

# The Cades Cove Bloomery Forge Discovery and Recovery of the Hammer

David Ledbetter, Dwight McCarter, Dave Post

## The Cades Cove Iron Works

The 75<sup>th</sup> Anniversary of the Great Smoky Mountains National Park represents the 190<sup>th</sup> Anniversary of the Cades Cove Community, an area described as the “crown jewel of the Park” and visited by over two million visitors annually. Cades Cove now provides little resemblance of its appearance and character experienced by the pioneer settlers upon arrival between 1818 and 1821. Those who visit today can only marginally appreciate the conditions encountered and accomplishments provided by the individuals and families who inspired the community, established the settlement, and matured Cades Cove into a thriving, productive area of Blount County.

The Native Americans claimed ownership of the land which evolved into the Cades Cove settlement until the Calhoun Treaty of 1819. This agreement between the Federal Government and the Cherokee Nation relocated the “Indian Boundary Line”, from north and east of the Cove to what is now known as the Little Tennessee River to the south and west. The agreement enabled legal ownership of Cades Cove property by non Native Americans with settlement and speculative interests.<sup>1</sup>

The area in and surrounding Cades Cove was apparently well known and appreciated by many who had visited the area for hunting, military or speculative purposes prior to passage of the Calhoun treaty. Both North Carolina and Tennessee awarded land grants before 1819 for Cades Cove and area properties, presumably in anticipation of future treaties enabling ownership by white speculators and settlers. After passage of the Calhoun Treaty, the Hiwassee Land District was established by the State of Tennessee with responsibility for awarding land grants for the newly acquired lands.

The dominant and most successful pioneer speculator of Cades Cove properties after the passage of the Calhoun Treaty was William “Fighting Billy” Tipton. He acquired the nickname “Fighting Billy” as much for his penchant for brawling in private life as for his valor and abilities in wartime. He came by his combative nature genetically, being the son of Col. John Tipton of Revolutionary War fame who battled another favorite son, Col. John Sevier, over State politics.<sup>2</sup> In 1821, William Tipton was issued the first Tennessee land grants for Cades Cove property based on earlier entries by Aaron Crowson and John Smith.<sup>3</sup> Tipton was subsequently awarded additional Cades Cove land grants and was joined by his brother Thomas in a land grant of significance to this article (Grant No. 2812 issued January 16, 1835)<sup>4</sup>.

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<sup>1</sup> Burns, Inez, *Settlement and Early History of the Coves of Blount County, Tennessee*, The East Tennessee Historical Society Publications, Nov. 24, 1952.

<sup>2</sup> Cades Cove Preservation Association, 2002 Calendar, *Pioneers of Cades Cove*, Maryville, Tennessee.

<sup>3</sup> Blount County Warranty Deed Book 3, pgs. 2, 3, Blount County Register of Deeds, Maryville, Tennessee.

<sup>4</sup> Blount County Warranty Deed Book 31, pgs. 26, 27, Blount County Register of Deeds, Maryville, Tennessee.

The passage of time, erosion of memories, and inadequate or incomplete documentation has clouded the interpretation of events and relationships which transpired almost two centuries ago. After committing to the acquisition of Cades Cove properties and perhaps even before acquiring legal ownership, William Tipton apparently began investments and actions which would make Cades Cove attractive to those desiring a “better life”. Food, shelter and safety are perhaps the most essential requirements to be satisfied in the establishment of a wilderness community. The pioneer settlers could only transport a limited inventory of food, tools, weaponry, livestock and clothing. Their long term survival and the establishment and maturation of a community required the development of local resources and skills as imported critical items were depleted and required replacement or repair. The requirement for such local resources was further emphasized by the relative isolation of the community with very marginal and arduous avenues for transportation and access to external resources.

Tipton apparently recognized that the settlement of Cades Cove, the development of a thriving community and profits from his speculative investments were dependent on providing a local source for iron. Iron was needed for axes, plow points, wheels, knives, hinges, hammers, cooking vessels and many other essential items to provide food, shelter and safety. The development of a source for iron and iron products was not unique to the establishment of the Cades Cove settlement. Many communities developed in the Southern Appalachian Mountains featured iron furnaces and forges. Mining and refining of brown iron ores began with the arrival of white settlers into Tennessee and it is described as the earliest manufacturing activity in Tennessee.<sup>5</sup>

The Tiptons were associated with the production of iron in Carter County so the establishment of an iron capability in Cades Cove was not an unknown undertaking.<sup>6</sup> The technology which was initially deployed by the Tiptons for producing iron in Cades Cove, although not definitively established, undoubtedly required a source of iron ore, a source for charcoal fuel, a flux (limestone) and water power.<sup>7</sup> Within Cades Cove, the Tiptons were required to identify a site for the operation which efficiently integrated the resources without undue transportation requirements.

