

**Missouri Vs. Kentucky**

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**Court :** US Supreme Court

**Decided On :** 1870

**Appeal No. :** 78 U.S. 395

**Appellant :** Missouri

**Respondent :** Kentucky

**Judgement :**

Missouri v. Kentucky - 78 U.S. 395 (1870)

U.S. Supreme Court Missouri v. Kentucky, 78 U.S. 11 Wall. 395 395 (1870)

**Missouri v. Kentucky**

**78 U.S. (11 Wall.) 395**

*ORIGINAL*

## **SYLLABUS**

1. On a question of the exact ancient course of a river in a wild region of our country, maps made by early explorers being but hearsay evidence, so far as they relate to facts within the memory of witnesses -- *ex. gr.* since A.D. 1800 -- are not to control the regularly given testimony of such persons.

2. It seems that the old maps (those *ex. gr.* prior to A.D. 1800), indicative of the physics and hydraulics of the Mississippi are not greatly to be relied on.

3. Wolf Island, in the Mississippi River, about twenty miles below the mouth of the Ohio, is part of the State of Kentucky, and not part of the State of Missouri. This fact settled by the testimony of witnesses as to which state exercised jurisdiction, as to where the middle of the main channel of the Mississippi River had been when the boundary between the states was fixed, by the character of the sod and trees of the island as compared with the soil and trees of Missouri and Kentucky, respectively, and by the natural changes produced in the course of the current by the physics and hydraulics of the river since the time mentioned as generally and specifically shown.

The State of Missouri brought here, in February, 1859, her original bill against the State of Kentucky, the purpose of the bill being to ascertain and establish by a decree of this Court the boundary between the two states at a point on the Mississippi River known as Wolf Island, which is about twenty miles below the mouth of the Ohio. The State of Missouri insisted that the island was a part of her territory, while the State of Kentucky asserted the contrary. The bill alleged that both states were bounded at that point by the main channel of the river, and that the island, at the

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time the boundaries were fixed, was and is on the Missouri side of said channel.

The answer stated that Kentucky, formed out of territory originally embraced within the State of Virginia, was admitted into the Union on the 1st day of June, 1792, and that she had always claimed her boundary on the Mississippi to the middle of the river, and Wolf Island to be within her jurisdiction and limits as derived from Virginia, a part of Hickman County, one of the counties of Kentucky, opposite to which it lay. And it denied that the island belonged to Missouri or that the main channel was on the eastern side of it when the boundaries of the states were fixed.

An immense amount of testimony, derived from maps as ancient as the earliest well known navigation of the river; from the journals of ancient and later travelers; from official and *quasi*- official surveys &c.;, was introduced by the counsel of both sides, but more especially by those of Missouri, to show where the main channel had been and was -- whether on the east or on the west of the island -- in 1763, where the boundary between France and England, then owners respectively of the regions now known as Missouri and Kentucky, and more particularly where it was in 1783, when by our treaty of peace with Great Britain we succeeded to the rights of that government; and also where it was in 1820, when Missouri, part of the territory acquired from France, was admitted into the Union, the middle of the main channel of the river confessedly having been fixed in all these cases as the boundary. The depositions of many witnesses on both sides, particularly on the defendant's, were also read, testifying as to where within the memory of man the channel in dispute had been.

The witnesses of the complainant -- to give the case of Missouri more particularly -- stated that from the present time back to 1830, the main channel of the river was on the east side of the island, and that from 1830 as far back as 1794, both channels were navigable. They admitted that from 1832 to the present time, the eastern channel had been chiefly used for navigation.

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The early maps and charts of the river, introduced by the State of Missouri, laid down the island as nearly in the middle of the river, but the larger portion of it west of the middle line. Amongst these were the map of Lieutenant Ross, of the British army, made in 1765 in an expedition from Fort Chartres to New Orleans; the map of Captain Philip Pittman, published in London in 1770; the map of General Collot in 1796; Hutchins's map in 1778; and Luke Munsell's map of Kentucky, made in 1818.

Extracts from the books of early travelers stated their passage down the river on the east side; among these books were the travels of Ashe in 1806, and of Sir

Francis Baily in 1796.

The Pittsburg Navigator, in several editions from 1806 to 1818, was relied on, stating the channel to be on both sides, but best on the east side.

