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Science and Technology Awakened:

Resource Exploitation and the Cherokee Removal

By Vicki Bell Rozema*



In 1832, Tennessee Supreme Court Judge and amateur geologist Jacob Peck conducted a geological survey of the gold region of Southeast Tennessee, North Georgia, and Western North Carolina. Most of these gold fields lay inside the boundaries of the Cherokee Nation. In addition to mapping gold reserves, Peck's survey reported copper, iron, garnets, zircon, and silver. The results of Peck's study appeared in an 1833 issue of the *American Journal of Science and Arts*, the nation's leading scientific journal. Peck's article was the first published description of the gold mine area in the Cherokee Nation in East Tennessee and North Carolina. The gold mines in Cherokee North Georgia were well-known by this time, but the gold mines in North Carolina and Tennessee were not. For many readers, speculators, and entrepreneurs, the study supported the conclusion that the gold deposits within the Cherokee Nation must be limitless.¹

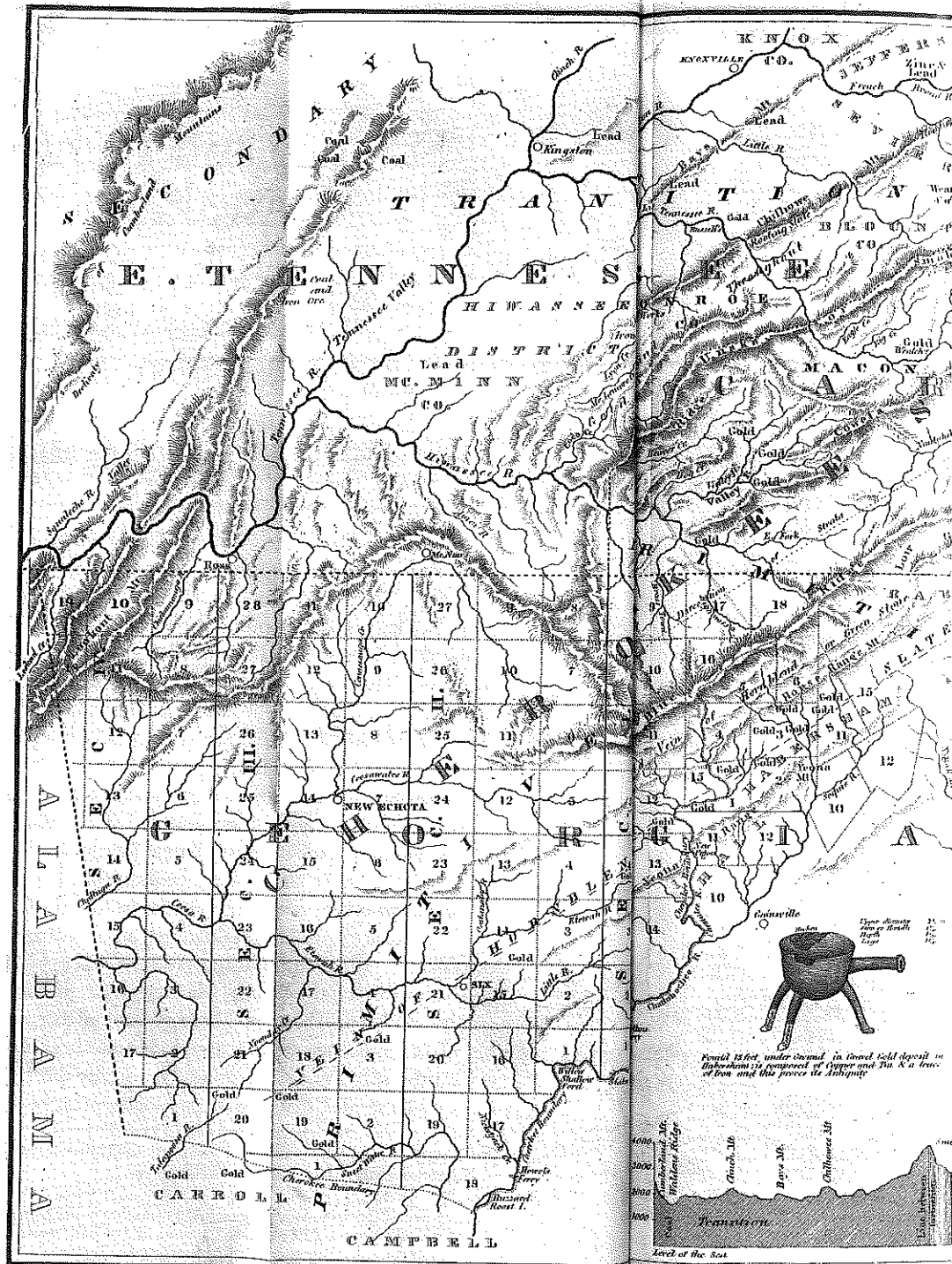
Peck and other prominent southerners took great interest in the lands of the Cherokee Nation. They realized that advances in science and technology, especially in mining and transportation, could open up new opportunities and resources of the South. He explained in the essay, "Science and enterprise [had just] been awakened, to explore this whole region." Peck and his fellow southerners were anxious to use advances in science to explore and exploit the riches of the Cherokee Nation. By the 1830s, southern leaders embraced the idea that new technologies must be used to utilize all the

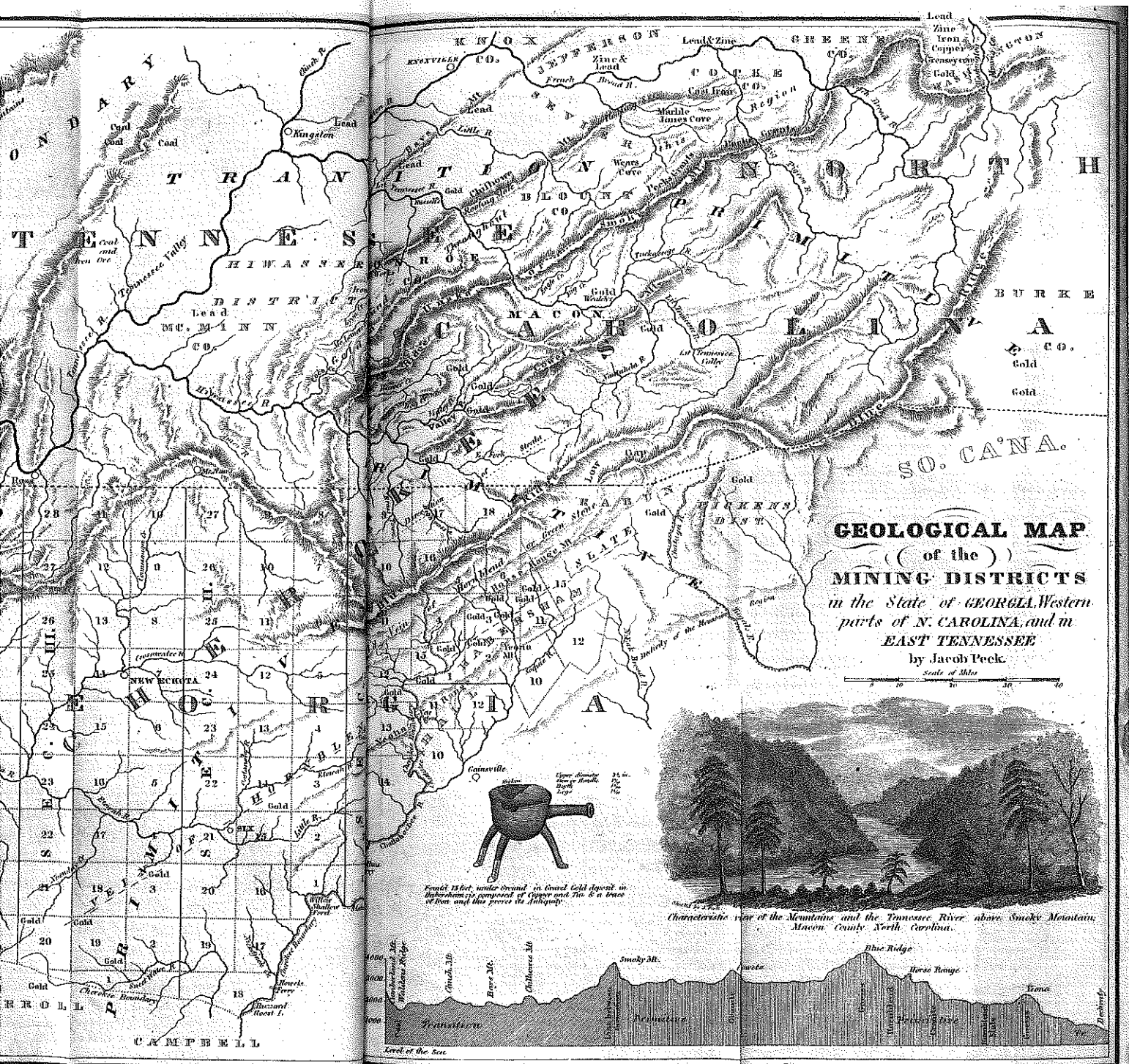
* The author completed her Ph.D. in history at the University of Tennessee in 2012. She is the author of three books on Cherokee history.