Insight concerning the Tipton iron producing operation is found in the March and June 1821 proceedings of the Blount County Court. Although the original Court records were apparently destroyed by Courthouse fire, a copy survived in the papers of Dr. Calvin Post.<sup>8</sup>

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<sup>5</sup> Maher, Stuart W., *The Brown Iron Ores of East Tennessee*, State of Tennessee Department of Conservation, Division of Geology, Nashville, Tennessee, 1964.

<sup>6</sup> Burns, Inez, *History of Blount County Tennessee From War Trail to Landing Strip*, The Tennessee Historical Commission, 1957.

<sup>7</sup> Albert, Linda, *If I Had A Hammer*, The Daily Times, December 16, 2007.

<sup>8</sup> Papers of Dr. Calvin Post, In possession of Dave Post, Maryville, Tennessee.

State Tenn.  
Blount Co.

March Session 1821

The petition of Thomas Tipton and William Tipton praying a Jury to view and examine the vacant and unappropriated lands in the vicinity of their Iron work seated on Abraham creek in Cades Cove in Blount County is granted and it is ordered by the Court that the Sheriff of Blount County summons a Jury of twelve free holders who shall view and examine the vacant and unappropriated Lands in the vicinity of said Iron works, seat and report to the next term of this Court whether or not this the same be fit for cultivation.

A copy atest Jac. F. Foute

State of Tennessee

Blount County

We the undersigned having been summoned and duly sworn by the Sheriff and being duly sworn according to Law, and having examined the vacant and unappropriated lands in the vicinity of Tiptons Iron works or seat in Cades Cove on Abraham Creek in Blount County pursuant to the above decree or order do report and say that fifty acres on the North side of Cades Cove and on the south side of the mountain adjoining Calloways Land including an Iron ore bank is unfit for cultivation thence on the North side of Abrahams Creek near the forks, thence runing down the creek & thence south across said creek to Ballingers improvement including the Iron works and seat thence up the meanders of said creek one mile & a half thence under the north side of the Mountain keeping out of the sectionized land or claims so as to include the number of acres required and that the same is unfit for cultivation.

Sworne & Subscribed  
James Cannon June 1821

Samuel Davison  
William Davison  
John Smith  
William Walker  
Peter Burkley  
Jacob Mcgee  
John Main  
Peter Snyder  
Jesse Ray  
Thomas Cambell  
Isaac Yate

Assuming the authenticity of the above Court record, it can be concluded that William and Thomas Tipton had established an “iron works” in Cades Cove prior to March 1821. The petition apparently was intended to provide the Tiptons with use or ownership of the examined land as it was adjudged “unfit for cultivation” and did include mention of a very valuable resource for the iron works, an ore bank. The area generally described in the document is shown on a 1934 topographical map of Cades Cove in Figure 1. The features identified include the site of the last operating Cades Cove forge. The site of the Tiptons’ original iron works may have been coincident. It is interesting that the Tiptons’ operation was apparently established and operating several years before William and Thomas Tipton acquired legal ownership of the property (Grant No. 2812).



Figure 1. Location of Cades Cove Iron Works  
(Interpretation by Dave Post)

Other features identified in Figure 1 include the location of the iron ore bank which provided ore for the operation. There are at least two other Cades Cove locations of iron ore mining. One is visible near the former home site of George Caughron and another is reported as north of the Missionary Baptist Church<sup>9</sup>. The “Coalen Ground” is also identified as is Coalen Ground Ridge and Coalen Ground Branch. These place names indicate the area used for the conversion of hardwoods to charcoal, a critically needed fuel for the iron works furnace. The map also includes traces of roads which may have been used for transport of ore and fuel to the forge site.

