ARKANSAS LAND & CATTLE CO. *v.* ANDERSON-TULLY CO. ET AL

5-4896 452 S. W. 2d 632

Opinion delivered April 13, 1970

1. DISMISSAL & NONSUIT—LACK OF JURISDICTION AS GROUND—BURDEN OF PROOF.—Where a motion to dismiss depends upon the introduction of testimony, the burden of producing evidence to show lack of jurisdiction is upon the moving party.
2. EVIDENCE—EXPERTS—DETERMINATION OF COMPETENCY.—Determination whether an expert witness is sufficiently qualified lies within the sound judicial discretion of the trial judge, whose decision on appeal will be reversed only in extreme cases where there is manifest error or a clear abuse of discretion.
3. EVIDENCE—EXPERT TESTIMONY AS TO NAVIGABLE WATERS—COMPETENCY.—In cases where expert testimony is required, long familiarity with the river and knowledge from observation and experience as to river action on banks and formation of islands and bars may be sufficient to qualify a witness.
4. EVIDENCE—EXPERT TESTIMONY AS TO NAVIGABLE WATERS—COMPETENCY.—Testimony of appellant's expert *held* admissible where it could not be said his education, training, and experience were so deficient that permitting him to testify was manifest error or abuse of discretion, notwithstanding admission that his duties in regular employment had never included determination of the genesis of any channel of the Mississippi River or any geological studies.
5. NAVIGABLE WATERS—PRESUMPTION OF ACCRETION—OPERATION & EFFECT.—Any presumption of accretion as against avulsion operates only in the absence of countervailing evidence, and depends upon relationship between the intervening time lapse and distance of movement, and comparative general correspondence of locations and directions of the river.
6. APPEAL & ERROR—CHANCELLOR'S FINDINGS—REVIEW.—Chancellor's determination that no weight could be given to testimony pertaining to foresters' findings as to vegetation, its age and history because the testimony and interpretations given it were in such conflict as to be inconclusive, *held* not against the preponderance of the evidence.
7. NAVIGABLE WATERS—ACTION TO ESTABLISH TITLE TO ACCRETIONS—JURISDICTION.—Where movants failed to meet the burden of producing evidence to show want of jurisdiction because of appellees ownership of lands as accretions to its lands in Mississippi, and the evidence on this issue preponderated in favor of appellant, cause remanded for further proceedings.

Appeal from Chicot Chancery Court, *James Merritt,* Chancellor; reversed and remanded.

Drew & Holloway, for appellant.

Arnold, Hamilton & Streetman and *Dent, Ward, Martin & Terry,* Vicksburg, Miss., for appellees.

JOHN A. FOGLEMAN, Justice. Both appellant and appellee Anderson-Tully Company claim to be the owners of a tract of land usually referred to as Luna Bar. Appellant is the owner of Sections 9 and 16 in T 15 S, R 1 W and accretions in Chicot County, Arkansas. It claims that Luna Bar is within the boundaries of the tract owned by it, even though separated from appellant's other lands by a chute of the Mississippi River. It is appellant's contention that Luna Bar was separated from the Arkansas mainland by an avulsion, so that this land remained within the boundaries of the State of Arkansas, and, with any accretions thereto, the property of the appellant. On the other hand, Anderson-Tully Company claims ownership of these lands as accretions to its lands in Washington County, Mississippi, known as Carter Point or Woodstock, acquired by deed from C. W. Hunter Company in October 1962. It is the contention of appellees that portions of the lands within the original boundaries of appellant's lands were eroded away by the action of the Mississippi River so that the boundary between the States of Arkansas and Mississippi and appellant's boundaries shifted with the erosion. They also contended that Luna Bar actually consists of accretions to Carter Point in Mississippi.