¹ Jacob Peck, "Geological and Mineralogical Account of the Mining Districts in the State of Georgia—Western Part of North Carolina and of East Tennessee, with a Map," *The American Journal of Science and Arts* 23 (January 1833): 4-7.



In 1832, Tennessee Supreme Court Judge and amateur geologist Jacob Peck conducted a geological survey of the gold region of Southeast Tennessee, North Georgia, and Western North Carolina. Peck's results, published with a detailed map, supported the conclusion that gold deposits existed in the Cherokee Nation. Jacob Peck, "Geological and Mineralogical Account of the Mining Districts in the State of Georgia—Western Part of North Carolina and of East Tennessee, with a Map," *The American Journal of Science and Arts* 23 (January 1833).





GEOLOGICAL MAP
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MINING DISTRICTS
in the State of GEORGIA, Western parts of N. CAROLINA, and in EAST TENNESSEE
by Jacob Peck.

Scale of Miles
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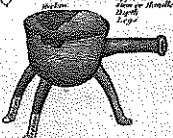
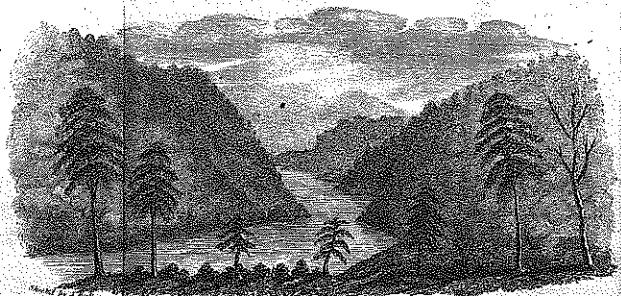
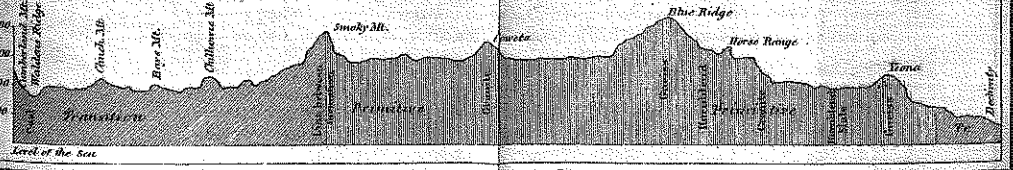


Fig. 1. Tripod used in prospecting for Gold in the Cherokee Mountains. It is composed of three legs of wood and the basin is of iron.



Characteristic view of the Mountains and the Tennessee River above Smoky Mountain, Macon County, North Carolina.



Entered according to Act of Congress, District West Tennessee, N. Mc. Wiley Clerk.

J. Peck del.

natural resources of the fledgling republic, for the purpose of meeting the needs of western expansion, defense, and commerce.²

At the same time as Peck's discoveries and assertions, the Cherokee Nation was in a significant period of transition. By the 1830s, the Cheokees developed a stronger national government, wrote a constitution, and passed new laws to protect their rights and lands from encroachment. In addition, the Cherokees aggressively expanded their industries and commerce and embraced many new technologies. However, their plans to control all development within their borders clashed with white plans to maximize use of new scientific and engineering discoveries.

The causes of the Cherokee removal of 1838 were numerous and complicated. Historians have argued that removal occurred because of the perceived threat of a sovereign nation located within the boundaries of states, the spread of slave-based cotton agriculture across the South, ethnocentrism, and more.³ This essay argues that Cherokee removal was also tied to a growing regional interest in new technologies, the perception that the Cherokees were an obstacle to commerce, and the development of a new level of racism based on the belief by some that Native Americans were too backward to embrace new and more modern scientific advances.

In the first decades of the nineteenth century, Americans became increasingly interested in the study of science and engineering. The Lewis and Clark and Zebulon Pike expeditions caught the imagination of many Americans, and encouraged the study of the natural history of the interior of the United States. Discoveries made on these expeditions overturned many scientific theories formulated in Europe and demonstrated a need to develop new classification systems for recently identified North American species. Within a decade, a younger generation of American leaders imbued with a new sense of national pride began to actively resent scientific advances made in Europe. Further, this new generation embraced engineering and scientific methods to solve national and regional problems. The War of 1812 contributed to this movement by exposing weaknesses in the financial, transportation, and defense systems of the young republic. For example, the war reinforced the importance of developing critical domestic industries like gunpowder and weapons production, so that the United States would not be dependent on European sources. Advancements in technology also

² Peck, "Geological and Mineralogical Account," 10. For more information on the technological and scientific revolutions in the Early Republic see, George H. Daniels, *American Science in the Age of Jackson* (New York, 1968); James X. Corgan, ed., *The Geological Sciences in the Antebellum South* (University, AL, 1982); Ulrich B. Phillips, *History of Transportation in the Eastern Cotton Belt to 1860* (1908; reprint, New York, 1968).

³ Several historians have discussed reasons for Cherokee land cessions and removal. See, Mary Young, "The Exercise of Sovereignty in Cherokee Georgia," *Journal of the Early Republic* 10 (Spring 1990): 43-63; William G. McLoughlin, *Cherokee Renaissance in the New Republic* (Princeton, NJ, 1986); Theda Perdue and Michael D. Green, *The Cherokee Nation and the Trail of Tears* (New York, 2007).



led to new forms of railroads, and the use of natural resources.

