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Settling Cherokee Georgia: Land Grab, Gold Rush, or Both?

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INTRODUCTION

The Cherokee Indians were the last Native Americans to be removed from Georgia during the late 1830s. Removal was carried out according to terms set forth in the controversial Treaty of New Echota, which was ratified by Congress and signed by Andrew Jackson in May 1836.¹ The treaty gave the Cherokees (who also occupied land in Alabama, Tennessee, and North Carolina) two years to prepare for removal to present-day Oklahoma, although over 2,000 Cherokees allied with the minority Treaty Party faction that signed the Treaty of New Echota left voluntarily in 1837. Over 16,000 Cherokees who remained until May 1838 were forcibly removed from the Southeast in the summer and autumn of 1838, a process that resulted in the deaths of 1,000s of Cherokees and has come to be known as the "Trail of Tears."² Removal cleared the way for white settlers to move into Cherokee Georgia by the thousands. These settlers occupied 40 acre gold lots and 160 acre land lots, that had been awarded to or purchased from fortunate drawers in one of the three lotteries the state of Georgia sponsored in 1832 and 1833 to distribute Cherokee land -- land that was not officially ceded until 1835.³

Georgia was unique among the states in its use of a lottery system to allocate land to settlers that had been ceded by Native Americans. After the cession of two narrow slivers of land by the Creek Indians in 1802, the Georgia legislature established the lottery system whereby the land would be surveyed into square districts comprised of smaller square lots to be distributed to fortunate drawers who met legally specified qualifications for participation. Georgia sponsored lotteries to distribute an estimated 23,992,058 acres of ceded land as it became available in 1805,

¹ The Treaty of New Echota was signed by only 20 Cherokees representing the "Treaty Party" and was opposed by the vast majority of the Cherokee Nation as attested to by a petition to Congress in April 1838 signed by 15,665 Cherokees protesting the validity of the treaty. The treaty was ratified by the Senate 31 to 15, a one vote margin over the two-thirds required. See Prucha, *The Great Father*, pp. 237-8; Kappler, *Indian Treaties*, p. 446, Moulton, *John Ross*, p. 77.

² Prucha, *The Great Father*, pp. 237-238; Foreman, *Indian Removal*, p. 283; Green, "The Expansion of European Colonization to the Mississippi Valley, 1780-1880," pp. 527-28; see also Satz, *American Indian Policy in the Jacksonian Era* and essays included in Anderson, ed., *Cherokee Removal: Before and After*.

³ See Cadle, *Georgia Land Surveying*, pp. 267-283; Shadburn, *Cherokee Planters in Georgia*, p. 6; Wilms, "Georgia's Land Lottery of 1832," pp. 52-60.

1807, 1820, 1821, 1827, 1832, and 1833.⁴ Records pertaining to the 1832 and 1833 Cherokee land and gold lotteries provide more detailed economic information than do those for the earlier lotteries as a result of the inclusion of surveyors' drawings and notes regarding Indian improvements on specific plats of lots. The separate designation of gold lots also provides important economic information. Sufficient quantities of gold were mined in parts of Cherokee Georgia from 1829 through 1859 to warrant construction of a mint at Dahlonega in 1837.⁵ A detailed portrait of Cherokee and white patterns of settlement and land use emerges through analysis of data generated as a result of the lotteries alongside data from the Cherokee Census of 1835, deed records, and manuscript census data. We present a preliminary sketch of this portrait in the pages that follow.

Our sketch will frame and provide initial answers to a number of questions regarding the settlement of Cherokee Georgia. First, what role did gold play in the Cherokee removal from Georgia and settlement by whites? Many historians have mentioned, but few have examined carefully, the role that gold discoveries in Cherokee Georgia played in negotiations over the Cherokee removal and the pattern of white settlement that followed. Georgia's zeal to remove the Cherokees increased dramatically after gold was discovered in 1829, as evidenced by legislative action to extend state law over Cherokee land and the working of an active secondary market for lots distributed in the 1832 and 1833 lotteries. Gold lots traded at a considerable premium over land lots in this market. We will show that this market correctly anticipated the existence of significant quantities of high quality gold. The Cherokee removal from Georgia was as much a gold rush as it was a land grab.

Second, how was the land valued in the secondary market for lots? The survey plats of Cherokee land generated for the lotteries include drawings or notes regarding the existence of improved acreage and structures on particular lots. By matching specific lots containing improvements with sales records in deed books it is possible to estimate the increment in value imparted to a lot arising from improved acres left by the Indians. What was the Native American contribution to American agricultural development from simply clearing land and preparing it for cultivation? We cannot present a complete answer to this question here, but our data suggest that

⁴ Cadle, pp. 168-283 and Table 3, p. 308.

Cherokee farmers both demonstrated the suitability of particular lots to cultivation and lowered land-clearing costs to prospective white farmers.⁶

Third, who benefited from the Cherokee removal and by how much? A remarkable aspect of Georgia's lottery system for distributing land ceded by Native Americans is that it was adopted, in part, as an attempt to prevent fraudulent land sales in response to the Pine Barrens and Yazoo land frauds that occurred during the 1790s.⁷ The transparency of the lottery system no doubt limited the potential for outright fraud in the market for vacated Indian land within Georgia's formal borders. And, the lottery system was consistent with Georgia's colonial heritage as a refuge for debtors and destitute individuals insofar as land ownership rights were extended to many individuals who would have had difficulty acquiring land under the system of headright grants that operated prior to the American Revolution until the Land Lottery of 1805.⁸ Moreover, fortunate drawers in the lotteries who were unable to occupy their lots were often able

⁵ Shadburn, pp. 214-216; See also, Williams, *The Georgia Gold Rush*, pp. 106-108.

⁶ Indeed, economic historians have largely ignored the Native American contribution to American agricultural development. White settlers necessarily benefited from investment in land clearing and other improvements previously undertaken by Native Americans. For example, The colonists at Jamestown in 1610 pursued a policy of seizing Indian fields that enabled them to plant food crops while constructing defensive fortifications in addition to pursuing exploration and prospecting activities. Lewis C. Gray describes these activities with reference to the colonists' "... natural desire to seize the already cleared Indian fields, some of which were extensive." See Gray, *History of Agriculture*, p. 18. Peter C. Mancall discusses the attractiveness of improved Indian land to settlers in the Upper Susquehanna Valley in the 18th century arguing that as Indians moved their villages "subsequent cutting or burning of new sections thinned the forest in precisely the same places most commonly visited by colonists who usually traveled along water routes." Mancall suggests that "Clearings in the forest gave colonists an impression of a potential agricultural bounty, an image of what they would enjoy when they gained control of the region." Furthermore, he maintains, "When colonists arrived, fields remained cleared or were covered by younger, thinner, and more easily removable trees." See Mancall, *Valley of Opportunity*, pp. 68-69. The extent to which growth in average farm labor productivity from 1800 to 1840 can be attributed to white settlers occupying land that had already been improved by Native Americans deserves careful attention. See Atack and Passell, pp. 13-14.

⁷ Magrath details the sale of western lands claimed by Georgia in present-day Alabama and Mississippi that precipitated the Yazoo land fraud and a famous Supreme Court decision, *Fletcher v. Peck* in his book, *Yazoo: Law and Politics in the New Republic*. For an account of the Pine Barrens fraud, see Magrath, pp. 1-2 and Cadle, 85-107.

⁸ The system of headright grants that operated in Georgia from the colonial period through the first two decades of statehood is well described by Cadle, pp. 3-167. Magrath (p. 3) discusses confusion and fraud associated with the liberal assignment of headright grants writing that, "So generous in fact were the Georgia authorities that they even distributed nonexistent land. While twenty-four organized counties in 1786 contained 8,717,960 acres, records in the office of the state surveyor general show that three times as much land -- 29,997,866 acres had been granted. These bogus titles were then sold to gullible purchasers in the northern states and Europe." For a discussion of Georgia's roots as a charity colony, see Coleman, "The Founding of Georgia," pp. 4-20, Ready, "Philanthropy and the Origins of Georgia," pp. 46-59, and Spalding, "James Edward Oglethorpe's Quest for an American Zion," pp. 60-79, included in Jackson and Spalding, eds., *Forty Years of Diversity: Essays on Colonial*

to appropriate at least a share of the rents from lots they won by choosing to sell in the secondary market. But what share of the rents did they acquire? Who purchased lots in the secondary market when, and at what price? The lottery system certainly imparted to Georgia's legislators the goodwill of the poorer classes with attendant political benefits. But, do the names of legislators or their agents show up in the records of deeds? To what extent did Georgia's political leaders reap personal financial benefits from the lottery system?

We attempt to answer these questions or, to develop the methodology whereby these questions might be answered, in the following way. A review of the provisions in legislation passed in Georgia to support the various land lotteries is presented to illustrate how this unique institution evolved during the first decades of the nineteenth century. Then we examine Cherokee settlement and land use patterns in Georgia prior to removal in the context of an increasingly hostile environment created by Georgia's desire for their expeditious removal along with a shift in federal policy to endorse removal after Andrew Jackson's election as president in 1828. We then use data from the land and gold lotteries of 1832 and 1833 and deed records to estimate a hedonic valuation model that decomposes the prices of lots sold in the secondary market for Cherokee lands into increments to value arising from land improvements made by the Cherokees, the potential for gold discoveries on some of the lots, and the location of specific lots. Our model can be used to estimate the market value of Cherokee land in Georgia in the years just preceding removal. White settlement patterns in Cherokee Georgia after removal are then examined to show that the spatial pattern matched those found for the Cherokees and tended to be concentrated in the gold regions. We conclude with a discussion of the distribution of benefits to Georgia from removing the Cherokees and allocating the land by lottery. Possible approaches to answer remaining questions are suggested.