In addition to motivation and requisite natural resources, the Tiptons needed human resources to develop an iron industry in Cades Cove. It is plausible that John Oliver, recognized as the first permanent white settler, was enticed to relocate from Upper East Tennessee to assist in the operation. Oliver’s skills included expertise as a collier, with proficiency in the conversion of hardwoods for fueling the furnace.<sup>10</sup> It is also conceivable that Oliver may have initially lived in the proximity of the iron works while simultaneously constructing his permanent home in the eastern area of the Cove. If so, this may explain why an infant son of John and Luraney Frazier Oliver is buried in the nearby Davis Cemetery, several miles distant from the current John Oliver cabin exhibit but a relatively short distance from the forge site.

<sup>9</sup> Research of Dwight McCarter.

<sup>10</sup> Oliver, Colonel Hugh and Margaret T., *Sketches of the Olivers A Family History 1726 to 1966*, Pinehurst, North Carolina, 1987.

The Tiptons apparently operated the iron works until 1831 when the Tipton “Forge Tract” was reportedly purchased by Robert Shields.<sup>11</sup> No record of this transaction has been located. In May 1834, Robert Shields executed a trust deed providing 1600 acres and personal property items as collateral for a debt owed to John Cannon of Sevier County. The land was described as “being the land the said Shields bought from Thomas Tipton, Jacob Tipton and Johnson Steele, on which land there is a forge”.<sup>12</sup> Shields apparently defaulted on repayment of the loan.

On May 30, 1837, Hugh Bogle, Trustee, conveyed the property consisting of “a certain forge and lands” to Daniel D. Foute.<sup>13</sup> (Figure 2) Foute also acquired ownership of the Carson Iron Works on Abrams Creek near Happy Valley<sup>14</sup>. Foute closed the Cades Cove forge in 1847, apparently due to inferior iron ore in the Cove and a depleted supply of hardwoods for fuel purposes.<sup>15</sup> One source of confusion, relative to the forge site property ownership, is that William Tipton’s will, dated October 28, 1848, includes a “parcel of land containing 1255 acres, known as the iron works tract”.<sup>16</sup>



Figure 2. Daniel D. Foute  
(Inez McCauley Adams Photograph)

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<sup>11</sup> Shields, A. Randolph, *The Descendants of Robert & Margaret Emmert Shields of Cades Cove Tennessee*, Maryville, Tennessee, 1986.

<sup>12</sup> Blount County Warranty Deed Book 5, pgs. 240-242, Blount County Register of Deeds, Maryville, Tennessee.

<sup>13</sup> Blount County Warranty Deed Book 6, page 228, Blount County Register of Deeds, Maryville, Tennessee.

<sup>14</sup> Burns, Inez, *History of Blount County Tennessee From War Trail to Landing Strip*, Maryville, Tennessee, 1957.

<sup>15</sup> Maher, Stuart W., *The Brown Iron Ores of East Tennessee*, State of Tennessee Department of Conservation, Division of Geology, Nashville, Tennessee, 1964.

<sup>16</sup> William Tipton Will, Blount County Will Book 1, Blount County Courthouse, Maryville, Tennessee.

The design, technology and operation of early iron working operations are described in several references.<sup>17</sup> The product of a bloomery furnace, the bloom, is converted to a malleable, high purity iron through repeated impacts of a wrought iron or steel hammer<sup>18</sup>. For isolated operations such as that of Cades Cove, the hammer would have had to be laboriously imported into the area. The illustration in Figure 3 illustrates how the Cades Cove Bloomery Forge hammer was configured and operated using the waters of Forge Creek to raise the hammer prior to release and subsequent impact with the bloom.<sup>19</sup> Dr. Durwood Dunn chronicled that the resonating sound of the hammer impact drove the wolves from the vicinity of the Cades Cove settlement.<sup>20</sup>

