

THE HISTORY AND INDUSTRIAL ARCHAEOLOGY OF A CONFEDERATE PAPER MILL IN NASHVILLE, TENNESSEE

By

DONALD B. BALL

U.S. ARMY CORPS OF ENGINEERS - LOUISVILLE DISTRICT

LOUISVILLE, KENTUCKY

Thou hast most traitorously corrupted the youth of the realm in erecting a grammar-school; and whereas, before, our forefathers had no other books but the score and the tally, thou hast caused printing to be used; and contrary to the King, his crown, and dignity, thou hast built a paper-mill.

William Shakespeare

King Henry VI, Part II, Act iv, Scene 7

INTRODUCTION

In common with numerous other industrial facilities in the South at the beginning of the Civil War, paper mills were few in number and woefully incapable of meeting the needs of those who relied upon their products. It is the purpose of this study to briefly address the history and industrial archaeology of the William S. Whiteman paper mill, near the settlement of Whites Creek, (Nashville, Davidson County) Tennessee. Built in 1849 and operated until the fall of Nashville to federal forces in early 1862, this structure is one of the last surviving facilities of its kind in the former Confederacy.

WILLIAM S. WHITEMAN -- ENTREPRENEUR

Following his father and grandfather, William S. Whiteman² was the third generation of his family to enter the paper making business (Weeks 1916:269). Likely from England, his grandfather settled on the Schuylkill near Philadelphia, Pennsylvania, and was followed in the paper business by his son, William S. Whiteman¹. About 1800, the senior Whiteman transported the required paper making equipment by wagon from Philadelphia to eastern Tennessee and established a paper mill on Middle Brook Creek about four miles from Knoxville (Clements 1987:319; Tennessee State Historical Commission 1946:427). This was one of the first paper mills built in the state. He married in 1801 and fathered at least three children including one son also named William S. Whiteman² born in 1808 (Clements 1987:316).

Whiteman's son, William S. Whiteman², moved to Nashville in 1838 and soon afterwards entered into a partnership with John A. McEwen, O. B. Hays, and John M. Hill to build a paper mill in that city. The mill was placed near the bank of the Cumberland River, where the city workhouse stood in the 1940s (Tennessee State Historical Commission 1946:427-428). The partnership was dissolved in the late 1840s, at which time Whiteman bought out the interests of his partners. He established a new partnership with W. O. Harris, the chief owner and manager of the Nashville *Banner* newspaper (Tennessee State Historical Commission 1946:428).

Following his purchase of several hundred acres from Felix Earthman, Whiteman, in concert with Harris, soon afterwards began construction of a new paper on the left bank of Earthmans Branch (also called Judith Branch) (Clements 1987:198). This was about one and one half miles (2.4 km) north of the small settlement of Whites Creek, about eight miles (13 km) northwest of Nashville (see **Table 1**).

Construction of the new mill apparently began in 1848, and it was placed in operation possibly in early 1849, following the installation of the equipment removed from the Cumberland River mill (Clements 1987:316 citing article in Nashville *Daily Union*, January 10, 1849). Whiteman's business endeavors were apparently prospering during this period. He is listed as a "paper merchant" in the 1850 census and claimed \$7,000 in personal property.

TABLE 1. CHAIN OF TITLE FOR WHITEMAN PROPERTY AT WHITES CREEK.

<u>Owner</u>	<u>Year</u>	<u>Record</u>
Claim of Land	Late 1700s	RODC A:197
Lewis Earthman*	-----	RODC G:116; M:174
Felix Earthman	1828	Davidson County Will Book 10:119
W. S. Whiteman, Sr.	-----	RODC 11:278
W. S. Whiteman, Jr.	-----	RODC 42:756
Ernest Williams	1919	RODC 512:663
Clyde Owens	-----	RODC 1323:8
H. Eugene Martin	1971	RODC 4546:303

* See also *National Banner and Nashville Whig*, July 11, 1828, p. 2 for notice of death of Lewis Earthman. Source: Registrar of Davidson County (RODC) deed books cited in Clements (1987:198).

On October 18, 1853, James Stevens, a mill employee, was killed in a work related accident. Stevens – originally a carpenter by trade initially hired by Whiteman to remodel and expand the much smaller house on the grounds – worked 18 hours a day, seven days a week preparing pulp prior to being made into paper and other mill related tasks. Citing an article in the *Nashville Republican Banner*, October 20, 1853, Clements reported that:

...James Stevens, turning his efforts to the machine which prepared the pulp, put on an apron to deflect some of the liquid which flew from the spinning stone. At some point, he stepped too near the apparatus and his apron became caught in the drive shaft, jerking him against the mechanism and battering him repeatedly before his lifeless and mutilated body could be freed [Clements 1987:318].

Whiteman² subsequently collected almost \$200 for Virginia Stevens, James' pregnant wife. Already confronted with the responsibility of raising three young children, she gave birth to a son, Elisha, three months later (Clements 1987:198, 318, citing article in *Nashville Republican Banner*, November 3, 1853, p. 3).

In marked contrast to most paper mills, Whiteman and Harris constructed a pulp mill known as Loggin Springs on Paradise Ridge about five miles (8 km) from the paper mill to take advantage of a bountiful supply of pure, limestone free water for washing and beating the pulp (Halley 1904:214-215; Tennessee State Historical Commission 1946:428). Following this process, the pulp was hauled by wagon to the mill. Several years later, but prior to the Civil War, Whiteman bought out Harris's interest in this facility and thereafter operated it as a sole proprietorship (**Figure 1**). The business proved to be quite profitable and was based upon the production of news, book, Manila, and wrapping paper. It is reported that the mill operated day and night seven days a week, except for "down time" required to maintain the boiler needed for powering the equipment (Clements 1987:318; Tennessee State Historical Commission 1946:428). Said to have had a "daily output of 70 reams" of paper, available sources make no mention of any specific watermark used by or attributable to any of the Whiteman paper mills (Clements 1987:318 citing a notice in the January 4, 1854, issue of the *Nashville Republican Banner*, p. 2).

In late 1855, only a few weeks after the death of Whiteman's first wife, the mill suffered major damage from fire and required extensive rebuilding (Clements 1987:318). Although the cause of this fire is not further described, similar disasters at early paper mills were frequently attributable to boiler malfunctions and explosions.

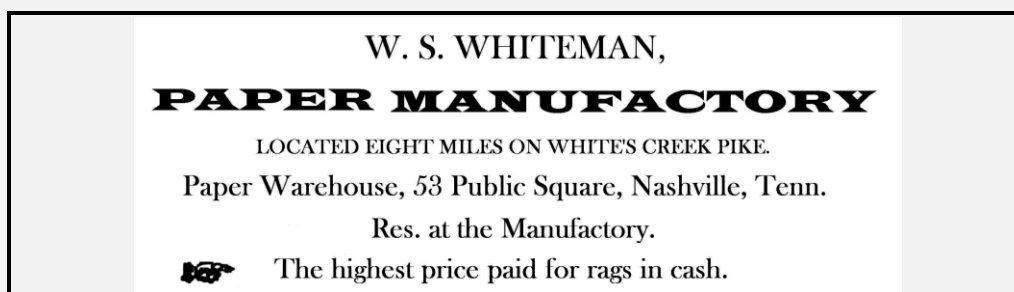


FIGURE 1. ADVERTISEMENT FOR WHITEMAN'S NASHVILLE PAPER MILL.
(Nashville City Directory 1857:221)

During the 1850s, Whiteman² variously maintained personal residences in both Nashville and at a house, still standing, (**Figure 2**) adjacent to the paper mill (Clements 1987:198, 318; Graves 1975:39; see also **Figure 1**). Though extensively remodeled through the years into a "Southern Colonial" "I" house (Kniffen 1936:185-186; O'Malley 1972a; 1972b; Riedl et al. 1976:93-99, 240-243) --- a distinctive type of traditional architecture, long associated with the more prosperous farms of the region --- the core of the imposing Whites Creek house is an 1830s era log structure.



FIGURE 2. WILLIAM S. WHITEMAN HOME, WHITES CREEK (DAVIDSON CO.), TENNESSEE.
(Photograph taken by author on August 9, 2002)

Not unexpectedly, as a conscientious businessman, Whiteman² sought ways to improve the quality of his mill's products. As noted by Tennessee State Historical Commission:

...Mr. Whiteman's mechanical genius came to his aid and enabled him to perfect many valuable improvements in the existing modes of paper manufacture, one of which was the diamond-shaped plates for beating pulp, which he, unfortunately, did not patent, but which were generally substituted for the plates formerly used by all the mills throughout the country. The invention would have brought him greater returns if patented than he ever received from the uniformly successful operation of his mills [Tennessee State Historical Commission 1946:428].

Despite the claim that “The output [of Whiteman’s Mill] was the largest of any mill in the South,” this simply was not the case (Tennessee State Historical Commission 1946:428; Clements 1987:318). Based upon available statistical information concerning the paper industry in the United States compiled in the 1860 U.S. Federal Census (Kettell 1867:298), the Whites Creek Mill represented an estimated capital investment of but \$7,250 --- in contrast to an average expenditure of \$23,869 for the mills established by its competitors elsewhere in the South. In terms of dollar value of product sold, the average figure for the two mills operating in Tennessee in 1860 was about \$7,000 each, compared to average annual sales of just over \$29,400 by other mills in the South and just over \$38,200 per year nationwide.

Though specific production information is typically lacking for most mills in the South, it may be noted that the Rock Island Paper Mill of Columbus, Georgia, is reported to have had a daily output of 2,500 pounds (White 1854:571). A mill at Neuse River Falls near Raleigh, North Carolina, is said to have produced 520,000 pounds per year; Franklin Mill in Richmond, Virginia, is reported to have produced 500,000 pounds annually; and the mill in Bath, South Carolina – which burned on April 2, 1863 – was considered to be the largest in the South (Weeks 1916:269). Both of the mills operating in Tennessee in 1860 jointly produced but 200,000 pounds of paper (Secretary of the Interior 1865:cxxii).

Although several sources repeat the story that some of the first Confederate money and securities were printed on paper made at Whiteman’s mill, no firm primary evidence is offered to support this contention (Anonymous 1946; Graves 1975:71; Halley 1904:214-215; Hunter 1947:535; Tennessee State Historical Commission 1946:428; Weeks 1916:269). Moreover, one must reasonably question why the newly-formed Confederate government would expend the effort and resources to transport paper from Nashville to Richmond? There was already an operating paper mill in downtown Richmond, Virginia, and additional mills were elsewhere in Virginia, the Carolinas, and Georgia.

Indeed, a similar story has been circulated about the Bath Paper Mill in Aiken County, South Carolina. As noted by Mr. Erick Montgomery of Historic Augusta, Inc., “The family lore claimed that it made ALL the paper for Confederate money...” (Erick Montgomery, personal communication, April 1, 2002). This claim becomes all the more incredulous in light of the mill having burned in April of 1863. Identical claims have also been made for the Neuse River Falls mill near Raleigh, North Carolina, and the Marietta, Georgia paper mill, which burned in July 1864 (Hunter 1947:535). It is entirely possible that comparable folklore is attached to the local oral history associated with other Confederate era southern paper mills. In light of the manufacturing and logistical problems confronted by the Confederacy, currency and other securities were likely printed on paper obtained from any available source, including imported stock.

Whiteman² was a strong supporter of the Southern Cause and is reported to have offered free housing to the families of Confederate recruits. After the fall of Fort Donelson to federal forces in February of 1862, he fled Nashville (Graf and Haskins, eds. 1986:501). The loss of his mill did not escape the attention of the Southern press, causing the *Washington [AR] Telegraph* to report in its March 19, 1862, issue that “...now the Paper Mill at Nashville is in the hands of the enemy...” Presuming he would have moved to an area where he had family or friends, and noting that his Uncle James Byrd was involved with the operation of a paper mill near Marietta, Georgia, this may be the same W. S. Whiteman who subsequently sold an “almost twenty-eight years old” Negro male named Willis to Mr. A. C. Williams of Cartersville, Georgia, for \$5,000 in Confederate money on March 7, 1864 (Whiteman 1864a; 1864b). Without elaboration, one source remarked, “He served with distinction in the War Between the States...” (Anonymous n.d.).

Aside from his involvement with the Whites Creek mill, Whiteman² had a number of other business interests. According to the 1860 U.S. Federal Census, Whiteman reported owning real estate valued at \$150,000 and personal property valued at \$30,000 (Graf and Haskins 1986:501). With the assistance of a \$15,000 loan from the Tennessee Military and Financial Board, Whiteman² built and subsequently operated, from the fall of 1861 to late March 1862, a gunpowder mill near Manchester (Secretary of War 1898:163). This gunpowder mill produced some 125,700 lbs. (57 metric tons) of

this invaluable commodity for the Confederate government before its destruction by Union forces (the history of this facility is discussed more fully in Ball 2001a:53-57; 2002a; and Smith 1997).

In addition to these activities, Goodspeed Publishing Company noted "In 1852 W. S. Whiteman² erected a paper-mill on Barren Fork of Duck River [near Manchester, Coffee County, Tennessee] ...which was burned in 1871" (Goodspeed 1886:841; Ball 2001a). There is some discrepancy concerning the dates at which the Manchester paper mill was established and burned. The Tennessee State Historical Commission states: "About the beginning of the [Civil] war Mr. Whiteman built another [paper] mill in the old Stone Fort, near Manchester, in Coffee County [Tennessee], to which he removed the machinery of the White's Creek mill" (Tennessee State Historical Commission 1946:428-429).