AN OVERVIEW OF GEORGIA'S LAND LOTTERIES

On April 24, 1802, Georgia and the federal government of the United States entered into an agreement formally titled Articles of Agreement and Cession, but commonly referred to as the Compact of 1802, whereby Georgia relinquished all claims to United States land west of the present-day boundary with Alabama and south of Tennessee, an area containing lands that were fraudulently sold in the Yazoo scandal. In return for this cession, the United States agreed to pay

the state of Georgia \$1.25 million and "that the United States shall at their own expence extinguish for the use of Georgia, ... the Indian title to all the lands within the state of Georgia."⁹ Immediately thereafter, on June 12, 1802, the Creeks ceded a strip of land containing approximately 617,018 acres west of the Oconee-Appalachee rivers in east-central Georgia and another called the "Tallassee strip" containing some 406,210 acres in southeastern Georgia between the Altamaha and St. Marys rivers.¹⁰ Georgia's legislature convened in April 1803 at then-capitol Louisville to create a system by which the ceded land could be distributed. The legislature passed the Lottery Act of 1803 on May 11, which became the template for all of the following land lotteries.¹¹

The provisions of the Lottery Act of 1803 included the creation of three counties -- Wayne County in the Tallassee strip, and Baldwin and Wilkinson counties from the strip of land west of the Oconee-Appalachee rivers. Each county was to be surveyed into five districts of nearly equal size then, each district was to be divided into square lots, 202.5 acres each in Baldwin and Wilkinson counties and 490 acres each in Wayne County. One surveyor was appointed by the legislature to survey each district after posting a \$10,000 bond, and was paid \$2.75 per mile of line run with a \$300 advance to cover expenses. Tickets with lot numbers as well as blank tickets that together totaled the number of participants in the lottery were to be placed in a drum and selected at random. A book was maintained with a roughly alphabetical list of the names of participants so that as a ticket was drawn the results were recorded alongside the participant's name -- either the lot number or a blank ticket. White males 21 and older who were citizens of the United States and had lived in Georgia for at least a year were allowed one draw. White males matching these requirements with a wife and legitimate children under age 21 were permitted two draws. Widows with legitimate children under 21 were also allowed two draws, while parentless orphans and children whose fathers had died and mothers had remarried were entitled to one draw. Fortunate drawers were required to pay a fee initially set at \$0.50 per 100 acres for pine lands, increasing to \$9.00 per 100 acres for first-quality river-bottom land,

⁹ The text of this agreement can be found at the University of Georgia site, <http://neptune3.galib.uga.edu/ssp/cgi-bin/legis-idx.pl?sessionid=7f000001&type=law&byte=656173&lawcnt=1&filt=doc>, retrieved 5-29-06.

¹⁰ Cadle, pp. 170, 308.

¹¹ *Ibid.*, pp. 173, 175. Graham, *1805 Georgia Land Lottery*, pp. i-iii.

however, the fee was later changed to \$4.00 per 100 acres no matter the quality of the land.¹²

Approximately 24,000 individuals participated in this first land lottery and were entitled to some 40,000 draws, giving each participant just under a 1 in 10 chance of winning a lot. According to Graham, the 24,000 participants represented a majority of those eligible, suggesting that the lottery was a politically attractive institution.¹³ Surveys of the new counties were carried out beginning in the spring of 1804 and the lottery took place in Louisville beginning July 22, 1805 and was completed in just over a month on August 25.¹⁴ Fractional lots with high quality river-bottom land were excluded from the lottery and were auctioned in Louisville in 1806.¹⁵ Fortunate drawers initially had one year to pay for their grants, although this time limit was extended annually for some 10 years by the legislature. Once the time limit finally expired, lots were revert back to the state and could still be purchased directly from the state.¹⁶ Owing to the poor quality of the land, 310 lots (31 percent) in Wayne County reverted back to the state while only 37 lots in Wilkinson County and 2 in Baldwin County reverted.¹⁷

The Lottery Act of 1806 set the stage for the disposition in the 1807 lottery of a fertile strip of land comprising 2,121,390 acres located in the center of Georgia between the strip ceded west of the Oconee-Altamaha rivers and the Ocmulgee River.¹⁸ The Lottery Act of 1806 was little-changed from that of 1803. Thirty-eight districts of nearly equal size were to be surveyed into square lots 202.5 acres each, except for fractional lots. The land was to be incorporated into Baldwin and Wilkinson counties. Surveyors were elected by the legislature rather than appointed,

¹² Cadle, pp. 173-175.

¹³ Graham, p. ii.

¹⁴ Cadle, pp. 177, 179.

¹⁵ Graham, p. iii.

¹⁶ *Ibid.*, p. iii.

¹⁷ *Ibid.*, p. v.

¹⁸ The full text of this land lottery act is available at the University of Georgia site, <http://neptune3.galib.uga.edu/ssp/cgi-bin/legis-idx.pl?sessionId=7f000001&type=law&byte=1068534&lawcnt=1&filt=doc>, retrieved 05-29-06; see also Cadle, pp. 196, 308 (Table 3).

with the surveyor receiving the highest number of votes getting first choice of the district to be surveyed and so on through the 38 districts. Surveyors were advanced \$150.00. Unmarried white male citizens 21 years and older, widows, and spinsters received one draw each, while married white male citizens 21 and older received two draws. Minor orphans and families of minor orphans received either one or two draws depending on specific circumstances. Winners in the previous lottery were excluded from participation. Fortunate drawers were to pay a fee equal to \$6.00 per hundred acres for a grant, or \$12.15 for a full-sized lot.¹⁹ The drawings for this lottery were completed in early September 1807, having commenced on August 11 that year.²⁰ As with the 1805 lottery, fractional lots were sold at auction for the 1807 lottery with the proceeds to be used for useful public purposes.²¹

Thirteen years would pass before the Land Lottery of 1820, which was provided for by two legislative acts. The first one, passed in December 1818, was applicable to two Creek Indian cessions of land and a Cherokee cession. The first Creek cession came as a result of the 1814 Treaty of Fort Jackson that ended the Creek War and was negotiated by then General Andrew Jackson. Georgia acquired a large expanse of lower quality land about 70 miles wide, east of the Chatahoochee River stretching to the western border of Wayne County and forming Georgia's southern border with Florida. The Cherokee cession was made in 1817 and was followed by another Creek cession in 1818 that included land adjacent to the Cherokee cession and an area north of the southern-Georgia land ceded by the Creeks in 1814.²² The second act passed in December 1819 was an amendment to the 1818 act so that land ceded by the Cherokees as a result of a treaty in 1819 could be included in the lottery.²³ As a result of these two acts, eight new counties were created. Three of these in southern Georgia include from east to west,

¹⁹ Cadle, pp. 196-197.

²⁰ *Ibid.*, p. 199.

²¹ *Ibid.*, p. 199.

²² *Ibid.*, pp. 204-206.

²³ The full text of this land lottery act is available at the University of Georgia site, <http://neptune3.galib.uga.edu/ssp/cgi-bin/legis-idx.pl?sessionId=7f000001&type=law&byte=44012150&lawcnt=15&filt=doc>, retrieved 05-29-06; see also Cadle, p. 228.

Appling, Irwin, and Early. Five counties created as result of the 1817 and 1819 Cherokee cessions and the 1818 Creek cession include the northern Georgia counties, Rabun, Habersham, Hall, Gwinnett, and Walton that lie mainly to the south and east of the upper reaches of the Chatahoochee River.²⁴

Lot sizes for the Land Lottery of 1820 varied widely even within particular counties. For example, the 1817 and 1818 Cherokee and Creek lands that were ceded in the north formed parts of Walton, Gwinnett, Hall, and Habersham counties and were surveyed into 250 acre lots. Land in Early County was surveyed into 250 acre lots as well. However, land in Appling and Irwin counties was divided into 490 acre parcels, as was some of the land ceded by the Cherokees in 1819 that formed Rabun County and additions to Hall and Habersham Counties. One district in Rabun County was surveyed into 250 acre lots. Fractional lots greater than 160 acres were to be drawn as prizes and smaller fractional lots were to be sold at auction. Grant prices for successful drawers were fixed at \$18.00 per lot. Qualifications for participation in the lottery were similar to those stated in the acts providing for the 1805 and 1807 lotteries with the exception that unmarried white males over the age of 18 received one draw, indigent and invalid Revolutionary War veterans who had drawn successfully in prior lotteries were entitled to one draw, however, others who had drawn successfully in previous lotteries were prevented from participating.²⁵

Two more cessions of land by the Creeks in the 1820s left only the remaining Cherokee lands in the northwest corner of Georgia under the control of Native Americans. The Land Lottery of 1821 distributed land ceded by the Creeks in 1821 south of Cherokee land and north of land ceded in 1814 between the Ocmulgee River on the east and the Flint River to the west in 202.5 acre lots.²⁶ In 1827, a lottery was held to distribute the last of Creek land in Georgia lying south of Cherokee land and between the Flint River on the east and the Alabama state line and the Chatahoochee River on the west, north of land ceded in 1814. The lot size was also 202.5 acres. The robustness of the lottery system is evidenced by the minor alterations in provisions for the

²⁴ Cadle, pp. 207-208, 229.

²⁵ *Ibid.*, pp. 207-210, 228-229.

²⁶ The full text of this land lottery act is available at the University of Georgia site, <http://neptune3.galib.uga.edu/ssp/cgi-bin/legis-idx.pl?sessionId=7f000001&type=law&byte=508921&lawcnt=1&filt=doc>, retrieved 05-29-06;

1821 and 1827 lotteries compared to previous ones. Fractional lots were auctioned in both cases, the price of a grant was fixed at \$19.00, and participation in the lottery was essentially limited to the same categories of individuals, although veterans of the War of 1812 and Indian wars were allowed two draws.²⁷

The final lotteries for land lots, gold lots, and fractional lots that distributed remaining Cherokee land in 1832 and 1833 differ significantly from the previous lotteries. The most notable difference is the fact that the Land Lottery Act and the Gold Lottery Act passed in 1830 and 1831, respectively, as well as the drawings in 1832 and 1833 came well in advance of the 1835 Treaty of New Echota that ceded the land. Lot sizes were considerably smaller -- 160 acres for land lots and 40 acres for gold lots. Fractional lots less than 100 acres were initially to be withheld from the lotteries to be disposed of at some future date, but were actually distributed by a special lottery following the gold lottery in 1833 because the clamor for land was so great.²⁸ For the first time, state legislators were expressly prohibited from running for election as surveyors. Also, surveyors were instructed to note both the quality of the land on each lot and the existence of Indian improvements.²⁹

Compared to the earlier lotteries, participation in the lotteries for Cherokee land was expanded considerably to include new subgroups of Georgia's population, provided that they had lived in Georgia at least four years, a residency requirement that was later reduced to three years.³⁰ The terms set allowed one draw for unmarried white male citizens 18 years and older, widows, wives with children whose husbands has been absent from the state for at least three years, the deaf, dumb, and blind, and each unmarried white female over the age of 18 whose father was killed in the Revolutionary War, the War of 1812, or Indian wars. Allowed two draws

²⁷ Cadle summarizes details of this act on pp. 234-241. The full text of the 1825 legislative act that provided for the 1827 lottery is available at the University of Georgia site, <http://neptune3.galib.uga.edu/ssp/cgi-bin/legis-idx.pl?sessionId=7f000001&type=law&byte=7558150&lawcnt=1&filt=doc>, retrieved 05-29-06; for a summary of its details, see Cadle, pp. 246-251.