Reliance was had, too, on certain official or *quasi*- official maps of the federal government. An official map, made in 1821 by the United States Engineers' Department, under an Act of Congress of April 14, 1820, and a United States Survey and Report, made in 1838 by the Land Department, with official computation, showed the area of the cross-section of the east channel to be 31,020.33 square feet, and of the west channel to be 18,625.71, and the mean velocity of the east channel to be 3.72 feet per second, and of the west channel to be 2.79 feet, and giving the gallons discharged by the east channel per second as 115,395, and of the west channel 51,965, being less than one-half on the west side; and also the greatest depth of water on the east side as being 23 feet against 22 1/2. General Barnard's apparently official map of 1821 was relied on as laying down the channel on the east side; as also the United States Coast Survey map, of 1864, presenting it in the same way. The island, it seemed, had been surveyed by the United States, in March, 1821, as part of Missouri, and in April, 1823, steps were taken to locate on it a New Madrid certificate for 600 arpents; and in August, 1834, a plot of the island was sent to the Register of the Land Office at Jackson, Missouri.

The State of Missouri relied also a good deal on the fact,

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which seemed to have been sufficiently proven, that in 1820 the Sheriff of New Madrid County (the county in Missouri opposite to the island), had executed process of the Missouri courts on the island against the only settler on it, one Hunter, and who entered upon it prior to 1803; and that one of the Missouri circuit court judges had once -- though when did not appear -- resided on the island.

Evidence introduced by Missouri tended to show that the first clear act of jurisdiction exercised by Kentucky was not earlier than 1826, and that it was only

in 1837, when her legislature passed an act for the sale of lands on the island and her people purchased under her title so offered, that Kentucky asserted open and exclusive ownership of the island.

The State of Kentucky, on its side, gave proof which was much of it in direct opposition to that presented by Missouri. It proved that land on the island was entered in the Virginia land office during the Revolutionary war; the state now known as Kentucky being then part of Virginia, and that in 1828, one of the courts of Kentucky exercised jurisdiction over the island in a matter of apprenticeship. Although it presented fewer evidences from ancient maps and books of travels than did the State of Missouri, it produced more living persons whose recollections came in support of its case. More than a score of witnesses, many of them ancient, including boatmen, navigators, and several persons who had lived from childhood close by the island, some opposite to it, and specially interested by their business to note on which side vessels sailed, all testified that while now the main channel of the river was to be regarded as on the east side of the island, it was undoubtedly and within their memory and knowledge not so formerly, but was on the west side; many of these witnesses going into details, and showing a positive and experimental knowledge on the subject upon which they spoke -- details of a sort that could not easily be invented and which, if not invented but true, tended to give the case to Kentucky.

The geology of the island and its sylvia were relied on by

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Kentucky and shown to be more coincident with its own soil and woods than with those of Missouri, the argument hence being that what was now an island was originally part of the mainland of Kentucky.

The counsel for Kentucky directed evidence yet more specially to the physical changes which the shores of the two states had undergone since the years 1763, 1783, and 1820. It was not denied by them that now and since 1820, the river on the east side of the island had become broad, deep, and navigable; the testimony

introduced by them being directed to show that this was the result of physical and hydraulic causes, working changes since the boundary had been fixed, some of the changes being the results of actual efforts of science to improve the channel, but others, immeasurably more operative, natural ones only; a continuation of those changes caused in the basin of the Mississippi, by the mighty rises to which the river is subject; estimated at such magnitude that men of science [ [Footnote 1](#) ] have considered that the river poured past even at this high point of it, at the rise in March, 1858, 1,130,000 cubic feet per second; at the rise in April of that year 1,260,000, and at the rise in the following June (continuing for several days), the immense volume of 1,475,000 of cubic feet per second, inundating cities, changing courses of the stream, and in former ages leaving far to the west of the present river course those crescent-shaped lakes, noted by Sir Charles Lyell and other geologists, plainly bends in the ancient channel. [ [Footnote 2](#) ]

These were causes, sufficient as the counsel of the State of Kentucky argued, to account for the change in the course of the channel, and the counsel produced a map known as H. G. Black's ( see it *infra*, p. [78 U. S. 409](#) ), showing how the eastern channel had been produced by recent mighty rushings of the river against the "iron banks," above the island, and which, while they were able to resist the current, threw it with a rebound to the Missouri side, but which, now yielding to the tremendous stream and being gradually washed away, let the whole force of the river come in a more direct and easy course.