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⁴ George H. Daniels

⁵ Gordon B. Oakes, "Case History," in Drake and Willis

⁶ George Gilmer, 455; C. Edward 214; Jacob Peck Papers, Tennessee

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Michael D. Green, *The Cherokee Nation*

led to new forms of transportation and internal improvements. Canals,
railroads, and steamboats opened up greater access to the West and the
natural resources of difficult to reach regions.⁴

At the opening of the nineteenth century, formal science education was
limited and engineering had not yet developed into a profession. Colleges
in the United States recruited scholars trained in Europe or those who
were self-taught in the sciences. Two schools that led in the production of
scientists were Yale, where Benjamin Silliman, a chemist and the editor of
the *American Journal of Science and Arts*, taught many promising students, and
West Point, which became a leader in training engineers and topographers
for the military.⁵

Other scientific disciplines in the United States were emerging as
the nineteenth century began. Self-taught laymen with little or no formal
education represented the first leaders of scientific inquiry into the fields
of geology, agriculture, linguistics, and other disciplines. Many of these
early leaders dabbled in multiple areas of study. For example, George W.
Featherstonhaugh, an English farmer living in New York, investigated
linguistics, agriculture, and geology, while Jacob Peck was interested
in geology, mathematics, topography, and railroad engineering. Many
American leaders and self-proclaimed scientists were involved in agricultural
research and publishing their findings. For instance, Georgia Governor
George Gilmer, who served as president of the Agricultural Association
of the Slaveholding States, and Secretary of War John Armstrong Jr., who
advocated the founding of a state-supported agricultural school in New York,
wrote articles on advances in agricultural science.⁶

Advancements in agriculture, mining, and construction of roads, canals,
and railroads all took hold first in the North, then spread to the South
where leaders like Vice President and Senator John C. Calhoun of South
Carolina and Georgia Governor George Troup sought ways to use science
and technology to solve transportation and mining problems. Because of a
shortage of American scientists, politicians relied on European engineers
and scientists, such as Gerard Troost of Holland and the Paris School of
Mines graduate Lardner Vanuxem, to solve commercial problems. Southern
leaders, such as President Andrew Jackson and war hero Edmund P. Gaines,
relied on the Army Corps of Engineers for the necessary expertise to resolve
engineering problems. By the 1830s, two of the most pressing engineering

⁴ George H. Daniels, *American Science in the Age of Jackson* (New York, 1968), 8-10.

⁵ Gordon B. Oakeshott, "Contributions of the State Geological Surveys: California as a
Case History," in *Geologists and Ideas: A History of North American Geology*, eds. Ellen T.
Drake and William M. Jordan, (Boulder, CO, 1985), 323, 325-26.

⁶ George Gilmer, *Sketches of Some of the First Settlers of Upper Georgia* (Americus, GA, 1926),
455; C. Edward Skeen, *John Armstrong, Jr., 1758-1843: A Biography* (Syracuse, NY, 1981),
214; Jacob Peck to Newton Cannon, December 10, 1836, Governor Newton Cannon
Papers, Tennessee State Library and Archives, Nashville, Tennessee.

needs in the South were making internal improvements and extracting natural resources from isolated areas. In particular, leaders and scientists wanted to mine for gold in Cherokee country, even though the Cherokees still occupied the land. In fact, the presence of the Cherokees did not deter engineers from planning the construction of transportation routes and mining projects through Cherokee lands.⁷

As the population in the South grew and its white leaders developed plans to expand industry and support internal improvements into Cherokee lands, the Cherokees were developing a strong national government and a new generation of educated and commerce-oriented leaders who took advantage of advancements in agriculture, transportation, communication, and mining. In general, most of the Cherokee leadership was progressive-minded and embraced new technologies used for milling, blacksmithing, and turnpike building. The Cherokees fully embraced the so-called federal civilization program that President George Washington and Secretary of War Henry Knox began in 1791 with the hope that the Indians would adopt Euro-American agricultural practices, Christianity, and education in the English language. According to the Treaty of Holston which established the program in 1792, the government's intent was to lead the Cherokees "to a greater degree of civilization and to become herdsmen and cultivators instead of remaining in a state of hunters." The program allocated funds for the purchase of domestic animals and agricultural tools to be distributed among the Cherokees.⁸

Following the Treaty of Holston, the Cherokees successfully adopted white husbandry techniques; built gristmills, sawmills, hide processing centers, ferries, and turnpikes; and leased out saltpeter mines. Most of the Cherokee lands were not suitable for cotton because of the short growing season and rain patterns, but many of those who could grow cotton did and also purchased cotton gins. The Cherokees created an agricultural and industrial society that successfully competed with neighboring white markets by incorporating modern white tools such as gristmills and the cotton gin with centuries-old Southeast Indian agricultural practices like the three sisters method of planting corn, beans, and squash together in small hills.⁹

The Cherokees engaged in thriving market systems with other indigenous groups for many generations, and after European contact, they rapidly expanded their commercial markets to include their new white

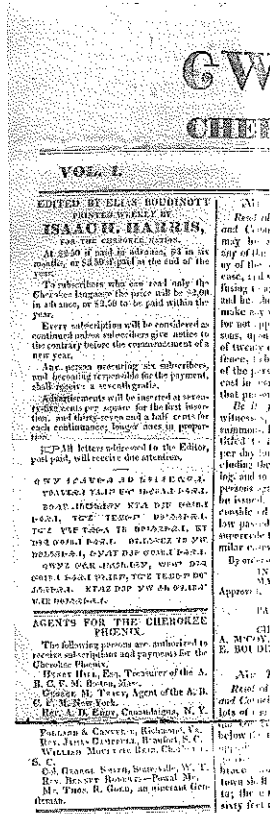
⁷ Anne Millbrooke, "South Carolina State Geological Surveys of the Nineteenth Century," in *Geological Sciences*, 26-27.

⁸ Treaty of Holston, July 2, 1791, in Charles J. Kappler, ed., *Indian Affairs: Laws and Treaties* (Washington, D.C., 1904), 2:29-33.

⁹ George W.A. Featherstonhaugh, *Canoe Voyage up the Minnay Sotor* (1857; reprint, St. Paul, 1970), 2:284; Legislature of Cherokee Nation, "Census of 1824," *Cherokee Phoenix*, June 18, 1828; Vicki Rozema, *Coveted Lands: Agriculture, Timber, Mining, and Transportation in Cherokee Country Before and After Removal* (Ph.D. dissertation, University of Tennessee, 2012).

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neighbors. Among other products, the Cherokees raised hogs, cattle, wheat, and corn for external markets. They built their new capital, New Town or New Echota, at the junction of four roads that connected the town to the rest of the Cherokee Nation and where the Conasauga and Coosawatte Rivers join to form the Oostanula River. From this location, navigation to Mobile Bay was possible and allowed the Cherokees to send boats loaded with flour and whiskey to Mobile in the Alabama Territory.¹⁰

For many years, the Cherokees relied on a passport system operated by the War Department to control travel through or settlement in Cherokee territory by whites and their slaves. Although both the Cherokees and the

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The Cherokees embraced many forms of emerging technologies. Beginning in 1828, the Cherokee Nation published the first Native American newspaper, the Cherokee Phoenix. To appeal to a wide range of readers, the newspaper printed articles in both Cherokee and English. Cherokee Phoenix, May 28, 1828.