²⁸ Cadle, pp. 277-278.

²⁹ *Ibid.*, p. 269.

³⁰ The full text of this land lottery act is available at the University of Georgia site, <http://neptune3.galib.uga.edu/ssp/cgi-bin/legis-idx.pl?sessionId=7f000001&type=law&byte=10543155&lawcnt=98&filt=doc>, retrieved 05-29-06

were white male citizens with a family; veterans of the Revolutionary War, the War of 1812, or Indian wars who had not successfully drawn in previous lotteries, and widows of these veterans. Minor orphans or families of minor orphans and children of convicts were entitled to one draw or two draws, depending on specific circumstances. Excluded from the lotteries were "successful drawers in previous lotteries, convicts, residents of the Cherokee territory, and persons 'either directly or indirectly concerned ...with a certain horde of Thieves known as the Poney Club' excluded from participation." Fortunate drawers were to pay \$18 for the grant of a land lot and \$10 for a gold lot.³¹

Table 1 below shows the lot sizes, grant prices, number of lots surveyed, and the total acreages for each of the Georgia land lotteries.

TABLE 1
STATISTICS FOR GEORGIA'S LAND LOTTERIES

| Year of Lottery | Size of Lot | Grant Price, Dollars per Lot | Estimated Number of Lots by Size | Estimated Number of Acres Distributed |
|-----------------|-------------|---------------------------------|--|---|
| 1805 | 202.5 | \$8.10 | 3,047 | 617,018 |
| 1805 | 490 | 19.60 | 829 | 406,210 |
| 1807 | 202.5 | 12.15 | 10,476 | 2,121,390 |
| 1820 | 250 | 18.00 | 18,600 | 4,650,000 |
| 1820 | 490 | 18.00 | 10,500 | 5,145,000 |
| 1821 | 202.5 | 19.00 | 12,200 | 2,475,000 |
| 1827 | 202.5 | 19.00 | 21,000 | 4,252,500 |
| 1832 | 160 | 18.00 | 18,309 | 2,929,440 |
| 1833 | 40 | 10.00 | 35,000 | 1,400,000 |
| Totals | | | 129,961 | 23,992,058 |

Source: Adapted from Cadle, p. 308. For grant prices, see the preceding text.

Figures in the table highlight the small size of the Cherokee lots relative to preceding

³¹ Cadle, p. 269.

lotteries resulting in a significantly larger number of lots that were distributed in the 1832-1833 lotteries. Clearly, the lotteries were a significant source of revenue for Georgia as fortunate drawers purchased grants. The precise amount of revenue generated is unclear, because unclaimed lots eventually reverted back to the state. Moreover, the revenue generated should be viewed net of surveying costs and administrative costs that accompanied the lotteries and data for these costs is currently unavailable. However, it is possible to estimate a lower bound for the net revenue generated by the distribution of land via lotteries in Georgia. Cadle cites an estimate of 25 percent for the fraction of lots that reverted to Georgia because grants were not purchased.³² Graham's work gives us precise figures of 37 reverted lots for the 202.5 acre lots in the 1805 lottery and 310 reverted lots for the 490 acre lots distributed the same year.³³ Thus, \$34,559.40 of revenue was generated by the grants purchased in the 1805 lottery. Using the 25 percent reversion rate to estimate the revenue from grants purchased and adding the figure for 1805 gives a total of \$1,505,629.95 flowing into Georgia's coffers. Surveying costs from the Cherokee lands distributed in 1832 and 1833 lotteries were by far the most expensive since so many lots had to be surveyed. An upper bound for these survey costs is \$103,706.50.³⁴ Assuming that all the lotteries had surveying costs this high gives a strict lower bound for the net revenue generated equal to \$883,390.95.

After 1814, reverted lots in certain counties from the 1805 and 1807 lotteries could be purchased from the state by anyone who paid stipulated fees.³⁵ After consistently extending the time available for a fortunate drawer to purchase a claim, the 1843 Georgia legislature passed an act that gave fortunate drawers until October 1, 1844 to pay for their grants including any payments in default after which time anyone could purchase a full-size lot that had reverted

³² Cadle (p. 307) cites this estimate from Banks, *The Economics of Land Tenure in Georgia*, p. 19, n. 3.

³³ Graham, p. v.

³⁴ The Georgia Surveyor General's Office has the original map of Cherokee Georgia that shows the districts and demarcates land districts from gold districts. Using this map, and the fact that district surveyors were paid \$2.50 per mile of line run and section surveyors (the territory was split into four longitudinal sections before being split into districts) were paid \$3.50 per mile of line run coupled with estimates of the number of lines that had to be run to generate 160 acre land lots and 40 acre gold lots in each district gives the generous estimate for surveying costs of \$103,706.50. A copy of the map is included in Shadburn, p. 21.

³⁵ Cadle, pp. 314-315.

according to a graduated scale by paying \$2,000 during October, \$1,500 during November, \$1,000 during December, \$500 during January, \$250 during May and June, \$100 during July and August, \$25 during September to December, and \$5 thereafter. By September 1845, over 4,000 applications had been received causing the \$25 price period to be extended through January of 1846.³⁶ In the process of considering the applications, it was revealed that Georgia's surveyor general, and other state officials, who had routinely speculated in reverted lots prior to the act, had altered records to make it appear that reverted grants for choice lots had been claimed so that officials in the office could purchase them once the graduated price had fallen to lower levels.³⁷

It seems reasonable to presume that purchases of grants over time generated well over \$1 million of revenue for the state, on top of revenue generated by the sale of fractional lots at auction, in addition to placing land in the hands of thousands of citizens who were then obligated to pay land taxes; clear reasons for the state to pursue the lottery system and aggressively support treaties for Indian removal negotiated and paid for by the federal government. Furthermore, many more citizens were added to the list of eligible voters via the lottery system than would have been in the context of either the headright grants system or an auction system to dispose of land ceded by the Indians. The clear definition of land rights provided by Georgia's lottery system entailed higher surveying costs than did the metes and bounds surveying methods used to establish headright grants. However, the grants sold and the tax revenues generated more than recouped these higher costs. And the potential for future disputes over title and outright fraud was diminished by the lottery system. From the perspective of Georgia settlers and politicians, the land lottery system appears to have been a great success on most counts.

Our attention now shifts to an examination of Cherokee settlement and land use patterns that determined the characteristics of land distributed in the 1832 and 1833 lotteries.

³⁶ Cadle, p. 315.

³⁷ *Ibid.*, pp. 306-307, 314, 315 n. 23.

CHEROKEE POLITICAL AND SOCIAL ADVANCES, LAND USE PATTERNS, AND RESISTANCE TO GEORGIA'S PUSH FOR REMOVAL

Georgia effectively negotiated a commitment by the federal government to Indian removal from the state in the Compact of 1802 some 28 years prior to the formal adoption of an Indian removal policy by the United States with the passage of the Indian Removal Act of 1830. The Indian Removal Act was the object of intense lobbying and national debate after Andrew Jackson's election to presidency in 1828.³⁸ Georgia's political leaders were among the most vocal proponents of removal during the 1820s and found themselves with a staunch ally in the White House after Jackson's election. Georgia's arguments in favor of removal were well rehearsed by 1828, couched in terms that by nineteenth century standards could be construed as humanitarian, but today smack of racism and paternalism. An excerpt from an 1824 letter by Georgia Governor George Troup to Senator John C. Calhoun of South Carolina typifies arguments advanced by proponents of removal. Troup wrote that at best, the Indians could occupy "a middle station, between the negro and the white man; and that, as long as they survived this degradation, without the possibility of attaining the elevation of the latter, they would gradually sink to the condition of the former -- a point of degeneracy below which they could not fall; it is likely, before they reached this, their wretchedness would find relief in broken hearts." Troup continued that only removal would "afford no pretext for the intrusions or annoyances of the white man."³⁹ This view eventually prevailed when, after rancorous debate, the Indian Removal Act passed 28 to 19 in the Senate and 102 to 97 in the House and was signed by Jackson on May 26, 1830.⁴⁰

The circumstances of the Cherokees east of the Mississippi figured more prominently in the debate over the Indian Removal Act than those faced by any other eastern tribe. The

³⁸ A full account of this debate is beyond the scope of this paper. The interested reader is referred to Sheehan, *Seeds of Extinction*, Satz, *American Indian Policy*, and Prucha, *The Great Father*.

³⁹ Sheehan, *Seeds of Extinction*, p. 258.

⁴⁰ Prucha, *The Great Father*, p. 206. Regarding the intensity of the debate over Indian Removal Act, Wilson Lumpkin, a former surveyor of Indian lands in Georgia and a pro-removal House member from Georgia, active in the Congressional debate over removal, who became Georgia's governor in 1831, described his adversaries as the most "...powerful and formidable opposition as ever has been overcome in Congress upon any great subject which has agitated that body." See Lumpkin, *The Removal of the Cherokee Indians*, p. 50.

Cherokees were a particularly strong case in point for opponents of the removal policy because of the high degree of success they had attained in the civilization process. For example, by 1810 the Cherokees had created their own national courts and a police force. By the 1820s, agriculture was well established among the eastern Cherokees and, by the mid-1830s, approximately eight percent of Cherokee households owned black slaves. Numerous missionary schools had been located within the Cherokee Nation, and Sequoyah had invented a syllabary for the Cherokee language, thus accelerating the spread of literacy. The Cherokee Nation adopted a written constitution patterned after the United States Constitution on July 26, 1827. In the following year, a bilingual newspaper, *The Cherokee Phoenix*, was published in the Cherokee Nation's capital, New Echota, located in northwest Georgia.⁴¹ Governor Troup's comments regarding the impossibility of social and economic progress among the Indians located in the midst of whites notwithstanding, the Cherokees were vigorously asserting political and property rights and accumulating substantial physical and human capital as of the late 1820s.

Georgia's response to these developments was swift and direct. In December of 1827, the Georgia legislature approved resolutions to extend Georgia law and authority over Cherokee lands.⁴² Georgia's zeal to annex Cherokee land within its borders was further increased by the discovery of gold in Cherokee Georgia in 1828. The Georgia state legislature passed a series of acts in 1828, 1829, and 1830 that extended Georgia's jurisdiction to the Cherokee Nation within Georgia's borders, made it impossible for Cherokees (and Creeks) to testify against whites in Georgia courts unless the white person lived within the Indian territories, nullified all Cherokee legislation, and set up a procedure for surveying Cherokee lands so that it could be distributed by lottery.⁴³

The Cherokee response to the Georgia legislation was to file suit against Georgia with

⁴¹ A fuller description of Cherokee cultural, political, and economic achievements prior to their removal west is impossible in a brief paper and is presented in numerous books and articles. For example, William G. McLoughlin examines Cherokee progress on all of these fronts in the context of the changing nature of the early American republic in his 1986 volume *Cherokee Renascence in the New Republic*. For an account of Cherokee economic achievements, see Wishart, "Evidence of Surplus Production in the Cherokee Nation Prior to Removal," pp. 120-38.