Appellant instituted this action seeking to quiet its title and to enjoin appellees[1] from interference with appellant in the use and enjoyment of this land. Appellees moved to dismiss the complaint for want of jurisdiction over the lands, contending that they were in the State of Mississippi. The chancery court proceeded with extensive hearings upon the question of jurisdiction. This appeal was taken from the chancery

[1]Appellee Chicot Land Company asserts rights in the tract by virtue of an exclusive license for hunting and fishing dated August 18, 1964. Other parties are in the same position as Anderson-Tully so far as issues involved on this appeal are concerned.

court's dismissal of appellant's action for want of jurisdiction.[2]

We agree with the chancellor that the burden lay upon appellees to show want of jurisdiction over the lands by a preponderance of the evidence. The allegations of the complaint indicate that the land was in Chicot County, Arkansas, and that the court had jurisdiction. Where, as here, a motion to dismiss depends upon the introduction of testimony, the burden of producing evidence to show the lack of jurisdiction is upon the moving party. *Running* v. *Southwest Freight Lines, Inc.*, 227 Ark. 839, 303 S. W. 2d 578.

In order to meet their burden, it was incumbent upon appellees to show that the lands were formed as accretions to Carter Point. We do not agree that appellees met this burden.

The chancellor studiously recorded his findings in detail. These findings included the following:

1. The area occupied by Luna Bar was within the boundaries of Sections 9 and 16 owned by appellant when the United States Government Survey dated January 13, 1825, and certified June 18, 1823, was made.

2. Luna Bar appeared in the river sometime between the year 1862 and the years 1872—1874.

3. The thalweg, or sailing channel, of the Mississippi River lay west of Luna Bar for more than 40 years prior to 1961.

4. That the proof is insufficient to show that the Mississippi River "land jumped" and left Luna Bar isolated from appellant's lands re-

[2]The propriety of questioning subject matter jurisdiction by preliminary motion to dismiss rather than by answer, when a question of fact is involved, was not questioned in the lower court, even though it seems that substantially the same questions will be involved on trial on the merits.

maining in Sections 9 and 16 on the mainland.

5. That the thalweg or sailing channel west of Luna Bar existing from 1872/74-1935 came into existence by reason of erosion and accretion.

Appellant raises four points for reversal. Three of them have to do with the burden of proof and the conclusions to be drawn from the evidence. The first point is based upon the contention that the testimony of Austin B. Smith, an expert called by appellees, was erroneously admitted. It is argued that the witness lacked the necessary education, training and other qualifications to make his opinion evidence on the issues in the case admissible. Determination whether an expert witness is sufficiently qualified lies within the sound judicial discretion of the trial judge. *Ratton* v. *Busby,* 230 Ark. 667, 326 S. W. 2d 889. This court will only reverse the decision of a trial judge on this determination in extreme cases where there is manifest error or a clear abuse of this discretion. *Keeton* v. *Bozark,* 232 Ark. 588, 339 S. W. 2d 123; *Arkansas-Louisiana Gas Co.* v. *Maxey,* 245 Ark. 15, 430 S. W. 2d 866. We find no such abuse of discretion here.

Smith was a graduate in civil engineering from the University of Arkansas in 1930. He had 20 hours credit in geology. He is an employee of the United States Corps of Engineers, having been employed on a full-time basis by the Mississippi River Commission since 1935. His duties with the river commission have been connected with navigation and construction problems on the Mississippi River and its tributaries. He was responsible for navigation of the river during World War II. His present duties are in supervision of construction of dikes, abutments, dams and locks and of dredging in controlling the flow of the river. He is a member of the American Society of Civil Engineers, Mississippi Society of Professional Engineers, International Association of Navigation, Vicksburg Engineers Club, and a registered engineer in Louisiana and Mississippi. Although he had never made a geological

