

## THE RED RIVER RAFT

By Norman W. Caldwell

One of the most fascinating chapters in the history of river transportation and its relation to the western regions is that which deals with the Red River raft. This great log jam, extending many miles along the course of the stream, was long an effective barrier to the navigation of the river and hence a formidable obstacle to the development of the Red River country. The purpose of this article is to discuss the origin of the raft and to give in summarized form the story of its conquest. Lack of space will necessitate that certain broader phases of the subject such as political implications be minimized.

The raft was undoubtedly of great age. A casual search of the records relating to the period of French occupancy reveals little mention of it.<sup>1</sup> We may assume that at that time it had already retreated above Natchitoches. The Spanish found the river clear at least that far north. The raft, evidently starting at the mouth of the river, as will be explained below, had progressed up stream until by 1833 its lower end was some four hundred miles from the Mississippi. As the obstruction grew and progressed up the river, it rotted away at its lower end and disintegrated, the river thus becoming clear again.<sup>2</sup> The raft was thus like a great serpent, always crawling upstream and forcing the river into new lateral channels.

In 1805 the obstruction is described as being about one hundred miles in length as measured by the course of the river. It was not a solid jam all the way, some places being comparatively free of drift.<sup>3</sup> The great age of the older parts of the drift had given rise to considerable vegetable growth, so that even large trees might be found growing on the raft, and in places one might even pass over the river itself without being aware of its presence.<sup>4</sup> There is some disagreement among writers as to the size of the raft. Farnham says it was only some forty miles long as against Dr. Sibley's esti-

<sup>1</sup> I have relied mostly upon maps in this case. A map by J. F. Broutin, dated probably in 1722, locates a small "Embaras Darbres" at Natchitoches, but indicates nothing below this point. Photostat in Karpinski Collection, Newberry Library, from original in the Bibliotheque de Service Hydrographique (No. C 4044-50) in Paris.

<sup>2</sup> *De Bow's Review*, XIX, 437-438. Due to the fact that it accumulated at the head faster than it disintegrated below, the raft actually became longer each year.

<sup>3</sup> Dr. John Sibley to General Henry Dearborn, April 10, 1805, *American State Papers, Indian Affairs*, I, 728.

<sup>4</sup> Dunbar and Hunter in *Am. State Papers, Indian Affairs*, I, 740. See also Timothy Flint, *Recollections of the Last Ten Years* (Boston, 1826), 331; Thomas J. Farnham, *Travels in the Great Western Prairies*, (London, 1843), volume I, as printed in Reuben Gold Thwaites, *Early Western Travels*, XXVIII, 114-115; *De Bow's Review*, XIX, 437. The latter source estimates the raft as being 400 years old. These sources all give good descriptions of the appearance of the raft. Dr. Grant Foreman's article entitled "River Navigation in the Early Southwest," *Mississippi Valley Historical Review*, XV, 34-35, gives a good secondary sketch.

mation of one hundred miles.<sup>6</sup> The government engineers estimated its length in 1833 at about one hundred and thirty miles.<sup>6</sup> The foot of the raft was then at Loggy Bayou, one hundred miles above Natchitoches, and the head at Hurricane Bluffs, fifty miles above Shreveport. The rate of growth of the raft is indicated by the fact that between 1843 and 1855 it is said to have advanced at its head some thirty miles.<sup>7</sup>

Concerning the origin of the raft, it seems generally agreed that the drift formations began at the mouth of the river as a result of a higher stage of water in the Mississippi, the waters of the lower Red River being at such times quiet or "backed up". Below Alexandria the Red River is naturally meandering and of slow current. Drift wood floating in such quiet water would accumulate into obstructions, such formations tending to "tighten" as the waters receded. Once established the raft continued to grow, the average yearly accumulations amounting to about one and a half miles of drift.<sup>8</sup> Since the Red River once emptied into the Gulf through the Atchafalaya, conditions were not always so favorable for drift accumulations on its lower course.<sup>9</sup> The phenomenal accumulation of drift can be explained in part by the fact that the river is subject to such rapid rises. One writer tells of experiencing a rain lasting thirty-one hours which caused the river to rise within that same period an equal number of feet! Such freshets naturally bring down much timber and drift.<sup>10</sup> As the raft grew the river was forced to seek new lateral channels, thus in time making a chain of lakes or bayous alongside that part of the river congested by the raft.<sup>11</sup>

That the raft was a formidable impediment to the navigation of the river cannot be doubted. The Long Expedition traversed the length of the raft only "after fourteen days of incessant fatigue, toil and danger, doubt and uncertainty. . ."<sup>12</sup> At that time the steamboat was making its appearance on western rivers, but the waters of Red River above the foot of the raft were considered

<sup>5</sup> Thwaites, *op. cit.*, 114-115. Farnham's estimation was of course only a conjecture.

<sup>6</sup> Extract from report of the Chief of Topographical Engineers to the Secretary of War, November 1, 1845, 29th. Cong., 1st. sess., Senate Documents, vol. iii, no. 26, p. 6; *De Bow's Review*, XIX, 438-439.

<sup>7</sup> *De Bow's Review*, XIX, 438-439.

<sup>8</sup> *Ibid.* See also *ibid.*, XXI, 280-281.

<sup>9</sup> *Ibid.* See also Dr. Joseph Paxton to Hon. A. H. Sevier, August 1, 1828, as quoted in the *Arkansas Gazette*, September 9, 1828. This writer estimated the age of the raft at 300 years, this assuming that the Red River had sought its present course into the Mississippi about that long ago.

<sup>10</sup> *Niles's Weekly Register*, July 12, 1817, XII, 320. The nature of the *hinterland* is also a factor, the heaviest rises being caused by freshets in the upper country which is less protected by vegetation.

<sup>11</sup> See Randolph B. Marcy, *Exploration of the Red River of Louisiana in 1852*, (Washington, 1854), 91.

<sup>12</sup> James's Account of S. H. Long's Expedition, 1819-1820, as printed in Thwaites, *Early Western Travels*, XVII, 70.

navigable only "for boats of three or four tons burthen."<sup>13</sup> Only small boats could be successfully moved through the raft area or around it by way of the almost equally difficult lateral bayous. The steamboat did, however, soon appear on the lower Red River. In 1820 the *Beaver* from New Orleans reached Natchitoches, and by 1825 there were seven steamboats in the lower Red River trade.<sup>14</sup> At this time it was hardly expected that steamboat navigation would ever be established through the raft.<sup>15</sup>

Nevertheless, it was inevitable that men's attention should be turned to the raft barrier. With the successful establishment of the Republic of Mexico, some began to wonder as to how effective the Red River might be as a barrier against a possible "powerful enemy" to the southward. That part of the river above the raft would certainly be a very poor line of defense.<sup>16</sup> The establishment of such military posts as Fort Jesup and Fort Towson gave needed protection to the Red River line, but at the same time, the problem of transportation to and from these posts became important. The War Department accordingly ordered a survey of the raft region in 1824,<sup>17</sup> and in the autumn of 1825 the Arkansas Territorial Legislature petitioned Congress to remove the raft "so that boats might ascend to the Kiamichi and the newly established Fort Towson."<sup>18</sup> At the same time General Thomas S. Jesup, the Quartermaster General, recommended the building of a road from Natchitoches to Fort Towson and thence to Fort Gibson on the Arkansas. Nevertheless, the General writes that he considered "the improvement of the navigation of the Red River a matter of first importance." He thought this work might be undertaken by the regular army troops at a small expense.<sup>19</sup> The attack upon the raft had begun.