⁴² Prucha, *The Great Father*, p. 189.

⁴³ For a succinct description of these Georgia legislative acts, see Shadburn, *Cherokee Planters in*

William Wirt, former United States Attorney General in the Monroe and Adams administrations, as their legal representative. Chief Justice John Marshall expressed sympathy with the Cherokees regarding their case, *Cherokee Nation v. Georgia*, but ruled in 1831 that the Cherokee Nation was not a foreign state under the Constitution, but rather, was a “domestic dependent” nation, thus the Supreme Court had no jurisdiction.⁴⁴ In 1832, a second case, *Worcester v. Georgia*, was brought by the Cherokees and their supporters to the Supreme Court where the court ruled in favor of the Cherokees holding that Georgia’s laws “can have no force” in the Cherokee Nation and that Georgia’s citizens “have no right to enter” the Cherokee Nation “but with the assent of the Cherokees themselves, or in conformity with treaties, and with the acts of Congress.”⁴⁵

Unfortunately for the Cherokees, loopholes in federal laws, adjournment of the Supreme Court following the *Worcester* decision, Georgia’s complete refusal to acknowledge the Court’s decision, along with a reluctance on the part of Jackson’s opponents in Congress to push for enforcement due to the nullification crisis with South Carolina on the tariff issue formed a confluence of circumstances that permitted pressure for the removal of the Cherokees to mount unabated.⁴⁶ Removal became a certainty with the signing and ratification of the Treaty of New Echota.

According to the 1835 Census of the Cherokees, just over half of the 18,335 members of the Eastern Cherokee Nation resided in Georgia. The census shows 8,944 Cherokees distributed among 1,350 households in northwestern Georgia a fraction of which owned a total of 769 slaves of African descent. There were also 68 white males connected by marriage to Cherokee families in Georgia. Including slaves and whites connected by marriage, Cherokee Georgia’s population was 9,781. The vast majority of these households engaged in agricultural production as 1,271 out of the 1,350 households cultivated an average of 15.19 improved acres for a total of 19,306.5 cultivated/improved acres.⁴⁷

Georgia, 1832-1838, pp. 4-6.

⁴⁴ Prucha, *The Great Father*, pp. 208-10.

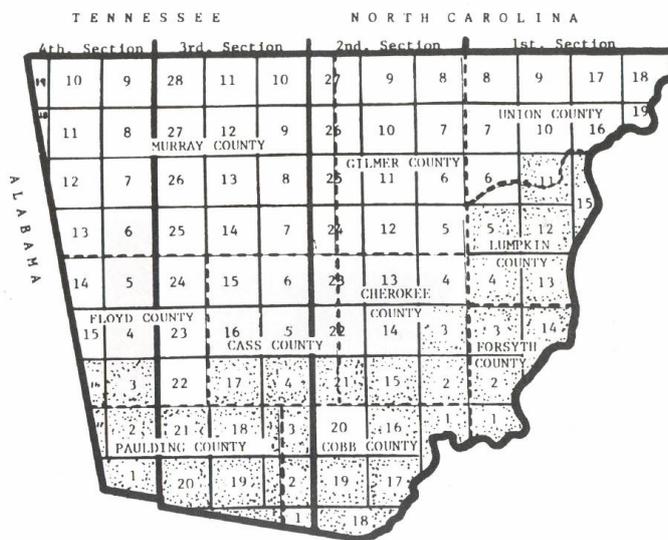
⁴⁵ *Ibid.*, pp. 211-13.

⁴⁶ *Ibid.*, pp. 212-13.

⁴⁷ Wishart, “Evidence,” pp. 125-27.

It is possible to analyze the pattern of Cherokee settlement and land use in Georgia at the county level because of an 1832 legislative act that split the nearly 7,000 square miles of Cherokee Georgia into ten counties that included Cass, Cherokee, Cobb, Floyd, Forsyth, Gilmer, Lumpkin, Murray, Paulding, and Union and the 1835 Cherokee Census lists household data for each county. Walker County was created in 1833 out of the western portion of Murray County to form the eleventh Cherokee county in Georgia.⁴⁸ The 10 original counties are shown in Map 1 below.

MAP 1
THE TEN ORIGINAL COUNTIES IN CHEROKEE GEORGIA



Notes: The numbered squares with dots are the gold districts and those without the dots are the

⁴⁸ Shadburn, *Cherokee Planters*, pp. 6-7, 295.

land districts. These ten counties were created in 1832 prior to the initial lottery. The dashed lines show the boundaries of the ten counties.

Source: Shadburn, *Cherokee Planters*, p. 21

Demographic and production statistics with estimates for surplus or deficit production for the eleven Cherokee counties in Georgia are presented below in Table 2.⁴⁹ Statistics in Table 2 are arranged by county moving from east to west through the three tiers of counties comprising Cherokee Georgia from north to south. Union, Gilmer, Murray, and Walker form the northernmost tier of counties from east to west, Lumpkin, Cherokee, Cass, and Floyd form the middle tier, and Forsyth, Cobb, and Paulding form the southernmost tier (see Map 1 above). The second column in Table 2 presents population statistics by county for the Cherokees and the small number of whites who were connected to Cherokee families by marriage. Cass, Gilmer, and Cherokee were the most populous counties with more than 1,400 Cherokees and whites connected by marriage each. Murray, Walker, and Floyd Counties follow with from 850 to 991 Cherokees and whites connected by marriage each, leaving Lumpkin, Paulding, Union, Forsyth, and Cobb counties with relatively small numbers. Of special note in the third column is Forsyth County, which had more slaves than Cherokees due largely to one Cherokee planter's presence, George Waters, who owned 110 slaves according to the 1835 census.

⁴⁹ These data exclude the 10,254 whites living in Cherokee Georgia in 1834 and the 1,248 whites in Paulding County in 1837. White settlement in Cherokee Georgia prior to the forced Cherokee removal in 1838 is discussed below.

TABLE 2
DEMOGRAPHIC AND PRODUCTION STATISTICS FOR
CHEROKEE COUNTIES IN GEORGIA, 1835

| Georgia Counties and Whites | Total Cherokees | Total Slaves | Consumer Equivalents | Slaves per CE | Available Corn | Bushels per CE | Surplus Per CE |
|--------------------------------------|--------------------|-----------------|-------------------------|------------------|-------------------|-------------------|-------------------|
| Union | 198 | 0 | 155.0 | 0 | 3,538.75 | 22.83 | 2.83 |
| Gilmer | 1,511 | 38 | 1,176.0 | 0.03 | 28,163.70 | 23.94 | 3.94 |
| Murray | 991 | 17 | 752.5 | 0.02 | 19,114.00 | 25.40 | 5.40 |
| Walker | 1,396 | 62 | 1,104.5 | 0.06 | 27,045.55 | 24.48 | 4.48 |
| Lumpkin | 395 | 43 | 341.0 | 0.13 | 13,110.00 | 38.44 | 18.44 |
| Cherokee | 1,461 | 66 | 1196.0 | 0.06 | 47,517.10 | 39.73 | 19.73 |
| Cass | 1,750 | 215 | 1,531.5 | 0.14 | 55,585.45 | 36.29 | 16.29 |
| Floyd | 857 | 97 | 750.0 | 0.13 | 25,341.25 | 33.78 | 13.78 |
| Forsyth | 175 | 231 | 361.0 | 0.64 | 28,935.10 | 80.15 | 60.15 |
| Cobb | 77 | 0 | 57.0 | 0 | 1,674.85 | 29.38 | 9.38 |
| Paulding | 201 | 0 | 151.5 | 0 | 1,809.75 | 11.95 | -8.05 |
| Total | 9,012 | 769 | 7,576.0 | | 251,853.55 | | |

Source: Census Roll, 1835 of the Cherokee Indians East of the Mississippi and Index to the Roll, Records of the Bureau of Indian Affairs, Record Group 75.

Slave ownership was most heavily concentrated in Forsyth, Cass, Floyd, Cherokee, Walker, and Lumpkin Counties with fewer than 50 slaves found in Gilmer and Murray Counties. Column four shows the number of consumer equivalents in each county. Consumer equivalents were calculated by summing half the males under age eighteen, half the females under age 16 (ages 18 and 16 are the cut-offs for children and adults used in the 1835 census for male and female Cherokees, respectively), the adult Cherokee and white populations, and the total slave

population. No distinction is made in the census between slave adults and children. Column five is the ratio of slaves to consumer equivalents for each county. This ratio is highest in Georgia for Forsyth County at 0.64 and is above 0.1 for Lumpkin, Cass, and Floyd Counties. Column six shows corn available for human consumption calculated as 95 percent of each county's corn crop, leaving five percent for seed. Bushels per consumer equivalent and the surplus per consumer equivalent are reported in columns six and seven, respectively. Twenty bushels per consumer equivalent is used as a threshold for self-sufficiency and represents a strict lower bound for surplus production since only corn and wheat production were recorded in the 1835 Census (only a handful of Cherokee households produced wheat) although Cherokee farmers practiced highly diversified agriculture.⁵⁰ These statistics show that only Paulding County was a deficit food producer based on corn output. Paulding County was relatively sparsely settled by Cherokees (only 201 including whites connected by marriage) and had a significant white population in 1835. Georgia's state census of 1837 showed 1,248 white inhabitants in Paulding County.⁵¹ Unsurprisingly, counties with higher values for surplus per consumer equivalent such as Lumpkin, Cherokee, Cass, Floyd, and Forsyth also have relatively high ratios of slaves to consumer equivalents. The correlation coefficient between slaves per consumer equivalent and surplus per consumer equivalent for the 11 Cherokee counties is 0.76, reflecting the higher productivity of slave-owning Cherokee farmers relative to free Cherokee farmers.

Douglas Wilms's careful mapping of Cherokee agricultural practice shows settlement patterns with farming activities located virtually exclusively in valleys formed by rivers and streams. Wilms notes that where lots did not border on a stream or river, they were typically located close to one. Furthermore, his examination of settlement patterns shows that improved acres that were not close to waterways were close to roads, thus lowering transportation costs. This pattern of agricultural activity is exhibited in each of the three physiographic regions noted in Cherokee Georgia -- the Blue Ridge, the Ridge and Valley, and the Piedmont.⁵² Map 2 below shows the distribution of cultivated fields in Cherokee Georgia.