The statement, in more detail, of this great body of evidence, tending only to the establishment of facts, would serve no purpose of judicial science, and may be the more properly omitted by the reporter since in most of the details not already given, it is minutely presented by the learned Justice who gives, after stating it, the opinion of the Court as a result.

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MR. JUSTICE DAVIS delivered the opinion of the Court.

It is unnecessary, for the purposes of this suit, to consider whether, on general principles, the middle of the channel of a navigable river which divides coterminous states is not the true boundary between them, in the absence of express agreement to the contrary, because the treaty between France, Spain, and England, in February, 1763, stipulated that the middle of the River Mississippi should be the boundary between the British and the French territories on the continent of North America. And this line, established by the only sovereign powers at the time interested in the subject, has remained ever since as they settled it. It was recognized by the Treaty of Peace with Great Britain of 1783, and by different treaties since then, the last of which resulted in the acquisition of the Territory of Louisiana (embracing the country west of the Mississippi) by the United States in 1803. The boundaries of Missouri, when she was admitted into the Union as a state in 1820, were fixed on this basis, as were those of Arkansas in 1836. [ [Footnote 3](#) ] And Kentucky succeeded, in 1792, [ [Footnote 4](#) ] to the ancient right and possession of Virginia, which extended, by virtue of these treaties, to the middle of the bed of the Mississippi River. It follows, therefore, that if Wolf Island, in 1763, or in 1820, or at any intermediate period between these dates, was east of this line, the jurisdiction of Kentucky rightfully attached to it. If the river has subsequently turned its course, and now runs east of the island, the status of the parties to this controversy is not altered by it, for the channel which the river abandoned remains, as before, the boundary between the states, and the island does not, in consequence of this action of the water, change its owner. [ [Footnote 5](#) ]

That Virginia Claimed the ownership of the island as early as 1782 is very certain, for at that date the arable land on it was entered in the proper office of Virginia as vacant land lying within the territorial limits of the state, although it

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seems the entry was never surveyed or carried into a grant. And that Kentucky is now, and has been for many years prior to the commencement of this suit, in the actual and exclusive possession of the island, exercising the rights of sovereignty over it, is beyond dispute. The island lies opposite to and forms part of Hickman

County, one of the counties of the state, and the lands embraced in it were, in May, 1837, surveyed under state authority, and have since then been sold and conveyed to the purchasers by the same authority. The people residing on it have paid taxes and exercised the elective franchise according to the laws of the state. In 1851, a resident of the island was elected to represent the county in the General Assembly, and served in that capacity. And as early as 1828, a minor living there with one Samuel Scott was bound an apprentice to him by the proper court having jurisdiction of such subjects. This possession, fully established by acts like these, has never been disturbed. If Missouri has claimed the island to be within her boundaries, she has made no attempt to subject the people living there to her laws or to require of them the performance of any duty belonging to the citizens of a state. Nor has there been any effort on her part to occupy the island or to exercise jurisdiction over it. If there were proof that the island, by Legislation, had been included in the limits of New Madrid County, then the service of a writ in 1820 on the solitary settler there by the sheriff of the county would be an exercise of sovereign power on the part of the state. But in the absence of this proof, there is nothing to connect the state with the transaction or from which an inference can be drawn that the sheriff was authorized to go on the island with his process. And for the same reason it is hard to see how the fact, conceding it to be true, that a person occupying the position of a circuit judge of Missouri once lived on the island (when or how long we are not informed) tends to show that the state intended to take possession of it.

These things may prove that in the opinion of the judge and sheriff, the island belonged to Missouri, but they do not

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go further and put the state in any better position than she was if they had not occurred. And so with the locator of the New Madrid Claim in 1821. He doubtless believed he had authority to locate his warrant on the island, but surely the state cannot claim that she acquired any right by this proceeding. There is therefore nothing in this record which shows that Kentucky has not maintained, for a long course of years, exclusive possession and jurisdiction over this territory and the

people who inhabit it. It remains to be seen whether she shall remain in possession and continue to exercise this jurisdiction or whether she shall give way to Missouri. The case is certainly not without its difficulties, but we think these difficulties can be removed by a fair examination of the testimony, and the right of the contestants properly determined.

The evidence to be considered consists of the testimony of living witnesses, the physical changes and indications at and above the island, and the maps and books produced by the complainant. In a controversy of this nature, where state pride is more or less involved, it is hardly to be expected that the witnesses would all agree in their testimony. And as this conflict does exist, it is necessary to consider the evidence somewhat in detail in order to justify the conclusions we have reached concerning it.