Early in 1826 army engineers from Fort Jesup spent two months examining the raft. These gentlemen concluded that the raft could only be removed at great expense and advocated the clearing of a

<sup>13</sup> *Texas State Republican*, October 5, 1819, as quoted by Douglas C. McMurtrie, "The First Texas Newspaper," *The Southwestern Historical Quarterly*, XXXVI, 32.

<sup>14</sup> Foreman, *op. cit.*, 47. The first steamer on the Red River is said to have had her steam exhaust pipe leading out through the bow and terminating in the form of a serpent's head. As the boat progressed up the river under full steam, it was appropriately named *pinelore* or "the fire canoe" by the Choctaw Indians. Flaggs's note in Thwaites, *op. cit.*, XXVI, 64, n. 18.

<sup>15</sup> *Arkansas Gazette*, November 25, 1820. In this article the possibilities of the Red River lands are extolled, though no mention of the raft barrier is made. Some of the lands were already surveyed and the Editor writes that large settlements "are already formed upon it, within the limits of our territory." Fulton, Arkansas, was laid out about this time as an evidence of this optimism. Fulton lots were advertised for sale in the *Arkansas Gazette* for December 25, 1819.

<sup>16</sup> *Arkansas Gazette*, January 20, 1821, quoting the *Knoxville Register*.

<sup>17</sup> *Arkansas Gazette*, May 1, 1827.

<sup>18</sup> Foreman, *op. cit.*, 48.

<sup>19</sup> Brigadier General Thomas S. Jesup to Honorable James Barbour, Secretary of War, November 26, 1825, 19th. Cong., 1st. sess., Sen. Doc., vol. i, no. 2, B, p. 14.

navigable route through Soda Lake and the Bayou Pierre outlet, thus circumventing the raft.<sup>20</sup> The War Department after consideration of this report asked for an appropriation of \$25,000 to begin the work.<sup>21</sup> At the same time Congress authorized the construction of a military road from Fort Smith to Fort Towson and thence to Fort Jesup.<sup>22</sup>

Interest in the removal of the raft grew rapidly. One proposal from Arkansas would have constructed an artificial jam "at some suitable place near the back line of this Territory" to stop the growth of the raft below so that it could be removed and navigation made safe.<sup>23</sup> Another would have burned all the drift which was accessible at low water and in the dry season, thus reducing future accumulations.<sup>24</sup> The people grew impatient with a Congress which was slow to undertake the destruction of the monster.<sup>25</sup> Some of the merchants and farmers even took the matter into their own hands, employing "an intelligent and respectable young man" named Richard H. Finn to explore the raft and clear out a passage for boats. Several hundred dollars were spent by Finn and his men, who, however, made little impression on the raft.<sup>26</sup>

The army did some work on the raft in 1829-1830 after a second examination of the region, but the failure of Congress to continue appropriations brought operations to a standstill.<sup>27</sup> In the spring of 1831 the government moved considerable supplies to Fort Towson by flat boat in connection with the Choctaw immigration.<sup>28</sup> The expense and trouble involved in this undertaking were so great that interest in improving the Red River route grew. This is particularly

<sup>20</sup> *Arkansas Gazette*, April 11, 1826, quoting the *Natchitoches Courier*.

<sup>21</sup> Major General Alexander Macomb to Honorable James Barbour, January 3, 1827, in *Arkansas Gazette*, May 1, 1827.

<sup>22</sup> Quartermaster General's Report, October 31, 1827, 20th. Cong., 1st. sess., House Executive Documents, no. 2, C, vol. i, p. 74.

<sup>23</sup> Paxton to Sevier, August 1, 1828, in *Arkansas Gazette*, September 9, 1828.

<sup>24</sup> *Arkansas Gazette*, November 22, 1827, quoting the *Natchitoches Courier*.

<sup>25</sup> Dr. Paxton writes: "It must not be forgotten that the raft is not standing still, but it is gradually progressing upwards, like a destroying angel, spreading desolation over a most lovely country. . ." Paxton to Sevier, August 1, 1828 in the *Arkansas Gazette*, September 16, 1828. In 1828 Congress did appropriate \$25,000 for the Red River project. Statement of Appropriations, December 21, 1846, 29th. Cong., 2nd. sess., Sen. Doc., vol. ii, no. 44, p. 14.

<sup>26</sup> *Arkansas Gazette*, December 16, 1828.

<sup>27</sup> General C. Gratiot to Honorable John H. Eaton, November 18, 1828, 21st. Cong., 1st. sess., Sen. Ex. Doc., no. 1, vol. i, p. 76; Report of the Chief Engineer, November 4, 1831, 22nd. Cong., 1st. sess., House Ex. Doc., no. 2, vol. i, p. 83. The latter report indicates all work was suspended on account of lack of funds. Some fifty miles of the river had been improved, however. The suspension of work by the government caused a renewed impatience on the part of the Red River people, who even feared that the Red River might leave the Mississippi outlet entirely and resume its old route down the Atchafalaya. See Lois Garver, "Benjamin Rush Milam," *The Southwestern Historical Quarterly*, XXXVIII, no. 2, 120.