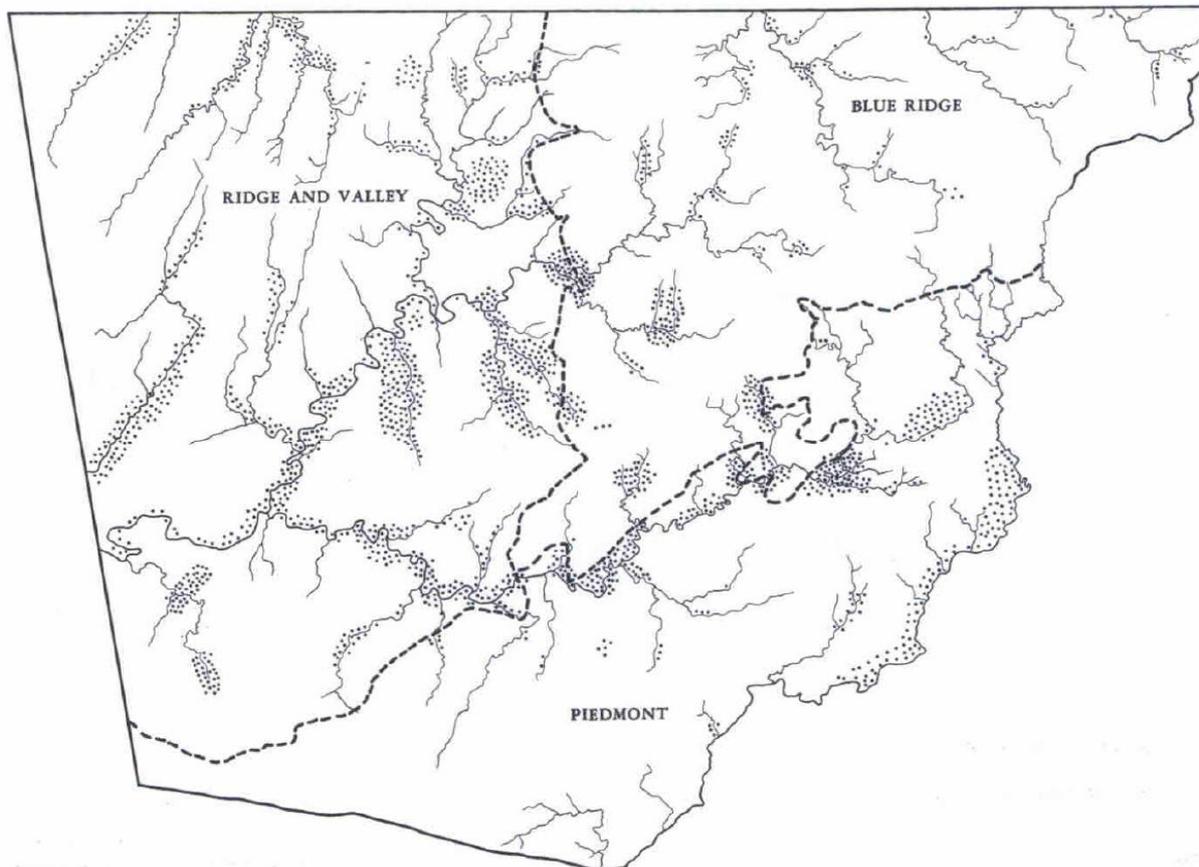
⁵⁰ For a detailed discussion of the choice of the 20 bushel per consumer equivalent threshold, see Wishart, "Evidence," pp. 128-31.

⁵¹ Shadburn, *Cherokee Planters*, p. 378.

⁵² Wilms, "Georgia's Land Lottery," pp. 59-60.

MAP 2

THE DISTRIBUTION OF CULTIVATED FIELDS IN CHEROKEE GEORGIA

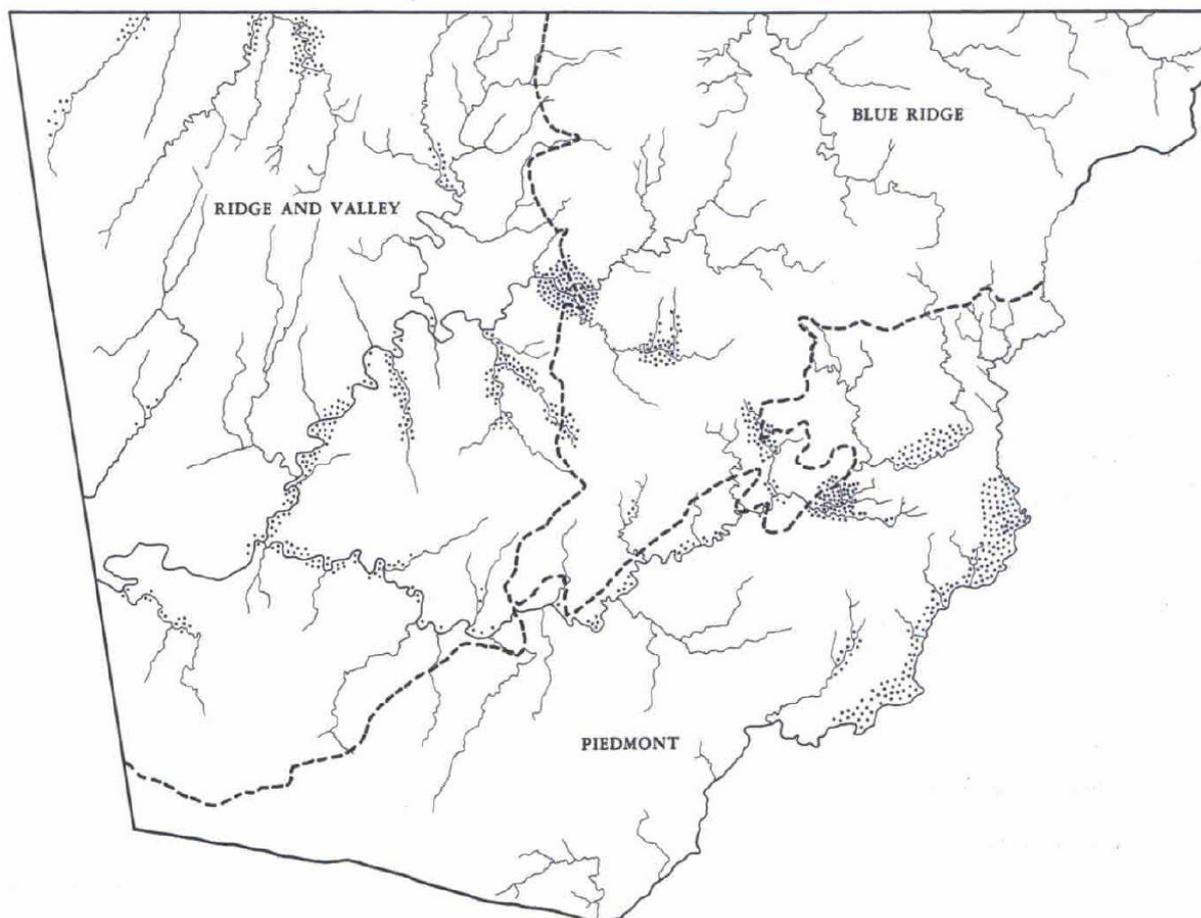


Notes: Each dot represents 20 cultivated acres. The map is based on property valuations of Cherokee holdings calculated in 1836-37. The dashed lines denote physiographic boundaries.

Source: Wilms, "Cherokee Land Use in Georgia," 1991, p. 19.

Wilms's map of Cherokee slave holders' home sites clearly shows the close concentration of slave-based agriculture along rivers and streams that is represented in Map 3 below.

MAP 3
THE DISTRIBUTION OF SLAVES IN CHEROKEE GEORGIA



Notes: Each dot represents one slave. The dashed lines represent physiographic boundaries.

Source: Wilms, Cherokee Land Use in Georgia, 1991, p. 16.

The portrait of Cherokee production that emerges from these data and maps is that of an agricultural community with its labor and slave capital employed on the best available land resources along waterways, in valleys close to waterways, or close to roads in a way that produced comfortable surpluses for most. As Georgia's Cherokee households adopted agriculture on a broad scale in the decades preceding removal, they located their farmsteads where there was the greatest potential for generating surpluses, hence rents. We present a model to estimate the nature and magnitude of these rents in the following section.

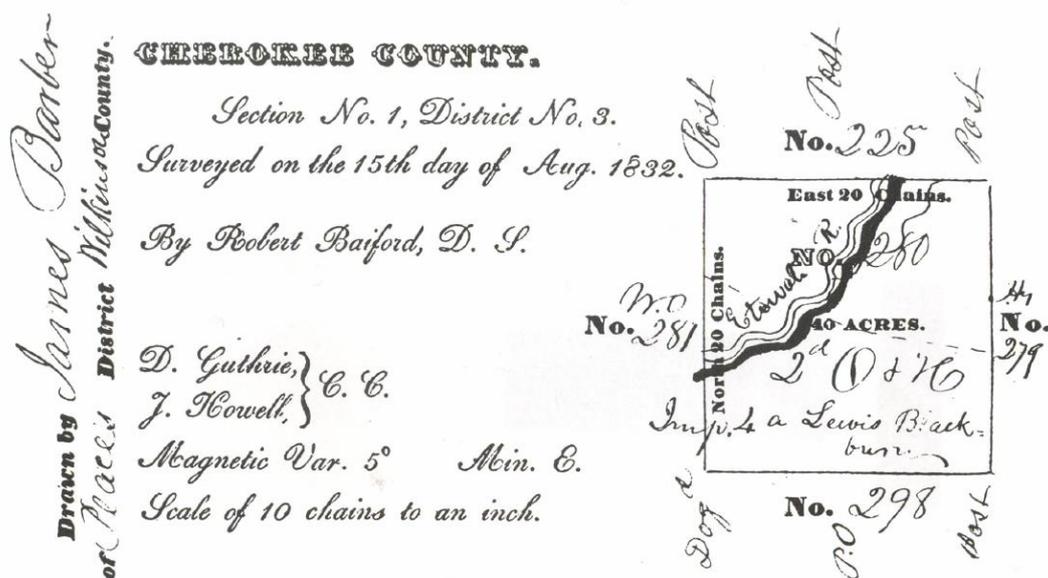
THE SECONDARY MARKET FOR CHEROKEE LAND AFTER THE 1832/33 LOTTERIES

The survey of Cherokee lands that preceded the Georgia lotteries of 1832/33 divided the territory into four sections with north-south boundary lines that in turn were divided into nine square mile districts, which again were divided into 160 acre land lots, 40 acre gold lots, and fractional lots where boundaries or major waterways prevented the survey of full-sized lots. Gold districts are represented by the dotted portion of Cherokee Georgia presented above in Map 1. Surveyors drew maps of each district and plat maps of each lot. These plats showed streams, the quality of land (land of the first quality, second quality, and third quality in addition to designating land as swamp, forest, or river bottom), and some showed the existence of Indian improvements such as houses and improved acres (cleared or cultivated acres) on the lots.⁵³ A sample for a plat of a gold lot is presented below in Map 4.