Alternately, Clements states that following the fall of Fort Donelson in February 1862 "...the mill's machinery [at Whites Creek] was moved to a site in Coffee County and ultimately destroyed by federal troops" (Clements 1987:318). Clements may have confused the paper mill at this site with the nearby gunpowder mill operated by Whiteman², which was destroyed by a U.S. Army detachment on March 28, 1862 (Secretary of War 1884:48). One source states that the paper mill burned shortly after the destruction of the powder mill (Tennessee State Historical Commission 1946:429). Despite any discrepancies regarding the date at which the mill was established, its location is clearly shown on a map dated June 28, 1863, of the area surrounding Manchester prepared by U.S. Captain W. E. Merrill, during military operations in Middle Tennessee (Secretary of War 1891-1895:Plate XXXIV-2).

It is of note that the *Columbus* [Georgia] *Enquirer* reported in an article that:

We learn that some enterprising gentlemen from Georgia went to Tennessee, a short time ago, and purchased a paper mill that was exposed to the enemy, and succeeded in removing its machinery just before a raid of the enemy swept through the region where it was located. It is to be put up somewhere in Georgia [Anonymous 1863].

Speculatively, it is probable that the referenced Tennessee mill and the mill at the Old Stone Fort in Manchester were one and the same. The only known paper mill subsequently established in Georgia during the Civil War was the Fulton Paper Mill in DeKalb County, which went into operation in mid-1864. The reported commencement of construction at the Fulton Mill on June 24, 1863, certainly coincides with the date at which the equipment of the Tennessee mill was acquired (Anonymous 1864). [Note: As reported by Secretary of War, Manchester was formally occupied by the US Army on June 23, 1863. In actuality, the occupation may have taken place somewhat later in the month, as skirmishes between the conflicting armies were still taking place near the northern portion of the county. The Middle Tennessee campaign, of which this action was but a small part, is discussed in much greater detail by Bradley (Secretary of War 1889:399; Bradley 2000)].

In 1874, Whiteman² transferred the Manchester property to William P. Hickerson, Sr. (**Figure 3**), an attorney in that town. Although subsequently partially disturbed by the construction of a second paper mill at the same location, the site of this mill is readily accessible to the public and now protected as part of the Old Stone Fort State Park.

Following the Civil War, Whiteman² did not reopen the mill at Whites Creek, but became involved with an attempt to reactivate the Nashville Paper Mills south of Nashville on Browns Creek. This enterprise ultimately failed, due to a combination of problems with both outdated machinery and a lack of pure water needed to process the paper pulp (Clements 1987:318-319; Halley 1904:216; Tennessee State Historical Commission 1946:429). After the mill had changed management several times and was finally closed, Whiteman² bought the interests of the other shareholders, sold the machinery piecemeal, and dismantled the mill (Tennessee State Historical Commission 1946:429).

Thereafter, Whiteman² devoted his time to managing his property in Nashville and before 1870, diverted the use of the acreage surrounding the Whites Creek mill to agricultural purposes

(Clements 1987:198). The machinery associated with paper manufacture was removed from the mill, and the structure converted into a barn (a function it still serves). Though the disposition of this equipment remains uncertain, as a consequence of both design changes and comparatively limited production capability, it is likely that the majority of this machinery was obsolete. What could not be sold was probably disposed of as scrap metal.

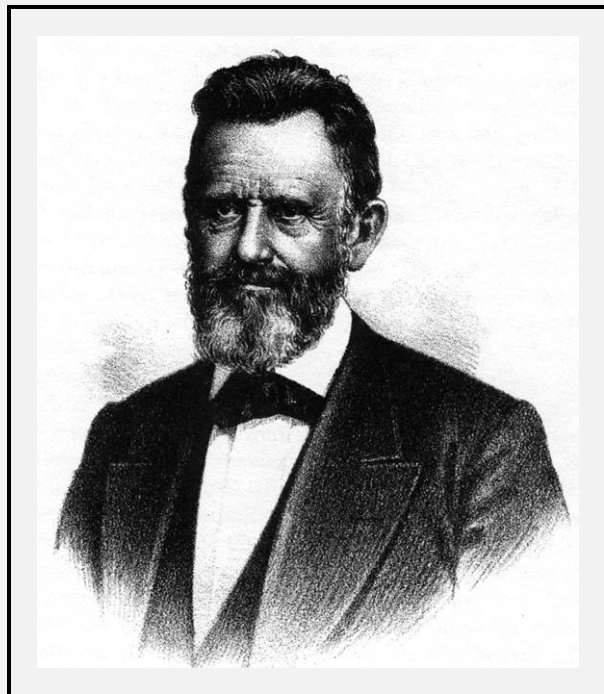


FIGURE 3. JUDGE W. P. HICKERSON, SR., WHO, IN 1874, OBTAINED TITLE TO SITE OF WHITEMAN'S MANCHESTER PAPER MILL.
(Goodspeed 1886:Plate facing p. 932)

Prior to 1889, Whiteman² transferred the then empty mill, the house, and the surrounding property to his son, William S. Whiteman³, Jr., who continued to operate the land as a farm (Clements 1987:319). In 1919, the property was sold by Whiteman³, Jr. to Mr. Ernest Williams, who named the farm "Blue Hills." The land was subsequently sold to Mr. Clyde Owens and more recently (1971) purchased by Mr. H. Eugene Martin, its present owner (Clements 1987:319).

Excluding his interest in various claims pending against the United States government left to his son William S. Whiteman³, Jr., upon his death in 1889 Whiteman² bequeathed his remaining worldly property to his wife, Larue Whiteman. The instructions read "...to give any portion of it to any one of hers and my children and may and is impowered [sic] to will or devise all in such proportions as she may deem proper and with such care as she may deem wise and proper, but shall give none of it to any person or persons but to hers and my children by her" (Whiteman 1888). In compliance with her husband's wishes, the last will and testament of Larue Whiteman bequeathed real property at 919, 921, and 923 Warren Street in Nashville to their children (Whiteman 1909). The life and times of William S. Whiteman² thus ended and became part of the historical record.

THE MILL AT WHITES CREEK

Located approximately 100 yards (91 meters) west of Highway 431 at 4700 Whites Creek Pike in Nashville, (Davidson County) Tennessee, the mill structure, still standing, is readily visible from the road (**Figure 4**). It is a sturdy two-story, solid brick building, measuring about 30 ft. (9.1 meters) across by 80 ft. (24.4 meters) in length. Constructed of handmade bricks (likely of local manufacture) and situated perpendicular to, and on the left (east) bank of, Earthmans Branch (also known as Judith Branch) of Whites Creek, this facility is known to have been steam powered. Both the elongated shape of the structure, and its historically reported output of 70 reams of paper per day, provide clear evidence that this facility was built specifically to accommodate Fourdrinier automated paper-making machinery. [**Note:** In

simple operating terms, this machine "...performs the remarkable work of receiving a fluid stream of pulp from its 'stuff chest' at one end and turning out a dry, smooth, sized, and finished paper at the other, either in a continuous roll or cut into sheets of any size" (Bowker 1887:120). The process of converting wet, runny pulp into dried, usable paper took two minutes. For comparison, the process of making paper by hand might require up to a week to produce the same product, with but a fraction of the output.]



FIGURE 4. WILLIAM S. WHITEMAN'S 1849 PAPER MILL NEAR THE COMMUNITY OF WHITES CREEK, IN DAVIDSON COUNTY, TENNESSEE.

(Photograph taken by author on August 8, 2001)

Although available historical sources make no mention as to the manufacturer of the equipment installed at Whiteman's Whites Creek mill, known American producers of Fourdrinier machinery (**Figure 5**) after 1830 included the firms of Phelps & Spofford of Windham, Connecticut, and Howe & Goddard of Worcester, Massachusetts (Anonymous 1848; 1875; Kettell 1867:295). Other American firms manufacturing Fourdrinier equipment before the Civil War included the Cyrus Currier machine works (established 1836) of Newark, New Jersey (Dunlap, 1874:57) and the Nelson Gavit machine works of Philadelphia (Freedley 1858:319-320; 1867:398).

Among the many sources examined, few specifically addressed the cost of these rather expensive devices. It is known that in 1849 – significantly, a date contemporaneous with the construction of the Whiteman mill – the firm of Curtis & Brother of Newark, (New Castle County) Delaware, paid \$3,067 for a Fourdrinier machine capable of producing continuous sheets of paper 62 inches wide (Smith 1975:3, 5).

Models produced by the Nelson Gavit machine works of Newark in 1857 were priced from \$3,400 to \$6,000 (Freedley 1858:319). By 1867, Gavit made Fourdriniers were priced at \$6,000 each (Freedley 1867:398). However, less expensive models were also available in the post-war era. As reported in *Scientific American*:

The machines by which the pulp is now formed into paper, dried, and cut into sheets, by one continuous process, are very expensive, as well as heavy of transport. An inferior one will cost four or five thousand dollars [Anonymous 1869:278].

Regardless of the manufacturer, the purchase of this single, indispensable piece of equipment likely accounted for approximately half of the cost of the Whites Creek facility.

On the basis of available information concerning the manufacture of paper generally before and during the Civil War and the operation of the Whiteman mill specifically (Ball 2002b), there is no reason to believe that this facility was ever adapted to wood pulp technology. Likely, the entire output of this mill was based upon pulp prepared from processed rags.

In the course of visits to this mill on November 11, 2001, and August 9, 2002, it was confirmed that all readily visible vestiges of the original machinery had been long removed. Though the structure has received but minimal maintenance for many years, it is yet in generally sound (though deteriorating) condition, except for a ca. 15 foot (4.6 meter) length of wall which had collapsed or was removed near the creek end of the upstream long axis wall. The structure's solid brick walls rest upon a substantial foundation constructed of sizable hewn limestone blocks measuring ca. 24 inches (61 cm) wide, 12 inches (31 cm) high, and 18 inches (46 cm) thick (**Figure 6**). The quarry site used to procure these stones is not known, though it is presumed to be reasonably close to the mill.

An unusual feature of this structure is a small basement located at the rear of the structure adjacent to the stream. Oriented parallel to the stream and measuring 30 by 13 feet (9.1 x 4.0 meters) (Anonymous 1946) and likely about 8 feet (2.4 meters) in height, this area was probably used to house the boiler and steam engine that powered the mill's equipment. Speculatively, the boiler was fired (at least in part) by wood harvested on the sizable tract owned by Whiteman situated behind the mill proper. Entry to this area was gained through a passageway not over 30 inches (76 cm) wide about 10 feet (3 meters) from the upstream corner of the rear short axis portion of the foundation. Unfortunately, this portion of the building had been used for the disposal of manure for years and was not accessible for further inspection.

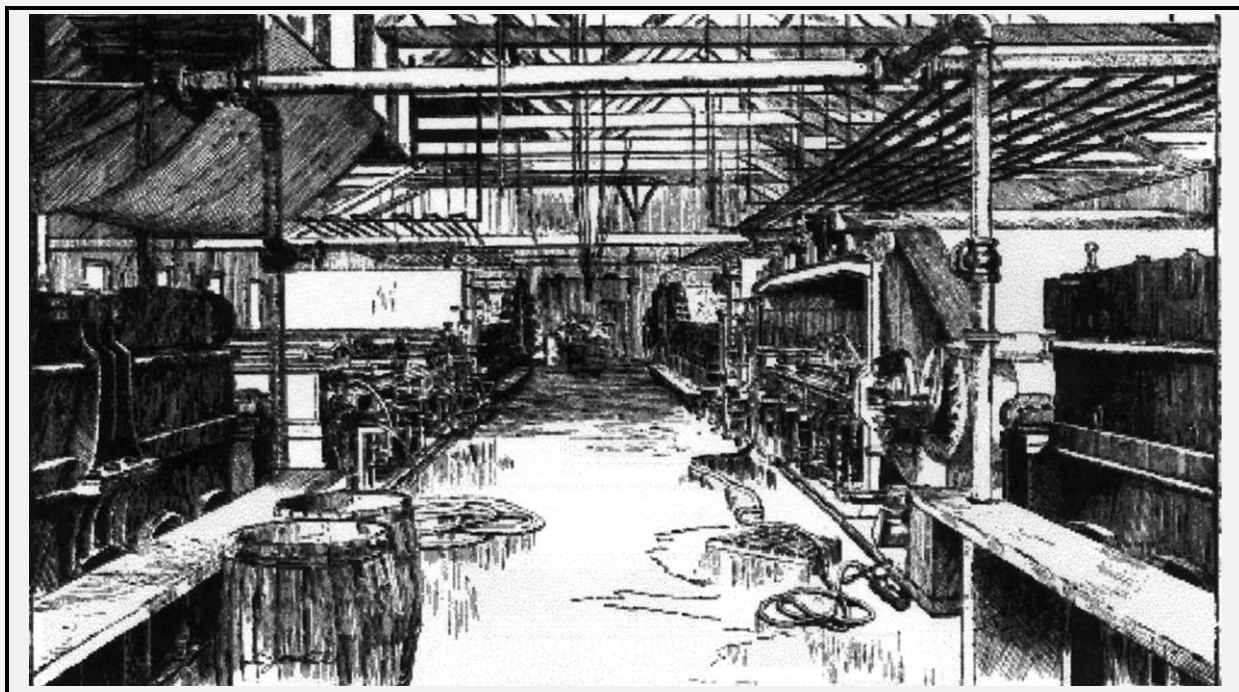


FIGURE 5. LAYOUT OF A "FOURDRINIER ROOM" IN AN 1880s PAPER MILL.
(Reproduced from Bowker 1887:122)

The abundance of machine cut ("square") nails in much of the original interior woodwork confirmed the general era of mid-nineteenth century construction (Nelson 1968). Spanning the structure's short axis, the unsupported joists for the second floor consisted of heavy sawn beams ca. 3 inches (7.5 cm) thick and 12 inches (30 cm) high.

A variety of interesting carved initials and dates were observed on the frame of the upper left window as facing the front of the mill. As they appear from top to bottom on the left side of the window frame, these

were: "E C/ 1905"; "P P/ JULY/ 12 (?)/ 1875", and "J W/ JUNI (?)/ 1911 (?)". Initials appearing on the right side of the window frame (also listed from top to bottom) were: "B U"; "K G"; "M D"; "J P"; "J M"; and "D W". Although it is tempting to suggest that the surnames represented by the initial "W" were carved by members of the Whiteman family, there is no way to conclusively prove this.