<sup>28</sup> Muriel H. Wright, "Early Navigation and Commerce Along the Arkansas and Red Rivers in Oklahoma," *Chronicles of Oklahoma*, VIII, 77.

related to the general program of Indian removal which the government was then undertaking.<sup>29</sup> Benjamin Rush Milam's feat of bringing the first steamboat through the raft in 1831 also did much to quicken interest in overcoming the barrier.<sup>30</sup>

Beginning with the \$20,000 appropriated in 1832, the federal government became formally committed to the removal of the raft and was to spend upon the project by 1841 the sum of \$425,800.<sup>31</sup> At first work had consisted only of trying to improve routes around the raft through the bayous. This plan was now abandoned, and an attempt was made to remove the raft itself. Experience gained by the engineers in work done on the Mississippi and Ohio rivers as well as improvement in the construction of "snag boats" seems to have prompted the change of policy. An advantage in removing the raft itself was to be found in that much waste land occupied by the bayous and lateral passes could be reclaimed.<sup>32</sup>

On April 11, 1833 Captain Henry M. Shreve of the army engineers arrived at the foot of the raft with four boats (including the snag boat *Archimedes*) and a force of 159 men. Work began at once, the process consisting of pulling the logs and stumps out of the raft, sawing them into sections, and floating them down the river. At first the current was so slight as to necessitate removing the debris to the banks or placing it in the bayous, but it soon increased sufficiently to carry away the timber. By the time the funds became exhausted, Shreve had cleared a path through seventy-one miles of the raft, or half its estimated length. The monster had been dealt a mighty blow, and despite the fact that the obstruction became more recent and accordingly more solid as one went up stream, the enterprising Shreve thought an additional sum of \$100,000 would

<sup>29</sup> Foreman, *op. cit.*, 49-50.

<sup>30</sup> Garver, *op. cit.*, 120-121; Foreman, *op. cit.*, 50. Two years later another small boat succeeded in accomplishing the feat.

<sup>31</sup> The appropriations for the raft work for the period from 1828 to 1841 are as follows:

1828 .....	\$25,000
1832 .....	\$20,000
1834 .....	\$50,000
1835 .....	\$50,000
1836 .....	\$70,800
1837 .....	\$65,000
1838 .....	\$70,000
1841 .....	\$75,000

Total.....\$425,800

Statement of Appropriations, December 26, 1846, 29th. Cong., 2nd. sess., Sen. Doc., vol. ii, no. 44, p. 14. Total federal appropriations for internal improvements rose from \$48,400 in 1806 to \$2,087,044.16 in 1838 and declined sharply for the next few years, amounting to only \$50,000 in 1845. The decline was due to the panic conditions existing after 1837 and to the political reaction under the Whigs. *Ibid.*, p. 24.

<sup>32</sup> Report of the Chief Engineer, November 13, 1832, 22nd. Cong., 2nd. sess., House Ex. Doc., no. 2, no. 3, vol. i, pp. 95-96.

suffice to complete the job.<sup>33</sup> The failure of Congress in 1833 to make another appropriation halted the work for a while, but upon the resumption of appropriations Shreve was able to return to the Red River in October, 1834.<sup>34</sup> Some work had to be done over the ground covered in 1833, but such rapid progress was made that by the spring of 1836 only nine miles of the raft remained. The work had now become so difficult, however, that Captain Shreve estimated four times as much labor was required to remove a mile of the obstruction as at first. A great part of the area cleared "had more the appearance of a forest than of a river." The fact was that Shreve's difficulties were so great that he foresaw the need of still larger sums of money in order to complete the work.<sup>35</sup>

Despite lurking dangers steamboats followed in the wake of Captain Shreve's snag boats, eager to exploit the trade of the upper region. By the spring of 1836 trips were being made as far up as Coates's Bluff, some 110 miles above the original foot of the raft. As early as 1834, 42,500 bales of cotton reached New Orleans from the Red River region, and in 1835 Fulton, Arkansas, made another bid for the future by advertising lots.<sup>36</sup>

<sup>33</sup> Report of Henry M. Shreve to General Gratiot, Chief Engineer, June 27, 1833, 23rd. Cong., 1st. sess., House Ex. Doc., no. 98. Shreve also made a map of the raft at this time. *Ibid.* See also *Arkansas Gazette*, June 19, 1833, quoting *Alexandria* (La.) *Gazette*, May 29, 1833.

<sup>34</sup> Annual report of operations from 1st. October, 1833 to 30th. October, 1834, 23rd. Cong., 2nd. sess., Sen. Doc., vol. i, p. 165.

<sup>35</sup> Low water was blamed for slow progress in 1835. *Arkansas Advocate*, May 15, 1835, quoting the *Arkansas Gazette*. In 1836 Shreve reported as follows: "The fact is, . . . the work is of such a nature as to make it almost impossible to judge of the amount of labor required to perform any portion of it until after it is done." *Niles's Register*, July 16, 1836, XL, 333. He also complained in 1836 of rising prices due to the inflation then existing. Then, too, much time was lost due to sickness, many of the men falling ill from working in the blazing sun, or exposure to mosquitoes. Shreve blamed the decaying vegetation for much of the illness. Report of July 6, 1836, 24th. Cong., Sen. Ex. Doc., vol. ii, no. 2, pp. 272-274. To the people of the Red River region Captain Shreve quickly became a hero. Shreve seems to have been eager to popularize his work. In 1834, for instance, he sent the snag boat *Archimedes* to Little Rock where she was inspected by the people at large, and where she gave a demonstration "of her astonishing powers, by grappling with and removing a large cottonwood tree, which has been lying nearly buried in the mud . . . near the shore." *Arkansas Gazette*, February 18, 1834. G. W. Featherstonehaugh, the English geologist, who was then visiting Arkansas, lauds the work of Captain Shreve in very high terms. Featherstonehaugh, *Excursion Through the Slave States* (2 vols., London, 1844), II, 194-198. See also the praises of Edmund Flagg, *The Far West* (New York, 1838) as quoted in Thwaites, *op. cit.*, XXVI, 93-94.

<sup>36</sup> *Arkansas Gazette*, October 13, 1834, quoting *Natchitoches* (La.) *Republican*; *Arkansas Gazette*, March 31, 1835. It would be an unjustified diversion to discuss here the dangers of early steamboat navigation, though something might be said on that subject. The worst Red River disaster in the early days was that of the *Lioness* which exploded on May 18, 1833 as she was proceeding to Natchitoches with a load of gunpowder, killing fifteen and injuring thirteen. James T. Lloyd, *Steamboat Directory and Disasters on Western Waters*, (Cincinnati, 1856), 85-87. Shreve mentions many others which were grounded or lost on snags. This was of course not a condition peculiar to the Red River alone, but was common to river

In anticipation of the opening of the raft immigrants poured into the region, their number being so great as to occasion an excessive rise in prices of provisions.<sup>37</sup> In the meantime the work of removing the rest of the raft progressed and in the spring of 1838 Captain Shreve was able to announce that he had cleared a way completely through the raft.<sup>38</sup> With the establishment of steamer traffic through the raft, contracts were offered for the carrying of the mails by boat. The raft was thus officially assumed to be dead.<sup>39</sup>

But the raft was not so easily conquered. By August, 1838, freshets had closed the route with new drifts and steamboat traffic above Shreveport was interrupted.<sup>40</sup> Captain Shreve himself had foreseen the necessity of greater improvements before the navigation of the river could be assured. In the report of 1838 he asked for and received a larger appropriation including a considerable sum