¹⁰ Return J. Meigs to John C. Calhoun, November 15, 1819, in *The Papers of John C. Calhoun*, eds. W. Edwin Hemphill and Clyde N. Wilson (Columbia, SC, 1995), 4:411-13.

federal government wanted to carefully control the types of people who moved into or passed through Cherokee lands, both parties also wanted to promote new industry inside the Cherokee Nation, and to do that, passports were issued to individuals, and sometimes their families and slaves, who wished to set up new industry inside Cherokee territory. The Cherokees needed white mechanics who could build and operate grist mills, sawmills, blacksmith shops, and powder mills and who could teach them new agricultural, husbandry, and building techniques.¹¹

Although passports for residency were intended to be issued only to skilled people who the Cherokees had approved, the federal government sometimes abused the system and granted permission to industrialists who fulfilled some need of the government but not the Cherokees. These included permits to whites to set up iron and saltpeter mines for the dual purposes of supplying the military and making profits. Another problem with federal control of the passport system was that many workers who were granted temporary residency in the Cherokee Nation were hard to get rid of after they had lived there for several years. Beginning in 1819, the Cherokee General Council began to pass a series of laws that regulated the types of white people who would be allowed to enter the nation to operate approved industries. These new laws established national standards that limited access and reduced the possibility of corruption and conflict among the tribe or federal agents about who could enter and establish residences or businesses.¹²

Censuses taken in 1809 and 1824 indicated that the measures that the Cherokees took to limit the number of white people who settled in Cherokee country worked. The 1809 census listed 314 whites living in the Cherokee Nation while the 1824 census listed 215, a decrease of 29 percent. At the same time, the number of sawmills increased from 3 to 13, the number of grist mills increased from 13 to 36 and the number of schools, which were run by white missionaries, increased from 5 to 18. This indicated that the Cherokees were successful in increasing both industry and education without increasing the number of whites who resided in the nation. On the other hand, the number of black slaves increased from 583 to 1,277, reflecting the Cherokees' growing dependency on slave labor.¹³

On October 15, 1829, after an influx of gold diggers into their country, the Cherokee National Committee and Council suspended the Treasurer's authority to issue permits for mechanics to enter. The flood of white men into

¹¹ Records of the Cherokee Indian Agency, East, M-208, National Archives and Records Administration, Bureau of Indian Affairs, Record Group 75.

¹² Return J. Meigs to John Walker, August 8, 1813, reel 5; Treaty with the Cherokee Indians, December 2, 1807, reel 3, all in Records of the Cherokee Indian Agency, M-208; Cherokee Nation, *Laws of the Cherokee Nation adopted by the Council at Various Periods* (Tahlequah, Cherokee Nation, 1852), 6, 131, 134.

¹³ Legislature of the Cherokee Nation, "Census of 1824," *Cherokee Phoenix*, June 18, 1828; McLoughlin, *Cherokee Renaissance*, 168-71.



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the mountains made it difficult to determine who was there legitimately and who was not. Permits were often obtained under fraudulent circumstances for persons who were not skilled mechanics. The Council suspended the issuing of permits temporarily until the matter could be studied. Six days later, on October 21, 1829, the Council declared a resolution to the problem by enacting a law limiting permits to one year. By declaring that they could not bring their families, the Council expressed its concern over skilled white craftsmen using their work in the Cherokee Nation as a means to becoming permanent residents. An exception was made for millers, ferrymen, blacksmiths, and turnpike-keepers that had already entered the country with their families under the 1819 law.¹⁴

Although the Cherokees embraced education and new technologies, they were determined to maintain strict control over all the industry, commerce, and transportation in their Nation. Southern leaders saw the Cherokee laws controlling access to their lands as being in direct conflict with their goals of opening Cherokee lands to new technologies being developed in mining, transportation, and agriculture.

By the 1820s, southern leaders and investors took particular interest in the natural resources of the Cherokee Nation. Although the South trailed the North in scientific education and application of technology, the southern states led the nation in state-funded mineralogical surveys. Those surveys were a response to soil exhaustion and were also designed to search for deposits of gold and other valuable minerals. North Carolina, where gold was discovered in 1799, was the first state to order a geological survey. In 1821 Denison Olmsted, the first professor of chemistry, geology, and mineralogy at the University of North Carolina and a former student of Benjamin Silliman at Yale, led the survey, which focused on North Carolina's gold region. Other states soon launched their own surveys including South Carolina in 1824; Massachusetts in 1830; Tennessee in 1831; Maryland in 1834; Virginia, New Jersey, and Connecticut in 1835; and Georgia and New York in 1836. The first federal survey, authorized by the Topographical Bureau of the Corps of Engineers in 1834, was led by the newly appointed U.S. Geologist George W. Featherstonhaugh and covered several southern states and territories including Virginia, Tennessee, Georgia, Alabama, the Carolinas, Arkansas, and lands still belonging to Native Americans like the Creeks.¹⁵

In 1831, the Tennessee legislature authorized the appointment of Gerard Troost as the state's first official geologist and mineralogist. Troost was a

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4," *Cherokee Phoenix*, June 18, 1828;

¹⁴ Cherokee Nation, *Laws of the Cherokee Nation*, 6, 131, 134-35.

¹⁵ Oakeshott, "Contributions of the State Geological Surveys," 323, 326; Millbrooke, "South Carolina," 26-28; Michele L. Aldrich and Alan E. Leviton, "William Barton Rogers and the Virginia Geological Survey: 1835-1842," in *Geological Sciences*, 83-104; Edmund Berkeley and Dorothy Berkeley, *George William Featherstonhaugh, The First U.S. Government Geologist* (Tuscaloosa, AL, 1988), 114-15; George W. Featherstonhaugh, *Excursion Through the Slave States* (London, 1844), vol. 2.

Dutch physician, pharmacist, and geologist who had moved to Nashville from New Harmony, Indiana in the late 1820s. He opened a natural history museum in Nashville before joining the faculty of the University of Nashville, where he was a professor of mineralogy, geology, and chemistry and taught the state's first geology course. The legislature ordered Troost "to make a geological survey of the state with a view to develop its mineral resources." By 1835, Troost conducted three surveys mapping resources in Tennessee including the coal region which ran from Cumberland Mountain in Kentucky to Monte Sano at Huntsville, Alabama. In October 1836, the state asked Troost to travel to the Ocoee District to survey the lands which had recently been illegally ceded by a small group of Cherokees in the Treaty of New Echota. Troost and his field assistants performed this survey despite the fact that the Cherokees still lived there. The report called attention to areas well-suited to agriculture and identified mineral resources such as gold, roofing slate, marble, limestone, graphite, and iron. To the disappointment of the legislature, Troost determined that gold prospects in the Ocoee District were minimal and less valuable than in neighboring states. Despite these findings, Tennesseans were anxious to explore the natural resources in the Cherokee lands.¹⁶

By the 1830s, geological surveys in Indian territories were also used to assess the strength of specific tribes. John C. Calhoun took a very visible interest in the mineral resources of the Cherokee Nation while also evaluating the possibility of displacing the Cherokees. As Secretary of War under President James Monroe, Calhoun helped the president redirect federal policy away from support of the civilization program and toward increased pressure for land cessions from the Indians. Also as Secretary, Calhoun ordered several scientific explorations of Indian Territories to gather intelligence on Indian populations and village locations, possible fort locations, transportation routes, and other natural resources. Although Calhoun did not play a direct role in the Cherokee removal of 1838, he was a major architect of U.S. removal plans and strategies to pressure eastern tribes into ceding their lands.¹⁷

¹⁶ "An Act to appoint a Geologist, Mineralogist, and Assayer for the State of Tennessee," December 21, 1831, in *Public Acts Passed at the Stated Session of the Nineteenth General Assembly of the State of Tennessee, 1831* (Nashville, 1832), 43-44; "A resolution providing for a mineralogical survey and examination of the Ocoee District," October 24, 1835, in *Public Acts Passed at the Called Session of the Twenty-first General Assembly of the State of Tennessee, 1836* (Nashville, 1836), 12-14; Gerard Troost, *Fourth Geological Report to the Twenty-second General Assembly of the State of Tennessee, made October, 1837* (Nashville, 1837); Gerard Troost, *Third Geological Report to the Twenty-first General Assembly of the State of Tennessee, made October, 1835* (Nashville, 1835); Charles W. Wilson Jr., *State Geological Surveys and State Geologists of Tennessee*, Bulletin 81 (Nashville, 1981), 2-4; James X. Corgan, *Geology in Antebellum Tennessee*, Bulletin 85 (Nashville, 2002), 32.