The streambed of Earthmans Branch in the vicinity of the mill is characterized by a solid limestone bed. About 100 yards (91 meters) upstream of the mill are the remains of the dam that impounded the water needed to both process paper pulp and supply the boiler. Situated along both banks of the branch at this point are the still standing substantive cut limestone block abutments associated with the dam. These stones are comparable in size to those incorporated in the mill's foundation. A series of about 40 iron rods about 1 inch (2.5 cm) in diameter and arranged in parallel rows are yet embedded in the rock creek bed between the abutments. These rods likely served to secure the lower beams of a now long vanished timber crib dam (Ball 2000; 2001b; Starbuck 1990). Following the demolition of the dam, the iron rods were bent at almost 90 degrees, so that their topmost surfaces were oriented downstream and thus less likely to snag stream borne debris.



**FIGURE 6. FOUNDATION NEAR
BACK LEFT CORNER OF MILL
NEAR CREEK BANK.**

(Photograph Date August 9, 2002)

Though obviously subject to decay and thus not necessarily representing the best choice of material for dam construction (Anonymous 1874), timber crib dams were widely used for a variety of 19th century industrial applications and offered the distinct advantage of being relatively inexpensive and amenable to being readily constructed with both available materials and semi-skilled local labor. Presumably, the timber used in Whiteman's dam was harvested from his adjacent property. Such a dam is known to have been used at the 1830s era Stedman paper mill near Frankfort, Kentucky (Hockensmith 1998:85-86, 90).

The dam abutment along the right bank of the stream is about 30 feet (9 meters) in length. In contrast, the abutment along the left bank (closest to the mill) is about 300 feet (91 meters) in length (**Figure 7**). Both portions of the abutment stand about 8 feet (2.4 meters) in height and rest upon the creek's solid limestone bed. About half the length of the left bank abutment extends upstream away from the mill while an equal length extends downstream toward the mill. The downstream portion of the left bank abutment served as a retaining wall to allow for the placement of fill on the downward sloping creek bank thus creating more working space in the "yard" area adjacent to the mill. A single story earthen-floored wooden tractor shed presently stands about midway between the downstream terminus of the left bank abutment and the location of the iron bars and the former dam. The site occupied by the existing shed was likely the location of a mill related support structure at the time the mill was in operation. Significantly, no evidence was observed of either any adaptations for the utilization of water power in the operation of the mill's machinery or any means (e.g., flume supports) for diverting impounded water from the dam to the mill's boiler.

The grounds surrounding the mill proper appear to have been little disturbed since this facility ceased to be actively used for manufacturing. Though associated outbuildings are not specifically discussed in the sources devoted to the history of this mill, it is reasonable to anticipate that the sub-surface remnants of various support structures such as stables, wagon sheds, maintenance buildings, a woodshed, privies, and cabins for housing slaves are situated nearby. The only source examined which indirectly commented on support structures associated with this industrial facility, was Tennessee State Historical Commission, which observed that to ensure an adequate skilled workforce at his paper mill “Both white and black were thus trained, Mr. Whiteman [2] himself owning several negroes [sic] who were fully trained to the business of paper making” (Tennessee State Historical Commission 1946:430).

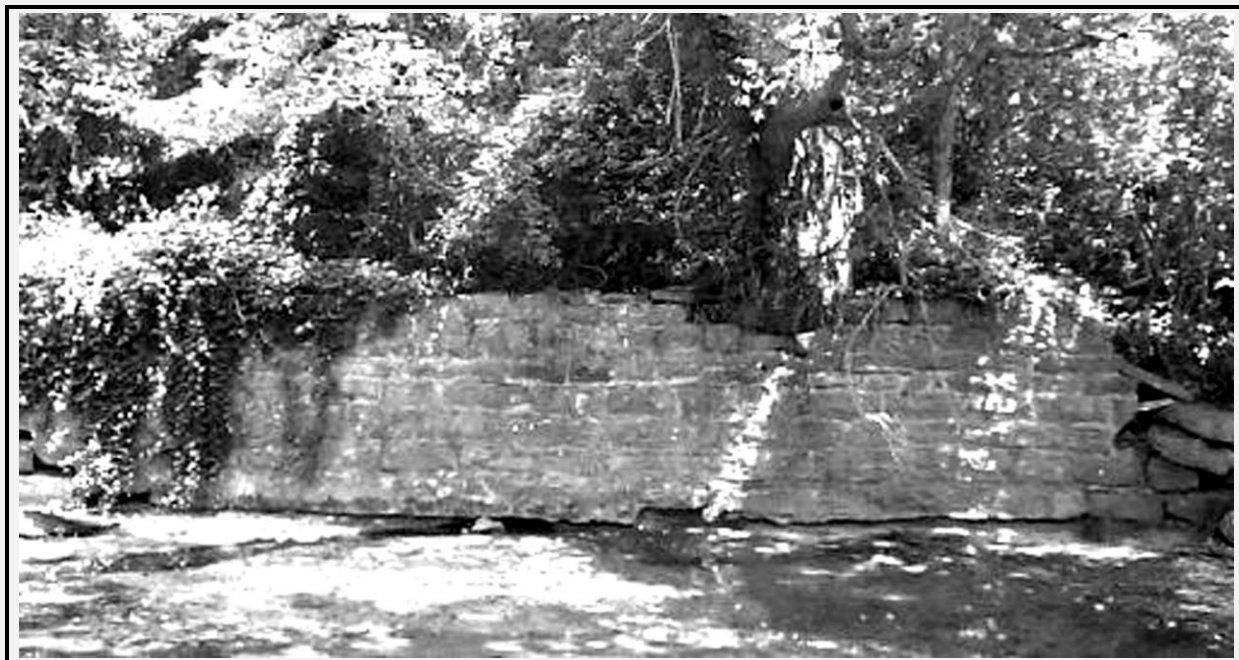


FIGURE 7. PORTION OF THE DAM ABUTMENT AND RETAINING WALL ALONG LEFT (EAST) BANK OF EARTHMAN’S CREEK NEAR WHITEMAN PAPER MILL.
(Photograph Date August 9, 2002)

CLOSING REMARKS

Despite the relative importance of their product to governmental entities and the civilian populace alike, as a class of manufacturing enterprise paper mills in the Confederate South have been largely ignored and little studied. In conformity with Mallet’s (1909:7) contention that the “typical” paper mill in the South was “small,” Whiteman’s mill at Whites Creek may be taken as all the more representative of the general state of paper making operations in the South in the years immediately prior to and during the Civil War era. Clearly, this structure and the undisturbed grounds surrounding it are worthy of both additional concerted study and preservation and are likely eligible for inclusion in the National Register of Historic Places.

The William S. Whiteman paper mill near Nashville, Tennessee, is likely the best remaining manufacturing facility of its type associated with the ante-bellum South and has afforded an unparalleled opportunity to better understand both the physical facilities and processes involved in the production of paper following the general introduction of automated paper making machinery but prior to the widespread usage of wood pulp. The rural location of this mill in concert with its adaptability to being converted into a use never initially envisioned by its builder has aided in its

continued existence and these same factors have contributed to little or no substantive ground disturbing activities in the area surrounding the mill proper. Beyond any reasonable doubt, Whiteman's Whites Creek paper mill and the little heralded remains of comparable facilities scattered about the cultural landscape of the South should be accorded much greater attention from historians, industrial archaeologists, and preservationists alike.

REFERENCES CITED

Anonymous

- 1848 First Paper Mill in Havana. *The Scientific American* 3(25):194.
- 1863 New Paper Mill. (1863, June 9). *Columbus [Georgia] Enquirer*, p. 2, col. 6.
- 1864 Unspecified article title concerning Fulton Paper Mill construction. (1864, June 10). *Memphis Daily Appeal*, p. 2, col. 7.
- 1869 Paper-Making Fifty Years Ago. *The Scientific American* 20(18):278-279.
- 1874 Dams as They Should be Built. *The Manufacturer and Builder* 6(8):184.
- 1875 The Manufactories of New England. *The Manufacturer and Builder* 7(3):51.
- 1946 Paper for the Confederacy. (1946, April 7) Unknown newspaper clipping (*Nashville Banner?*).
- n.d. Mr. W. S. Whiteman is Buried at Nashville. Newspaper notice from unattributed and undated source (*Nashville Banner*, 1889?). Copy on file, Historical Collections, Nashville Library, Nashville, Tennessee.

Ball, D. B.

- 2000 Useful but Impermanent: The Timber Crib Dam at Lock and Dam Number 4, Green River, Kentucky. *Ohio Valley Historical Archaeology* 15:53-65.
- 2001a Notes on a Lesser Known Early Map of the Old Stone Fort (40CF1), Coffee County, Tennessee. *Journal of Alabama Archaeology* 47(1):46-64.
- 2001b The Timber Crib Dam. *Kentucky Explorer* 16(6):53-55.
- 2002 An Ill-Fated "School of Instruction": Comments on the History and Archaeology of the Confederate Gunpowder Mill at Manchester, Tennessee. *Ohio Valley Historical Archaeology* 17:63-72.
- 2002b Paper Mills in the Confederate South: Industrial Archaeology of a Forgotten Industry. *Ohio Valley Historical Archaeology* 17:1-62.

Bowker, R. R.

- 1887 A Sheet of Paper. *Harper's New Monthly Magazine* 75(445):113-130.

Bradley, M. R.

2002 *Tullahoma: The 1863 Campaign for the Control of Middle Tennessee*. Burd Street Press, Shippensburg, Pennsylvania.

Campbell, J. P.

1857 *Nashville City Directory*. Fiche #751-756:4 on file, Tennessee State Archives, Nashville.

Clements, P.

1987 *A Past Remembered: A Collection of Antebellum Houses in Davidson County*, vol. 1. Clearview Press, Nashville.

Dunlap, T. (compiler)

1874 *Wiley's American Iron Trade Manual of the Leading Iron Industries of the United States*. John Wiley and Sons, New York.

Freedley, E. T.

1858 *Philadelphia and Its Manufactures: A Hand-Book Exhibiting the Development, Variety, and Statistics of the Manufacturing Industry of Philadelphia in 1857*. Edward Young, Philadelphia.

1867 *Philadelphia and Its Manufactures: A Hand-Book of the Great Manufactories and Representative Mercantile Houses of Philadelphia in 1867*. Edward Young, Philadelphia.

Goodspeed Publishing Company

1886 *A History of Tennessee from the Earliest Times to the Present*. Goodspeed, Chicago and Nashville.

Graf, L. P. and R. W. Haskins (editors)

1986 *The Papers of Andrew Johnson*, vol. 7. University of Tennessee Press, Knoxville.

Graves, J. P.

1975 *Northwest Davidson County: The Land – Its People*. Published by the author, place not given.

Halley, R. A.

1904 Paper Making in Tennessee. *The American Historical Magazine*. July 9:211-217.

Hockensmith, C. D.

1998 Ebenezer Stedman's Mills: A Nineteenth Century Paper, Grist, and Lumber Milling Complex near Frankfort, Kentucky. *Ohio Valley Historical Archaeology* 13:80-95.

Hunter, D.

1947 *Papermaking: The History and Technique of an Ancient Craft*. 2nd ed. A. A. Knopf, New York (reprinted 1978, Dover Publications, New York).

Kettell, T. P.

- 1867 *Paper: Its Manufacture. In Eighty Years' Progress of the United States: A Family Record of American Industry, Energy and Enterprise; Showing the Various Channels of Industry and Education Through Which the People of the United States Have Arisen from a British Colony to Their Present National Importance*, by "Eminent Literary Men," vol. 1, pp. 291-298. L. Stebbins, Hartford, Connecticut.

Kniffen, F.

- 1936 Louisiana House Types. *Annals of the Association of American Geographers* 26(4):179-193.

Mallet, J. W.

- 1909 Work of the Ordnance Bureau. *Southern Historical Society Papers* 37:1-20.

Nelson, L. H.

- 1968 Nail Chronology as an Aid to Dating Old Buildings. *Technical Leaflet No. 48*, rev. ed. American Association for State and Local History, Nashville.

O'Malley, J. R.

- 1972a The "I" House: An Indicator of Agricultural Opulence in Upper East Tennessee. Masters thesis, Department of Geography, University of Tennessee, Knoxville.

- 1972b Functional Aspects of Folk Housing: A Case for the "I" House, Union County, Tennessee. *Tennessee Folklore Society Bulletin* 38(1):1-4.

Riedl, N. F., D. B. Ball, and A. P. Cavender

- 1976 A Survey of Traditional Architecture and Related Material Folk Culture Patterns in the Normandy Reservoir, Coffee County, Tennessee. *Report of Investigations* No. 17, Department of Anthropology, University of Tennessee, Knoxville.

Secretary of the Interior

- 1865 *Manufactures of the United States in 1860; Compiled from the Original Original Returns of the Eighth Census*. Government Printing Office, Washington, D.C.

Secretary of War

- 1884 *War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies*, Series I, Volume X, Part 1. Government Printing Office, Washington, D.C.

- 1889 *War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies*, Series I, Volume XXIII, Part 1. Government Printing Office, Washington, D.C.

- 1891-5 *Atlas to Accompany the Official Records of the Union and Confederate Armies*. Government Printing Office, Washington, D.C.

- 1898 *War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies*, Series I, Volume LII, Part 2. Government Printing Office, Washington, D.C.

Smith, M. O.

- 1997 The Quest for a Supply of Saltpeter and Gunpowder in Early Civil War Tennessee. *Tennessee Historical Quarterly* 56(2):96-111.

Smith, R. W.