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transportation in general. Count Francesco Arese, an Italian nobleman who traveled on the Mississippi and other rivers in 1837, writes: "It is rather remarkable that from Louisville to St. Louis, a distance of five or six hundred miles, I saw at least 25 abandoned hulks. . . I was told that as a general rule forty or so ships every year strand themselves, burn, or blow up—an awful proportion of ten percent out of the 400 or 500 boats in the West. Most of them are stranded in shallows or pierced by what the Americans call snags—the French Chicots. . ." Quoted in Romualdo Bonfadini, *Vita di Francesco Arese* (Turin, 1894), as printed in *Mississippi Valley Historical Review*, XX, 381-399, document edited by Lynn M. Case. That this condition grew no better is indicated by the fact that a decade later in one year (1845-1846) 120 boats were lost on western rivers, of which 46 were snagged, 38 were sunk, 16 exploded (boiler explosions), 15 were rammed, 13 were burned, 10 were wrecked, and 7 were damaged by ice. 310 people were killed in such accidents throughout the country that year. *Niles's National Register*, September 11, 1847, LXXIII (Ser. 5, v. 23), 24. In the period from 1853-1860, 3,001 people were killed and 1,090 were injured in 242 steamboat accidents. *De Bow's Review*, XXX, 377. The Act of Congress dated August 30, 1852 forced inspection of boilers and ordered better construction thus eliminating many boiler accidents. *Ibid.*, XIX, 466. The great number of accidents in the 1840's was said to be due in large part to the failure of the federal government to improve the waterways, appropriations for internal improvements being then at a minimum. At one time the number of losses sustained was said to have mounted to as high as one fifth of the boats engaged in the western river trade. See Resolution of the General Assembly of Illinois on subject of neglect of rivers, February 24, 1843, 27th. Cong. 3rd. sess., Sen. Doc., vol. iv, no. 216. Many other such memorials from state legislatures, towns, and so on, could be cited.

<sup>37</sup> *Niles's National Register*, January 27, 1838, XLIII, (Series 5, vol. 3), 352.

<sup>38</sup> *Arkansas Advocate*, February 3, 1837; *Niles's National Register*, April 28, 1838, XLIV, (Ser. 5, v. 4), 144. The first steamboat passed through on March 7, 1838 and up to March 29th. five boats in all had gone through. Two boats were lost early in April on snags. Shreve estimated the total expenditure on the removal of the raft at \$311,129.50 and thought \$15,000 yearly would be enough to keep the channel clear. A new snag puller with the formidable name of *Eradicator* had been built. Captain Shreve's Report, June 4, 1838, 25th. Cong., 3rd. sess., Sen. Doc., vol. i, no. 1, pp. 308-311.

<sup>39</sup> *Arkansas Gazette*, April 25, 1838.

<sup>40</sup> *Arkansas State Gazette*, August 22, 1838.

to be spent in work on that part of the river above the raft.<sup>41</sup> In spite of this appropriation, the river could not be kept open and the funds were soon exhausted. The panic which had struck the country was showing its full effects and Congress failed to make appropriations in 1839 and 1840. Citizens of Washington, Arkansas, and surrounding regions, through the Washington branch of the State Real Estate Bank, raised a sum of \$7,147.50, thus enabling Shreve to open the river again in the spring of 1839. These funds were, however, soon exhausted; and Shreve had exceeded the amount allotted him in 1838 as well. The raft continued to grow and the river was closed again.<sup>42</sup> Requests for funds in 1840 also went unheeded.<sup>43</sup>

In 1841 Congress returned to the Red River problem by appropriating the sum of \$75,000 for removing the raft. It was decided, however, that the work should be let out to contract, the contractor agreeing to purchase the snag boat *Eradicator*, and to clear out the three miles of raft then formed and maintain open navigation for a period of four years. This contract was taken by one Thomas B. Williamson, who seems to have known little about the work. In June, 1842, a heavy freshet closed the river again, and the formation of rafts in the two following years was greater than that ever known, being some four miles in extent. The contractor failed to meet his obligations and on March 6, 1844 Captain T. B.

<sup>41</sup> Report of Captain Shreve, November 10, 1838, 25th. Cong., 3rd. sess., Sen. Doc., vol. i, no. 1, 307-308. \$23,000 was spent for the *Eradicator* out of the \$70,000 available.

<sup>42</sup> Report of Captain Shreve, June 12, 1839, 26th. Cong. 1st. sess., Sen. Doc., vol. i, no. 1, pp. 205-209; *Arkansas Gazette*, July 24, 1839. The river was closed by the latter date. Those interested in the Red River route naturally felt their spirits fall at such a turn of events. To make matters worse a dangerous bar was forming at the mouth of the Red River and the removal of the rocks at Alexandria was becoming imperative. Even the lower course of the Red River seemed likely to be closed to navigation. See Resolution of the General Assembly of Louisiana, February 13, 1839, 25th. Cong., 3rd. sess., Sen. Doc., vol. iii, no. 214. At this time such a plague of fever broke out in this region that the citizens of Alexandria fled the town. *Niles's National Register*, December 14, 1839, LVII, (Ser. 5, v. 7), 256. These things occurred just as attempts were being made to establish commerce with Mexico via the Red River route. Some Mexican and American traders from Chihuahua did reach New Orleans in 1839, but nothing more seems to have come of these projects. *Arkansas Gazette*, September 4, 1839, quoting the *New Orleans Louisianan*, July 26, 1839.

<sup>43</sup> Report of Captain Shreve, June 12, 1839, 26th. Cong., 1st. sess., Sen. Doc., vol. i, no. 1, p. 210; *ibid.*, 2nd. sess., Ex. Doc., vol. i, no. 2, p. 170. Some attempts by citizens and the state of Louisiana to open the raft were made in 1839 and 1840, but failed to accomplish anything. Report of Captain Shreve, October 31, 1840, *ibid.*, 2nd. sess., Sen. Doc., vol. i, no. 1, pp. 128-129. An attempt to bring goods down the river by flat boat is mentioned in 1840, but this also seems to have been a failure. *Arkansas State Gazette*, July 1, 1840. Land speculators in the raft region seem to have been hard hit by these adversities. Roswell Beebe offered all his land at bargain prices, while Fulton speculators were also eager to sell. *Arkansas State Gazette*, March 18, March 25, and May 13, 1840, etc.



