But in Evansville, windows rattled, and buildings swayed as people fled into the streets.

The *Messenger* headline read "A violent shaking up of Wicked Evansville people that thoroughly scares them." Congregations from all the churches apparently thought the end was near as they rushed into the streets without waiting for the benedictions, and serious panic broke out in some quarters such as the First Baptist Church where several children fell down the steps as they hastily exited. Fortunately they were not hurt.

On All Hallows Eve, Halowe'en, October 31, 1895, as the country began to enter a period of political and social rumblings and shakings known as the Progressive Era, Owensboro had its own upheaval. Chimneys were shaken down and other minor damage was suffered from a quake felt from Cincinnati to St. Louis to Memphis. The *Messenger* bragged that it was the only paper in the state to have coverage in the morning edition. "The occurrence was the thing most talked about all over the county during the day and therefore the best news item of the day," the paper declared.

The earthquake, centered in Charleston, Missouri, was a 7 or 8 on the Mercalli scale. No serious damage seemed to have occurred, although according to telegraph reports the quake was felt from Chicago to the Gulf, and as far west as the Rocky Mountains and as far east as Ohio. According to the *Messenger*, "Owensboro seems to have caught it about as severely as any place within the area..." There were three shock waves and it was all over in 45 seconds. The motion was from east to west and was felt at 5:07 a. m. It was observed that there was a rumbling sound both after and before the shock. Some claimed to see a red light in the north immediately afterwards, and only briefly.

The most serious damage reported in the area was the collapse of a large smokestack at the Cook Brewery in Evansville. A number of chimneys were down or damaged in Owensboro, and plaster was loosened in many houses. Engine House No. 1 had several cracks, but one was widened a half- inch or more, and plaster inside was cracked badly. The locks were broken on doors at the homes of Mrs. T. M. Smith and Mrs. James Conyers on Lewis Street after the violent shaking; and Mr. Will Feland was thrown to the floor as he stepped over a coal bucket. The vibrations of the shock caused the Court House bell to ring for more than a minute. Among the chimneys down were James Weir's on Frederica, Clint Griffith's on Parrish and Tom Pettit's on Lewis Street, as well as the old Neal Hotel on East Main. The new home of the Haynes family on East Eighth Street had a plate glass window broken.

It was reported that the Rudd House "shook as in a cyclone" Two "drummers," thinking the wall about to fall, raised the windows and were about to jump across a twenty- five foot alley from the hotel to a building fronting on Main Street, but friends detained them. People "bustled"

from rooms in all stages of undress, alarmed by the shaking. A Mr. H.K. Cole, a guest at the hotel, had been in San Francisco six years earlier during an earthquake, but said he felt none as sharp as the one experienced here.

There are always good stories after an earthquake. The newspaper reported what they thought was the best one. It dealt with a maiden lady who "is fair, fat, and forty" who always looked under her bed for a man. When her bed began to shake, she jumped up and screamed "Come out from under there, sir. You needn't think I am afraid of you!"

Engine House No. 1 was also the scene of some confusion. When the quake started, Chief Gentry opened the trap door at the pole for light to get his boots. Another man thought the chief was going to a fire, and started to slide down the pole but never touched it. One man swore he heard the big gong and started to hitch a horse. John Bratcher was on watch and was trying to put more coal on the stove. He threw some at the opening, but missed it and scattered coal over the floor. He made another attempt, but failed, and just let the bucket fall. One man came down the pole head first. And after they had all run outside, the firemen noticed that no one had dressed!

Theodore Roosevelt was in the White House and making waves as a Trust Buster in the Northern Securities Case when on August 21, 1905, a different kind of wave struck Owensboro from a northerly direction. At 11:08 p.m. there was a "distinct earthquake shock" followed by a lesser shock. There were reports from Henderson and Evansville as well. As usual the shocks were more noticable to people on upper floors of buildings. Windows rattled, telephone exchanges were affected temporarily and a flock of pigeons roosting under the Court House eaves flew away in bewilderment.

The quake seemed to be exceptionally strong a few miles from Owensboro on the Leitchfield Road, close to the location of the Rough Creek fault system. J.C. Bratcher, four miles out, reported that china and glassware were toppled over and broken in his house.

The next major earthquake to jostle the area occurred during the roaring twenties - on March 1, 1925. The newspaper headline read: "Country is Shaken From New England to Mississippi River." The tremors lasted up to two minutes in some places, and the motion was felt from Ontario to Wheeling, West Virginia, and Richmond, Virginia. Virtually every major city in the northeast was affected - New York, Chicago, Philadelphia, Washington, Pittsburgh, Cleveland, Boston and Detroit.