- 1975 Historic American Engineering Record: Curtis Paper Mill, HAER-DE-1. Ms. on file, Historic American Engineering Record, Library of Congress, Washington, D.C.

Starbuck, D. R.

- 1990 The Timber Crib Dam at Sewell's Falls. *Industrial Archaeology* 16(2):40-61.

Tennessee State Historical Commission

- 1946 *Tennessee Old and New: Sesquicentennial Edition, 1796-1946*. 2 vols. Kingsport Press, Kingsport, Tennessee.

Weeks, Lyman Horace

- 1916 *History of Paper-Manufacturing in the United States, 1690-1916*. The Lockwood Trade Journal, New York (reprinted 1969, B. Franklin, New York).

White, George

- 1854 *Historical Collections of Georgia: Containing the Most Interesting Facts, Traditions, Biographical Sketches, Anecdotes, Etc. Relating to Its History and Antiquities, from Its First Settlement to the Present Time*. Pudney & Russell, New York.

Whiteman, Larue

- 1909 Last Will and Testament (dated March 8, 1909 and probated June 26, 1909). In *Davidson County, Tennessee, Will Book 37*, p. 159. Metro Archives, Nashville.

Whiteman, W. S.

- 1864a Letter dated March 6, 1864, from W. S. Whiteman to A. C. Williams offering to sell a Negro male named Willis for \$5,000 in CSA treasury notes or \$200 in gold. Letter on file, Small Manuscript Collection, Ina Dillard Russell Library Special Collections, Georgia College and State University, Milledgeville, Georgia.

- 1864b Receipt dated March 7, 1864, from W. S. Whiteman to A. C. Williams for sale of Negro male named Willis for \$5,000 in Confederate money. Document on file, Small Manuscript Collection, Ina Dillard Russell Library Special Collections, Georgia College and State University, Milledgeville, Georgia.

Synopsis of ref. 1864a and 1864b accessible at <http://library.gcsu.edu/~sc/manuscript.html>.

- 1887 Last Will and Testament (dated April 12, 1888 and probated August 1889). *Davidson County, Tennessee, Will Book 30*, p. 271. Metro Archives, Nashville.

A RECENT DISCOVERY MADE IN CONNECTION WITH THE McALPINE LOCK REPLACEMENT PROJECT

By

KEITH A. KEENEY

JAN MARIE HEMBERGER

U.S. ARMY CORPS OF ENGINEERS - LOUISVILLE DISTRICT

LOUISVILLE, KENTUCKY

INTRODUCTION

An inadvertent discovery made in connection with the McAlpine Lock Replacement Project is providing new evidence on the presence of late prehistoric and Mississippian occupations in the lower Ohio River Valley region. The discovery was made in September of 2002 when archaeologists working for the U.S. Army Corps of Engineers – Louisville District (ACOE-LD) were notified of prehistoric artifacts within a contractor work area. A subsequent examination of the area ensued.

SITE INVESTIGATIONS

Investigations started in the area of the initial discovery and then extended to other portions of the contractor's work area. A canvass of the area noted varying quantities of prehistoric artifacts on the surface that included stone tools and flake debitage, prehistoric pottery, fire-cracked rock, animal bone, and mussel shell. Initial field observations of the artifacts suggested a strong late prehistoric occupation due to the shell tempering observed in the pottery; a sample of these artifacts was collected for analysis.

Further investigations revealed that the prehistoric artifacts identified in the contractor's work area were likely unearthed through the excavation of a large, roughly square-shaped pit measuring approximately 30.5 m (100 feet) by 36.6 m (120 feet) in dimension and extending 2.4 m (7.9 feet) to 3.1 m (10.2 feet) deep. Fill associated with these excavations was also placed in a huge pile next to the pit.

Late prehistoric artifacts, similar to those previously identified, were observed within and near the pit. Fragmented human remains were also identified in this area. The remains were reported to the Jefferson County Coroner and were subsequently released into custody of the ACOE-LD. Due to the presence of human remains, consultation with a number of federally-recognized Native American tribes is underway. Overall, the preservation of the observed and collected artifacts and remains can be characterized as good.

Although the walls of the pit were too dry to effectively clean a profile section, some charcoal flecking and soil stratification were noted. The floor of the pit also exhibited areas of dark soil staining. These areas will have to be further investigated in order to determine their true nature and origin. But the recovered materials suggest the presence of a significant prehistoric habitation site.

Additional artifacts were identified and collected during a subsequent visit in early October 2002. The previous earthmoving activities had cut a shallow swath through previously undisturbed soil in the eastern margin of the contractor's work area, well away from the excavated pit, and to a depth measuring approximately 0.5 m (1.6 feet). The associated back dirt piles contained an abundance animal remains (mostly deer), prehistoric pottery, and stone tools and debitage. However, no human remains were identified. These field observations suggested that the site extended beyond the area of the pit.

ANALYSIS

A preliminary analysis of the artifacts and remains collected from the site indicate a strong Mississippian period occupation (A.D. 900 to pre-European contact). Culturally diagnostic artifacts identified in the collection also suggest additional occupations dating to the Middle Woodland (A.D. 150-500) and Late Woodland (A.D. 600-900) periods. A sample of these artifacts is shown in **Figures 1, 2, and 3.**

Shell-tempered body sherds dating to the Mississippian period represented a majority of the pottery collected from the site. These sherds exhibited smoothed interior surfaces with either smoothed or cord-marked exterior surfaces. Clay paste colors ranged from a reddish yellow (7.5YR6/6) to a yellowish brown (10YR5/6) to a dark grayish brown (10YR4/2). One of the collected sherds was burnished (10YR2/1) black and exhibited what appears to be smoothed-over cord-marking. All of the sherds were primarily tempered with mussel shell but minor amounts of grit and/or grog (clay) were also observed. A few small shell-tempered rim sherds were identified, but due to their size could not be analyzed for their profile and/or vessel form.

Incised decorations were also noted on exterior surfaces of two of the plain shell-tempered body sherds in the collection. A deep, chevron-shaped incision was observed on one of the sherds, while the other possessed finer, but indeterminate, incised markings. Three sherds of Kimmswick Fabric Impressed were also identified in the site collection, including a portion of a large pan collected from the surface near, but outside of, the excavated pit. In general, their paste and temper was similar to the above plain and cord-marked sherds, but the mussel shell fragments were much larger. One potsherd was identified as a grit and grog tempered body sherd dating to the Late Woodland period.

Deep, cord-marked impressions were observed on the exterior surface. The sherd was well fired with a dark gray (10YR4/1) exterior and a black (10YR2/1) interior clay paste color.

Culturally diagnostic lithic artifacts identified in the site collection include two Late Woodland/Mississippian triangular points manufactured from an indeterminate chert, and a Middle Woodland Copena point base manufactured from Wyandotte chert. A variety of other artifacts are represented in the collection, including reworked and broken projectile point fragments, informal and formal flake tools, drills, perforators, scrapers, mano fragments, unspecified bifaces, hammerstones, core fragments, flake debitage, and fire-cracked rock. Two notched antler tine points were collected, as well as a polished flake of a green igneous/metamorphic rock likely coming from a celt.

The recovered human remains were very fragmentary, but represent at least one adult. A caries (cavity) was noted on one of the teeth recovered from the pit. Frequently attributed to a corn diet, such dental problems are a common attribute found on human remains associated with Mississippian peoples.

SUMMARY

The ACOE-LD has identified a significant habitation site in connection with the McAlpine Lock Replacement Project. A preliminary analysis of the artifacts indicates a strong Mississippian period occupation to the site, but Middle Woodland and Late Woodland period occupations are also represented.

Based on limited field observations, the site may extend beyond the confines of the current excavation area. However, it is unclear how previous lock and canal construction episodes and earth-moving activities, not related to this project, may have already affected the site.

While Mississippian sites have been identified in the immediate area, very few have been excavated in context. Additional investigations of the site may provide important information on regional cultural influences and chronology.

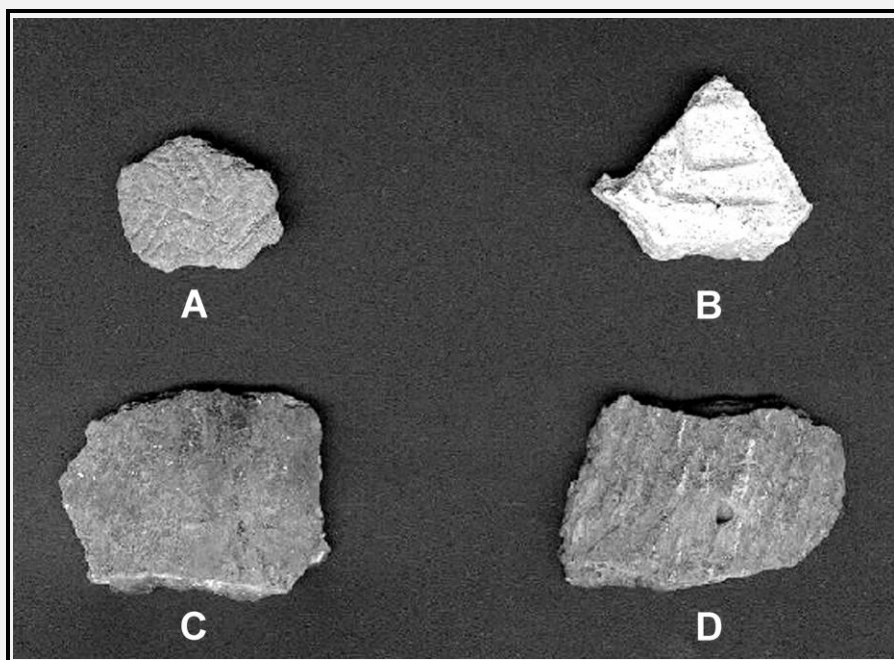


FIGURE 1. SELECTED PREHISTORIC CERAMICS.

- A) Mississippi Plain body sherd with an indeterminate incised decoration
- B) Mississippi Plain body sherd with a chevron-shaped incised decoration
- C) Mississippi Plain body sherd with burnished and smoothed-over cord-marking
- D) Late Woodland cord-marked body sherd

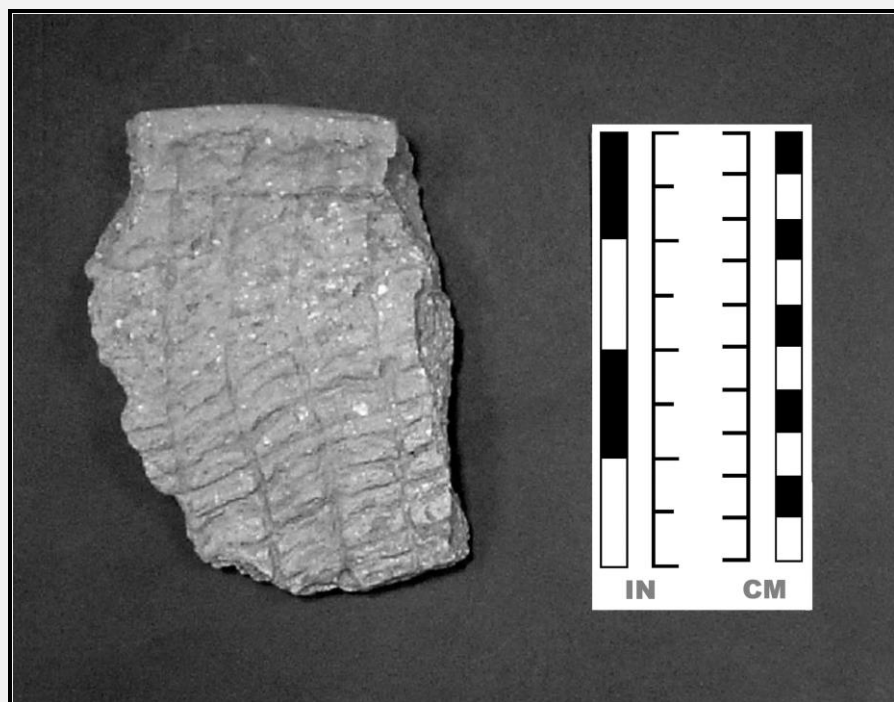


FIGURE 2. PORTION OF KIMMSWICK FABRIC IMPRESSED PAN.