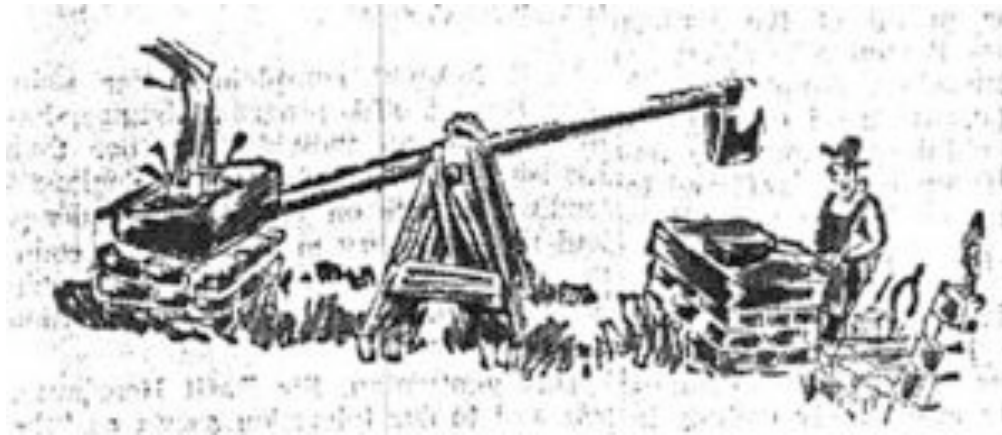


Figure3. Design and Operation of the Cades Cove Bloomery Forge Hammer

The available property transactions and other documentation, albeit circumstantial, indicates that William and Thomas Tipton established an iron working operation, probably including a forge, prior to 1821, which they operated until 1831; Robert Shields operated the forge from ca. 1831 to ca. 1837; D.D. Foute operated the forge from ca. 1837 to ca. 1847 when the forging operation ceased. The Tiptons, Shields and Foute may have had amicable or hostile relationships. Perhaps there were partnerships relative to forge construction and operation<sup>21</sup>. There may have been more than one forge site on the waters of the Cove. Ownership of the forge site was equally confusing. Records have been destroyed and memories lost. The certainty is that the property which once housed a valuable source of wrought iron for the Cades Cove settlement is now a part of the Great Smoky Mountains National Park and the owners are the general public.

<sup>17</sup> Maher, Stuart W., *The Brown Iron Ores of East Tennessee*, State of Tennessee Department of Conservation, Division of Geology, Nashville, Tennessee, 1964.

<sup>18</sup> Albert, Linda Braden, *If I Had A Hammer*, The Daily Times, December 16, 2007.

<sup>19</sup> Dickey, David D., *Early Iron Works Flourished Till 1840s in Smokies*, Knoxville News Sentinel, May 27, 1956.

<sup>20</sup> Dunn, Durwood, *Cades Cove The Life and Death of a Southern Appalachian Community 1818-1937*, The University of Tennessee Press, Knoxville, Tennessee, 1988.

<sup>21</sup> Shields, A. Randolph, *The Descendants of Robert & Margaret Emmert Shields of Cades Cove Tennessee*, Maryville, Tennessee, 1986.

## **Cades Cove Bloomery Forge Hammer Discovery and Recovery**

On October 31, 2007, Dwight McCarter led a small group of hikers on a visit to Gum Bottoms, a small isolated community on Rabbit Creek between the Parsons Branch Road and the Rabbit Creek Road. Among the hikers were Dave Post, Mark and Janet Snyder. At the termination of the hike, the Snyders exhibited intriguing photographs of wooden structures lying adjacent to the waters of Forge Creek which were reportedly explained to them by Park staff as being remnants of the Cades Cove Bloomery Forge. McCarter and Post examined the images but, due to schedule constraints, were unable to visit the site on that date.

On November 4, McCarter, Post and their mutual friend, David Ledbetter, traveled to Cades Cove to visit the forge site for an examination of the remnant structures. The trio, all with significant Cades Cove ancestry and healthy appetite for the cultural history of the Cove, arrived at the Cable Mill exhibit to begin their short, early morning walk to the historical forge site. All had previously visited the general area several times, had observed slag from the forging operations on the banks and in the creek, and had noted other historical features in the same general area. These features include a diversion canal connecting Forge Creek to Mill Creek, built in the late 1860s or early 1870s by John P. Cable to provide additional water power for the Cable Mill in dry seasons when Mill Creek provided inadequate supply. Cable also built a dam with gate and support structures to harness Forge Creek and divert water to the canal. These structures were significantly eroded by the time the Park was established but were rebuilt in the 1930s. (Figures 4, 5) The rebuilt dam and structures have also been eroded by flood and time with only a few shards of the rebuilt structure remaining today. Perhaps resources and priorities can be found to once again restore these historical Cove features.