study for the Mississippi River Commission, he classified himself as "one of the foremost" potamologists. He stated that he had been engaged in studying land formations along the Mississippi River and its tributaries for the purpose of examining the genesis of these lands in private employment for 30 years. He had been employed in three court cases and worked privately in twelve without litigation. His private employment included 12 or 15 matters wherein the state boundary was a factor. He claimed to have written several papers dealing with the actions of the Mississippi River and to have been concerned with about 100 accretions in boundary problems dealing with the Mississippi, Arkansas and Red Rivers. He had been concerned with this particular reach of the river on three other occasions between 1954 and 1965. As a part of his duties connected with navigation, he had experience in determining the deepest part of the river for safe navigation. Although the witness admitted that his duties in his regular employment had never included the determination of the genesis of any channel of the Mississippi River or any geological studies, we cannot say that the education, training and experience of the witness were so deficient that permitting him to testify was manifest error or an abuse of discretion. If expert testimony is required, long familiarity with the river and knowledge from observation and experience as to river action on banks and formation of islands and bars may be sufficient to qualify a witness. *Mallory* v. *Brademyer,* 76 Ark. 538, 89 S. W. 551

We find ample testimonial support for the first two of the chancellor's findings listed above. As a matter of fact there seems to be little controversy on these points. Insofar as the other findings are concerned the critical question depends upon location of the river channel between 1861 and 1872/74 and the means by which any change of location was accomplished.

Appellees offered in addition to the testimony of Austin Smith that of Walter Guyer, chief forester for

Anderson-Tully Company, J. S. McKnight, a forester with the United States Forest Service, Captain Henry C. Muirhead, a river pilot, and J. C. Smith, caretaker for C. W. Hunter Company, predecessor in title to appellee. On the other hand, appellant offered the testimony of John W. Thompson, a forester in charge of Johns Manville - Mississippi Timber Lands near Natchez, Mississippi, James Spillers, a geologist and T. S. Dabney, a licensed engineer.

Appellees contend that they have clearly shown that the tract involved was formed by accretion to Carter Point. They argue that the physical location of the river and the peninsula called Carter Point in 1962 as compared with their appearance in 1841 gives rise to a presumption that the Arkansas bank gradually eroded and the land formed by accretion to the Carter Point peninsula. In the case relied upon by them, however, it is pointed out that this presumption operates only in the absence of countervailing evidence. See *United States Gypsum Company* v. *Reynolds,* 196 Miss. 644, 18 So. 2d 448 (1944). It also depends upon other factors such as the relationship between the intervening time lapse and the distance of movement, and the comparative general correspondence of locations and directions of the river. Under the evidence here, we do not deem this presumption to be controlling.

Our attention is called to the decision in *Anderson-Tully Company* v. *Dr. J. M. Walls,* 266 F. Supp. 804 (N. D. Miss. 1967), termed a companion case. We have not given any consideration to the decision in this case, principally because it appears obvious to us that there was considerable testimony before the Arkansas court, particularly the testimony of Spillers, that was not before the federal court.

An important element of the result reached by the trial court is its finding that until 1861 the thalweg or sailing channel of the Mississippi River was hard against the Arkansas mainland without regard to any land mass in the river. The river in the area in question

is referred to as Spanish Moss Bend. An 1841 edition of the Western Pilot, containing charts of the Mississippi River with directions for navigation, described the upstream entry of Spanish Moss Bend as being just south of Island 82. The preferred sailing channel around this island was to the left or east. The navigational directions suggested an incline toward the right shore after this island was passed coming downstream. Map No. 12 depicting this area shows the channel as being in the center of the stream between the Arkansas mainland and Carter Point after the suggested turn. At this time, at least, the thalweg was not hard against the Arkansas shore. The correctness of this finding may well depend on what is determined to constitute the Arkansas shoreline.

Lloyd's Map of the Lower Mississippi River published in 1862 shows that the sailing channel is hard against the Arkansas shore at the extreme south end of the Arkansas point opposite Island 82, but shows the channel in the center of the stream through Spanish Moss Bend. E. A. Douglas' 1872 Map of the Line of Levee from Gaines Landing to Luna designates this land formation as Luna Bar and does not show a connection with either shore. Luna Landing is shown by this map as being perhaps a mile south of the southernmost tip of the formation. The 1823 meander line was superimposed upon this Douglas map. The 1872 Arkansas bank is shown to be some 2,000 feet west of this meander line. A "state levee" running along the Arkansas shore from the north is shown as having terminated at the 1872 river bank opposite the north end of Luna Bar. A levee with a northern termination at the river bank virtually opposite the southernmost tip of the formation is also shown. The primary purpose of the Douglas survey was to determine the effect of floods upon levees.