¹⁷ William M. Meigs, *The Life of John Caldwell Calhoun* (New York, 1970), 1:244-45.

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¹⁸ John C. Calhoun, *Speeches and Writings*, ed. George F. Rife (New York, 1859), 24, 1835, in *John C. Calhoun: A Biography*, ed. Walter D. Mignone (New York, 1955), 50.



several routes including one that passed through Knoxville, then south through the Cherokee Nation.¹⁹

Southern leaders were also drawn to railroads as a way to better connect the nation. In the 1820s and 1830s, steam railroad technology was still in its infancy. When the Charleston to Hamburg, South Carolina Railroad began partial operations in 1830, many southern leaders envisioned a large network of southern railroads, including lines that ran through the Cherokee Nation. They proposed railroads to connect the Tennessee River with ports on the Atlantic and the Gulf such as Charleston and Mobile. Their primary goal was to open the interior of the South to eastern U.S. and foreign markets.

Calhoun and former U.S. Senator Robert Y. Hayne of South Carolina were strong supporters of an east-to-west railroad project that they hoped would revive Charleston's floundering economy as well as contribute to a South-West political alliance. They disagreed, though, on where the western end of the east-to-west railroad should terminate. Hayne wanted a terminus in Louisville and one in Cincinnati so that the railroad could tap the Ohio River and Northwest markets. In 1835, at the request of Hayne and the South Carolina legislature, Secretary of War Lewis Cass sent several officers and Featherstonhaugh to accompany Colonel James Gadsden on a survey of the proposed railroad line. After the engineers determined the feasibility of crossing the Appalachian Mountains, Hayne and other southern leaders formed a group called the Knoxville Convention to build interstate support. During a series of meetings in Knoxville during 1836, Hayne argued for a route from Knoxville through the mountains to Asheville, North Carolina using the French Broad River valley.²⁰

Calhoun favored two routes that ran further south: one would pass through Cherokee country and Muscle Shoals, Alabama, and terminate at Memphis; the other would pass through Cherokee country and Middle Tennessee, ending near the mouth of the Missouri River. To promote the Memphis route, Calhoun urged the citizens of Shelby and Fayette counties of Tennessee to press for a railroad charter. A special act was passed by the state legislature in December 1835 that chartered the LaGrange and Memphis

¹⁹ Meigs, *The Life of John Caldwell Calhoun*, 1:246-52; Forest G. Hill, *Roads, Rails & Waterways: The Army Engineers and Early Transportation* (Norman, OK, 1957), 24, 40, 160-61; Pamela L. Baker, "The Washington National Road Bill and the Struggle to Adopt a Federal System of Internal Improvement," *Journal of the Early Republic* 22 (Fall 2002): 441. During the first half of the nineteenth century, several roads were referred to as "The National Road" including the proposed road from Washington, D.C. to New Orleans. An earlier road which began in Cumberland, Maryland and ran west through what is now Ohio, Indiana, and Illinois, was also called "The National Road." Congress appropriated funds for the Cumberland Road in 1806. See, Hill, *Roads*, 37, 57.

²⁰ *Report of the South Carolina Commissioners to the Knoxville Convention, on the Subject of the Proposed Railroad from Charleston to Cincinnati and Louisville* (Knoxville, 1836); Editorial, *National Banner and Nashville Whig*, May 4, 1836; Robert Y. Hayne, *Address in Behalf of the Knoxville Convention, to the Citizens of the Several States Interested in the Proposed Louisville, Cincinnati, and Charleston Railroad* (Charleston, SC, 1836); Merrill D. Peterson, *The Great Triumvirate: Webster, Clay, and Calhoun* (New York, 1987), 262-64; Meigs, *The Life of John Caldwell Calhoun*, 2:360-62.



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Railroad. Construction on the LaGrange to Memphis Railroad began in 1837, but the economic panic later that year contributed to the company's financial problems and put an end to construction. John Christmas



Senator Robert Y. Hayne of South Carolina supported an east-to-west railroad project, which skirted just north of the Cherokee Nation. In 1836, he formed the Knoxville Convention to support railroad building in East Tennessee. The South in the Building of the Nation (Richmond, VA, 1909), 2:76.

McLemore, a resident of Nashville and close friend and confidant of Andrew Jackson, hoped to get the failed railroad back on track. McLemore owned two-hundred acres of land near Fort Pickering south of Memphis and he urged the railroad company to purchase his land, sell lots with the goal of establishing a town that would compete with Memphis, and thereby raise some capital for the railroad. The company accepted McLemore's proposal, but the real estate venture failed along with the railroad.²¹

One of the problems with Calhoun's middle Tennessee route was finding a pass through the Appalachian Mountains. In 1836, Calhoun and Gadsden identified a gap in the Carolina mountains between the Tuckasegee and White Water valleys. The proposed route ran through the Cherokee Nation in North Carolina and in South Carolina, the route followed the old Cherokee Trade Path to Charleston. Although Calhoun's Tuckasegee railroad was never built, other

commercial railroads proposed to pass through the Cherokee Nation, like the Hiwassee, and the Western and Atlantic, were built. Construction on the Hiwassee Railroad began in October 1837, was completed in 1855, and ran from Knoxville south to the Tennessee-Georgia state line. One of the commissioners and stockholders of the railroad was General Nathaniel Smith, the McMinn County resident and Tennessee militia leader who was appointed superintendent of the Cherokee removal. The Western and Atlantic Railroad was built through the Cherokee Nation and ran south from Ross's Landing (now Chattanooga) into Georgia and connected to other railroads that eventually covered the entire state. Colonel Stephen H. Long, on loan from the Corps of Engineers, was named chief engineer of

²¹ T.D. Clark, "The Building of the Memphis and Charleston Railroad," *East Tennessee Historical Society's Publications* 8 (January 1936): 12-14, notes 17 and 18 on page 13; Meigs, *Life of John Caldwell Calhoun*, 2:360; Andrew Jackson to John Christmas McLemore, April 30, 1830, in *The Papers of Andrew Jackson*, eds. Daniel Feller, Thomas Coens, Laura-Eve Moss (Knoxville, 2010), 8:20, 219.