In Detroit the swaying of buildings was obvious as people rushed into the streets, fleeing theatres, motion picture houses and other places of entertainment. Despite the widespread tremors, no motion was reported in Owensboro. The *Messenger's* Associated Press telegraph operator was receiving the report from Louisville when the shock there knocked the "sender" loose from the Louisvillian's table.

Shortly after 10 p.m. on Sunday, April 27, 1925, Owensboro was "rocked by the most severe earthquake in recent years." Many people thought a street car, truck, or train was causing the vibrations. This quake seemed to be centered in the Ohio River valley areas of Kentucky, Ohio and Indiana. It was also felt in Illinois. As usual the shock was most noticable at the telephone exchanges as it was reported that the Cumberland switchboard was "shimmying,"

On Phillips Court a woman thought a man was under her bed and screamed for her daughter, who also felt the quake in another room. One woman accused her husband of deliberately "shaking the bed," and threatened to hit him with a rolling pin (shades of Maggie and Jiggs!) if he did not go to sleep. A Louisville woman fired a gun at a window thinking the earthquake was a burgler. A crack appeared in the road at Henderson Ferry near Evansville.

The year 1925 proved to be an unsteady one, as an earthquake again struck Owensboro, this time on September 3, hitting the city while most people were still asleep, at 5:55 a.m. Once again the heavy rumbling sound was noted. It was said to resemble a loaded freight train much intensified. This quake was thought to be almost as severe as the August 31, 1886, quake in which "this section was rocked heavily and much damage done." (This was the quake which damaged Charleston, S.C. and is the intensity most predict for the near future.)

There were some reports of small bottles and containers toppling over, some plaster shaken from walls and ceilings, and cans and dishes rattled. All this occurred during a tremor which lasted only about thirty seconds.

Jim Staples, who lived near Sorgho, had just awakened his son and returned downstairs to his own room. When the tremor struck, he rushed down the hall thinking his son had fallen down the steps - the son rushed down the stairs thinking his father had met with an accident. They related that it sounded and felt as if someone was tearing the roof off the house.

Judge McFarland was concerned that his wife may have tripped over the children's toys left on the kitchen floor and hurt herself, when he heard the noise. When he reached her, she was trembling, expecting to hear the frightened cried of a child who might have fallen from bed and broken an arm.

At the Rudd Hotel a guest rushed from his room expecting a crowd, but finding none decided if the rest could stand it, so could he.

The 1886 quake had left a crack in the south wall of the Third Street School between Lewis and Crittentent Streets. It has been repaired, but was now re-opened by the quake.

According to some, the spring of 1925 earthquake was similar to the 1811-1812 quakes. But those who had observed both in that year felt that the September quake was heavier than the spring one. Large waves were noticed in the Ohio River by workmen at the government dam then under construction, where today English Park is located.

Throughout the area similar quakes were felt. Livermore and Calhoun reported tremors, as did Hartford, Madisonville, Paducah, Rockport, Evansville, and Cannelton. The trembling appeared to be going up the valley. No damage was reported, however.

Owensboro would go for 43 years before another noticeable earthquake would occur, this time on November 9, 1968 - the first for many residents. Just as the Veterans' Day parade was ending and downtown was full of Saturday shoppers, the earth began to move. A shock, lasting between fifteen and forty-five seconds, vibrated throughout the area causing concern and excitement, but not panic. Telephone service was disrupted in some areas. Gabe's Inn, then Owensboro's tallest building swayed visibly and water sloshed from the swimming pool located on the Inn's top floor. Everyone was ordered out of the pool, even though they had not felt the quake and did not know what was happening.

Some brick chimneys fell, and there were reports of rattling dishes and "loud, prolonged creaking of houses." Cans, jars, and other items fell from grocery store shelves into the aisles, and one grocer reported that although shoppers did not seem to panic, most hurried from the building. There were also reports of cracked walls in garages and small buildings.

The quake seemed to be centered in Southern Illinois, and shook more than one-third of the United States as it trembled across 19 states. It was felt from Michigan to Mississippi, from Nebraska to North Carolina. it was a 5.5 on the Richter Scale with a 6 being the usual damage level (i.e., when property damage can be expected), but in a built-up populated area a quake of less than Richter 6 can do substantial damage.

Apparently no injuries occurred in Owensboro, but in St Louis an 11-year-old boy suffered a concussion when a brick from a chimney at his home struck him on the head. There, windows cracked and some wires were broken. One local woman was on a ladder in her basement and was almost shaken off. Many people reported cabinet doors flying open, chandeliers swinging, and dishes rattling.