Major Charles R. Suter, of the United States Corps of Engineers, mapped his reconnaissance of the Mississippi River in accordance with an Act of Congress of June 23, 1874. His map shows a land mass between

Carter Point and the Arkansas mainland. He shows this as a land mass virtually equidistant from the Arkansas and Mississippi banks. The designation of Spanish Moss Bend is placed between this formation and Carter Point. A town or landing called Luna is shown on the Arkansas mainland near the southernmost tip of this land mass.[3] The composition of the surface of the land mass appears to have been shown as sand.

Testimony concerning cypress stumps found in the water on the west of the island is of some significance. Thompson counted 205 annual rings on one sound stump. He described the stump next to it as being larger, but rotted out and fragmented. He testified that the stump from which he took the cross section grew in the spot where he found it and that appellees' theory that these stumps were from cypress trees which floated to the point they now are found where they were separated from the stumps which then sank into their present location was clearly erroneous. The appearance of at least two of these stumps in photographs introduced tends to lend support to Thompson's testimony rather than appellees' theory. Support for the statement of this witness is the appearance of a designation of "cypress knees" or other designation of "cypress stumps" or trees along the Arkansas shore near the mainland on several Mississippi River Commission charts exhibited. One of these shows cypress stumps along the Arkansas shore in 1894. These charts indicate that there were evidences of cypress stumps many years before 1940, when appellees claim they were left there. It is their theory that there was a custom of floating cypress trees downriver to a point where logs were cut and hauled away and stumps left standing upright at the river bank. J. C. Smith told of this practice and said that he first saw these stumps in 1940. Austin Smith testified that if his theory that the river channel moved by gradual migration, rather than by avulsion, is correct, these stumps could not have remained in their present posi-

[3]Other maps show both a landing and a community called "Luna" in proximity to each other.

tion. Captain Muirhead, a retired pilot of steam tugs and tenders on the Mississippi River, traced the sailing channel around Luna Bar or Towhead in 1933 and before the construction of Tarpley Cut-Off in 1935. He placed it between the Bar and the Arkansas mainland. While tracing the line on an exhibit, he commented as follows:

> "Now you will note as you got down to the foot of the towhead there, right in there was extremely deep water on both sides, but there was a lot of stumps in there and we always ran near the main shore to avoid those snags in there around the island or towhead."

Although Captain Muirhead said that the channel east of Luna Bar was too shallow to be used by steamboats except during excessively high water at any time from 1920 on, he said that there was never dry land between Luna Bar and Carter Point until the construction of Tarpley Cut-Off. The significance of this witness' saying that the channel *west* of Luna Bar had been called Linwood Bend, rather than Spanish Moss Bend, as it is now designated, is not to be overlooked, in view of Suter's location of Spanish Moss Bend east of the bar.

The testimony of James Spillers is impressive. He is a geologist with bachelor's and master's degrees, who has done some work toward a doctorate. He has many years of experience as a geologist, during which he has served as a part-time associate professor of geology at Mississippi Southern University. His major employment prior to 1963 was with an oil company. Since that time he has served as Chief Geologist in charge of the Engineering and Geological Division of the Louisiana State Mineral Board. He has worked in his profession in North Carolina, Texas, California, Louisiana, Mississippi and Alabama. Two-thirds of his career has been spent in evaluation of deep strata and geological structure, and the remainder in surface geology. He made a study of the origin and evolution

of the land mass in question. Spillers took borings by digging post holes in four different places. In one of them on the face of the eastern escarpment of an area he called province 1, he found permanent bench mark 168 H C of the United States Corps of Engineers, covered by four feet of colluvium, which he said had crept over the face of the cliff. In at least one sample from a boring on the mesa, Spillers found a lithology at corresponding elevations similar to that of a sample on the mainland in proximity to the community of Luna.[4]