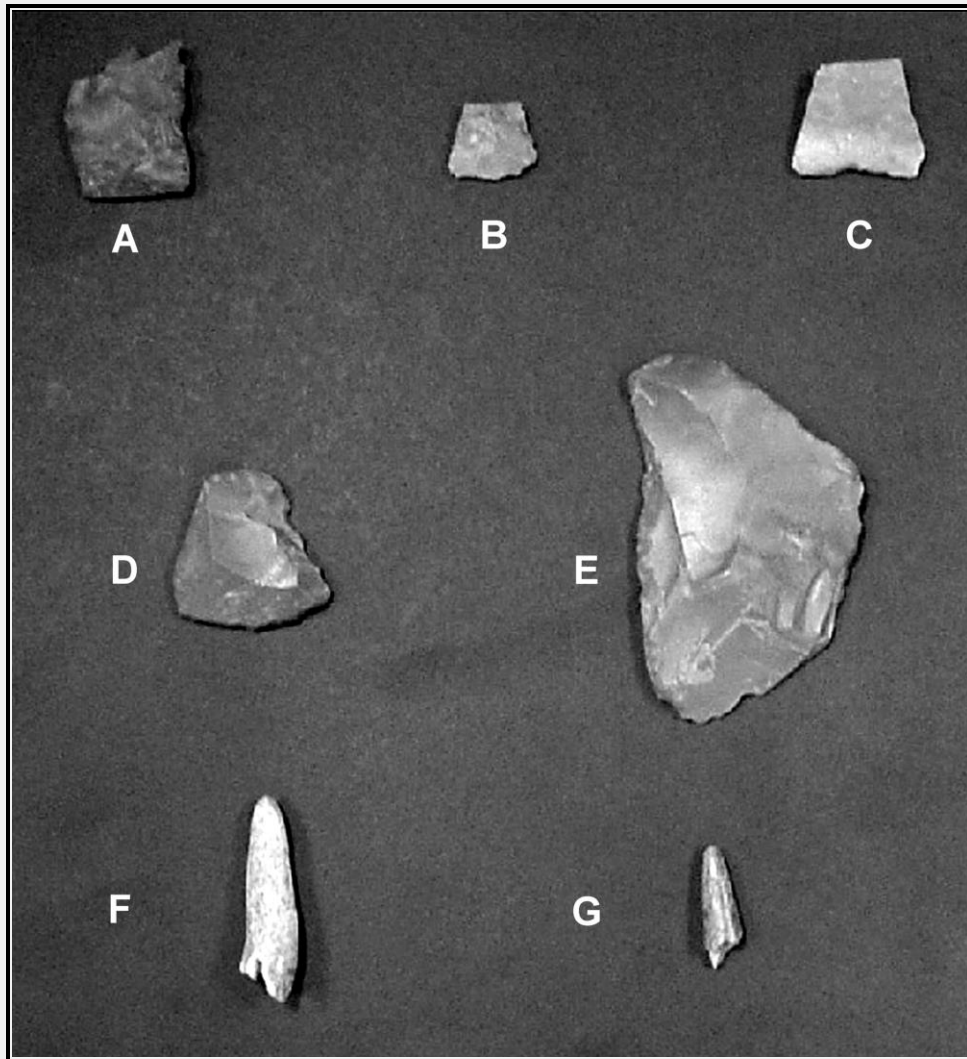


FIGURE 3. SELECTED PREHISTORIC ARTIFACTS.

- A) Copena point base (Middle Woodland)
- B) Triangular point (Late Woodland/Mississippian)
- C) Triangular point (Late Woodland/Mississippian)
- D) End/Side scraper
- E) Side scraper
- F) Notched antler tine point
- G) Notched antler tine point

Photos courtesy of U.S. Army Corps of Engineers-Louisville District.



U.S. Army Corps
of Engineers
Louisville District

THE BRICK INDUSTRY IN LOUISVILLE, KENTUCKY BETWEEN 1850 AND 1860

By

CHARLES D. HOCKENSMITH

KENTUCKY HERITAGE COUNCIL

FRANKFORT, KENTUCKY

INTRODUCTION

Since early in its history, Louisville has had brickyards to supply the millions of bricks needed for new construction projects in the city. This article examines the decade between 1850 and 1860, when the Louisville brick industry was thriving. By extracting information from the 1850 and 1860 U.S. Federal Census Manufacturing Schedules, along with available directories for the period, a glimpse into the Louisville brick industry is possible. Information is presented for the known brickmakers between 1850 and 1860. Comparisons are made between Louisville brickmakers and those within the Commonwealth during the decade. Finally, some suggestions for future research are presented.

HISTORY

By the mid 19th century, Louisville had developed a thriving brick industry. Numerous historic brick structures within the city are a testimony to the importance of brick as a building material. Earlier research by the author indicated that at least 196 brick companies and individuals manufactured brick in Louisville and Jefferson County at various times in its history (Hockensmith 2001a:122). A lengthy volume would be required to adequately document the brick industry in Louisville and Jefferson County. The current article focuses on the decade between 1850 and 1860. Several subsequent articles are planned to deal with the other periods of brickmaking in Louisville.

DATA AND SOURCES

This paper compiles data from several sources to discuss specific brickmakers and to make some general observations about the brick industry between 1850 and 1860. By utilizing information from the Census of Manufacturing for 1850 and 1860, it is possible to look at specific aspects of brickmaking in Louisville. Topics covered in these Census records include the number of reported brickyards, amounts of capital invested, amounts and values of raw materials used, the size of individual labor forces, wages, sources of power, quantities of bricks produced, annual income, etc. Statewide and city directories were also useful sources of information on Louisville brickmakers. The current paper focuses on providing a glimpse into the brick industry during this decade. However, it must be remembered that some of these companies started production before 1850, and some were still in business after 1860.

First, this paper provides a brief listing of each brick company that operated in Louisville during the decade. Next, specific information for these brickyards, extracted from the Census of Manufacturing, is included in Tables 1, 2, 4, and 5. Table 3 presents information from the 1850 population Census. Third, the discussion section includes some comparisons between the Louisville brickmakers and between Louisville brickmakers and those in Kentucky as a whole. Finally, some suggestions for future research are offered.

THE COMPANIES

The 1850 Census of Manufacturing listed 17 brickmakers while the 1860 Census of Manufacturing listed only six brickmakers. *George W. Hawes Kentucky State Gazetteer and Business Directory for 1859 and 1860* listed ten brickmakers for Louisville suggesting that there were more brickmakers than the 1860 Census listed (Hawes 1859:383). Unfortunately, there are no available Louisville city directories for the period between the 1844 and 1858 directory editions. Thus, there is no easy way

to verify if brickyards are missing from the 1860 Census, or to even obtain addresses for those yards in the 1860 Census, but not listed in directories. The Louisville brickmakers are listed below in alphabetical order. Specific information for many of these brickyards can be obtained from Tables 1, 2, 4, and 5.

Berman, George: Listed in the Manufacturing Schedule for 1850 (United States Federal Census 1850). See Tables 1 and 2.

John C. Cochran: Listed in the Manufacturing Schedule for 1850 (United States Federal Census 1850). John C. Cochran was listed six years earlier in *Haldemans Picture of Louisville, Directory and Business Advertiser for 1844-1845*, as having a brickyard at Tenth and Broadway (Poor 1844:12). See Tables 1 and 2.

Cooper, James M.: Listed in the Manufacturing Schedule for 1850 (United States Federal Census 1850). See Tables 1 and 2.

Crutchfield, Edward: Operated a brickyard located on the south side of Broadway, between Hancock and Clay (Tanner 1859:262). Also, Crutchfield is listed in the Manufacturing Schedule for 1850 (United States Federal Census 1850) and in *George W. Hawes Kentucky State Gazetteer and Business Directory for 1859 and 1860* (Hawes 1859:383). See Tables 1, 2, and 3.

Figg, Benoni: Operated a brickyard located on the corner of Shelby and Broadway in 1858 (Hurd and Burrows 1858:235) and Preston at the southeast corner of Broadway in 1859-1860 (Tanner 1859:262). Also, Figg is listed in *George W. Hawes Kentucky State Gazetteer and Business Directory for 1859 and 1860* (Hawes 1859:383).

Figg, Hamilton: Operated a brickyard located on the north side of Campbell, between Jackson and Hancock (Tanner 1859:262). Also, Figg is listed in the Manufacturing Schedule for 1850 (United States Federal Census 1850) and in *George W. Hawes Kentucky State Gazetteer and Business Directory for 1859 and 1860* (Hawes 1859:383). See Tables 1, 2, and 3.

Figg, Legrand: Operated a brickyard located on the east side of 21st Street, between Main and Rowan (Tanner 1859:262). Also, Figg is listed in the Manufacturing Schedule for 1860 (United States Federal Census 1860) and in *George W. Hawes Kentucky State Gazetteer and Business Directory for 1859 and 1860* (Hawes 1859:383). See Tables 4 and 5.

Fruman(?), Francis: Due to the handwriting, the spelling of this entry is questionable. Listed in the Manufacturing Schedule for 1850 (United States Federal Census 1850). See Tables 1 and 2.

Hahn, Warden P.: Listed in the Manufacturing Schedule for 1850 (United States Federal Census 1850). See Tables 1 and 2.

Halarmet, William: Listed in the Manufacturing Schedule for 1860 (United States Federal Census 1860). See Tables 4 and 5.

Kline, Peter: Listed in the Manufacturing Schedule for 1850 (United States Federal Census 1850). See Tables 1 and 2.

Knightman(?), Richard: Due to the handwriting, the spelling of this entry is questionable. Listed in the Manufacturing Schedule for 1850 (United States Federal Census 1850). See Tables 1 and 2.

Konhors, Henry: Operated a brickyard located on the north side of Broadway between Wenzel and Underhill (Tanner 1859:262). Also, Konhors is listed in *George W. Hawes Kentucky State Gazetteer and Business Directory for 1859 and 1860* (Hawes 1859:383).

Loismenl(?), A. J.: Due to the handwriting, the spelling of this entry is questionable. Listed in the Manufacturing Schedule for 1850 (United States Federal Census 1850). See Tables 1 and 2.

McKeesen(?), William: Due to the handwriting, the spelling of this entry is questionable. Listed in the Manufacturing Schedule for 1850 (United States Federal Census 1850). See Tables 1 and 2.

Maloney, James: Listed in the Manufacturing Schedule for 1860 (United States Federal Census 1860). Maloney may be a different spelling for Molona. See Tables 4 and 5.

Molona, James: Operated a brickyard located on Magazine at the southeast corner of 15th (Tanner 1859:262). Also, listed in the Manufacturing Schedule for 1850 (United States Federal Census 1850) and in *George W. Hawes Kentucky State Gazetteer and Business Directory for 1859 and 1860* (Hawes 1859:383). See Tables 1 and 2.

Nally, William: Listed in the Manufacturing Schedule for 1850 and 1860 (United States Federal Census 1850; United States Federal Census 1860). See Tables 1, 2, 4, and 5.

Phillips, H. D.: Listed in the Manufacturing Schedule for 1850 (United States Federal Census 1850). See Tables 1 and 2.

Planke, William: Operated a brickyard located on the west side of Elizabethtown Turnpike near Maple (Tanner 1859:262). Also, Planke is listed in the Manufacturing Schedule for 1860 (United States Federal Census 1860) and in *George W. Hawes Kentucky State Gazetteer and Business Directory for 1859 and 1860* (Hawes 1859:383). See Tables 4 and 5.

Reick, John: Operated a brickyard located on Madison at the southeast corner of Campbell (Tanner 1859:262). Also, Reick is listed in *George W. Hawes Kentucky State Gazetteer and Business Directory for 1859 and 1860* (Hawes 1859:383). This appears to be the same man as J. F. Rieke who ran a brickyard at the head of Madison between Campbell and Creek (Hurd and Burrows 1858:235).

Rothmaly(?), William: Due to the handwriting, the spelling of this entry is questionable. Listed in the Manufacturing Schedule for 1850 (United States Federal Census 1850). See Tables 1 and 2.

Schoppenhorst, Henry: Operated a brickyard located on Henry at the west side of Elizabethtown Turnpike near Broadway (Tanner 1859:262). Also, Schoppenhorst is listed in *George W. Hawes Kentucky State Gazetteer and Business Directory for 1859 and 1860* (Hawes 1859:383) and the Manufacturing Schedule for 1860 (United States Federal Census 1860). See Tables 1 and 2.

Story(?), Alton: Due to the handwriting, the spelling of this entry is questionable. Listed in the Manufacturing Schedule for 1850 (United States Federal Census 1850). See Tables 1 and 2.

Werts, William: Operated a brickyard located on York Street, between Brent and Campbell (Tanner 1859:262). Also, Werts is listed in the Manufacturing Schedule for 1850 (United States Federal Census 1850) and in *George W. Hawes Kentucky State Gazetteer and Business Directory for 1859 and 1860* (Hawes 1859:383). See Tables 1 and 2.

EXTRACTED INFORMATION SPECIFIC TO COMPANY

TABLE 1. LOUISVILLE BRICKMAKERS LISTED IN THE 1850 U.S. MANUFACTURING SCHEDULE FOR JEFFERSON COUNTY, KENTUCKY: CAPITAL, RAW MATERIALS, AND KIND OF POWER.

Name	Capital Invested (\$)	Raw Materials	Value of Raw Materials (\$)	Kind of Power
Edward Crutchfield	5,000	Fuel	-----	Horse & Hand
William Rothmaly(?)	1,500	Sand(?)	-----	Horse & Hand
George Berman	2,000	Sand(?)	-----	Horse & Hand
A. J. Loismenl(?)	700	Sand(?)	-----	Horse & Hand
H. D.(?) Phillips	1,500	Land	8,000	Horse & Hand
Peter Kline	500	Sand(?)	-----	Horse & Hand
Hamilton Figg	2,000	Land	-----	Horse & Hand
Alton Story(?)	600	Land	-----	Horse & Hand
William Werts	1,000	Land	-----	Horse & Hand
Warden P. Hahn	2,500	Land	-----	Horse & Hand
James M. Cooper	400	Clay	40	Horse
John C. Cochran	16,000	Preparing Clay Wood and Coal Horse and Feed	400 2,600 125	Horse
William McKeesen(?)	1,000	Wood and Clay Keeping Horse	1,300 200	Horse
Perry & Glass(?) Brick Layers	100	1,600 bu. of Lime Sand	260 200	Hand
Richard Knightman(?)	3,700	Wood and Coal Tempering Clay Horse Feed	1,500 400 300	Horse & Hand
Francis Fruman(?)	2,000	Tempering Clay Wood and Coal Horse Feed	100 600 100	Horse
James Malona	3,855	Preparing Clay Wood and Coal Horse Feed	400 2,600 100	Horse
William Nally	1,620	Preparing Clay 200 Cords Wood Horse Feed	320 1,800 100	Horse

TABLE 2. LOUISVILLE BRICKMAKERS LISTED IN THE 1850 U.S. MANUFACTURING SCHEDULE FOR JEFFERSON COUNTY, KENTUCKY: NUMBER OF HANDS, MONTHLY WAGES, ANNUAL QUANTITIES OF BRICKS, AND THE VALUE OF BRICKS PRODUCED.