The last quake (so far!) to hit Owensboro was in 1974. It was only a slight tremor, enough to create some excitement but no obvious damage. But many homes in the Owensboro area have cracked basement walls, detaching mantles, cracked brickwork, and damaged plaster which may be the result of this or other past tremors.

The story goes on. We are waiting for another mild tremor about which we will have humorous tales to relate, or perhaps the expected and predicted catastrophic earthquake for which the government is now preparing. There are seismologists and disaster specialists who have said that such an event would be more immediately disastrous and disruptive than a nuclear war. Unlike 1811 or even 1925, we have vast communication, transportation and pipeline networks which could be devastated. More people, more tall buildings, more brick veneer and glass veneer buildings, more poorly- built structures will all add up to more casualties and more confusion.

Running somewhere beneath the surface of our streets and farms and rivers are sleeping giants which may arouse themselves and try to shake us off this fragile planet some day soon - until then this story must remain an unfinished history!



**Messenger-Inquirer, Owensboro, KY, 2 December 1990, pp.1A & 10A:**

tremendous quake of 1811 capped 'year of wonders'

By Glenn Hodges, Messenger-Inquirer

The great earthquakes of 1811-1812 on the New Madrid Fault in western Tennessee and Kentucky started shortly after 2 a.m. Monday, Dec. 16. They are considered the most severe in the recorded history of the North American continent.

Though there was no Richter scale in 1811, geologists believe the strongest quake then would have registered 8.3, compared with the 7.1 quake in the San Francisco Bay Area on Oct. 17, 1989.

Vivid descriptions of the New Madrid quakes can be found in the book "Jefferson's Nephews: A Frontier Tragedy" written by Boynton Merrill Jr. and in a study by Myron Fuller in the U.S. Geological Survey Bulletin in 1912.

The first of the shocks lasted 3 1/2 minutes. Tremors were felt from upper Canada to the Gulf of Mexico and from Boston to the Rocky Mountains. Twenty-seven shocks, all distinct and violent, were felt and counted before daylight on Dec. 16. They continued until Dec. 21 and were repeated with decreasing violence until the most severe of the series of shocks occurred on Feb. 7, 1812. Small periodic shocks continued for a year thereafter.

When the quake began, people in that region "were suddenly awakened by groaning, creaking and cracking of the timbers of houses and cabins in which they were sleeping; by the rattle of falling furniture and the crash of falling chimneys," Fuller reported. ". . . Daylight brought little improvement to the situation, for early in the morning, another shock, preceded by a low

rumbling fully as severe as the first, was experienced. The ground rose and fell as earth waves, like the long, low swell of the sea . . . ."

Thousands of acres of land in Missouri, Arkansas and the far western parts of Tennessee and Kentucky sank 25 feet or more during the quake. Near those areas, the rivers ran backward forming lakes in the depressions in the earth. Reelfoot Lake in western Tennessee is the most well-known of these, but in Missouri and Arkansas a lake 50 miles long also was created.

Several phenomena accompanied the shocks, Merrill said. Settlers closest to the quake's activity heard roaring, whistling and hissing sounds.

During the daylight shocks, the atmosphere was darkened by smoke and fog that remained for hours after the vibrations quit. Vapors in the air smelled like brimstone and sulfurous decay, rising out of the fissures in the earth and contaminating the water so that it was unfit to use as far as 150 miles from the epicenter.

During the nighttime shocks, eerie lights and flashes were seen rising from the earth, like gas explosions or low-level lightning, Merrill wrote. Objects were "visible for considerable distances although there was no moon," he said.

Flatboatmen on the rivers were in the greatest danger of being casualties of the quake. "The writhings and distortions of the Mississippi River were almost beyond belief," Merrill said. "Above New Madrid the river bottom rose and formed a six-foot waterfall that stretched entirely across the river. Boats were swept over the barrier until it, in turn, was wiped away by the currents. Other boats were tossed about by waves that rose 30 feet above the normal water level. Sandbars were swallowed up by the river and riverbanks caved in. The clear water of the river changed to a reddish hue and was thick with mud thrown up from the bottom."

Trees on the banks waved and nodded without a wind before sliding into the river. Wide cracks opened in the earth on the shore.

Charles Latrobe, an eyewitness, was a passenger on the steamboat New Orleans about five miles west of Yellow Banks (Owensboro) when the earthquake began. The vessel, making its maiden voyage as the first steamboat to go down the Ohio, stopped at that point to refuel.