There are eight witnesses called for the complainant, who testify confidently that the main channel of the Mississippi River was always east of Wolf Island, and one of them (Swon), an experienced river man, who navigated the river from 1821 to 1851, in all stages of water, says there are no indications that the main channel was ever on the west side. Only three of them knew the river prior to 1820, and they were engaged in the business of flatboating, which is hardly ever undertaken in a low stage of water. There is nothing to show that anyone of them ever made a personal examination of the channels and surrounding objects at this point, and there is a remarkable absence of facts to sustain their opinions. It is also noticeable in connection with this evidence that none of the witnesses (Hunter may be an exception)

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ever lived in the vicinity of the island or remained there any length of time, and that all the knowledge any of them acquired of the state of the river was obtained by passing up or down it at different times, either on flatboats or steamboats. Notwithstanding they swear positively that the channel was always east of the island, yet Watson says it changed for about three years, and Ranney testifies that on one occasion, when the main channel was divided into three parts, the deepest

water for a short time in the fall of the year was found on the west of the island, and steamboats passed on that side. But they do not prove a deficiency of water at any time in the Missouri channel, or that any boat, from that or any other cause, was ever hindered in any attempt to run it. It is undoubtedly true that the Kentucky channel, when the river was full, for many years has afforded a safe passage for boats, because at such a time, if the obstructions were not submerged, they could be avoided, and navigators would take it, as it was five miles the shortest. And passing the river only occasionally, and without any knowledge of where the volume of water flowed when the river was low, they would naturally conclude it was the main channel. It is equally true that now it is the main highway for the business of the river, but the point to be determined is was it so as far back as 1763, or even 1820? If in the investigation of such an inquiry positive certainty is not attainable, yet the evidence furnished by the defendant affords a reasonable solution of it. And at any rate it greatly outweighs the evidence on the other side, and in such a case the party in possession has the better right. The proof on behalf of the defendant consists of the testimony of twenty-seven witnesses. Many of them have been acquainted with the river from an early period in this century, and quite a number have spent their lives near the disputed territory, and, therefore had better opportunities for observing the condition of the river at this point than the witnesses for the complainant, who only passed there occasionally. Nearly all of them are old men, and there is no diversity of opinion between them concerning the location

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of the main channel of the Mississippi River at Wolf Island. All who testify on the subject -- there are only a few who do not -- agree that until a comparatively recent period, it ran west of the island, and to fortify their opinions they describe the state of the respective channels at different times and tell what was done by themselves or others about the navigation of the river. They concur in saying that in early times it was difficult for flatboats, even in the highest stage of water, to get into the Kentucky chute, owing to the current running towards the Missouri side, and that if they succeeded in doing it, the navigation was obstructed on account of the

narrow and crooked condition of the stream, which was filled with tow-heads, sand-bars, driftwood, and rack-heaps. One of the witnesses, in describing the appearance of this chute in 1804, states that it looked like lowlands, with cottonwood and cypress on it, and that there was only a narrow channel close to the island; all the other space to the Kentucky shore, now open water, was then covered with large cottonwood timber.

Other witnesses corroborate this testimony and unite in saying that in early times, at an ordinary stage of water, it was impossible to take the Kentucky channel at all on account of these obstructions, while the Missouri channel was wide, deep, and unobstructed. And one of them expresses the opinion that in low water, anyone could have got to the island from the Kentucky shore without wetting his feet by crossing the small streams on the drift-wood. But we are not left to conjecture on this point, for Ramsey, an old inhabitant of the country, swears that on one occasion he walked over from the Kentucky side to the island, nearly all the way on dry land, and the residue on drift-wood, and noticed while on the island that there was plenty of water in the Missouri channel.

Can it be possible that such a stream at this time was the main channel of the Mississippi River? Although the Kentucky channel, from natural causes, had improved in 1825, still in the low water of that year it did not have a depth of over two and a half feet nor a width exceeding one hundred

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and fifty yards, while steamboats passed through the Missouri channel without any difficulty. The witness who testifies to this state of things, at that time, had his attention especially called to the subject as he kept a woodyard on the Kentucky side opposite the island, and missed the opportunity of supplying boats that ran the Missouri channel.