Linnard, the superintendent, declared the contract void.<sup>44</sup> In his report for the year 1844, Captain Linnard criticized the policy of removing the raft because he thought the river bed had been so elevated by the presence of the raft that the tendency of the river to seek lateral outlets could not be checked. He, therefore, advocated the construction of booms at certain places, thus assisting the river to cut new channels around the raft. He thought such a scheme would be much cheaper than trying to remove the raft at the cost of \$7,000 per mile.<sup>45</sup> This plan was tried and such a boom was made, but broke and disaster resulted. The formation of drift in the spring of 1845 was unusually large. Colonel Abert then recommended a return to the plan of removing the raft as before, and asked for appropriations for the work.<sup>46</sup> This led to a Senate investigation of the Red River expenditures, while the annexation of Texas and the outbreak of war with Mexico soon turned attention to other and more important things.<sup>47</sup>

The Red River was therefore definitely closed to steamer traffic and an annual commerce of ten millions of dollars in value placed upon a very uncertain status.<sup>48</sup> New Orleans was of course anxious about the future of this trade, which it was conceived might be diverted into other channels.<sup>49</sup> On the other hand Washington and other towns in Arkansas were forced to depend upon overland routes for their supplies, especially late in 1845 when low waters closed the Red River route even more effectively.<sup>50</sup> In 1846 an attempt was made to set up a private system of transportation through the raft

<sup>44</sup> Report of Colonel J. J. Abert, November 15, 1844, 28th. Cong., 2nd. sess., Sen. Doc., vol. i, no. 1, pp. 279-282. The army engineers after Williamson's failure resumed work on the raft, but accomplished little. The flood of 1844 was one of the largest ever recorded. All the lands in the immediate neighborhood of Red River "were desolated, and every vestige of cultivation was destroyed." The contractor naturally could not have fulfilled his obligations against such odds. See Lloyd, *op. cit.*, 257-258.

<sup>45</sup> Appendix to the report of Colonel Abert, November 14, 1844, 28th. Cong., 2nd. sess., Sen. Doc., vol. i, no. 1, pp. 283-293.

<sup>46</sup> Extract from Colonel Abert's Report of November 1, 1845, 29th. Cong., 1st. sess., Sen. Doc., vol. iii, no. 26, pp. 5-13.

<sup>47</sup> *Ibid.*

<sup>48</sup> Cotton exports from the Red River and its tributaries to New Orleans in 1842 are said to have amounted to 200,000 bales valued at \$5,000,000. *Niles's National Register*, October 28, 1843, LXV (ser. 5, v. 15), 131-132, quoting *New Orleans Bulletin*.

<sup>49</sup> *Ibid.*, November 18, 1843, 179. Fears that the Red River would again seek an outlet through the Atchafalaya and thus pass New Orleans "on the other side" were much discussed. See statement of P. O. Herbert, State Engineer of Louisiana, as quoted in the *Washington Telegraph*, March 18, 1846.

<sup>50</sup> *Washington Telegraph*, January 29, February 26, 1845. A thriving trade grew up between Washington and Camden on this account. Only \$17,863.54 had been made available for work on western rivers by Congress for the year 1846-1847. Most of the boats used in such work had been transferred to the War Department for military service. Report of Lieutenant Colonel T. H. Long, September 1, 1847, 30th. Cong., 1st. sess., Sen. Doc., vol. i, no. 1, pp. 670-678.

area, but nothing seems to have come of this scheme. The raft was again victorious.<sup>51</sup>

Congress was of course besieged with the usual memorials on the subject of the raft.<sup>52</sup> The answer of the government was found in President Polk's message of March 13, 1849, accompanying his veto of the internal improvement bill. The gist of the president's argument was that the individual states concerned should bear the expense of such works, the funds to come out of tonnage duties levied on the commerce going over the route under improvement.<sup>53</sup> The activities of the engineers for the next few years were accordingly limited "to the expenditure of small balances."<sup>54</sup>

Such was the state of affairs until the year 1852 when the government again entered the fight against the raft. Between 1828 and 1852 appropriations aggregating \$535,765.50 had been made on the Red River project. Most of this money had been wasted, since the failure to continue regular appropriations had meant that much work had to be done over again when after a lapse of time the work was resumed.<sup>55</sup> The government now resumed the work with

<sup>51</sup> *Washington Telegraph*, March 18, 1846. One J. B. Gilmer undertook to haul cotton through at 50c per bale and other goods at 25c per barrel. Fulton, Arkansas, which as we have seen had made her bid for the future as early as 1819, well illustrates the retardation due to the presence of the raft. In 1846, Fulton consisted of no more than "one Smith Shop, two ware houses, three Groceries, and four cabins. . ." William A. McClintock, "Journal of a Trip Through Texas and Northern Mexico in 1846-1847," in *Southwestern Historical Quarterly*, XXXIV, 22. McClintock, a volunteer of the 2nd. Kentucky Regiment was killed at Buena Vista.

<sup>52</sup> For example, see the *Washington Telegraph*, December 8, 1847, January 5, 1848; *De Bow's Review*, V, 94-95. *De Bow's Review* states that freights on the Red River were "two hundred percent higher than on any other river of our continent, and all on account of the raft." Points above the raft paid \$2.50-\$5.00 per bale for the shipment of cotton to New Orleans, while the rates in the Ouachita Valley about the same distance away ranged from 50c to \$1.00 per bale! The memorials rarely failed to point out also how keeping open the river would enhance the value of government lands in that area.

<sup>53</sup> 30th. Cong., 1st. sess., Ex. Doc., vol. v, no. 49, pp. 1-17.

<sup>54</sup> Report of Colonel Abert, November 20, 1849, 31st. Cong., 1st. sess., Ex. Doc., vol. iii, pt. 1, no. 5, pp. 294-336. Appropriations were not resumed until 1852. See Report of Colonel Abert, October 27, 1849, 31st. Cong., 1st. sess., Sen. Doc., vol. i, no. 1, pp. 300-302; *ibid.*, November 14, 1850, 31st. Cong., 2nd. sess., Sen. Doc., vol. i, pt. 2, no. 1, pp. 385-462; *ibid.*, 32nd. Cong., 1st. sess., Sen. Doc., vol. i, pt. 1, no. 1, pp. 428-437. While towns above the raft suffered in these years, Shreveport thrived, especially with the opening of the Texas cattle trade. Five or six packets were engaged in this trade between Shreveport and New Orleans. Of course smaller craft worked their way through the raft region. *De Bow's Review*, XI, 222. The editor of *De Bow's Review* and the editor of the *Washington Telegraph* favored state action to remove the raft, but the Louisiana state engineer favored federal assistance. *Ibid.*, 222-223; *Washington Telegraph*, January 25, 1854; House Miscellaneous Documents, no. 22. Some opposed removal of the raft in any case, fearing the region below the river would be flooded by the waters so released. *De Bow's Review*, XXI, 280. Certain others were just as sure the upper country would all be ruined if it wasn't! *Ibid.*, XIX, 440.