Georgia and conducted the initial survey of the route in 1837-1838. Because of his military training and the months that he spent in the Cherokee Nation surveying the route, Governor George Gilmer of Georgia called on Long to advise the state on whether or not he believed the Cherokees would offer violent resistance to removal and how the state militia should respond if they did.²²

In addition to commercial goals, southern leaders wanted to build railroads through Cherokee country for defense purposes. Calhoun and General Edmund P. Gaines, who spent part of his early years in East Tennessee, advocated a system of railroads that crisscrossed the country that could be used to transport troops and supplies for defense purposes. Gaines and Calhoun believed that a Memphis to Atlantic railroad could serve as both a military transport system and to promote southern commerce. As one of the commissioners for the new railroad, Gaines was instrumental in convincing the Tennessee legislature to authorize \$500 towards a survey. A lack of engineering expertise presented problems, though, so southern leaders looked for experienced engineers from the U.S. military. Gaines was able to use his high-ranking position in the Army to secure the services of Colonel Long, who not only had expertise in river improvements, but had become one of the nation's leading railroad and steamboat engineers.²³

Long's survey began in the summer of 1834. He travelled to Alabama and met with the officers of the Tuscumbia, Courtland, and Decatur Railroad who supplied him with materials for the project. Long charted a route through Cherokee lands, and thereafter Gaines arranged for Long to survey a more southern route and to have his expenses paid by the Atlantic and Mississippi Railroad. Gaines was pleased with Long's work, and he sent a glowing report to Washington stressing the importance of an internal improvement project that would connect the Mississippi River and the Atlantic seaboard through Cherokee lands.²⁴

Although there was wide support for a western railroad, the Memphis and Charleston Railroad suffered many setbacks. Parts of the system were completed in the 1830s. Other sections of the railway which Gaines hoped

²² John C. Calhoun to Editor of the *Pendleton Messenger*, September 22, 1836, in *Papers of John C. Calhoun*, 13:286-93; John C. Calhoun, "The Great Rail Road," *Niles' Weekly Register*, October 8, 1836; Meigs, *Life of John Caldwell Calhoun*, 2:360-62; N.W. Woodfin to D.L. Swain, October 2, 1836, David L. Swain Papers, PC # 84, North Carolina State Archives, Raleigh, North Carolina; Peterson, *The Great Triumvirate*, 263; James W. Holland, "The East Tennessee and Georgia Railroad, 1836-1860," *East Tennessee Historical Society's Publications* 3 (January 1931): note 10 on page 9, 91-92; Richard G. Wood, *Stephen Harriman Long: Army Engineer, Explorer, Inventor* (Glendale, CA, 1966), 197-98.

²³ James W. Silver, "Edmund Pendleton Gaines: Railroad Propagandist," *The East Tennessee Historical Society's Publications* 9 (1937): 7-9; James W. Silver, *Edmund Pendleton Gaines: Frontier General* (Baton Rouge, 1949), 241-43; "An Act to appropriate five hundred dollars to the survey of a railway from Jackson to the Mississippi River," *Public Acts Passed at the First Session of the twentieth General Assembly of the State of Tennessee* (Nashville, 1833), 91.

²⁴ Phillips, *History of Transportation*, 304-306; Hill, *Roads*, 119; Wood, *Stephen Harriman Long*, 162-64.

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²⁵ Silver, *Edmund P*

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would become part of his great east-to-west rail system were delayed because
of limited funding and financial failures. Gaines never ceased lobbying
for either the Memphis and Charleston Railroad or his great national rail
defense system. In 1839, Gaines sent a proposal to Congress that outlined
seven major rail systems, one of which was a rail network from Memphis
to Charleston with branches to Milledgeville, Georgia and East Florida.
Like his earlier proposals, this Memphis to Atlantic plan placed the railroad
through the Cherokee Nation, which by that time had been vacated by the
Cherokee.²⁵

Two other strong advocates of building transportation routes through
Cherokee country were Governors George Troup and Wilson Lumpkin of
Georgia. In 1826, Lumpkin, while serving on Governor Troup's board of
internal improvements, visited Cherokee country for the purpose of finding
a route for a canal through the Appalachian Mountains to connect the rivers
of Georgia to tributaries of the Tennessee River. The trip also served as a
diplomatic mission in that Lumpkin spoke with Cherokee leaders about the
idea of a complete removal from the state to lands west of the Mississippi.
Lumpkin spent twenty-five days with the state engineer, Hamilton Fulton,
examining Cherokee country. They settled on a canal route between the south
fork of the Hiwassee River and the Conasauga River in Georgia. However,
Lumpkin became convinced that the best solution was not a canal but a
railroad. Lumpkin's desire to build a railroad through Cherokee country
directly influenced his decision to present a plan for Cherokee removal to
the Georgia legislature in 1827. Lumpkin also recommended other means
of connecting the Tennessee River with rivers in Georgia. One idea was to
build a one-hundred-mile canal from the Tennessee River to Will's Creek
and the Coosa River in Alabama. He also recommended the construction
of a road from the Chattahoochee River to the Tennessee River. Concerning
the road through Cherokee country, Lumpkin wrote, "the country abounds
in fine timber, water, suitable stone for turnpiking, and masonry of every
description."²⁶

Like railroads, river navigation was the responsibility of the states.
Tennessee lagged behind other states in addressing the issue of river
navigability and establishing a board of internal improvements. When the
board had its first meeting in 1832, the organization recommended that
President Andrew Jackson appoint Colonel Long to the task of improving
the Holston and Tennessee Rivers from Knoxville to the Alabama state line.
Jackson concurred, and that same year, Long took two civil engineers and
three engineers from the Corps of Topographers with him. The lands on
the south side of the Tennessee River from the mouth of the Hiwassee to

²⁵ Silver, *Edmund Pendleton Gaines*, 251-52.

²⁶ Wilson Lumpkin, *The Removal of the Cherokee Indians from Georgia* (New York, 1907), 1:37-42, 2:273; Wilson Lumpkin to General D. Newnan, *Georgia Statesman*, July 4, 1826.

the state line all belonged to the Cherokees, but the survey party did not obtain permission from the Cherokees to conduct the survey. The section of the Tennessee River located near Ross's Landing to the Alabama line was notorious for its sandbars and whirlpools that bore colorful names such as "the suck" and "the boiling pot." Steamboats rarely traversed this section of the river, instead operating above and below the obstacles.²⁷

Long's report was presented to the Tennessee legislature in September 1832. He recommended over \$58,000 in improvements including straightening and deepening the channel, creating warping facilities, and constructing a sluice and dam. The work took several years to complete, but by 1835, steamboats were able to travel from Alabama to Knoxville when the water level allowed.²⁸

After Long's navigation improvements were made to the Tennessee River, the Cherokees benefitted from the improvements. There is no evidence that the Cherokees objected to the river improvements. They recognized the benefits of the new technologies developed by the Corps of Engineers in improving river navigation and even hoped that some of the obstructions on the rivers where they built their capitol over a decade earlier could be removed to improve navigation downstream of the capitol as well as in the Cherokee upper country. In 1836, the Cherokees wrote several letters to the federal government in which they laid out plans to further develop their resources and commercial prospects. Among other things, they proposed the construction of more ferries and roads, clearing more rivers for navigation, and the development of marble and limestone quarries and gold, silver, lead, and iron mines. The problem, at least from the white perspective, was that these letters reinforced the Cherokees' position that their nation was sovereign and that the states had no right to extend their laws over the Cherokees. These letters and other Cherokee correspondence did not address railroads, however their past actions and laws regarding white intrusions on their lands, supported the Cherokees' position that laws passed by the states to acquire right-of-ways for state-incorporated railroads were not valid without Cherokee consent.²⁹

Long's river navigation improvements not only aided Cherokee commerce, but all commerce on the upper Tennessee River and its many tributaries and made the Cherokee settlement at Ross's Landing more attractive to whites as an important transportation hub. The settlement was

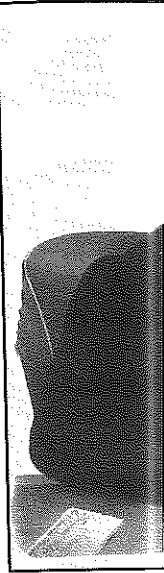
²⁷ Wood, *Stephen Harriman Long*, 152; Stephen H. Long, *Surveys of the Tennessee River*, Doc. No. 167, 29th Congress, 1st Session, 1831; Edward Deas, "Journal of Occurrences on the route of a party of Cherokee emigrants," in Vicki Rozema, ed., *Voices from the Trail of Tears* (Winston-Salem, 2003), 79-92, 102.