⁵³ Wilms suggests that not all Cherokee improvements were noted in the surveyors' plats because of the way the surveys were performed. The surveyors ran east-west and north-south parallel lines in order to create the desired 160 acre land lots or 40 acre gold lots. Surveyors were to record all the improvements they saw. Looking at the plats, one can see that most of the improvements they described were along the boundaries of lots. The surveyors, who were pressed for time, probably did not note many improvements located on the interior of particular lots. This practice should not affect the quality of our sample since the borders of lots were surveyed irrespective of the location of improvements. See Wilms, "Georgia's Land Lottery of 1832," pp. 55-56 and Wilms, "Cherokee Indian Land Use," p. 48.

MAP 4

A SAMPLE SURVEY PLAT OF A GOLD LOT IN FORSYTH COUNTY



Notes: The sketch shows a survey plat of Lot 280-3-1 showing the Federal Road (the dashed line) and 4 improved acres at Blackburn's Ferry on the Etowah River.

Source: Shadburn, *Cherokee Planters*, p. 157.

Two lotteries were held, the first for full-sized lots where 85,000 Georgians registered to draw for 18,309 land lots in October 1832, and another where 133,000 registered to draw 35,000 gold lots in the spring of 1833.⁵⁴ Another lottery for the remaining fractional lots was held in December 1833.⁵⁵

Although fortunate drawers in the Cherokee land lotteries were legally forbidden to move onto lots that were still occupied by Cherokees, after grants were issued for these lots in 1835 and 1836, they had the option of selling their lots; thus, these lotteries facilitated the creation of a

⁵⁴ Wilms, "Georgia's Land Lottery of 1832," p. 57; Shadburn, *Cherokee Planters*, p. 343.

speculative secondary market for Cherokee land in anticipation of the Cherokee removal.⁵⁶ If this market worked efficiently, Cherokee land lots that sold after the 1832/33 lotteries with more improved acres should have traded at a higher per acre price than land lots with fewer improved acres. Also, it seems reasonable to expect, *ceteris paribus*, that gold lots would have sold at a higher per acre price than land lots in this speculative market. Location close to waterways and roads also should have contributed value to lots. A hedonic valuation model can determine the significance and estimate the magnitude of these effects.

To construct a sample of lots, we first searched plat maps for land lots and gold lots that had improved acreage and a land quality designation noted by the surveyors. A total of 146 gold lots with improvements and 91 land lots with improved acreage were found in Murray, Floyd, and Forsyth counties. Then we searched the deed books for the years 1835 through 1837 for Murray, Floyd, and Forsyth counties to match the lot numbers for Cherokee lots with sales prices listed on the deeds for those lots. We were able to match 58 lots showing improved acres and a land quality designation with their deeds. Our search was restricted to only three of the 11 counties because of a lack of matches in some counties (Gilmer County), unavailability of deed books (Cass, Cherokee and Lumpkin Counties), or the destruction of courthouses containing deed books (Cobb, Walker, Paulding, and Union Counties). Of the 58 lots that were matched with deeds, 15 are land lots in Murray County, 15 are land lots in Floyd Counties, and the remaining 28 are gold lots with improved acres in Forsyth County. Twelve of the 28 gold lots are fractional lots ranging in size from 17 acres to 55.75 acres.

A plot of the data suggested that a semilogarithmic specification was most appropriate. We regressed the natural log of sales price of lots in dollars per acre on the number of improved acres, a dummy variable for gold lots (zero if it was a land lot), and a series of dummy variables designed to measure location specific values, including a dummy for the fractional lots located near the river in the southern corner of Forsyth county. A dummy variable for land of the first quality (zero if it was second or third quality land since only one lot in our sample was third quality) was entered into the model, but consistently failed to add explanatory power and was

⁵⁵ Shadburn, *Cherokee Planters*, p. 343.

⁵⁶ Cadle, *Georgia Land Surveying*, p. 279; Wilms, "Georgia's Land Lottery of 1832," p. 57; Shadburn, *Cherokee Planters*, pp. 8-9; Weiman, "Peopling the Land by Lottery?" pp. 840-41.

dropped from the estimation result shown in Table 1. We also estimated the equation with a variable for the number of improved acres squared but it also failed to add explanatory power. The final form of the model is given by

$$(1) \quad \ln P_i/A_i = \alpha + \beta_1 x_i + \beta_2 G_i + \sum_j \beta_j L_{ij} + \epsilon_i$$

where P_i is the price, A_i is the total number of acres, x_i is the number of improved acres, G_i is a dummy variable set equal to 1 if the lot is a gold lot and 0 otherwise for the i th lot. L_{ij} are the location specific dummies. The coefficients to be estimated, α , β_1 , β_2 , and $(\beta_1 \dots \beta_j)$, are the constant term, the coefficient for improved acres, the gold dummy, and the location coefficients respectively. The error term is ϵ_i .

However, coefficients for dummy variables in semilogarithmic regression equations cannot be interpreted directly as approximate percentage increases in the dependent variable because dummy variables are discontinuous so that the derivative of the dependent variable with respect to the dummy variable does not exist.⁵⁷ A correction for the estimated coefficients is given by

$$(2) \quad g = \exp[c - 0.5V(c)] - 1$$

where g is the true approximate percentage change in the dependent variable attributable to the factor measured by the dummy variable, c is estimated coefficient for the dummy variable, and $V(c)$ is an estimate of the variance of c .⁵⁸

The estimated coefficients for the independent variables, their t -statistics, the corrected values for the coefficients on the dummy variables, the F -value, and the adjusted R^2 are reported in Table 3 below. These results show that the number of acres of improved acres, whether or not the lot was a gold lot, and, in some cases, location had significant effect on the price per acre of

⁵⁷ Halvorsen and Palmquist, "The Interpretation of Dummy Variables in Semilogarithmic Equations," pp. 474-475; Kennedy, "Estimation with Correctly Interpreted Dummy Variables," p. 801. We thank Doug Brown for these references.

⁵⁸ Kennedy, p. 801.

TABLE 3

REGRESSION ESTIMATES OF THE CONTRIBUTIONS OF IMPROVED ACRES, THE POTENTIAL FOR GOLD DEPOSITS, AND LOCATION ON CHEROKEE LOTS TO THE PER ACRE PRICE OF LOTS TRADED AFTER THE 1832-33 GEORGIA LAND AND GOLD LOTTERIES

| Variable | Estimated Coefficient | Standard Error | t-statistic | Corrected Coefficient |
|-----------------------------------|-----------------------|----------------|---|---|
| Constant | -0.3006 | 0.4282 | -0.70 | |
| Improved Acres | 0.022604** | 0.007132 | 3.17 | |
| Gold | 1.2777** | 0.4606 | 2.77 | 2.2272 |
| Fo13 | 0.0051 | 0.3759 | 0.01 | -0.0634 |
| M38 | 0.9075* | 0.4908 | 1.85 | 1.1969 |
| M39 | 0.4772 | 0.8041 | 0.59 | 0.1664 |
| M310 | 0.1417 | 0.5765 | 0.25 | -0.0242 |
| M314 | 1.5781* | 0.8114 | 1.94 | 2.4866 |
| M48 | -1.4988* | 0.81 | -1.85 | -0.8391 |
| M49 | 0.3641 | 0.6365 | 0.57 | 0.1753 |
| Fl322 | 0.7268 | 0.5321 | 1.37 | 0.7954 |
| Fl323 | 1.3203** | 0.4734 | 2.79 | 2.3476 |
| fractional | 0.864** | 0.2908 | 2.97 | 1.2744 |
| <i>Adjusted R-squared</i> = 0.241 | <i>F</i> = 5.31 | <i>N</i> = 58 | ** = significant at the 1 percent level | * = significant at the 10 percent level |

Notes: The location coefficients are interpreted as follows. Fo13 refers to Forsyth County, section 1, district 3; M38 refers to Murray County section 3, district 8, and so on. Fractional identifies fractional lots in Forsyth County along the Chattahoochee River.

Sources: Surveyors plats and notes, Cherokee County Surveys, 1832, Records of the Surveyor General Department, Georgia Department of Archives and History [GDAH] (Microfilm Nos. AH 787, AH 789, GRG 2-2257, GRG 2-2259, GRG 2-2260, GRG 2-2268, GRG 2-2273; Floyd County, Deed Books A and B, 1833-37 (GDAH, Microfilm No. RHS 2558-9), Forsyth County, Deed Books A and B, 1832-1838 (GDAH, Microfilm No. RHS 3606 and 3622-23), Murray County, Deeds, 1833-36 (GDAH, Microfilm No. RHS 4068-69).

the lots sold in the speculative market.

These results show that the number of improved acres, whether or not the lot was a gold lot, whether or not the lot was a fractional lot, and location in Floyd County, section three, district 23 had effects significant at the one percent level on the price per acre of the lots sold after the lotteries. Interpreting the estimated coefficients as approximate percentage increases in the sales price per acre, 10 acres of improved land increased the sales price per acre by some 22.6 percent, on average. If this lot were also a gold lot, the sales price per acre would have increased further by approximately 223 percent on average. Location in Floyd County, the third section, 23rd district increased the sales price per acre of those lots by 234.76 percent on average. If a lot was a fractional lot, a fortunate drawer could expect its sales price to be 127.44 percent higher on average, than a full-sized lot. Significant at the 10 percent level are location effects for lots in Murray County, section three, districts eight and 14 and section four, district eight that measure 119.69 percent, 246.88 percent, and -83.9 percent, respectively. The location effect for fractional lots can be explained based on the fact that all of the fractional lots in our sample come from Forsyth County, section 1, district 14 that lies along the Chattahoochee River, and would thus contain rich alluvial soils in addition to proximity to a navigable stream.⁵⁹ The significance and magnitude for location effects in Floyd County could arise from the confluence of the Etowah and Coosa rivers in the 23rd district.⁶⁰ For Murray County, a negative sign appears for section 4, district 8 possibly due to its location in the more rugged terrain in the northwestern corner of

⁵⁹ For a map of Forsyth County in the 1830s, see Shadburn, *Cherokee Planters*, p. 147.

⁶⁰ For a map of Floyd County in the 1830s, see *ibid.*, p. 118.