Name	Avg. No. of Male Hands	Monthly Wages (\$)	Annual Quantity of Bricks	Value of Bricks (\$)
Edward Crutchfield	40	720	4,000,000	18,000
William Rothmaly(?)	20	400	1,000,000	4,500
George Berman	16	320	1,500,000	5,000
A. J. Loismenl(?)	12	220	1,000,000	4,000
H. D. (?) Phillips	18	196	2,000,000	9,000
Peter Kline	16	320	1,000,000	4,500
Hamilton Figg	10	200	1,000,000	4,500
Alton Story(?)	10	200	624,000	2,700
William Werts	7	150	600,000	2,700
Warden P. Hahn	(?)30	600	1,500,000	6,700
James M. Cooper	1	18	250,000	1,200
John C. Cochran	25	500	2,700,000	17,500
William McKeesen(?)	10	200	1,200,000	6,500
Perry & Glass(?) Brick Layers	4	205	Laid 1,500,000	3,700
Richard Knightman(?)	25	500	2,000,000	9,000
Francis Fruman(?)	3	96	650,000	2,400
James Malona	28	560	2,800,000	12,100
William Nally	18	360	2,000,000	8,500

TABLE 3. LOUISVILLE BRICKMAKERS AND WORKERS LISTED IN THE 1850 U.S. POPULATION CENSUS FOR LOUISVILLE, DISTRICTS 1 AND 2.

Name	Age	Occupation	Birthplace
Miller, Joseph	30	Brick Molder	Ohio
Jahnston, David	35	Brick Molder	Ohio
Wood, Alfred*	24	Brick Maker	Ohio
Woods, Alfred*	23	Brick Maker	Ohio
Webb, Simon	20	Brick Master	Kentucky
Crutchfield, Alexander	23	Brick Maker	Virginia
Jones, John	35	Brick Molder	Indiana
Anshutz, John	20	Brick Maker	Germany
Stitzel, Adam	19	B. Moulder	Germany
Richardson, George	32	B. Maker	Kentucky
Ryan, Thomas	27	B. Moulder	Kentucky
Ryan, Henry	26	B. Moulder	Kentucky
Figg, H. I.	35	B. Maker	Kentucky
Figg, George	21	B. Moulder	Kentucky
Crutchfield, E.	34	B. Maker	Virginia
Kootz, Edward	28	B. Moulder	Germany
Kohnhorst, Henry	32	B. Maker	Germany
Curtis, John	24	B. Maker	Germany
Wortz, William	25	B. Maker	France
Wortz, Charles	21	B. Maker	France
Cox, J. H.	40	Brick Maker	Kentucky
Miller, Thomas	48	Brick Maker	New York

* The two Alfred Woods were in different households.

TABLE 4. LOUISVILLE BRICKMAKERS LISTED IN THE 1860 U.S. MANUFACTURING SCHEDULE FOR JEFFERSON COUNTY, KENTUCKY: CAPITAL, RAW MATERIALS, AND KIND OF POWER.

Name	Capital Invested (\$)	Raw Materials	Value Of Raw Materials (\$)	Kind of Power
L. R. Figg	4,000	500 Loads of Wood 250 Loads of Clay	1,600 125	Hand
James Maloney	4,000	1,000 Loads of Wood 1,000 Loads of Clay	3,250 400	Hand & Horse
W. A. Nally	4,000	1,200 Loads of Wood 1,300 Loads of Clay	3,900 480	Hand & Horse
William Plank	2,500	650 Loads of Wood 600 Loads of Clay	2,100 240	Hand & Horse
William Halarmet	2,500	650 Loads of Wood 600 Loads of Clay	2,100 240	Hand & Horse
Henry Schoppenhorst	3,000	800 Loads of Wood 900 Loads of Clay	2,600 270	Hand & Horse

TABLE 5. LOUISVILLE BRICKMAKERS LISTED IN THE 1860 U.S. MANUFACTURING SCHEDULE FOR JEFFERSON COUNTY, KENTUCKY: NUMBER OF HANDS, MONTHLY WAGES, ANNUAL QUANTITIES OF BRICKS, AND THE VALUE OF BRICKS PRODUCED

Name	Avg. No. of Male Hands	Monthly Wages (\$)	Annual Quantity of Bricks	Value of Bricks (\$)
L. R. Figg	15	300	1,000,000	5,000
James Maloney	22	375	2,000,000	11,000
W. A. Nally	32	800	8,000,000	15,000
William Plank	16	400	1,500,000	7,500
William Halarmet	16	400	1,500,000	7,500
Henry Schoppenhorst	20	500	2,000,000	10,000

DISCUSSION

Using information extracted from the 1850 and 1860 Manufacturing Schedules, comparisons are made at three levels. First, summary data are provided for the brickyards operating in 1850 and then those in operating in 1860. Second, the changes that occurred in the Louisville brick industry between 1850 and 1860 are briefly discussed. Third, comparisons are made between the Louisville brickmakers and Kentucky brickmakers of the same period. Finally, brief suggestions for future research on this period of Louisville brickmaking are offered.

The 1850 Census of Manufacturing listed 17 brickmakers operating yards in Jefferson County (United States Federal Census 1850). Using the information presented in the census schedules (Tables 1 and 2), several summary statements can be made about Louisville brickmakers during this period (United States Federal Census 1850). The operations were listed under the name of the owner rather than by company names during this period. The size of the brickyards run the entire spectrum, ranging from a low of \$400 of capital invested to a high of \$16,000 of capital invested. Only four of the brickmakers had \$700 or less of capital invested, most Louisville brickmakers had between \$1,000 and \$5,000 of capital invested while only one producer had the large sum of \$16,000 in capital invested. Production costs for these operations include the purchase of horse feed (\$100 to \$300) and the preparation of clay (\$40 to \$400). One brickmaker was listed as firing his bricks with wood while the other yards were using both wood and coal. Fuel cost ranged from \$600 to \$2,600 annually for both wood and coal. The one yard using wood exclusively reported using 200 cords valued at \$1,800. In terms of power sources, most brickyards were listed using horses in combination with hand power. The labor force varied from a low of one man to a high of 40 male hands but most yards employed between 10 and 25 men. Total monthly wages for males ranged from \$18 for one person up to \$720 for the brickyard with 40 employees. Individual monthly wages ranged from \$10.88 to \$32 with most employees earning \$20 per month. No females or children were listed in the labor force.

Annual brick production figures in Louisville (Table 2) varied for 1850 (United States Federal Census 1850). The lowest yield was 250,000 bricks while the brickyard with the greatest yield produced four million bricks. Four yards produced between 250,000 and 650,000 bricks annually. Over half the brickyards produced between two and four million bricks each. The annual income of the brickyards ranged from \$1,200 to \$18,000. More than half the brickyards earned between \$4,000 and \$9,000 annually. Using the production figures and the annual income, the approximate value of the bricks

can be estimated. The price per thousand bricks ranged from about \$3.33 to \$6.48. However, the most common prices per thousand bricks ranged from \$4.00 to \$4.50.

The U.S. Population Census for 1850 in Districts 1 and 2 of Louisville (Table 3) listed 22 individuals associated with the brick industry (Louisville Genealogical Society 1995). Most of these people appear to be workers at brickyards. Only two owners of brickyards were included in the list: H. I. Figg and E. Crutchfield. Some of the other names could represent different spellings from those found in the Manufacturing Schedule records. Of those included in the U.S. Population Census for 1850, 12 were listed as "Brick Maker" or "B. Maker," eight were listed as "Brick Molder" or "B. Molder," and one was listed as "Brick Master." The ages of these individuals ranged from 19 to 48 years with most workers being between 20 and 35 years of age. Brickyard workers included those born in the United States and Europe. American-born workers included seven from Kentucky, one from Indiana, one from New York, four from Ohio, and two from Virginia. European-born workers included two from France and five from Germany.

A single listing for bricklayers was available in Louisville for 1850 (United States Federal Census 1850). This listing for Perry and Glass (Tables 1 and 2) provides information on the number of bricks that could be laid in a year and the associated costs. They had \$100 of capital invested in their business. Raw materials included 1,600 bushels of lime valued at \$260 and an unspecified amount of sand for \$200. Four men were employed in the business, which paid \$205 for monthly labor costs. During the year, they laid 1,500,000 bricks, which brought in \$3,700 of income.

The 1860 Census of Manufacturing listed six individuals producing bricks (Table 4) in Jefferson County (United States Federal Census 1860). The capital invested in these businesses ranged from \$2,500 to \$4,000. In terms of fuel, wood usage ranged from 500 to 1200 loads. Fuel cost ranged from \$1,600 to \$3,900 annually with most yards spending between \$2,100 and \$3,900. Using available figures, loads of wood would sell for between \$3.20 and \$3.25. Clay was used in quantities ranging from 250 to 1,300 loads annually. Cost for clay ranged from \$125 to \$480 with most yards spending between \$240 and \$480 for clay. Loads of clay were selling between 30 cents and 50 cents with most clay available for 40 cents a load. Five brickmakers described their power source as hand and horse, while only one yard was using hand power alone. Between 15 and 32 males worked at the yards, with most brickyards employing 15 to 22 workers. Brickyards spent between \$300 and \$800 on monthly wages. The approximate male wages were \$17.04 to \$25 per month, with most yards paying employees \$25 per month.

Annual production figures for brickmakers during 1860 varied greatly (United States Federal Census 1860). The smallest yard produced 1,000,000 bricks while the largest manufacturer made 8,000,000 bricks (Table 5). Prices per thousand bricks ranged from \$1.87 to \$5.50. The most common price was \$5.00 per thousand bricks. In terms of annual earnings, brickyards ranged from \$5,000 to \$15,000.

The 1860 Census of Manufacturing appears to be incomplete for many areas of the Commonwealth, including Louisville (United States Federal Census 1860). A comparison of listings in *George W. Hawes Kentucky State Gazetteer and Business Directory for 1859 and 1860* (Hawes 1859) with the 1860 Census reveals that many brickmakers and dealers were not included in the Census. At least six individuals listed by Hawes were not listed in the 1860 Census of Manufacturing (Hawes 1859:383). It is not known whether the missing brickmakers were simply overlooked by Census takers, or whether they did not generate enough income in 1860 to be included in the Census.

By comparing the figures from the Manufacturing Schedule for 1850 and 1860, some general comments can be made about changes in the Louisville brick industry during this decade. When looking at the capital invested, the dollar range was much more restricted for 1860, but the smaller yards had higher amounts of capital invested than those in 1850. Fuel cost for brickyards increased substantially from 1850 to 1860. This increased cost of fuel may be the result of greater brick production, or may represent an increase in wood costs over the period. The brickyards of 1850 had a wider range in the number of employees than the yards of 1860. On the other hand, the smaller yards of 1860 had more employees than the small yards of 1850, suggesting growth in these businesses. Between 1850 and 1860, labor cost increased for brickyards. Individual monthly

wages increased on the average of about \$5 per person between 1850 and 1860. Brick production drastically increased between 1850 and 1860. The smaller yards of 1860 produced up to four times as many bricks as those of 1850. The larger brickyards of 1860 produced up to twice as many bricks as those of 1850 produced. The price of bricks per thousand increased 50 cents to \$1 over the decade. Also, the average brickmaker was making more money in 1860 than in 1850.

A number of comparisons can be made between Louisville and the state as a whole for the 1850 and 1860. In 1850, the capital invested in Kentucky brickyards ranged from \$50 to \$16,000 (Hockensmith 2002:77), while Louisville range from \$400 to \$16,000. In 1860, Kentucky brickyards declined to a range of \$150 to \$10,000 per yard (Hockensmith 2002:77), while Louisville fell near the mid point. In 1850, Kentucky brickyards employed 140 men (most yards worked 625 men) (Hockensmith 2002:77), which decreased for 1860 to a range of 332 men (most yards worked 513 men). Louisville brickyards had the same overall employee range as the other Kentucky brickyards in 1850 (Hockensmith 2002:77), but had slightly larger operations (10 to 25 men). In 1860, the Louisville brickyards had more employees (1522 men) than the typical yards in the state (Hockensmith 2002:77). In 1850, Kentucky brickyards spent between \$18 and \$1,040 for monthly labor cost (Hockensmith 2002:77), compared to a range of \$18 to \$720 for Louisville brickyards labor costs. Kentucky brickyards had a range of \$50 to \$800 for monthly labor in 1860 (Hockensmith 2002:77), while Louisville brickyards had slightly higher labor cost (\$300 to \$800) for the same period.

Fuel consumption and fuel costs can also be compared between 1850 and 1860. Wood was the primary fuel for burning bricks in Kentucky (Hockensmith 2002:77), while both coal and wood was used by Louisville brickyards of 1850. Fuel cost for Kentucky brickyards in 1850 ranged between \$45 and \$3,000 per yard (Hockensmith 2002:77), while Louisville brickyards spent between \$600 and \$2,600. Fuel consumption decreased in 1860, with usage ranging between 75 and 550 cords of wood (Hockensmith 2002:77). For the same period, Louisville reported between 500 and 1,200 loads of wood. Kentucky fuel cost in 1860 ranged between \$75 and \$3,900 (Hockensmith 2002:77), while Louisville brickyards spent between \$2,100 and \$3,900.

For 1844-1845, the eight brickyards in Louisville were making 15,200,000 brick annually, with individual companies producing between 1 and 1.7 million bricks each. In 1850, Kentucky brick production ranged between 20,000 and 4 million for each yard, with values ranging between \$2 and \$12.50 (most \$3.50 to \$4.50) per thousand (Hockensmith 2002:77). Louisville brick production for the same period ranged from 250,000 and 4 million with values ranging between \$3.33 and \$6.48 (most \$4.00 to \$4.50) per thousand. The 1860 Kentucky figures ranged from 220,000 to 8 million bricks per yard, with values ranging between \$5.50 and \$6.00 per thousand (Hockensmith 2002:77). In Louisville during 1860, brick production ranged between 1 million and 8 million, with values ranging between \$1.87 and \$5.50 (most \$5) per thousand.