²⁸ Wood, *Stephen Harriman Long*, 152; *Surveys of the Tennessee River; Report of the Committee on Internal Improvements in the Senate of Tennessee* (Nashville, 1832).

²⁹ Return J. Meigs to John C. Calhoun, November 15, 1819, in *Papers of John C. Calhoun*, 4:411-13; John Ross, et. al. to The Senate and House of Representatives, June 21, 1836, in *The Papers of Chief John Ross*, 1:427-44.



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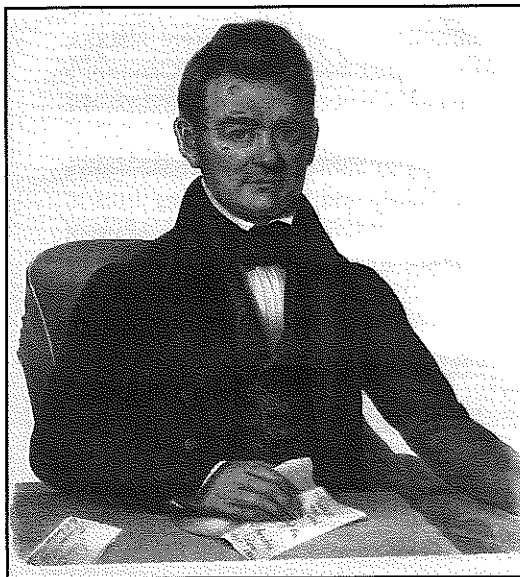
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located just upstream of the Tennessee River Gorge, a steep-sided canyon and natural gap in the mountains formed by the Tennessee River as it cuts its way through Walden's Ridge on the Cumberland Plateau. Several Indian trails converged at the landing where brothers John and Lewis Ross and other Cherokees had established warehouse, boat, and ferry businesses. Because of its prime location on both east to west and north to south transportation routes, Euro-Americans anxiously waited for an opportunity to move in



Principal Chief John Ross led the Cherokees during their removal to Indian Territory, now Oklahoma. Thomas McKenney and James Hall, History of the Indian Tribes of North America (Philadelphia, 1844), 3:176.

to Ross's Landing and set up transportation-related businesses. That opportunity came in early 1836.³⁰

Throughout the era of the Early Republic, southern leaders had pressured the Federal government to negotiate a final treaty with the Cherokees that would open all of their lands to white development. In May 1830, Congress approved President Andrew Jackson's Indian Removal Act which provided for the exchange of Indian lands for new lands west of the Mississippi River. The act also provided funding for the removal of Native

Americans to the West. After the passage of the new legislation, increased pressure was placed on the Cherokees and all tribes remaining east of the Mississippi River to enter into new land cession treaties. In December of 1835, treaty commissioners met with a small group of Cherokees at New Echota and negotiated an agreement whereby the Cherokees would give up all of their remaining lands in Georgia, Tennessee, North Carolina, and Alabama in exchange for new lands in what is now Oklahoma. The Cherokees would be paid five million dollars for their lands and were given two years to voluntarily emigrate from the date of Congressional ratification, which occurred on May 23, 1836. Because the Treaty of New Echota was

³⁰ Gilbert Govan and James Livingood, *The Chattanooga Country, 1540-1976*, 3rd ed. (Knoxville, 1977), 102-104; Phillips, *History of Transportation*, 8; Gary E. Moulton, *John Ross: Cherokee Chief* (Athens, GA, 1978), 8.

signed by only twenty Cherokees, none of whom were current members of the Cherokee National Council or Committee, Principal Chief John Ross and the majority of Cherokees, as well as many Euro-Americans, considered the treaty to be illegal. Ross, the Cherokee National government, and many Cherokee leaders and supporters continued to fight for the next two years to have the treaty overturned or re-negotiated, but to no avail.³¹

After the Treaty of New Echota was signed, investment and speculation in the region swelled. Land speculators and hopeful new white residents began moving into Ross's Landing and other areas that were not due to be vacated by the Cherokees for another two years. B.B. Cannon, a speculator and a key figure in the removal process, acquired land on the Tennessee River in Vann's Town (named for Joseph Vann, the wealthy mixed-blood Cherokee plantation owner of Springplace, Georgia, Vann's Town was renamed Harrison by the whites) and Ross's Landing areas in order to take advantage of financial opportunities. Cannon was aware of plans to build railroads to the Tennessee River, and like other whites, he expected the Ross's Landing-Vann's Town area to increase in importance as a transportation and commercial hub. In 1837, he organized the First Regiment of Tennessee Volunteer Infantry to aid with Cherokee removal to ensure the transfer of Cherokee lands to white hands and to protect his investments. He subsequently led a detachment of voluntarily enrolled Cherokees on a northern route through Kentucky, Illinois, and Missouri to Arkansas. This route later became known as the Trail of Tears. Cannon, like General Nathaniel Smith and many other southerners who planned to profit from the acquisition and development of Cherokee lands, were actively involved in Cherokee removal.³²

Although the Cherokees had embraced the white man's civilization program and adopted new agricultural and milling techniques, many whites still believed that the Cherokees were too backward to embrace scientific and technological advances. With regard to the fact that the Cherokees still resided in an area where Fulton and Lumpkin planned to put a railroad, Lumpkin wrote in his autobiography: "the resources of Georgia could never be extensively developed by a well devised system of internal improvements, and commercial and social intercourse with other portions of the Union, especially the great West, until this portion of the state was settled by an industrious, enlightened, free-hold population." Another former Georgia Governor, George Gilmer, explained his actions in ridding Georgia of the

³¹ "Treaty with the Cherokee, 1835," in Kappler, *Indian Affairs*, 2:439-47; John Ross, et. al., "To the Senate and House of Representatives," June 21, 1836, in Gary E. Moulton, ed., *The Papers of Chief John Ross* (Norman, OK, 1985), 1:427-44; Rozema, *Voices from the Trail of Tears*, 9, 16.

³² Govan and Livingood, *The Chatanooga Country*, 101-109; B.B. Cannon, "Journal of a Land Detachment," in Rozema, *Voices from the Trail of Tears*, 81-92; Rozema, *Voices from the Trail of Tears*, 79-80.

Cherokees in his 1855 "had no genius for inventing human knowledge or in making tools for work and weapons for such a primitive race, that they were incapable of the scientific progress that C

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³³ Gilmer, *Sketches*, 248; Lumpkin, *Autobiography*, 101-109.