Spillers divided the island into five physiographical areas, which he designated as "provinces." One of these was a high mesa-like area of about 200 acres, ranging from 135 feet elevation at the northern extremity to 120 feet at the south. This area lies wholly within the original lines of Sections 9 and 16, T 15 S, R 1 W of the original government survey in Arkansas. Significantly, the 1823 meander line of the river runs along the eastern escarpment. He found a distinct drainage pattern on this part of the island. His province 2 sloped gradually downward from No. 1 to the north and east. Province 3 lying north, east and west of province 2 was described by him as accretionary to No. 2. His province 4 lay east and west of Nos. 1, 2 and 3, and he characterized it as a series of accretionary materials. Province 5 consisted of the abandoned river channels east and west of the island. He found water running through the channel between the island and Carter Point.

By a study of survey maps and charts, Spillers demonstrated a relationship between the elevation of his physiographic province 1 and both the Arkansas and Mississippi mainland. From elevations shown on the various survey maps and charts exhibited he concluded that the formation had never been a low-lying island but was always a high mass. It appeared to him that the channel east of Luna Bar had remained in

[4]The weight of this testimony is diminished somewhat by the fact that Spillers only dug down a few feet in taking this sample and never returned for further borings. Austin Smith pointed out that others had made studies which would tend to contradict Spillers' conclusions.

essentially the same location since 1874. By a study of Mississippi River Commission charts showing the location of early river channels and a geological survey of ancient courses, he established that channel migration moved the point of the bar in a southwesterly direction prior to 1891-93 at the rate of 50 feet a year. By the same method, he noted that all channels had remained in relatively the same position after 1872-74. He referred to a monumental study of the river made for the Mississippi River Commission by a Dr. Fisk, whom he considered to be an eminent authority on Mississippi River geology and history.[5] This study was based in part upon 16,000 borings. It was made in 1944. Plate 22, Sheet 9, accompanying Dr. Fisk's report is a chart of historic and prehistoric river courses. A study of the legend accompanying this chart shows that the river channel never occupied the position now occupied by a part of the mesa area of Luna Bar for nearly 800 years. A map of early stream channels prepared in the office of the President of the Mississippi River Commission also indicates that the river channel never occupied this area, at least since 1765, which is the beginning point of the study. The indicated "indeterminate bank line" thereon places it east of this mass. According to Spillers, if Luna Bar had been accretions to the Carter Point peninsula, it should have had some slope in a westerly direction.

Spillers calculated that the changes that took place between 1861 and 1872-4 would require a dramatic migration of approximately 550 feet per year, more than five times the average migration of other bends in that reach of the river.

Spillers also recounted the history of flood intensity from 1862 to 1874.[6] He found that the flood of 1862 exceeded all previous gauge heights at Cairo, except during the year 1815 and that there was great de-

[5]Austin Smith obtained geological data from Dr. Fisk's report.

[6]Austin Smith testified that Luna Bar first appeared on a government survey in 1870.

struction of levees at all points below Cairo. The 1865 flood was noted for duration but was of less intensity than the one of 1868, which was classified as an extreme flood. An 1867 flood was characterized by almost unprecedented rapidity and height in rises, and by two crests two weeks apart. There were also floods in 1871 and 1874, the former having been classified as a great flood. Either of these floods, individually or coupled, according to Spillers, offered an opportunity for the river to have formed a new or alternate channel.[7] He concluded that when topographic, physiographic and lithological conditions, the 100-year minimum age of the mesa land mass, the comparison of migration of channels in other bendways, and the relative stability of the channels, both before 1861 and after 1874 are considered, the formation of Luna Island could only have been the result of an avulsion of the Mississippi River between 1862 and 1874 rather than of the gradual process of erosion and accretion, and that the island is a remnant of the Arkansas mainland to which there have been accretions.