Figure 4. Forge Creek Dam  
Prior to 1930s Restoration



Figure 5. Forge Creek Dam  
After 1930s Restoration

(NPS Photographs)

The temperature was crisp and cool, requiring coats and gloves in addition to boots and walking sticks, as the trio started their journey to Forge Creek. The path crossed Mill Creek and paralleled the diversion canal until Forge Creek was intersected. Due to the extreme drought conditions during the preceding months, the crossing of Mill Creek had been easy and Forge Creek appeared as only a trickle when compared to the normal water level and flow rate. Due to the abnormally low water flow, the friends decided to “rock-hop” up Forge Creek to the forge site rather than walk along the eastern bank as might have normally occurred.

The trio followed independently selected paths up the creek. After a short distance, Post glanced down and detected an odd, rectangular shape in the shallow water, submerged an inch or so under the surface. The object was of the same color as adjacent submerged rocks but was of distinctive form. (Figure 6) After attracting the attention of Ledbetter and McCarter, the friends began probing the object with walking sticks in a futile attempt to dislodge it. The object was obviously dense and immovable. The initial conclusion was that the object was a piece of forged wrought iron, very similar to the specimen on loan to the Cades Cove Preservation Association by the Roy Coada family. The trio speculated on why such a valuable article would have been left in the creek.



Figure 6. Rectangular Object As Discovered In Forge Creek  
(Dave Post Photograph)

McCarter then turned to glance up the creek and excitedly exclaimed “There’s the hammer!” About ten feet up the creek from the location of the rectangular object, another distinctive shape emerged from the waters of Forge Creek. This object projected 4 or 5 inches above the water line and, from the trio’s vantage point, a contoured “nose” geometry was distinguishable. (Figure 7)



Figure 7. Hammer Nose As Discovered In Forge Creek  
(Dave Post Photograph)

The trio incredulously left the rectangular object in lieu of a closer inspection of the new discovery. As this object was surrounded by a larger pool of water, it could only be reached with an arm’s extension of walking sticks. The contoured shape was also adjudged to be of great mass and any attempts to dislodge it proved futile as well. The discoverers soon decided to abandon further examination of the two objects until after an inspection of the wooden structures at the forge site was completed. An “up close and personal” experience with the objects might require a Forge Creek baptism and, due to



the cool weather and frigid water, that experience was better accommodated “on the way out” rather than “on the way in”!

Ledbetter, McCarter and Post proceeded a short distance further up Forge Creek to examine the ancient timbers which had survived so many years. Needless to say, the visitors marveled at the precisely bored holes and features which had been crafted so skillfully many years prior. (Figure 8) Several iron ore specimens and pieces of slag were observed in the vicinity of the structures. Also obvious were several spatially distributed surveyors’ flags, indicative of fairly recent archaeological evaluations, presumably by the GSMNP staff.



Figure 8. Wooden Structures at the Forge Site  
(Dave Post Photographs)

After completing the inspection of the wooden structures and exploring surrounding areas upstream, the objects lying in the frigid waters of Forge Creek were revisited. McCarter and Ledbetter established sound footing on a rock surface upstream from the rectangular object and Post, after removing boots, waded to the object and lifted it to the attention of the others. With numbing appendages, Post then, as rapidly as possible, waded upstream to the larger contoured object and, as gently as possible but with due haste, tumbled the shape downstream several times until Ledbetter and McCarter could assist with removal.

A closer examination confirmed that the contoured object was metallic and constituted the well worn nose and side of a forge hammer (at least to three amateur metallurgists). The rectangular shape was confirmed as a side of the larger piece. Another section of the forge hammer apparently still rests in the creek or may have been previously discovered and removed.

Prior to departure, the rectangular side of the hammer was deposited on the west creek bank and obscured with leaves and branches while the larger section was placed into the nearest and deepest area of the creek and camouflaged with a covering of rocks. The three friends were elated by their discovery and found it unbelievable that the remnants of the hammer were lying in Forge Creek so near the forge site for at least 160 years! The consensus agreement was that the GSMNP should be informed of the discovery and that the artifacts should be removed and preserved.

Shortly thereafter, GSMNP staff were contacted and informed of the hammer discovery. Communication was quickly established by Park archaeologist Erik Kreusch who indicated that he would like to visit the forge site to inspect the hammer remnants and that he would like to include Elizabeth Cahill, a graduate student performing research on the Cades Cove Bloomery Forge. The visit was established for the morning of November 14.