³⁴ "Report of the Chief Engineer of the Cherokee Land Survey," (Washington, D.C., 1860).



of whom were current members of the committee, Principal Chief John Ross and as many Euro-Americans, considered the Cherokee National government, and many continued to fight for the next two years, frustrated, but to no avail.³¹

signed, investment and speculation in new and hopeful white residents in other areas that were not due another two years. B.B. Cannon, a removal process, acquired land on the land owned for Joseph Vann, the wealthy owner of Springplace, Georgia, Vann's (whites) and Ross's Landing areas in other opportunities. Cannon was aware of the Tennessee River, and like other whites, he saw his own area to increase in importance and value. In 1837, he organized the First Georgia Land Company to aid with Cherokee removal efforts, to give lands to white hands and to protect the removal of voluntarily enrolled Cherokees through Kentucky, Illinois, and Missouri, known as the Trail of Tears. Cannon, and many other southerners who planned the removal of Cherokee lands, were

embraced the white man's civilization and the use of sawmills and milling techniques, many whites considered the Cherokee Nation too backward to embrace scientific progress. To the fact that the Cherokees still used bows and arrows, Lumpkin planned to put a railroad through the state, and the resources of Georgia could never be developed by a system of internal improvements, but rather by connecting with other portions of the Union. The removal of the Cherokee Nation from the state was settled by an act of Congress. "Another former Georgia Governor's actions in ridding Georgia of the

³¹ *Indian Affairs*, 2:439-47; John Ross, et. al., "Report of the Principal Chief John Ross, June 21, 1836, in Gary E. Moulton, ed., *Cherokee Nation*, 1:427-44; Rozema, *Voices from the Trail of*

Tears, 101-109; B.B. Cannon, "Journal of a Land Surveyor," *Cherokee Nation*, 81-92; Rozema, *Voices from the Trail*

Cherokees in his 1855 autobiography when he wrote that the Cherokees "had no genius for invention, and have added nothing to the stores of human knowledge or instruments. Stone axes and hickory clubs were their tools for work and weapons of war." Gilmer believed that the Cherokees were such a primitive race, that with the exception of some of the mixed-bloods, they were incapable of the types of education and industry needed for the scientific progress that Georgia and the rest of the South demanded.³³

The desire by southern leaders to incorporate new advances in science and technology in the development of the South led to a new level of racism. Although many white leaders acknowledged the fact that the Cherokees had begun to embrace Christianity and education, and were capable of learning new agricultural techniques, husbandry, and types of commerce, some believed that they were not up to the challenges of adopting the new scientific advances in engineering that the white race planned to use to exploit their resources. The federal civilization program had established goals for the Cherokees to meet in order to be considered worthy of inclusion in the new republic. The Cherokees met those challenges and created an agricultural and industrial society that successfully blended modern Euro-American technologies such as cotton gin and milling processes with the best of proven ancient indigenous agricultural practices, but southern white leaders raised the bar and declared that the Cherokees were too backward to embrace new technological advances in mining and transportation before giving them the opportunity to adopt these new tools. Ironically, southern leaders had set the bar so high that even the white community failed to meet most of its own goals.

The gold mines, based on surface mining techniques which took several more years to develop into effective underground processes, began to peter out shortly after the Cherokee removal. Numerous canal schemes, including a Department of War plan to cut a canal through Cherokee lands to connect the Tennessee and Coosa Rivers, were cancelled because of financial and political problems or after engineering problems resulted in the collapse of the Muscle Shoals canal. Plans to build railroads through Cherokee country were delayed or cancelled because of the Panic of 1837 which affected the entire country. Another problem affecting railroad development through the Cherokee Nation was the fact that railroad technology did not improve rapidly enough to conquer the steep inclines in the Appalachian Mountains or the sharp curves in the narrow river valleys until later in the century. But over-confident southern leaders believed that advances in mining and transportation technologies could keep up with their demands to exploit Cherokee lands, so they forced indigenous removal before the technologies were ready to conquer the geography of the Appalachian Mountains.³⁴

³³ Gilmer, *Sketches*, 248; Lumpkin, *The Removal of the Cherokee Indians*, 1:42.

³⁴ "Report of the Chief Engineer for the Year 1826," *American State Papers: Military Affairs* (Washington, D.C., 1860), 3:360.

Many plans by southern white leaders to fund internal improvements depended on Indian removal. For example, the North Carolina legislature used proceeds from the sale of former Cherokee lands to fund internal improvements including a new road from Franklin to Murphy through former Cherokee lands and the Fayetteville and Western Railroad. Georgia used income from the sale of the Cherokee gold mines to fund internal improvements. One railroad entrepreneur named John Williams even approached Colonel Gideon Morgan, a white man who was married to a Cherokee woman and who had led a detachment of Cherokees in the Creek War of 1813-1814, to ask Morgan to speak to the Cherokees about investing in the Charleston and Cincinnati Railroad using two or three million of the five million dollars that they were to receive from the treaty signed at New Echota. Morgan apparently told Williams he would meet with the Cherokees and try to persuade them to use half their money to invest in the railroad which they had not consented to and would never use. How the Cherokee National Council received this proposal, if it was ever made, is unknown. However, this story demonstrates the audacity of white entrepreneurs in their quest to fund new technologies like railroads across Cherokee lands.³⁵

Because of the forced removal of the Cherokees in the late-1830s there were no recorded agreements between Cherokee and white leaders about railroad construction in the disputed territory. But there is clear evidence that the Cherokees supported transportation innovations. During the Cherokee removal, Principal Chief John Ross purchased a steamboat, the *Victoria*, to remove his family and friends from Tennessee to Indian Territory. Joseph Vann bought several steamboats after moving west and both he and Ross hired men to run their commercial steamboat ventures. The Qualla Cherokees' white agent, William Holland Thomas, who was instrumental in securing the right of many Cherokees to remain in Western North Carolina, actively promoted railroad construction in the late 1840s to the 1850s. Like these men, other Cherokee leaders embraced new kinds of commerce and industry, such as steamboats, turnpikes, and ferries, so it is quite possible that, given more time, some sort of agreements would have been reached. But, the Cherokees had repeatedly declared their sovereignty and rights to control their internal affairs, including the right to regulate mining and transportation within their boundaries. In the historic case of *Worcester v. Georgia*, Cherokee leaders took the fight for sovereignty over their lands as far as the United States Supreme Court, and won. Because of decades of conflict over land and sovereignty issues, white leaders knew that the Cherokees would interfere with plans to build new mines, and canals and railroads

³⁵ Alan D. Watson, "Batling 'Old Rip': Internal Improvements and the Role of State Government in Antebellum North Carolina," *North Carolina Historical Review* 77 (April 2000): 189; Gilmer, *Sketches*, 284-85; John Williams to Willie P. Mangum, February 6, 1836, in Henry Thomas Shanks, ed., *The Papers of Willie Person Mangum* (Raleigh, NC, 1952), 2:387-88.

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from the Tennessee River to the Atlantic and Gulf and, therefore, as far as southerners were concerned, the Cherokees' lands must be forfeited.³⁶

The three decades leading up to the Cherokee removal of 1838 were critical developmental years for the United States in terms of science, education, and engineering. As the nation expanded west, leaders were faced with new transportation and communication problems. Military leaders were also faced with the additional burden of rapid deployment of troops and supplies to defend the expanding borders. The development of the gold industry in North Carolina and later Georgia came at a time when Americans knew very little about hydraulics or underground mining techniques or even how to locate new mineral resources. To solve all of these problems, American leaders looked for new technologies that could be applied to a variety of military and commercial problems. The national quest for new resources and access to isolated or restricted areas occurred at the same time as debates over removing Native Americans to western lands. In the eastern United States, the lands of the Cherokees were particularly appealing to speculators and investors. The forces of new technology, the rich resources outlined by geologists such as Jacob Peck, building resentment and racism toward Native Americans, and the desire for southern leaders to control their environment all contributed to the path that led to Cherokee removal in the late 1830s.

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³⁶ John Ross to J.W. Ricketts, July 1, 1839, in *The Papers of Chief John Ross*, 1:726; "Joseph Vann," in *The Papers of Chief John Ross*, 2:738; E. Stanley Godbold and Mattie U. Russell, *Confederate Colonel and Cherokee Chief: The Life of William Holland Thomas* (Knoxville, 1990), 73-76; Theda Perdue and Michael D. Green, eds, *The Cherokee Removal: A Brief History with Documents* (Boston, 1995), 69.