The theory of Austin Smith is directly contrary to that of Spillers. He placed considerable emphasis upon the failure of any map or chart to indicate the presence

[7]The general rule is that the boundary follows the channel when the change is not sudden and violent. But there is a recognized exception. The boundary remains in the same place whenever a river changes its main channel, not by excavating, passing over and then filling the intervening place between the old and new channel, but by flowing around intervening land, which never becomes the main channel in the meantime, and the change from the old to the new channel is wrought over a period of years by the gradual or occasional increase of the proportion of the waters passing over the course which eventually becomes the new channel and a corresponding decrease in the waters flowing through the old channel until the greater part of the waters flow through the new channel. *Commissioners* v. *United States,* 270 F. 110 (8th Cir. 1920), dismissed for want of prosecution, 260 U. S. 753, 43 S. Ct. 14, 62 L. Ed. 497 (1922). See also *Uhlhorn* v. *United States Gypsum Co.,* 366 F. 2d 211 (8th Cir. 1966), cert. denied, 385 U. S. 1026, 87 S. Ct. 753, 17 L. Ed. 2d 674 (1967) wherein it is demonstrated that the "thalweg rule," governing state boundaries, requires that the boundary remain fixed, unless changed by the gradual and imperceptible process of erosion and accretion, even though the process by which the river seeks a new channel is not a true avulsion.

of vegetation on the island prior to a 1925 hydrographic survey made for the Mississippi River Commission. The same witness stated that this vegetation was destroyed in 1933. Spillers testified that vegetation in certain instances is sometimes removed by sand migration, by the effect of dunes and by the action of water and winds. The constant floods may have been an element in denuding all or a portion of this tract of vegetation. Spillers testified that scouring action of the river during floods tended to remove soil and trees from lands which were then submerged.

Another cardinal point in Smith's testimony is that the river could never have accommodated itself to the narrow distance between the 1833 meander line on Carter Point and edge of Luna Bar. Yet the 1939 Arkansas-Mississippi Quadrangle Map published by the United States Corps of Engineers and introduced through him shows the 1825 and 1833 meander lines of the river. These seem to place the river between these two points. It also appears that the width of the two channels is depicted as about the same by the Suter map, the 1894 Mississippi River hydrographic survey, and other maps and charts introduced.

Smith's lack of experience in determining genesis of land formations tends to detract from the weight to be given his testimony regardless of his expertise in river action. Smith's physical reconnaissance of the island also seems to have been rather cursory. On the other hand, Spillers spent six days on the island.

Considerable significance is accorded by both parties to findings of foresters as to vegetation, its age and history. We agree with the chancellor that no weight can be accorded to this testimony because it and the interpretations given it are in such conflict that it is inconclusive. It would not be possible to say, on the present record, that a chancellor's finding on this important factor was against the preponderance of the evidence. If the trial court's findings had rested on this factor, we could only affirm its decree.

At any rate, we find appellees did not meet their burden of proof and that the evidence on the question of jurisdiction preponderates in favor of appellant. The cause is remanded for further proceedings.

Appellees' motion to tax the cost of its supplemental abstract against appellant is granted.

CONLEY BYRD, Justice, dissenting. I disagree with the reliance upon the testimony of Spillers to reverse the trial court's finding.

The undisputed fact here is that the main chanel of the Mississippi River, until the Tarpley cut-off in 1935, was along the right descending bank of the river and had been along the right descending bank in the area of Spanish Moss Bend as long as records have been kept. Another undisputed fact is that the main channel of the river was west of Luna Bar according to the first maps that depicted its existence. It is also undisputed that in the years of 1879-80 the Mississippi River Commission caused its Chart No. 39 to be made under the supervision of First Lieutenant Smith S. Leach, U. S. A., and that on this chart Luna Bar is shown as a sand bar. Furthermore, the highway maps of both Mississippi and Arkansas indicated the boundaries between the two states as being in the main channel along the right descending bank of the Mississippi River until sometime after the Tarpley cut-off in 1935.