The incomes for brickyards can be compared between 1850 and 1860. In 1850, the income for Kentucky brickyards ranged between \$680 and \$18,000 (Hockensmith 2002:77). Louisville brickyards earned between \$1,200 and \$18,000 annually. There was a decrease in Kentucky brickyard incomes for 1860 with earnings ranging from \$600 and \$15,000 (Hockensmith 2002:77). Louisville brickyards earned much more than the typical state ranges, with incomes between \$5,000 and \$15,000.

In order to develop a better understanding of the Louisville brick industry between 1850 and 1860, additional research is needed. A variety of archival resources are available for researching the brick industry (Hockensmith 2001b:14-17). A comprehensive search of the U.S. Population Census records on microfilm for 1850 and 1860 would yield much additional information. These records would provide data on the employees of the many brickyards (see Hockensmith 2001b:15). Also, these records would provide information on their ages, place of birth, families, and personal wealth. Likewise, a search of Louisville newspapers should produce many ads related to the brickyards and perhaps some news items (see Hockensmith 2001b:17). Deeds and other local records may reveal information on the ownership and lease of brickyards. Early maps represent another source that may show the precise locations of some early brickyards in Louisville (see Hockensmith 2001b:17).

Finally, as urban archaeology is undertaken in areas of Louisville that once contained brickyards, archaeologists can watch for buried remains associated with these industrial sites. The archaeological remains of these brickyards would afford the opportunity to study kiln construction and to study samples of bricks produced at these yards. By utilizing all the available avenues of research, we can develop a better understanding of Louisville's brick industry between 1850 and 1860.

ACKNOWLEDGEMENTS

The author wishes to express his gratitude to those who have provided assistance in this research. Thomas N. Sanders, Manager of the Site Protection Program at the Kentucky Heritage Council, has allowed the author to undertake some of the research used in this article. Ms. Anne T. Bader kindly welcomed and encouraged the preparation of this article shortly before her press deadline. The author's wife, Susie Hockensmith, read this article and made some useful comments. The contributions of each of these individuals are greatly appreciated.

REFERENCES CITED

Hawes, G. W.

1859 George W. Hawes Kentucky State Gazetteer and Business Directory for 1859 and 1860. No. 1. George W. Hawes, Louisville, Kentucky.

Hockensmith, C. D.

2001a Brick Industry. In *The Encyclopedia of Louisville*, edited by John E. Kleber, pp. 121-122. University Press of Kentucky, Lexington.

2001b The Value of Studying Bricks and Brickyards: Some Suggestions From Kentucky. *Material Culture* 33 (3):128.

2002 A Brief History of the Brick and Clay Products Industries in Kentucky: 1788-2002. *Ohio Valley Historical Archaeology* 17:73-90.

Hurd and Burrows

1858 *Louisville City Directory and Business Mirror for 1858-9*. Hurd and Burrows, Louisville, Kentucky.

Louisville Genealogical Society

1995 1850 Census of Louisville, Districts 1 & 2, Jefferson County, Kentucky. Transcribed by Louisville Genealogical Society, Louisville, Kentucky.

Poor, P.

1844 *Haldeman's Picture of Louisville, Directory and Business Advertiser for 1844-1845*. W. N. Haldeman at the Morning Courier Office, Louisville, Kentucky.

Tanner, H.

1859 *The Louisville Directory and Business Advertiser for 1859-1860*. General Western and Southern Directory Publisher.

United States Federal Census

1850 *Manufacturing Schedules for the Seventh Census of the United States: Kentucky*. Microfilm on file at the Kentucky Department of Libraries and Archives, Frankfort.

1860 *Manufacturing Schedules for the Eighth Census of the United States: Kentucky*. Microfilm on file at the Kentucky Department of Libraries and Archives, Frankfort.

ATLATL WEIGHTS

By

RICHARD B. LYONS

PRESIDENT, INDIANA ATLATL ASSOCIATION

JEFFERSONVILLE, INDIANA

Although the atlatl achieved worldwide distribution, North America is the only location in the world where stone weights were added to the shafts of atlatls. They have been variously called *bannerstones*, *loafstones*, *boatstones*, *bar weights*, etc., and it is thought these weights were added mainly because of their functional attributes. The weights add stability, distance, and accuracy to atlatl use. Because some of them have highly stylized and varied shapes, which go beyond any functional purpose, they must have also had a ceremonial component to them. These stylized weights had many different shapes, with a centrally-drilled hole (**Figure 1**), and have collectively been called *bannerstones*.

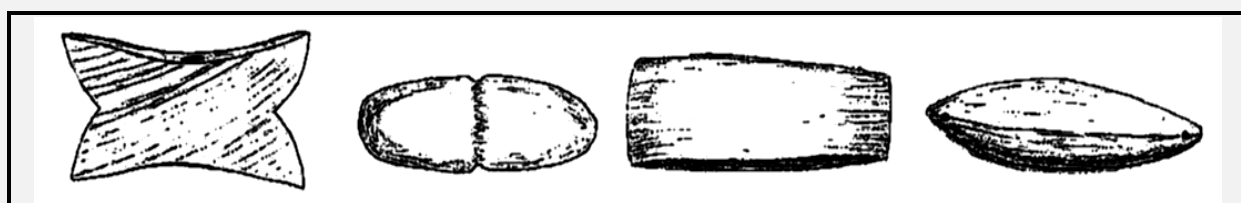


FIGURE 1. BANNERSTONE TYPES.

Clarence Moore was one of the first to examine bannerstones in an archaeological context to understand their function. When he found bannerstones, they were associated in burials with crochet type atlatl hooks. Because of the hook shape of the atlatl hooks, he thought they were used for manufacturing fishing nets. Because bannerstones were found in close association with the hooks, Moore concluded they were used as mesh sizers for the fishnets.

Twenty years later, two more individuals would examine bannerstones and arrive at different conclusions as to their use. Byron Knoblock and William Webb examined bannerstones from Archaic archaeological sites in the mid-western and southern United States. Byron Knoblock rejected the conclusions of Clarence Moore and of his contemporary William Webb. Knoblock thought bannerstones were entirely ceremonial and had no functional use. His main objections to them being used on atlatls were structural and functional ones. Today, Knoblock's objections are being disproved, as modern day atlatlists are rediscovering the functional attributes of bannerstones. Many are experimenting with them on their atlatls. We now know bannerstones can be used on atlatls, and they function well, with the main contribution to function coming from their weight and position, rather than their shape.

One of the most important and comprehensive examinations of the atlatl and atlatl weights was included in a book by William Webb. His posthumously published work *The Development of the Spear Thrower*, has long been considered the Bible on the archaeology and physics of the atlatl (Webb 1957). Webb realized the hooks, bannerstones, and bone and antler handles found in burial association were all parts of one device---an atlatl. The parts had previously been connected by a wooden shaft, which had long since decayed. Webb had been trained in physics and much of his work reflected this. He did a thorough examination of the mechanics of the atlatl and the function of atlatl weights, which has contributed more to our understanding of atlatl function than any other individual to this day.

Webb's work, however, has recently been re-evaluated and has come under criticism for both the chronology of the developmental sequence of atlatl weights, atlatl hooks, and the positioning of atlatl weights (bannerstones) on the atlatl shaft. His chronology was based on the hypothesis that the most primitive-looking types (loafstones and bar weights) occurred first and evolved into the more elaborate bannerstone forms. It seems the archaeological evidence does not support his hypothesis.

Information in a book called *The Archaic Bannerstone, It's Chronological History and Purpose from 6000 B.C. to 1000 B.C.*, written and published by David Lutz, is shedding new light on atlatl prehistory. Lutz has provided us with an up-to-date and accurate chronology of bannerstone sequential development that is backed by C-14 dating and excavations of stratified Archaic sites. His chronology differs from Webb's in several respects. Webb has bar stone and loafstone weights being the first types of weights added to an atlatl shaft, later evolving into the more elaborate bannerstones. Lutz has concluded, from archaeological evidence, that the first stone weight showing evidence of being an atlatl weight was a fully stylized bannerstone. This stylized bannerstone has become called the *ree/type* and was approximately dated to 6,070 B.C. by C-14 dating of associated materials (Lutz 2000). Lutz has determined that bar stone and loafstone weights were not in use until the Late Archaic and Early Woodland periods some 5,000 years later.

An objection is also made to Webb's sequence of antler atlatl hook development. In Webb's sequence, he has the crochet type of hook occurring first and followed by a "new" shorter type, which he thought allowed the bannerstone weight to be positioned closer to the hook (**Figure 2**).

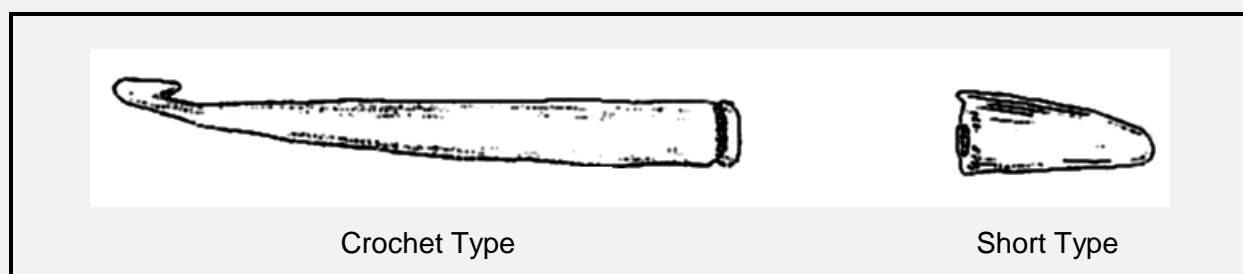


FIGURE 2. ATLATL HOOK TYPES.

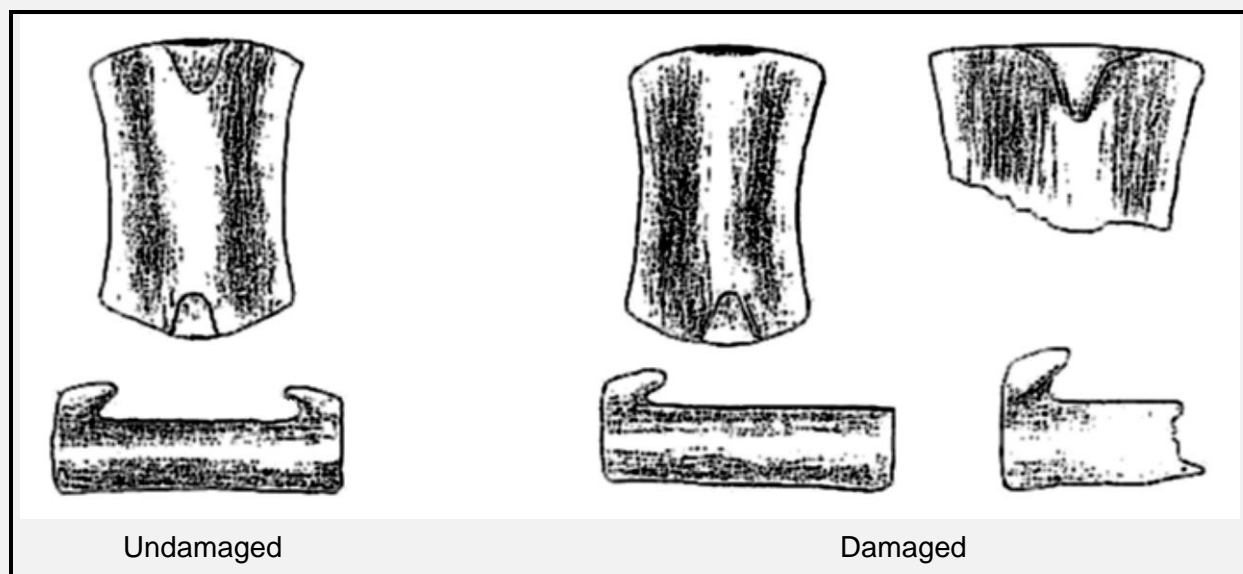


FIGURE 3. UNDAMAGED AND DAMAGED HOOK WEIGHTS.

One of Webb's most important assumptions was that, to improve the function of atlatls, the atlatl weights, over time, were moved closer and closer to the atlatl hook. Webb said the shorter hook type allowed the weight to be moved closer to the hook than did the crochet type. He finally has the hook actually being incorporated into the atlatl weight, and then eventually the weight was moved beyond the hook.

Lutz has examined all the archaeological evidence that Webb collected while at the University of Kentucky and he could find no objective data to support this conclusion. With new evidence that

has come to light over the years, Lutz has reversed the developmental sequence of atlatl hooks, with the shorter type being the first to occur, and the crochet type being one of the later types.

In one of Webb's stages of bannerstone development, he describes the hook being carved into the terminal end of the bannerstone. Lutz says Webb erred in this conjecture, because the two specimens of this type bannerstone he examined were damaged. They actually represented a type that is well known today, called the *horned* or *hooked* type. This style weight has two hooks or horns, one at each end. The two that Webb examined had both been damaged in such a manner that only one hook remained (**Figure 3**). With this incomplete information, Webb made the incorrect assumption that they were atlatl hooks. These illustrations do not represent the actual bannerstones that Webb examined. They are meant to show what an undamaged specimen would look like, compared to a damaged specimen.

The last phase of bannerstone placement that Webb proposed is with the stone placed beyond the hook. Lutz stated that Webb had no archaeological evidence to support this configuration, and the style hook and bannerstone that Webb links together have never been found in archaeological association.