And there is no one who speaks of a scarcity of water in the Missouri channel until after Captain Shreve operated in this locality with his snag boats, which had the effect of opening and deepening the Kentucky channel, so that it has now become

the navigable stream. Judge Underwood says that in 1820 the west channel was between four and five hundred yards wider than the east one, and must have discharged nearly double the quantity of water. And one witness testifies that the east channel was formerly so narrow that two steamers could not pass in it abreast. It would seem, therefore, that the condition of this channel, as told by these witnesses, was proof enough that the main channel was west of the island; but this is not all the proof on the subject. Russell, who was appointed superintendent of river improvements in 1842 and knew the island since 1814 and spent five months there in 1819, swears that in descending the river in 1830 or 1831, he sounded the Kentucky channel, and, not finding water enough in it by two or three feet to float his boat, was compelled to go down on the Missouri side, where there was nine or ten feet of water. To the same effect is the evidence of Holton, who in 1828, being unable to get up the east channel with a steamer drawing upwards of six feet of water, went over to the Missouri side and passed through without any trouble. And three years later Peebles saw three or four steamers attempt to run up the Kentucky channel, and failing to get through, back out and easily ascend the other. Christopher, who ran the river from 1824 to 1861, on one occasion could not pass the bar at the foot of the Kentucky chute with a boat drawing twelve feet of water, and was compelled to change to the other side, and got up without any difficulty, and there are other witnesses who testify to the inability of boats to

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pass east of the island, and to their safe passage west of it. Indeed, the concurrent testimony of all the persons engaged in the navigation of the river is that they could never safely go east of the island unless in high water, and that they uniformly took the west channel in dry seasons, and the flatboatmen, in early times, even in high water, were frequently compelled to uncouple their boats in order to descend the Kentucky channel, and then were obliged to pull through by trees, on account of the narrowness of the channel. In low water, they would quite often get aground and have to wait for a rise of the river to take them out. It will readily be seen that this class of men would naturally take risks in order to save

five miles of navigation. Moseby, who has lived in the vicinity for forty-two years, testifies to the greater volume of water in the Missouri channel and to boats usually taking it, and all the witnesses agree that since they knew the river, the chutes around the island have undergone great changes, and that the east one is now, in depth, width, and freedom from obstructions, wholly unlike what it was formerly. In this state of proof, how can it be successfully contended that Missouri has any just claim to the island?

But there is additional proof growing out of certain physical facts connected with this locality which we will proceed to consider. Islands are formed in the Mississippi River by accretions produced by the deposit at a particular place of the soil and sand constantly floating in it, and by the river cutting a new channel through the mainland on one or the other of its shores. The inquiry naturally suggests itself of which class is Wolf Island? If the latter, then the further inquiry whether it was detached from Missouri or Kentucky. The evidence applicable to this subject tends strongly to show that the island is not the result of accretions, but was once a part of the mainland of Kentucky. Islands formed by accretions are, in river phraseology, called made land, while those produced by the other process necessarily are of primitive formation. It is easy to distinguish them on account of the difference in their soil and timber.

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It has been found by observation and experience that primitive soil produces trees chiefly of the hardwood varieties, while the timber growing on land of secondary formation -- the effect of accretions -- is principally cottonwood. Wolf Island is of large area, containing about fifteen thousand acres of land, and, with the exception of some narrow accretions on its shores, is primitive land, and has the primitive forest growing on it.

On the high land of the island there are the largest poplar, chincapin, oak, and black-jack trees growing, and primitive soil only has the constituent elements to produce such timber. But this is not all, for trees of like kind and size are found on

the Kentucky side on what is called the second bottom, near the foot of the Iron Banks, which is about two feet higher than the bottom on which Columbus is located. There are no such trees on the Missouri shore. Those found there are of a different kind and much smaller growth. Besides this, the high land on the island is on the same level with the second bottom on the Kentucky side, while it is four or five feet higher than the land on the Missouri side opposite the island and above it. In this State of the case, it would seem clear that this second bottom and island were once parts of the same table of land, and at some remote period were separated by the formation of the east channel. In the nature of things it is impossible to tell when this occurred, nor is it necessary to decide that question, for, by the memory of living witnesses we are enabled to determine that the east channel, or cut-off, as it should be called, was not the main channel down to 1820.