Austin Smith, a potomologist, testified that he began his study of the Spanish Moss Bend problem with an 1821 map (prepared by Young) that accompanied an 1822 report to Congress and that that map showed snags in the channel of the Mississippi River. (The purpose of the report was to improve navigation and snags were a menace to navigation.) He pointed out that for the river to have made a cut-off as described by Mr. Spillers, the new channel would have had to make a circuit around Luna Bar and back into the old channel at least three miles long and all of the silt, sand and vegetation would have to go in the

river. In all the studies he had made there was no indication of deposition of this large land mass downstream from Luna Bar. It was his opinion that if such a large amount of material had been deposited downstream, it would have been recorded and he was able to find no such record.

Mr. Smith pointed out that following the 1822 survey, the federal government began to remove snags and has continued that practice down to date of trial. According to an 1894 government survey the bore holes of Spillers, locating the cypress stump, would have been in the deepest part of the river channel when the 1894 survey was made. Smith's analysis of the charts and the information obtained by Spillers' bore was that the alluvium on Luna Bar was of recent origin and within the boundaries of the State of Mississippi.

Mr. Smith explained the presence of the cypress stumps because of the common practice on the river for dredges to pull logs from the river, cut away the timber portion of the tree and then drop the roots and stumps back in the river.

Mr. Spillers, in contending that the stumps had grown in place, admitted that when Exhibit 13 was overlaid on his Exhibit 42, the cypress stump would be close to the right descending bank in the river. According to Spillers, a concave bank caves in a slipoff manner—the river undercuts the bank and it slips in, letting the vegetation fall in the river. He stated that when caving occurs, he would expect a tree on the top to rotate and lean and that the cypress tree he found did lean (record 351 to 353). From the boring made, the age of the cypress stump, and the topography of the land Mr. Spillers concluded that the Mississippi did not cut and erode to its 1935 position but that it encircled Luna Bar leaving the land mass intact.

Mr. Spillers' opinion, based upon evidence that now appears, cannot be reconciled with the recorded observations of First Lieutenant Smith S. Leach in the

years 1879-80 to the effect that the area in question was a sand bar. Furthermore, his expectation that a tree on a caving concave bank would rotate and lean and remain in place shows to me that he knows nothing about a caving concave bank.

It is not the water that makes a bank cave into a river. It is the force and movement of the water, much like the modern air drill used by dentists, that cuts under the terra firma and through any root formations (and also pilings) that caves away the alluvium banks of our rivers. When the force and movement is such as to move the terra firma in that manner, it also moves away any vegetation, including the massive oak and cypress that abound on such streams. Who has observed a caving concave bank on the Mississippi with leaning stumps or trees along the edge of the water next to the concave bank? The answer is obvious, because all such banks are well and cleanly scoured.

Mr. Spillers' testimony does not preponderate against the trial court's finding for still another reason —*i. e.*, there is no record of an avulsion having occurred in this area even though all of the charts introduced and relied on by both sides show signs of civilization in the area in the nature of towns or communities carrying popular names. In this we must remember that the testimony here is that it would have taken a three mile cut into the Arkansas bank of the river for the river to have encircled Luna Bar and left it in place. In *Dartmouth College* v. *Rose,* 257 Iowa 533, 133 N. W. 2d 687 (1965), the Iowa court held:

> "There is a presumption of accretion as against an avulsion. . . .
>
> In addition to the presumption against the happening of an avulsion in the summer of 1937 as contended by the intervenor, no witness testified to such an event. We repeat what is said in *Bone* v. *May, supra,* 208 Iowa 1094, 1097; 'A sudden change of the course of the Missouri River, affecting 600 or more acres of land, would, we

> think, attract considerable attention. It is altogether likely that it would have been known by everybody living in that territory, for miles around.' "

Considerable force is added to the foregoing proposition since part of Spillers' hypothesis is that Luna Bar shows the remnants of an identifiable levee on the Arkansas side of the main channel of the river before the 1935 Tarpley cut-off.

For these reasons, I would affirm the trial court.

HARRIS, C. J. and HOLT, J. join in this dissent.