On November 14, Post met Cahill and Kreusch at the Cable Mill area to provide escort to the discovery. When Forge Creek was intersected, Post pointed his walking stick in the direction of the camouflaged hammer nose and stated “Elizabeth, there’s the hammer”. The discoverers had apparently disguised the artifact well as Cahill had difficulty distinguishing the object but excitedly removed boots and waded to the center of the creek, with camera in hand, once the target was sighted. (Figure 9)



Figure 9. Elizabeth Cahill Photographing Hammer Artifact  
(Dave Post Photograph)

After visiting features of the forge site and discussing Cahill’s research and evaluations, hammer recovery options were considered. November 17 was established as the tentative removal date. Kreusch and Post proceeded to the Cades Cove Maintenance Department where they initiated conversations with maintenance staff concerning the potential use of mechanized equipment to assist in hammer recovery. To evaluate such alternatives, Post accompanied Vernon Stephens, acting supervisor due to Cades Cove Maintenance Supervisor Dale Brukiewa’s absence, to the forge site. Due to significant obstructions and potential damage to the ecology and equipment, this approach was deemed unadvisable. Post and Stephens then visited with Cades Cove Ranger staff to inquire about the loan and use of a wheeled, back country litter for hammer recovery. Although this approach seemed feasible, this consideration was ultimately abandoned due to the potential for Park emergencies requiring use of the back country equipment.

On the morning of November 17, the hammer recovery team convened at the Cades Cove Ranger Station to review recovery logistics and execute injury liability disclaimers. These included associates of Ledbetter, McCarter and Post with the Cades Cove Preservation Association, Rod Law and Mark Snyder. Also included in the entourage were media representatives. Other recovery participants, Cody Herron and

Ledbetter, and supporters met with the team at the Cable Mill area. Armed with ropes, straps, furniture moving equipment and an approximation of a plan, the force crossed Mill Creek with a common objective...to recover the hammer, estimated to weigh 200 to 300 pounds, *soaking wet*.

Once Forge Creek was intersected, the recovery team, after donning gloves and waders, splashed to the hammer artifacts and secured them to the equipment.(Figures 10, 11) The sole casualty of the operation was soon experienced as one of the equipment items, of inadequate capacity, experienced a mechanical malfunction. The load was quickly transferred to the sole remaining wheeled equipment and the arduous trek to the Cable Mill area began.



Figure 10. McCarter Dons Waders

(Paulette Ledbetter Photographs)



Figure 11. The Recovery Begins

While some pulled, some pushed and some righted the load, others cleared the route of rocks and limbs, charted the course of least resistance, documented the experience via photographs and otherwise encouraged the recovery participants to “stay the course”. After a few hours, the last obstacles of Mill Creek were conquered and the Cades Cove Bloomery Forge Hammer was parked on a maintained pathway at the Cable Mill exhibit.(Figure 12)



Figure 12. Hammer Recovery Team

Left to Right: Law, Herron, Post, Kreuzsch, Snyder, Ledbetter, McCarter

Not Pictured Elizabeth Cahill

(Paulette Ledbetter Photograph)

The ancient artifact soon attracted a crowd of onlookers who required an explanation of the significance of the metal objects. This was patiently provided by Kreusch. (Figure 13) The Cades Cove Bloomery Forge hammer was soon loaded into a GSMNP vehicle and was transported to the confines of the GSMNP historical collection to claim its rightful legacy as one of the more significant remnants of the former Cades Cove settlement.



Figure 13. Kreusch Explains Significance of Hammer  
(Paulette Ledbetter Photograph)

There are many unresolved questions relative to the Cades Cove Bloomery Forge hammer which was discovered by Ledbetter, McCarter and Post. Was this the hammer in use by the Tiptons in the 1820s? Was it of later vintage? Why was it abandoned in Forge Creek rather than recycled into useful tools? How did it remain hidden for so many years? How many people may have stumbled over it or viewed it without recognizing its significance or use? As Ledbetter said “As time goes on, a little more of history will open up to you. This was our time.”<sup>22</sup>

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<sup>22</sup> Albert, Linda Braden, *If I Had A Hammer*, The Daily Times, December 16, 2007.