Georgia, a portion of Murray County that later became Walker County.⁶¹ Section 3, districts 8 and 14 both have positive coefficients that are significant at the 10 percent level possibly because of a branch of the Federal Road that passed through both districts and the Oostanaula River that flowed through district 14.⁶²

The coefficients in Table 1 can be used to derive estimates for the economic rent arising from the potential for gold discoveries on some of the lots and the increment to value arising from improved acres on lots in Cherokee Georgia.⁶³ Taking the inverse of the regression equation after deleting the dummy variables for land location designation, and correcting the estimated coefficient for the dummy variable for gold according to equation (2), we have

$$(3) \quad P_i/A_i = [1 + g]^G_i \exp(" + \$_1 x_i).$$

Substituting values estimated for equation (3) we have

$$(4) \quad P_i/A_i = 3.2272^G_i \exp(-0.3006 + 0.022604 x_i).$$

Using equation (5) to estimate the economic rent arising from the potential for gold discoveries on gold lots is relatively straightforward. When the gold dummy, G , is set at one and the number of improved acres, x_i , is equal to zero we have the capitalized price of an acre of land on a gold lot, which equals approximately \$2.39. The capitalized economic rent arising from the fact the lot may contain gold is equal to \$2.39 minus the capitalized price of an acre on a land lot with no improved acres, $\exp(-0.3006) = .74$, which equals \$1.65.

There were some 35,000 gold lots that were 40 acres per lot, therefore the estimated aggregate capitalized economic rent is the product $\$1.65(35,000)(40)$, which is \$2,310,000. Annualizing the estimated rent at a six percent rate gives \$138,600, which expressed in per capita terms for the 9,781 Cherokees (including slaves and whites by marriage) is equal to \$14.17. The average Cherokee produced a little more than subsistence. If corn sold for \$0.75 and 20 bushels were required for subsistence, our estimate for the rent from the potential for gold discoveries is

⁶¹ For a map of Walker County in the 1830s, see *ibid.*, p. 294.

⁶² For a map of Murray County in the 1830s, see *ibid.*, p. 236.

⁶³ The increment to value from improved acres on a lot is a quasi-rent, using Marshallian terminology, because the supply of improved land was relatively inelastic due to the high cost of clearing land. Unfortunately, we cannot at this stage estimate the location rents for lots in particular districts or for fractional lots along waterways because we have not yet examined the plats of particular lots closely enough to determine the source of location rents nor do we have a figure for the number of fractional lots that were distributed.

about equal to Cherokee per capita output.

Estimating rents arising from the existence of improved acreage is more complex. We can only provide a crude lower bound estimate given the small size of our sample. Because surveyors did not record all the improved acres on Cherokee lots, we lack a precise estimate of the number of lots with improvements and the improved acreage. Wilms calculates that over 2,000 lots with improved acreage totaling 20,508 acres were noted by surveyors; a figure far below the 35,285 improved acres recorded in valuations of Cherokee property undertaken in 1836-37.⁶⁴ Wilms's map of these lots Cherokee Georgia shows that no more than 850 of these lots were gold lots.⁶⁵ Assume that the number of gold lots with improved acreage is 900, leaving 1,100 land lots with improved acres. Our examination of the surveyors' plats for Forsyth County generated a sample of 146 gold lots with improved acres. Using equation (5), it is possible to calculate estimates for the capitalized price per acre attributable to improved acres by inserting the number of improved acres in the variable x_i for each of the 146 lots with the dummy variables at zero. Doing this and computing the mean gives an average capitalized price per acre attributable to improved acres for gold lots equal to \$0.909. Therefore, the capitalized rent per acre from improved acres on gold lots is, \$0.909 minus \$0.74, or \$0.169. Spread over 900 lots at 40 acres per lot, the total rent from improved acres on gold lots is \$6,084.

Following the same method for land lots, our sample of 91 land lots showing improvements in Floyd and Murray Counties suggests an average capitalized price per acre attributable to improved acres equal to \$1.074, which gives a capitalized per acre rent from improved acres equal to \$0.334, which yields a total value across 1,100 land lots equal to \$58,784.

Summing the land rents and the gold rents gives \$2,374,868, which expressed in annualized per capita terms is \$14.56. What is surprising about these results is the degree to which gold rents dwarf land rents. Several factors may explain this result. First, these calculations are based on the assumption that the value of an unimproved acre of land on a lot with cultivable acres is \$0.74 and this estimated is calculated from the constant in our regression equation, which is statistically insignificant. Second, surveyors almost certainly failed to note the

⁶⁴ Wilms, "Cherokee Indian Land Use," pp. 50, 137.

existence of improved acres on many lots as noted above. Third, our computational technique biased the estimate of rents arising from improved acres downward. We assumed that only 1,100 of the 2,000 lots with improvements noted by surveyors were 160 acre land lots, thus the increased price per acre calculated applies to fewer total acres than would have been the case if we had assumed a higher number of the 2,000 lots with improvements were land lots.

Alternatively, it may be the case that fortunate drawers sold their lots for less than their true value so that a portion of the rents from improved acreage accrued to buyers in this secondary market. To test this hypothesis, we need to revisit the deed books to collect a sample of lots that were sold and subsequently resold to observe what was happening to price over time, making certain that the number of improved acres on a lot and other factors that might influence the price of a lot remained constant. It is possible to run a quick check to see if fortunate drawers were consistently underpaid for improved acres by examining estimates for the value of improved acres found in property valuations that the federal government performed in advance of the Cherokee removal so that Indian households could eventually be compensated for improvements they forfeited. Shadburn includes a large number of these valuations in his book, *Cherokee Planters*, with consistent valuations placed on improved river bottom land equal to \$10-\$12 per acre and improved upland equal to \$6-\$8 per acre. Assume the average value per acre of an improved acre of land is \$8. Our sample of 146 gold lots shows an average of 8.45 improved acres. For this average case, the increment to value from 8.45 improved acres is $(\$8 - 0.74)8.45 = \61.35 , which is \$1.53 per acre, suggesting that fortunate drawers were paid just over 10 percent of the potential rent. The aggregate figure for 900 gold lots then rises to \$55,080. Following the same procedure for land lots, the average land lot in our sample contained 13.92 improved acres, thus the rent per acre arising from improved acres is \$0.632, suggesting that fortunate drawers of land lots who subsequently sold were paid a little less than half of the potential rent. The aggregate figure for 1,100 land lots rises to \$111,232. These calculations suggest that it may be a worthwhile exercise to revisit the deed books in order to explore the distribution of rents from improved acres on lots sold, although the rents from the potential for gold discoveries still far surpass those from the existence of improved acres. It may be the case that investments in improved acres simply were not capitalized fully into the price of land.

⁶⁵ Ibid., Figure 10, p. 58.

It is possible to use our model to estimate the total value of Cherokee land in Georgia. The total cultivable acres in Cherokee Georgia can be calculated by multiplying the number of acres in each county by the fraction of land in each county that is cultivable that was provided by enumerators for the 1835 Cherokee Census, which is 1,707,900 acres.⁶⁶ Multiplying this value by \$0.74 gives the intrinsic value of these acres with no improvements equal to \$1,263,846. Incredibly, the 1835 Cherokee Census enumerators put the value of "tillable" land in Georgia at \$1,228,800.⁶⁷ However, the enumerators ignored the market value of the potential for gold and the value of improved acreage left by the Indians. Adding our estimate of these capitalized rents gives a total equal to \$3,638,714.

Where did whites settle in Cherokee Georgia? We turn now to this question.

THE SPATIAL PATTERN OF WHITE SETTLEMENT IN NORTHWEST GEORGIA

As noted above, white settlers began to move into Cherokee Georgia as soon as gold was discovered in 1828. These fortune-seekers, referred to as "Twenty-niners," exhibited tendencies toward rowdy drunken behavior and general lawlessness that are cited as reasons for the extension of Georgia law to Cherokee Georgia.⁶⁸ A Georgia state census in 1834 enumerated the white residents of Cherokee Georgia who were not connected to the Cherokees by marriage for counties in the region except for Floyd and Paulding. The whites in Paulding were counted in 1837. These figures are presented in Table 4 below alongside statistics taken from the 1840 Schedules of Mines, Agriculture, Commerce, and Manufacturing for counties created in Cherokee Georgia.

Two additional counties, Dade and Chatooga, were created out of the eleven Cherokee

⁶⁶ For total acres in the counties Cass, Cherokee, Cobb, Floyd, Forsyth, Gilmer, Murray, Paulding, Union, and Walker, see Shadburn, *Cherokee Planters*, pp. 23, 59, 91, 119, 147, 185, 237, 269, 279, and 295, respectively. Shadburn did not report a figure for the total acres in Lumpkin County so it is computed as a residual from the total acreage in Cherokee Georgia equal to 4,366,554 acres. The 1835 Cherokee Census is the source for the fraction of the total acres that is cultivable (see p. 67).

⁶⁷ 1835 Cherokee Census, p. 67. The enumerators gave a smaller estimate for the total cultivable acreage equal to 614,000 acres, probably because they would not have known the exact acreage in each county. They use \$2 per acre as the value of this land. The figure \$1,228,800 reflects an arithmetic error by the enumerators, one of many made in the 1835 census.