Settlers near the landing came to the river to ask the boat passengers if they had heard strange noises on the river. They said they had felt the earth tremble. A day or two later, those riding the New Orleans experienced the aftershocks as they went farther downriver toward the Mississippi.

The New Madrid earthquakes of 1811-1812 marked the end of a remarkable chain of events in a year known as "Annus Mirabilis" or "the wonderful 12 months."

"It was a year of portents so strange and unnatural that it was as though the very earth and sky were trying to give forewarning of impending doom," Merrill said.

In April 1811, a great comet appeared in the northern sky; a severe flood followed during the spring in the Ohio River bottomlands. Crop planting was delayed and an epidemic of sickness ensued, Merrill said. An intense heat wave and drought occurred in the summer. Tornadoes and hurricanes struck in the eastern section of the United States from Maine to Georgia. There was a total eclipse of the sun on Sept. 17.

In reaction to the bizarre nature of the year, wild animals in the forests were restless and behaved peculiarly, Merrill wrote. Tens of thousands of squirrels left their normal habitat in the North and were seen moving to the South, many of them drowning in the Ohio River, which lay in their path. At the same time, settlers were amazed at the massive numbers of passenger pigeons that stopped to feed in the Ohio Valley. The birds ate tons of mast in the forest, stayed until the food was gone and then moved on to other parts of the country.



The earthquake and other unusual events stunned the people in Kentucky and Tennessee. Many thought this was a warning that God was returning to earth, or that it was a prelude to the end of the world.



**Messenger-Inquirer, Owensboro, KY, 5 April 2001, pp.1B & 3B:**

## 1811 was an odd year in the Ohio Valley

By Keith Lawrence, Messenger-Inquirer

It's 1811. You're living in a tiny settlement called Yellow Banks that will one day become Owensboro.

And it's starting to look like the end of time.

Back in the spring, the Ohio River surged out of its banks. Then, it seemed like everybody was sick for miles around.

And suddenly, every squirrel in America went crazy.

Tens of thousands of squirrels stampeded from the north in a sudden frenzy to migrate south, swimming the Ohio River in a mass migration the likes of which hadn't been seen before - or since.

If that wasn't strange enough, a comet appeared in the night sky. It was big enough that folks watched and worried about it each night.

Then, in December, you hear a noise that sounds like the comet fell in the river. You rush down to the river to have a look. And there before you is the strangest boat you've seen, belching fire and steam.

And then, a couple of days later, the very earth itself seems to be trying to shake humanity from the planet.

Well, you can imagine the fear that walked the land that winter.

In 1832, Charles Joseph Latrobe, a 31-year-old British travel writer, penned what some historians call the best account of the 1811-12 voyage of the New Orleans, the first steamboat on the Ohio and Mississippi rivers.

You can find a copy of it at [www.myoutbox.net/nr1836.htm](http://www.myoutbox.net/nr1836.htm).

Latrobe was the cousin of Lydia Mary Latrobe Roosevelt, who made that first steamboat trip with her husband, Nicholas Roosevelt - and gave birth during the voyage.

In October 1811, the New Orleans pulled out of Pittsburgh with the Roosevelts, their first child, an engineer, a pilot, "six hands and a few domestics."

Roosevelt had earlier discovered two coal beds along the river and planned to stop at each to dig coal to power the boat, Latrobe writes.

Daviess County legend has always said that one of those coal beds was in the Bon Harbor hills west of Owensboro.

But Latrobe says it was in what is now Spencer County, Ind.

"When they arrived about five miles above the Yellow Banks," he writes, "they moored the boat opposite to the first vein of coal, which was on the Indiana side."

While the New Orleans was loading coal, Latrobe says, the crew was "accosted in great alarm by the squatters in the neighbourhood, who inquired if they had not heard strange noises on

the river and in the woods in the course of the preceding day, and perceived the shores shake; insisting that they had repeatedly felt the earth tremble."

The next day, the steamboat headed west.

"The weather was observed to be oppressively hot (it was early December); the air misty, still, and dull; and though the sun was visible, like a glowing ball of copper, his rays hardly shed more than a mournful twilight on the surface of the water," Latrobe writes.

That night, he says, as the Roosevelts sat on deck, they "heard a rushing sound and violent splash, and saw large portions of the shore tearing away from the land and falling into the river."

The comet, Latrobe says, "had disappeared about this time, which circumstance was noticed with awe by the crew."

He adds, "The second day after their leaving the Yellow Banks ... the portentous signs of this terrible natural convulsion continued and increased. The pilot, alarmed and confused, affirmed that he was lost, as he found the channel everywhere altered; and where he had hitherto known deep water there lay numberless trees with their roots upwards.