<sup>55</sup> Annual Report of the Chief of Engineers for 1888, 50th. Cong., 2nd. sess., House Ex. Doc., no. 1, pt. 2, vol. ii, pt. 2, p. 1341.

vigor but the coming of the Civil War was shortly to intervene with the result that the raft was to remain for many years as a barrier to the Red River navigation.<sup>56</sup>

In 1854 a survey was made of the raft region. The river was then found to be closed for a distance of thirteen miles. The engineer in charge of this survey was inclined to favor the plan of diverting the river through lateral channels instead of removing the raft itself which he now estimated would cost \$10,000 to \$12,000 per mile. He proposed opening a new route from Dooley's Bayou to Soda Lake and Twelve Mile Bayou, pointing out that this would not only shorten the river's course, but also increase the current.<sup>57</sup> This plan was approved and the work was begun in 1855, but the ravages of the cholera among the workers seriously handicapped progress.<sup>58</sup> Work was continued according to this plan in 1856,<sup>59</sup> while the government also took up consideration of the problem of improving the navigation of the rapids at Alexandria.<sup>60</sup> By 1857, however, the plan of establishing a lateral route of navigation was evidently laid aside in favor of a direct attack on the raft itself.<sup>61</sup> At this juncture appropriations were again refused by a Congress which

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<sup>56</sup> Report of the Chief of Engineers, November 18, 1852, 32nd. Cong., 2nd. sess., Sen. Doc., vol. ii, no. 1, pp. 217-219. The engineers seem to have been uncertain as to what method to use in attacking the raft and advertized "for proposals in reference to removing the Red River raft." The renewal of government interest in the project is partly due to the changing political situation, but the maintenance of larger bodies of troops in Texas and the western regions gained by the Mexican war caused renewed interest in problems of transportation. Charles Thomas, Deputy Quartermaster General, to Honorable Jefferson Davis, Secretary of War, January 11, 1854, 33rd. Cong. 1st. sess., House Ex. Doc., vol. v., no. 23, pp. 1-2. Then, too, cotton production in the Red River region was on the increase despite the impediments of transportation. *Washington Telegraph*, September 27, 1854. At this time steamboat captains formed an association to raise rates in the Red River region, this being vigorously contested by the people above the raft. *Ibid.*, January 4, 1854.

<sup>57</sup> Report of Red River Survey, January 18, February 17, 1855, 33rd. Cong., 2nd. sess., Sen. Ex. Doc., vol. iii, no. 62, pp. 1-6.

<sup>58</sup> Annual Report of Charles A. Fuller, engineer, September 1, 1855, 34th. Cong., 1st. and 2nd. sess., Sen. Doc., vol. ii, no. 1, pp. 319-324. Fuller who was then in charge of the work said the river had been completely closed for two years while large cotton crops in the upper region remained unmoved. Supplies were being hauled overland in quantities. See also *De Bow's Review*, XIX, 439, for a description of the raft at that time.

<sup>59</sup> Report of Colonel Abert, November 22, 1856, 34th. Cong., 3rd. sess., Sen. Doc., vol. iii, no. 5, p. 367.

<sup>60</sup> Colonel Abert to Secretary Davis, March 15, 1856, 34th. Cong., 1st. sess., Sen. Ex. Doc., vol. xii, no. 49, pp. 1-2.

<sup>61</sup> The progress of the work was then said to be seriously handicapped on account of sickness among the laborers, the difficulty of procuring men, prevailing high prices of provisions and labor, etc. Report of Colonel Abert to Honorable John B. Floyd, Secretary of War, November 23, 1857, 35th. Cong., 1st. sess., Sen. Doc., vol. iii, no. 11, pp. 290-291.

found itself facing increasingly serious domestic problems.<sup>62</sup> In the two following years the project was abandoned completely.<sup>63</sup>

During the Civil War nothing seems to have been done in regard to the raft problem. The attitude of the Confederacy toward internal improvements is expressed in Article I, Section 8, Paragraph 3 of the Constitution which declares that no clause of the Constitution may be construed "to delegate the power to Congress to appropriate money for any internal improvement intended to facilitate commerce; except for the purpose of furnishing lights, beacons, buoys, and other aids to navigation upon the coasts, and the improvement of harbors and the removing of obstructions in river navigation, in all which cases, such duties shall be laid on the navigation facilitated thereby, as may be necessary to pay the costs and expenses thereof."<sup>64</sup> The preoccupation of the Davis government with the prosecution of the war was quite sufficient to prevent its giving attention to the raft problem even under the strictly limited provisions stated above.

During the war, however, it chanced that the federal forces were given an opportunity to improve the Red River navigation. In March, 1864, a joint expedition under General N. P. Banks and Admiral David Porter was sent up the river to attack Shreveport. The battle fought at Sabine Cross Roads on April 8, 1864 compelled the federal forces to abandon the campaign and retreat down the river. When the expedition reached Alexandria in mid-April, it was found that the water was too low to allow the heavier boats to pass over the rapids. It first appeared that the only alternative to prevent the boats valued at two millions of dollars from falling into the hands of the enemy was to burn them. At this juncture, however, Lieutenant Colonel Joseph Bailey of the Engineers, proposed damming the river below the rapids so as to allow the water to rise sufficiently high to float the boats through. The plan being agreed upon, work was begun on April 20th., and on May 12th. the fleet

<sup>62</sup> Some work was done in 1857-1858 from unexpended balances, but this amounted to very little. Much trouble was found even then in keeping crews, the men preferring other work. Report of Lt. Col. S. H. Long, October 15, 1858, 35th. Cong., 2nd. sess., Sen. Doc., vol. iii, no. 1, pp. 1037-1038. At that time a new snag boat, a new dredge, and a new machine boat were badly needed. Long estimated over \$300,000 would be needed for the work for the next five years. *Ibid.*

<sup>63</sup> Report of Colonel Abert, November 14, 1860, 36th. Cong., Sen. Doc., vol. ii, no. 1, p. 294. In 1859 delegates from Texas, Arkansas, and Louisiana, met to organize a company to open the raft. The company was to operate for a period of thirty years, the capital stock to be \$250,000. This scheme reflects strongly the growing animosity of the states toward the federal government, which was accused of incompetency, waste, etc. in regard to the removal of the raft. The rafts long disappeared like frost before the sun." But, the war and its urgent problems swallowed up this scheme which most likely would have failed in any case. *De Bow's Review*, XXVI, (vol. i, New Series), 100.