If the testimony already noticed be not enough to prove this, there is the additional evidence furnished by the changes which the river has accomplished in the neighborhood of the island, within the recollection of many intelligent persons. These changes are important, and are shown on the map of H. G. Black (on the opposite page), which is proved to be a correct representation both of the present and original position of the island, the river, and its banks. The effect of the evidence on this subject is that the filling

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up at the mouth of Town Creek, the washing away of the point above on the Missouri side, the abrasion of the Iron Banks, and the partial destruction of Toney's Point, have operated to straighten the banks above the island on the Kentucky side, to bring the water closer to them, and, as a consequence, to cast it into the east channel. And that before these projecting points were removed and the accretions made at Town Creek, the water was thrown towards the Missouri

side. This was necessarily so, as can readily be seen by an inspection of the map. In the original condition of the river, the current must have been carried from the Missouri point to the Iron Banks opposite, and rebounded from them across to the Missouri side, so as to carry the channel west of Wolf Island. And it is equally clear that the changes which have occurred within this century have straightened the river and turned the channel to the east of the island. Can there be any need of further evidence to sustain the long-continued possession of Kentucky to the island, and are not the witnesses, who swear that in their time the main channel of the Mississippi River ran west of Wolf Island, abundantly fortified?

But it is said the maps of the early explorers of the river and the reports of travelers, prove the channel always to have been east of the island. The answer to this is that evidence of this character is mere hearsay as to facts within the memory of witnesses, and if this consideration does not exclude all the books and maps since 1800, it certainly renders them of little value in the determination of the question in dispute. If such evidence differs from that of living witnesses, based on facts, the latter is to be preferred. Can there be a doubt that it would be wrong in principle to dispossess a party of property on the mere statements -- not sworn to -- of travelers and explorers when living witnesses, testifying under oath and subject to cross-examination, and the physical facts of the case, contradict them?

But it is claimed the books and maps which antedate human testimony, establish the right of Missouri to this island. If this be so, there is recent authority for saying they are

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unreliable. In 1861, Captain Humphreys and Lieutenant Abbott, of the Corps of Topographical Engineers, submitted to the proper bureau of the War Department a report based on actual surveys and investigations upon the physics and hydraulics of the Mississippi River, which they were directed to make by Congress. In speaking on the subject of the changes in the river, [ [Footnote 6](#) ] they say:

"These changes have been constantly going on since the settlement of the country, but the old maps and records are so defective that it is impossible to determine much about those which occurred prior to 1800."

In the face of this report, authorized by the government and prepared with great learning and industry, how can we allow the books and maps published prior to this century to have any weight in the decision of this controversy?

Without pursuing the investigation further, on full consideration of all the evidence in the case, we are satisfied the State of Missouri has no just claim to the possession of Wolf Island.

It is therefore ordered that the bill be

*Dismissed.*

[ [Footnote 1](#) ]

See the report of Captain Humphreys and Lieutenant Abbott, of the Topographical Engineers of the United States upon the physics and hydraulics of the Mississippi River, made by order of Congress.

[ [Footnote 2](#) ]

See Lyell's Second Visit to the United States, vol. ii, pp. 248, 250. By way of illustrating the immense geological changes which the basin of the Mississippi has undergone in the course of time, a passage was quoted from Lyell's Principles of Geology (10th ed., vol. i, p. 462). The author is describing a cliff near the Gulf, which he examined in 1846, and which he says had been well described by Bartram, the botanist, sixty-nine years before, "a cliff continually undermined by the stream." He says:

"At the base of it, about forty feet above the level of the gulf, is buried a forest, with the stolls and roots in their natural position, and composed of such trees as now live in the swamps of the delta and alluvial plain. Above this buried forest the bluff rises to a height of about seventy-five feet, and affords a section of beds of river

sand, including trunks of trees and pieces of driftwood, and above the sand a brown clay. From the top of the cliff the ground slopes to a height of about two hundred feet above the sea. From this section we learn that there have been great movements and oscillations of level since the Mississippi began to form an alluvial plain and to drift down timber into it, and to bury under sand and sediment ancient forests. When the trees were buried, the ground was probably sinking, after which it must have been raised again, so as to allow the stream to cut through its old alluvium. The depth of this ancient fluviatile is seen to be no less than two hundred feet, without any signs of the bottom's being reached."

[ [Footnote 3](#) ]

3 Stat. at Large 545; 5 *id.* p. 50.

[ [Footnote 4](#) ]

1 *id.* 189.

[ [Footnote 5](#) ]

Heffter, *Du Droit International*, p. 143, 66; Caratheodery, *Du Droit International* 62.

[ [Footnote 6](#) ]

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