"The trees were seen waving and nodding on the bank, without a wind; but the adventurers had no choice but to continue their route."

The next morning, the crew discovered that they were near the junction of the Ohio and Mississippi rivers.

"About noon that day, they reached the small town of New Madrid, (Mo.) on the right bank of the Mississippi. Here they found the inhabitants in the greatest distress and consternation; part of the population had fled in terror to the higher grounds, others prayed to be taken on board, as the earth was opening in fissures on every side, and their houses hourly falling around them," Latrobe writes.

He was describing the Great Earthquake of 1811-12. It began Dec. 16, 1811, and aftershocks continued until Feb. 7, 1812 - 53 days later.

On Jan. 10, 1812, the New Orleans finally docked in the city for which it was named.



**Messenger-Inquirer, Owensboro, KY, 26 October 2005, p.7A:**

The dangers of New Madrid fault are far too serious to ignore

By Ron Logsdon

"Civilization exists by geologic consent, subject to change without notice." – Will Durant  
Mankind does indeed live on this planet at the whim of natural forces well beyond human control. The recent destruction in the Gulf and the Kashmir Valley are proof enough of our vulnerability.

Because of its proximity to America's most dangerous earthquake zone, the Ohio Valley may well be among the most imperiled places in America. We live within 150 miles of the treacherous New Madrid fault.

Scientists believe that the New Madrid fault resulted from a near break in the North American tectonic plate eons ago. According to Simon Winchester's new book, "A Crack in the Edge of the World," this plate is still attempting to break in two and will someday actually do so, eventually creating two separate continents and a sea where we now live.

Patrick O'Driscoll, writing in USA Today on Aug. 8, said, "The sleeping giant of American earthquake faults, the New Madrid zone in the middle of the country may be showing new signs of activity." More than a hundred minor quakes occur in the New Madrid zone each year, and the U. S. Geological Survey says there's a 40 percent chance of a 6.0 quake within 35 years.

New Madrid is the center of two intersecting "X-like," or cross-shaped faults. One is its southwest-to-northeast fault, a side-by-side fault like the famous San Andreas; the other, a northwest-to-southeast cross-fault, is an upward thrusting fault. These faults lie deep beneath alluvial sediments that have built up over time.

The USGS describes New Madrid's deep bedrock as "very old, very cold, and hard," causing its quakes to travel some 20 times farther than a California quake. And the deep loamy soil atop the bedrock means that seismic waves of two types spread through the alluvium, much like waves in a sea, and amplify over hundreds of miles. Back and forth "P-waves" push and pull the earth, and side-to-side "S-waves" tend to create more of a shearing motion in the earth.

A farmer of the time described the earth's quivering appearance in an 1811-1812 earthquake as looking like "the flesh of a beef just killed."

During that winter, at least three massive earthquakes with a magnitude of 7.3 or greater occurred in the New Madrid zone. The worst one was on Feb. 7, 1812, and it may have reached a magnitude of 8.1 to 8.5. Mayhem reigned for five months, shocks were felt across more than a million square miles, and, in all, 1,874 quakes were recorded between Dec. 16 and March 15. That's the way earthquakes occur - seldom just one isolated quake, but large series and clusters of quakes.

New Madrid is said to have also produced severe activity around 900 AD and 1500 AD. The last major quake in the zone occurred in 1895. Major New Madrid quakes have occurred at spans of 600, 311 and 84 years. December will mark 194 years since the winter of 1811-1812. Does this mean we may now be "living dangerously" and due another episode?

Much like this past year, the "nightmare" winter of 1811-12 was preceded by spring floods and a strong hurricane season. Simon Winchester states, "... In the very different world of seismicity it seems ... that the past is the key to the present. And, of course, to the future." This is our call to preparedness. Right now, we are probably not prepared should a major earthquake reoccur.

Recent reports confirm that local officials are working together to create the unified command and communications structures to assure that this community does not compound a natural disaster with the kind of communications and information failures seen in the Gulf area. We should encourage and support them in that endeavor.

We, too, should get ourselves prepared. One of the best readily available sources on how we can prepare and respond when our next major earthquakes do occur can be found at the Central United States Earthquake Consortium's Web site at [www.cusec.org](http://www.cusec.org).

I'd recommend its 16-page prospectus, "Reducing the Risk: Earthquakes in the Central United States." That publication can be found at [www.cusec.org/Library/cusec/general/pubs/prospectus.pdf](http://www.cusec.org/Library/cusec/general/pubs/prospectus.pdf).