<sup>64</sup> James M. Matthews, (editor), *The Statutes at Large of the Confederate States of America . . .*, (Richmond, 1864), 14.

passed in safety. This was one of the most brilliant exploits of engineering during the war.<sup>65</sup>

Following the war came that justly regrettable period in the history of our country known as "Reconstruction." The preoccupation of the government with the problems of that period prevented the resumption of work on the Red River project. The people of that region, however, were still interested in the subject. In 1869 we read of a convention which met at New Orleans to consider the improvement of the navigation of Red River. The division among the delegates, may, however, be illustrated by the statement of a gentleman from Jefferson, Texas, who thought the improvement of the river below that point was then sufficient "to cover the wants of the country." He thought Fulton, situated above the raft, might well depend for her outlet upon railroads to be built shortly.<sup>66</sup> A company organized to undertake the improvement of navigation through Mack's Bayou, Cross Bayou, and Bodeau Lake seems to have gone no farther than the paper stage.<sup>67</sup> In 1872, however, the federal government returned to the task, appropriating \$170,000 for the Red River work. The raft finally was to meet his master at the hands of a government representing a newly united nation.<sup>68</sup>

Work began with operations of shore parties on the first of December, 1872 and with snag boats and crane boats in the following month. Portable steam saws and explosives were used in the work,

<sup>65</sup>For references see *War of the Rebellion: Official Records of the Union and Confederate Armies* (Washington, 1891), Series I, vol. xxxiv, pt. 1, 209-210, ff. This includes General Banks' report of the expedition. Colonel H. L. Landers, "Wet Sand and Cotton—Banks' Red River Campaign," *Louisiana Historical Quarterly*, XIX, no. 1, 188-193 gives a scholarly criticism of Banks' bungling conduct of the campaign. See also James Grant Wilson, "The Red River Dam," *Potter's American Monthly*, XI, 104-106 for a more romantic account. The "Red River Dam" may sometimes be confused with the "Red River Raft," but of course has nothing to do with it at all.

<sup>66</sup>*Arkansas Daily Gazette*, December 8, 1869.

<sup>67</sup>*Ibid.*, January 5, 1870.

<sup>68</sup>A preliminary survey of the raft was made in April, 1872 by Lieutenant A. E. Woodruff of the engineers. In his report dated April 18, 1872, Lieutenant Woodruff says: "The total length of the raft covering the whole breadth of the river is seven miles, but throughout almost all of the distance between the head and foot of the raft (the foot of the raft was then at Carolina Bluffs) the channel is partially obstructed. The whole area of floating raft is computed at 290 acres. The whole area of 'tow-heads' or raft resting on the bottom . . . is computed at 103 acres." He recommended clearing the raft and improving the main channel instead of seeking a lateral route. 42nd Cong., 3rd. sess., House Ex. Doc., no. 1, pt. 2, vol. ii, pp. 568-572; Report of the Chief of Engineers, October 19, 1872, 42nd Cong., 3rd. sess., Ex. Doc., no. 1, pt. 2, vol. ii, p. 61; Report of the Chief of Engineers, 1890, 51st. Cong., 2nd. sess., House Ex. Doc., no. 1, pt. 2, vol. ii, pt. 3, p. 1820. Yearly appropriations were made in the period 1872-1882 and appropriations were also made in 1884, 1886, and 1888. By 1890 a total of \$902,000 had been appropriated in this new campaign against the raft. The raft itself may be said to have ceased to have a personality after 1882 at which time special appropriations for its removal were dropped. Henceforth appropriations are "for improving the Red River."

though the latter are said to have been ineffective at first. By May 16, 1873 a route had been opened through Red Bayou and other lateral routes so that the steamer *R. T. Bryarly* went through "with jubilant whistling." She was the first steam boat to take freight past Carolina Bluffs in twenty-nine years.<sup>69</sup> So vigorous was the work carried on in the following months that by November a "navigable channel" was obtained through the whole length of the raft, and much additional work had been done in cleaning up along the route.<sup>70</sup> The following year these operations were continued, most of the labor being expended on the removal of timber from the river banks where it was likely to cave into the stream.<sup>71</sup>

By 1876 the engineers were able to announce plans for a clear channel 150 feet in width at all points along the river. The early months of this year were unusually dry and snag pulling was carried on vigorously at low water. The work of clearing the banks also progressed satisfactorily.<sup>72</sup> A July rise, however, coming at a time when appropriations were exhausted, caused new jams to appear, interrupting navigation for a time. The river was soon reopened to traffic. Work was continued satisfactorily throughout 1878.<sup>73</sup> In 1878 the appropriation provided for snag pulling in the lower Red River as well as work in the raft area. An appropriation of \$150,000 was also made for improving the mouth of Red River.<sup>74</sup> In the following year in addition to general operations, a study was begun of the effects of the removal of the raft on the river and its connecting lakes.<sup>75</sup> By 1880 the raft was definitely conquered, but the patrolling of the river could by no means be neglected. The Chief of Engineers writes: "This work must be continuous from year

<sup>69</sup> Report of the Chief of Engineers, October 20, 1873, 43rd. Cong., 1st. sess., Ex. Doc., no. 1, pt. 2, vol. ii, pp. 613-620. The use of nitroglycerine to remove large trees and stumps proved very effective after some experience had been gained in handling it.

<sup>70</sup> Report of the Chief of Engineers, October 20, 1874, 43rd. Cong., 2nd. sess., House Ex. Doc., no. 1, pt. 2, vol. ii, pt. 1, pp. 72, 702-704.

<sup>71</sup> Report of the Chief of Engineers, October 18, 1875, 44th. Cong., 1st. sess., House Ex. Doc., no. 1, pt. 2, vol. ii, pt. 1, pp. 69, 522-527. The engineers were now manufacturing their own nitroglycerine for use in the river work. At one time some 900 lbs. of this and other explosives detonated, though fortunately no one was nearby. A new snag boat was requested at this time to replace the *Sterling* "worn out in service." *Ibid.*

<sup>72</sup> Report of the Chief of Engineers, October 21, 1876, 44th. Cong., 2nd. sess., House Ex. Doc., no. 1, pt. 2, vol. ii, pt. 2, pp. 78, 596-599.

<sup>73</sup> Report of the Chief of Engineers, November 19, 1877, 45th. Cong., 2nd. sess., House Ex. Doc., no. 1, pt. 2, vol. ii, pt. 1, pp. 76-77, 480-488. The steamer *Florence* was sunk that year (1877) at Benton Cut-Off. Tone's Bayou was closed with a dam to strengthen the flow of the main channel.

<sup>74</sup> Report of the Chief of Engineers, 45th. Cong., 3rd. sess., House Ex. Doc., no. 1, pt. 2, vol. ii, pt. 1, pp. 86-87. The dam at Tone's Bayou had broken and had to be repaired.