⁶⁸ See Cadle, *Georgia Land Surveying*, p. 268; also see Williams, *The Georgia Gold Rush*.

counties in Georgia after the Cherokee removal in 1838. Dade County occupied the northwest corner of Walker County and Chatooga County was formed from the southern portion of Walker County and the northwestern portion of Floyd County.⁶⁹ The first and second columns in Table 4 show the total number of whites and free blacks and the number of slaves in each county, respectively. These data show very rapid population growth after the Cherokee removal. Notably, 11,502 whites lived scattered among these Cherokee counties in 1834 (1837 for Paulding) on land not already occupied by Cherokee households. Of these, 9,477 (82 percent) lived in the six counties with gold districts, which are Lumpkin, Forsyth, Cass, Cobb, Cherokee, and Paulding. The remaining 2,025 whites lived in Union, Gilmer and Murray counties along the northern tier of Cherokee Georgia. Clearly, whites had a preference for settling in the counties with the greatest potential for gold discoveries in the mid-1830s. Excluding Paulding

TABLE 4

DEMOGRAPHIC AND PRODUCTION STATISTICS FOR
FORMERLY CHEROKEE GEORGIA, 1834, 1837, 1840

| Georgia Counties | Whites 1834 (1837 for Paulding) | Whites and Free Blacks, 1840 | Total Slaves, 1840 | Consumer Equivalents, 1840 | Slaves per CE, 1840 | Available Corn, 1840 | Bushels Per CE, 1840 | Surplus per CE, 1840 |
|------------------|--|------------------------------------|--------------------------|----------------------------------|---------------------------|-------------------------|----------------------------|----------------------------|
| Union | 903 | 3,065 | 87 | 2,370.0 | .04 | 122,873 | 51.84 | 31.84 |
| Gilmer | 359 | 2,444 | 89 | 1,884.5 | .05 | 92,691 | 49.19 | 29.19 |
| Murray | 763 | 3,891 | 798 | 3,754.5 | .21 | 109,051 | 29.04 | 9.04 |
| Walker | part of Murray | 2,626 | 946 | 5,163.0 | .18 | 163,015 | 31.57 | 11.57 |
| Dade | part of Murray | 1,330 | 0 | 980.5 | 0 | 73,920 | 75.39 | 55.39 |
| Lumpkin | 2,015 | 5,155 | 516 | 4,404.5 | .12 | 204,016 | 46.31 | 26.31 |
| Cherokee | 1,341 | 5,478 | 496 | 4,475.5 | .11 | 235,539 | 52.62 | 32.62 |

⁶⁹ Shadburn, *Cherokee Planters*, p. 344.

| | | | | | | | | |
|----------|--------------------------------|--------|-------|----------|-----|-----------|-------|-------|
| Cass | 1,288 | 7,394 | 1,996 | 7,513.0 | .27 | 445,896 | 59.35 | 39.35 |
| Chatooga | part of Floyd and Murray | 2,635 | 814 | 2,815.0 | .29 | 191,490 | 68.02 | 48.02 |
| Floyd | no data available | 3,176 | 1,265 | 3,597.0 | .35 | 232,323 | 64.59 | 44.59 |
| Forsyth | 2,015 | 5,068 | 551 | 4,275.5 | .13 | 196,531 | 45.96 | 25.96 |
| Cobb | 1,570 | 6,637 | 902 | 5,718.0 | .16 | 304,028 | 53.17 | 33.17 |
| Paulding | 1,248 | 2,092 | 454 | 1,993.0 | .23 | 114,904 | 57.65 | 37.65 |
| Total | 11,502 | 50,991 | 8,914 | 48,944.0 | | 2,486,277 | | |

Sources: Shadburn, *Cherokee Planters*, pp. 343-380. Manuscript Census, Georgia, 1840, various counties; Schedules of Mines, Agriculture, Commerce, and Manufacturing, 1840, Records for various counties in Georgia.

County and counting whites, free blacks, and slaves, the counties with gold districts have the highest population levels in 1840 as well, ranked from high to low -- Cass, Cobb, Cherokee, Lumpkin, and Forsyth.

The apparent importance of the potential for gold discoveries is highlighted further by calculating population density per square mile of whites for 1834 (1837 for Paulding) and comparing these figures with population density per square mile for whites, free blacks, and slaves in 1840. These data are presented in Table 5 below. Floyd, Chatooga, Dade, and Walker counties are excluded because information regarding changes in the size of these counties due to the creation of new counties is unavailable. These data show clearly that whites more densely

TABLE 5
POPULATION DENSITY (PERSONS PER SQUARE MILE) FOR COUNTIES IN
CHEROKEE GEORGIA, 1834, 1837, 1840

| County | White Population Density, 1834 (1837 for Paulding) | White, Free Black, and Slave Population Density, 1840 |
|----------|---|--|
| Union | 1.28 | 4.47 |
| Gilmer | 0.45 | 3.16 |
| Murray | (included Walker) | 5.69 |
| Lumpkin | 7.00 | 19.71 |
| Cherokee | 2.21 | 9.83 |
| Cass | 2.12 | 15.46 |
| Forsyth | 7.18 | 20.02 |
| Cobb | 2.80 | 13.47 |
| Paulding | 2.32 | 4.75 |

Sources: Square miles for the counties Cass, Cherokee, Cobb, Forsyth, Gilmer, Murray, Paulding, and Union, are calculated from the acreage figures presented in Shadburn, *Cherokee Planters*, pp. 23, 59, 91, 147, 185, 237, 269, 279, respectively. Square miles for Lumpkin County is computed as a residual. Population data is taken from Table 4 above.

settled the counties in Cherokee Georgia with gold districts, with the exception of Paulding County.

Data for slaves, slaves per consumer equivalent, corn production, and surplus production per consumer equivalent in Table 4 can be compared with data for Cherokee slave ownership, corn production, and surplus production presented above in Table 2. Clearly, whites held much larger numbers of slaves than did the Cherokees in absolute terms - 8,914 compared to 769 for the Cherokees, and in relative terms – slaves comprised 14.9 percent of the population in these counties in 1840 and only 7.8 percent of the Cherokee population (excluding whites not connected to Cherokees by marriage) in 1835.

Consumer equivalents for each county are listed in the fourth column in both tables. In

order to facilitate as direct a comparison as possible between Cherokees and whites, the number of consumer equivalents was calculated in a manner as close to that used for the Cherokees as possible by summing half of the white children under 15, all of the slave population, and all of the white population 15 years and older. The ratio for slaves to consumer equivalents is listed by county in column 5. The more mountainous counties in northern Georgia (Union, Gilmer, and Dade) show low ratios of slaves to consumer equivalents in 1840. Those counties that had the highest ratio of slaves to consumer equivalents for the Cherokees also have relatively higher ratios for whites. These are Walker, Lumpkin, Cherokee, Cass, Floyd (out of which Chatooga County was formed), and Forsyth. The remaining columns show corn available for human consumption, the bushels of corn per consumer equivalent, and the surplus corn per consumer equivalent based on a 20 bushel per consumer equivalent threshold. Only corn production is considered in the calculation of surplus per consumer equivalent in order to facilitate a direct comparison with the Cherokee data. In general, white farmers were producing significantly larger surpluses than were Cherokee farmers in the same counties. However, for some of the higher surplus producing Cherokee counties, one finds relatively large surplus production in the 1840 statistics. This trend is borne out in the figures for Lumpkin, Cherokee, Cass, Chatooga, Floyd, and Forsyth Counties. Murray and Walker Counties, which produced rather marginal surpluses under Cherokee control, also produced relatively smaller surpluses when farmed by whites in 1840.

These data indicate a close correspondence between patterns of settlement and production for Cherokee farmers and the white farmers who followed them. Also, it is clear that proportionately more slaves led to proportionately greater surplus production for both Cherokees and whites. Moreover, the locus of slaveholding and surplus production tended to be the same for Cherokees and whites. Counties in Georgia that were larger surplus producers and had larger numbers of slaves per consumer equivalent under the Cherokees such as Lumpkin, Cherokee, Cass, Chatooga, Floyd, and Forsyth Counties exhibit relatively higher ratios of slaves to consumer equivalents and surplus production per consumer equivalent after the Cherokee removal. Referring to the maps presented above, this mainly middle tier of counties marked by higher concentrations of population, slaveholding households, and production by whites corresponds closely to the most intensive cultivation and slaveholding by Cherokees.

Whites who moved into formerly Cherokee Georgia appear to have had a strong

preference for land in counties that held out the potential for gold discoveries, but they also seem to have been drawn to the same counties that had been most intensively cultivated and was best able to support the employment of slaves by Cherokees, that is to say, along waterways or in valleys close to streams, and along roads. Georgia's lotteries for Cherokee land, which required surveyors to make note of Cherokee improvements, could only have helped to inform fortunate drawers in the lottery and buyers in the secondary market about superior lots with significant improvements and advantageous locations.

CONCLUSIONS

Although acquiring nearly 7,000 square miles of land to be distributed initially to less fortunate Georgians via the lotteries was a significant side benefit to whites arising from the Cherokee removal, the initial settlement of Cherokee Georgia appears to have been more of a gold rush. The land acquired by Georgia as a result of the Cherokee removal was nice, to be sure, but the potential for gold discoveries was fabulous, as evidenced by the substantial increment to value that accrued to lots in gold districts. The disproportionate focus by Georgia's whites on gold discoveries appears not to have been entirely misplaced given that as much as \$16 million of gold may have been extracted from northern Georgia (mainly Cherokee Georgia) prior to 1837 and another \$6 million was turned into coin between 1837 and 1859 at the Federal mint constructed at Dahlonega, the seat of Lumpkin County.⁷⁰ Could all this gold have contributed to the financial turbulence in the United States during the 1830s?

Our results bear out the fact that Indian improvements to the land were valuable, but not extraordinarily so. The margin added to the price per acre of a lot due to improved acreage was rather small, although it may not have fully reflected the value of cleared land. A variety of factors may have been at work here. In addition to factors cited above, it is important to note that Georgia's land market may have been flooded as of the mid-1830s. The Creek cession distributed in the Lottery of 1827 had added 4,252,500 acres to the total available for white settlement only a few years earlier, and much of this land was superior in quality to that made available in the lotteries for Cherokee lands. Perhaps those who purchased lots from fortunate drawers were able to take advantage of information asymmetries in order to appropriate rents from Indian improvements. Considerably more investigation will be necessary before any definite statements

⁷⁰ Williams, *The Georgia Gold Rush*, pp. 106-108.

can be made about the Native American contribution to American agricultural development through land clearing and locating especially fertile acreage.

An important question we raise and are unable to explore fully in this paper relates to the distributional effect of the lottery system used by Georgia to distribute land ceded by Native Americans. Georgia created a system for land distribution that appears to have effectively shifted the distribution of wealth toward the less fortunate, albeit at the expense of Native Americans. No doubt, evidence of the acquisition of land by speculators, and perhaps by Georgia government officials might turn up as we peruse the deed books, but these acquisitions would not necessarily suggest fraud. Indeed, the secondary market for land created by the lottery system allowed fortunate drawers, who might have been unable to take advantage of the opportunity to settle and farm land they won, to liquidate their winnings expeditiously. The secondary market permitted the efficient matching of knowledge and control. Ignoring the expropriation of the Native Americans, Georgia's lotteries may have improved both distribution and efficiency while limiting the potential for public corruption.

One verse to a popular song on the Georgia frontier during the 1830s went

"All I ask in this creation
Is a pretty little wife and a big plantation
Way up yonder in the Cherokee Nation."⁷¹

For male fortunate drawers, the wife may have been pretty, but the plantation was not very large initially. Even so, the 40 acres or 160 acres won represented a start for many. For young women who were fortunate drawers, the winnings may have constituted a dowry or a contribution to their overall security. Could Georgia's lottery system be the exception that proves a basic premise of institutional economics that the creators of economic institutions do so primarily with regard to their own interests?

⁷¹ Starkey, *The Cherokee Nation*, p. 109.

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