<sup>75</sup> Report of the Chief of Engineers, 46th. Cong., 2nd. sess., House Ex. Doc., no. 1, pt. 2, vol. ii, pt. 1, pp. 112-114; appendix to the same, *ibid.*, pp. 951-964. A heavy freshet in April, 1879, carried down the greatest drift in several years. Two spans of the new railroad bridge at Fulton, Arkansas were washed away.

to year, owing to the immense quantity of drift brought down on every flood from upper Red River."<sup>76</sup>

What was the effect of the establishment of dependable Red River navigation? It would be difficult to answer this question conclusively, but the evidence seems to indicate that the opening of the river came too late to bear full fruit. The building of railroads had in the meantime linked the upper Red River region with the rest of the country, and the river route was no longer so important. Thus during the twelve months ending in May, 1879, Shreveport received a total 103,660 bales of cotton of which only 16,040 bales came from the region above the raft. 65,025 bales of this cotton were sent down the river to New Orleans by boat, but the rest went by rail to other destinations. Of 150 steamer landings at Shreveport that year only twenty-four were made by boats from points above the raft.<sup>77</sup> The following year showed a still greater decline in river shipments, only 10,360 bales of cotton coming by river from the region above the raft. In that year (September 1, 1879 to June 24, 1880) Shreveport shipped out 58,886 bales of cotton by rail and only 33,558 by water!<sup>78</sup>

Despite the dwindling importance of steam boat commerce, the government spent large sums of money on the Red River in the years immediately following 1882. By 1886 the rapids at Alexandria

<sup>76</sup> Report of the Chief of Engineers, November 19, 1880, 46th. Cong., 3rd. sess., House Ex. Doc., no. 1, pt. 2, vol. ii, pt. 1, pp. 150-152. In the absence of the steamer *Florence*, which was refitting in New Orleans, private boats had to be hired to assist in the work that year. In 1881 the Chief of Engineers could report: "There is now a good navigable channel through the raft region at all seasons of the year, though it is liable to be temporarily blocked during the flood stages of the river." Report of October 22, 1881, 47th. Cong., 1st. sess., House Ex. Doc., no. 1, pt. 2, vol. ii, pt. 1, pp. 206-208. The opening of extensive timber milling operations in the Red River valley about this time also caused difficulties in keeping the drift cleared away. In the Report of the Chief of Engineers for 1882, we read: "Considerable difficulty is experienced in keeping the river clear, from the fact that the lumber and sawmill people allow their lumber rafts to block up the channel and so cause a vast accumulation of drift. . ." 47th. Cong., 2nd. sess., House Ex. Doc., no. 1, pt. 2, vol. ii, pt. 2, p. 1538. That the work of the government was not universally approved is shown by the destruction of the Tone's Bayou Dam on the night of December 1, 1881, supposedly at the hands of farmers who feared the effect of the artificial raising of the river level which the dam produced. See Report of the Chief of Engineers, October 19, 1882, 47th. Cong., 2nd. sess., House Ex. Doc., no. 1, pt. 2, vol. ii, pt. 1, pp. 203-205.

<sup>77</sup> Appendices to the Report of the Chief of Engineers, July 1, 1879, 46th. Cong., 2nd. sess., House Ex. Doc., no. 1, pt. 2, vol. ii, pt. 2, pp. 953-954.

<sup>78</sup> Appendices to the Report of the Chief of Engineers, July 1, 1880, 46th. Cong., 3rd. sess., House Ex. Doc., no. 1, pt. 2, vol. ii, pt. 2, pp. 1277-1280. In the following year more cotton came into Shreveport by rail than by boat—18,257 bales and 14,472 bales respectively. *Ibid.*, for 1881, 47th. Cong., 1st. sess., House Ex. Doc., no. 1, pt. 2, vol. ii, pt. 2, pp. 1403-1404. By 1888 the Chief of Engineers reported: "Traffic on Red River has fallen off for some years past. The Texas and Pacific Railroad, running nearly parallel with the river, and touching it at Alexandria, Shreveport, and other points, has diverted a large amount of cotton. . . At competing points, the railroad claims to do 40 per cent of the business." 50th. Cong., 2nd. sess., House Ex. Doc., no. 1, pt. 2, vol. ii, pt. 2, pp. 1342-1343.

had been improved by the cutting of a navigable channel through the rocks.<sup>79</sup> A general survey of the river below Fulton was also undertaken in 1886,<sup>80</sup> and some improvements were made on the river above Fulton.<sup>81</sup>

Thus ends our survey of the Red River raft. As we have pointed out above, the Red River route could not compete with the railroads; far better water routes failed in the same struggle. But, had competition with the railroads been absent, the Red River route would never have been satisfactory. There was always the nemesis of the raft and the countless other difficulties to be met in its course, not the least of which was the rapid fluctuation in the waters themselves. The raft was nominally dead, but likely to reappear if given the least opportunity. As late as 1909 an authority could write: "General Banks found the Red River navigation very bad during the war—and it is not much better now. Boats hardly ever go above Fulton, Arkansas—though the river goes on for hundreds of miles."<sup>82</sup>

<sup>79</sup> Report of the Chief of Engineers, October 13, 1883, 48th. Cong., 1st. sess., House Ex. Doc., no. 1, pt. 2, vol. ii, pt. 1, pp. 213-214, 1139-1143. At this time a plan to open a new route through Tone's Bayou and Bayou Pierre was considered. Such schemes probably reflect more the ease with which federal appropriations could be obtained than the actual needs of the time. Report of the Chief of Engineers, October 28, 1886, 49th. Cong., 2nd. sess., House Ex. Doc., no. 1, pt. 2, vol. ii, pt. 1, pp. 227-229.

<sup>80</sup> Report of the Chief of Engineers, October 22, 1887, 50th. Cong., 1st. sess., House Ex. Doc., no. 1, pt. 2, vol. ii, pt. 1, pp. 193-194. This work was dropped in 1887 and resumed in 1889. Report of the Chief of Engineers, October 4, 1890, 51st. Cong., 2nd. sess., House Ex. Doc., no. 1, pt. 2, vol. ii, pt. 1, pp. 186-188. The reports at this late period still speak of dangers to navigation, particularly at low water when snags appear. Report of the Chief of Engineers, September 30, 1889, 51st. Cong., 1st. sess., House Ex. Doc., no. 1, pt. 2, vol. ii, pt. 1, pp. 207, 1584-1585. The amount of yearly drift was still described as "enormous." For a while in 1887 the mouth of Red River was actually closed to traffic by a bar, except for transshipment by barges. Report of the Chief of Engineers for 1888, 50th. Cong., 2nd. sess., House Ex. Doc., no. 1, pt. 2, vol. ii, pt. 2, pp. 1342-1343.

<sup>81</sup> Report of the Chief of Engineers, October 4, 1890, 51st. Cong., 2nd. sess., House Ex. Doc., no. 1, pt. 2, vol. ii, pt. 1, p. 195. Small appropriations were made for this work in 1886, 1888, and 1890. Eventually improvements were made as far up stream as Denison, Texas.

<sup>82</sup> Herbert Quick, *American Inland Waterways*, (New York, 1909), 166.