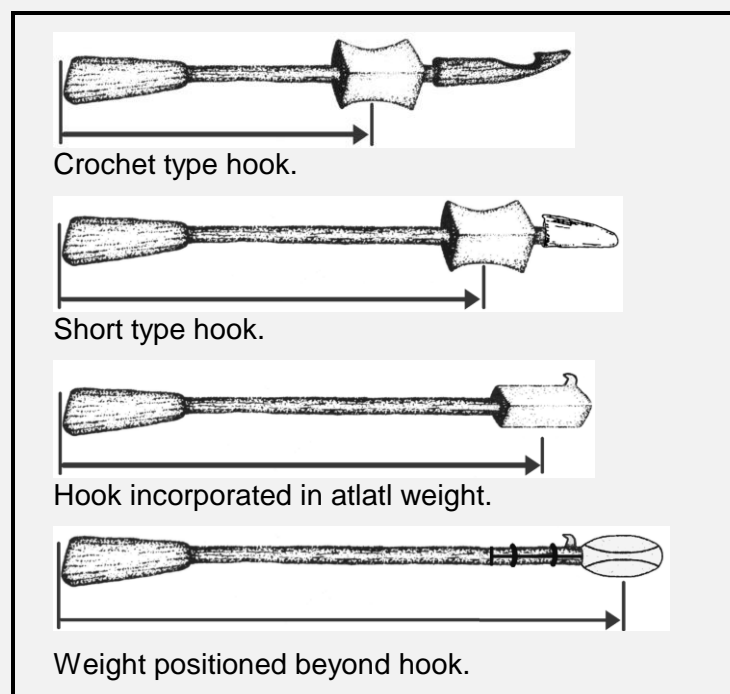


FIGURE 4. ATLATL WEIGHT POSITIONS.

Webb's sequential positioning of atlatl weights has them moving further towards the distal end of the atlatl over time (**Figure 4**). This seems to improve functional aspects of the atlatl, but it is based on faulty data.

Webb may have erred in his interpretation of archaeological data, but his description of the mechanics of the atlatl and associated weights is one of the best we have today. Webb had a strong background in physics, and this greatly influenced his findings. This led Webb to search for functional interpretations of atlatl weights and their positions on atlatls, but his knowledge of physics may have misled him. We must now re-evaluate the methods he used. Was it archaeological data or his knowledge of physics that led him to his conclusions?

Lutz takes the position that bannerstones were placed on atlatls as symbols of clan membership and for burial internment, but were not for everyday use. I think he may have a point in regards to the more elaborate bannerstones, but my own experience using weights and bannerstones on modern-day atlatls has led me to believe they have a very practical functional aspect. They act as a counter balance, add stability, increase distance, and improve accuracy.

New investigations and discoveries on atlatl weights and bannerstones are presently being made. We must use this information to reevaluate the works by pioneers in this field, Webb, Moorehead, and Knoblock, and put their work into perspective. The bannerstone and atlatl weight debate has been a long one and will continue.

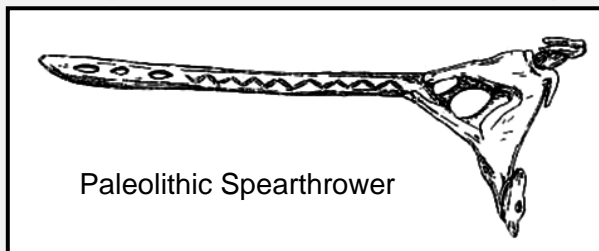
> > > < < <



INDIANA ATLATL ASSOCIATION



Thousands of years ago, an unknown someone discovered the principles of a simple device, which transformed the way people hunted and survived. This simple device became known as the spear thrower or atlatl. It increased the distance, force, and accuracy by which a spear could be thrown. Early people could now take game, such as mammoth, mastodon, bison, horse, and reindeer from a much greater distance and much more safety. This device was not much more than a short piece of wood, but the effect on early man was as important as the discovery of fire or the wheel.



Paleolithic Spearthrower

Today, some of us are trying to recreate, from the archaeological and historic record, the technology and skill these early people used to become proficient with the atlatl. Groups of like-minded people all over the world are getting together to share information, and to compete in contests of skill and fun using the atlatl.

The Indiana Atlatl Association was started in 2001 as a spin-off of the World Atlatl Association, which has been in existence since the late 1980s. Over the last few years, there has been an increased interest in the atlatl, within the state of Indiana. There was a need to have a focal point for the collection and dissemination of information for those individuals interested in learning about and using the atlatl. We are trying to fill that need.

In addition to publishing a biannual newsletter, we also organize demonstrations, set up displays, and conduct contests throughout the state. We have started an Indiana State Championship Atlatl Contest, in which people throughout the state can compete. At our demonstrations, we try to involve the general public by inviting them to have hands-on experience with the atlatl. We have introduced thousands of individuals to the history, technology, and use of the atlatl.

Anyone interested in joining our organization and learning more about the atlatl can contact Richard B. Lyons at 5024 King Road, Jeffersonville, Indiana 47130 or call (812) 246-9987.

REFERENCES CITED

Knoblock, B. W.

1939 *Bannerstones of the North American Indian*. Published by the author, La Grange, Illinois.

1979 Banner-Stones are Ceremonial. *The Best of 25 Years of the Central States Archaeological Journal 1954-1979*. Central States Archaeological Society, St. Louis, Missouri.

Lutz, D.

2000 *The Archaic Bannerstone: Its Chronological History and Purpose from 6000 BC to 1000 BC*. Published by the author, Newburgh, Indiana.

Moore, C.

1916 Some Aboriginal Sites on Green River, Kentucky. *Journal of the Academy of Natural Sciences of Philadelphia* 16:431-509.

Webb, W. S.

1955 *The Development of the Spearthrower*. University of Kentucky Occasional Papers in Anthropology No. 2. University of Kentucky, Lexington, Kentucky.

MOUND BUILDERS: NATIVE AMERICANS OR MYTHIC LOST RACE?

By

VALERIE MCCARTHY, SECRETARY

FALLS OF THE OHIO ARCHAEOLOGICAL SOCIETY

CLARKSVILLE, INDIANA

"It's rare that archaeologists ever find something that so totally changes our picture of what happened in the past, as is true for this case." This is the reaction of the president of the Society for American Archaeology, Vincas Steponaitis, to the finding of the oldest mound complex in North America (Pringle 1997:2). According to Professor Joe Saunders, an 11-mound complex in northeastern Louisiana, called Watson Brake, challenges previous conclusions about the prehistoric hunter-gatherers of 5,400 to 5,000 years ago (Walker 1998).

Reca Bamburg Jones, an amateur archaeologist, contacted Saunders when she noted unusual ground contours in 1981, after a timber company clear-cut the area near her home (**Figure 1**). Jones first reported her find to several other professional archaeologists, including one from Harvard who actually mapped the site, before Saunders' involvement in 1992. Since then a fifteen-member research team has used multiple techniques to date the site to between 3000 and 3400 B.C. (Saunders 1997).



FIGURE 1. WATSON BRAKE MOUNDS.

(Southeast Archaeological Center, National Park Service)

What makes the Watson Brake Mounds so significant? Before the discovery at Watson Brake, the oldest mounds were at Poverty Point, Louisiana (**Figure 2**). "We thought Poverty Point, with its geometric mounds and fine lapidary work was precocious, like the Emerald City of Oz appearing in a desert," says George Stuart, vice president for research and exploration at the National Geographic Society. "With Watson Brake we are getting a glimpse of what might be the roots of Poverty Point" (Spotts 1997).

Poverty Point seems fantastical, because it was built about 3,500 years ago when most archaeologists believe that humans were on the borderline of developing beyond the hunter-gatherer type of subsistence system. (Hunter-gatherers were small groups of nomadic people spending almost all of their time in finding enough food to survive.) Archaeologists believe that a more highly-organized society---with leaders and followers---would have been necessary for the kind of cooperative effort of mound-building. Agriculture would also be needed to produce enough surplus food to support the population while time was devoted to building (Menon 1998:30).

What is so revolutionary about Watson Brake? It pre-dates Poverty Point by more than 1,500 years.

If Poverty Point stretches scientist's beliefs about hunter-gatherers, then Watson Brake throws them out the window. Researchers are forced to accept that much of what they know about how people lived in 3000 B.C. is not correct. How much, then, of other findings must be reconsidered?

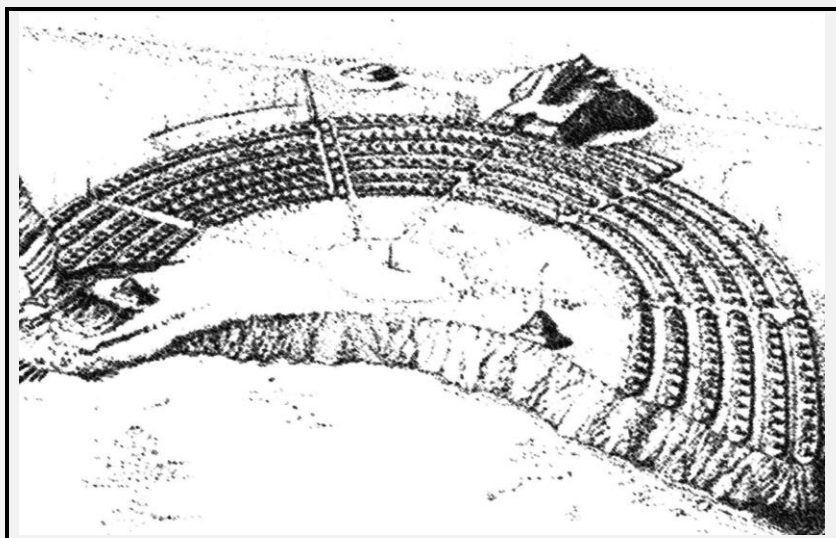


FIGURE 2. POVERTY POINT.
(Jon L. Gibson 1983)

It is the purpose of this paper to investigate what is known of the people called “Mound Builders” and what we can learn from the mounds today. Were the Mound Builders ancestors of the Native Americans, the North American Indians present at the time of the first European contact? Or were the mounds built by a “Lost Race,” a mysterious people who came from an unknown place and returned there for no known reason, leaving nothing but the mounds behind to testify to their existence?

Caleb Atwater, an early surveyor of Ohio mounds, published his account for the Antiquarian Society in 1820. He writes that it is unbelievable that “a race of people, as pitiful and demoralized as the indigenous Indians of the region, could have fallen so far, as to be linked to a people capable of building the mounds.” (Atwater 1820:209). Atwater was referring to the Indian cultures of the early 1800s, which had been severely impacted by the effects of European contact since the 1500s.

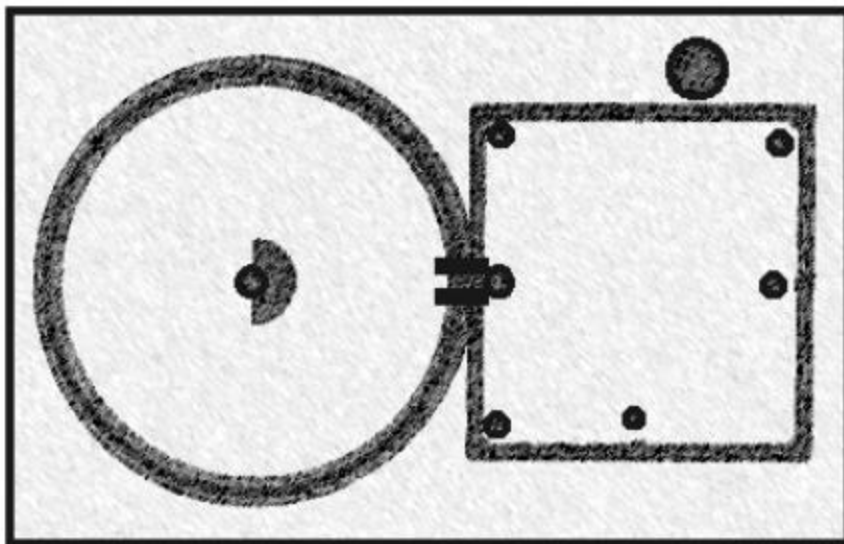


FIGURE 3. MOUND FORMATIONS AT CIRCLEVILLE, OHIO.
(Redrawn from Atwater 1820:Plate V)

One major factor in the decline of Indian civilizations was a severe decrease in population resulting from introduced disease. We know that contact with these Europeans also meant contact with European diseases, such as smallpox and measles. Before the advent of antibiotics, these diseases were frequently fatal to Europeans, who had at least developed some immunity from repeated exposures. The impact on Indian populations, which had not had prior exposure, was devastating. An example of the results of exposure of Indian populations is found in the record of the Mandan tribe. In 1836, the Mandans numbered 1600; in 1837, their number was reduced to 61, as a result of introduced disease (Oswalt 1988:38).

Let us consider the reports of the very earliest explorers who had contact with the people we call the Mound Builders. Hernando de Soto was a Spaniard, who led the first successful expedition in 1539, exploring what is now the southeastern United States. "The Gentleman of Elvas," a Portuguese knight known to us only by this unusual title, accompanied the expedition and he published an account of the journey in 1557 (Silverberg 1968:9).

Not far from Tampa Bay, the expedition entered a town called Ucita, which he described thus: The town was of seven or eight houses, built of timber, and covered with palm-leaves. The chief's house stood near the beach, upon a very high mount made by hand for defense; at the other end of the town was a temple, [atop a second mound] on the top of which perched a wooden fowl with gilded eyes, and within were found some pearls (Gentleman of Elvas 1907:134).

Another member of de Soto's expedition was Garcilaso de la Vega, known as "The Inca" because he was the son of a Peruvian princess and a conquistador. He described the town of Osachile in Florida:

Since all of the land is very flat, and elevated sites are seldom found, they build such sites with the strength of their arms, piling up very large quantities of earth and stamping on it with force until they have formed a mound from twenty-eight to forty-two feet in height. Then on the top of these places they construct flat surfaces which are capable of holding the ten, twelve, fifteen or twenty dwellings of the lord and his family and the people of his service, who vary according to the power and grandeur of his state. In those areas at the foot of this hill, which may be either natural or artificial, they construct a plaza, around which first the noblest and most important personages and then the common people build their homes [Vega 1951:170].

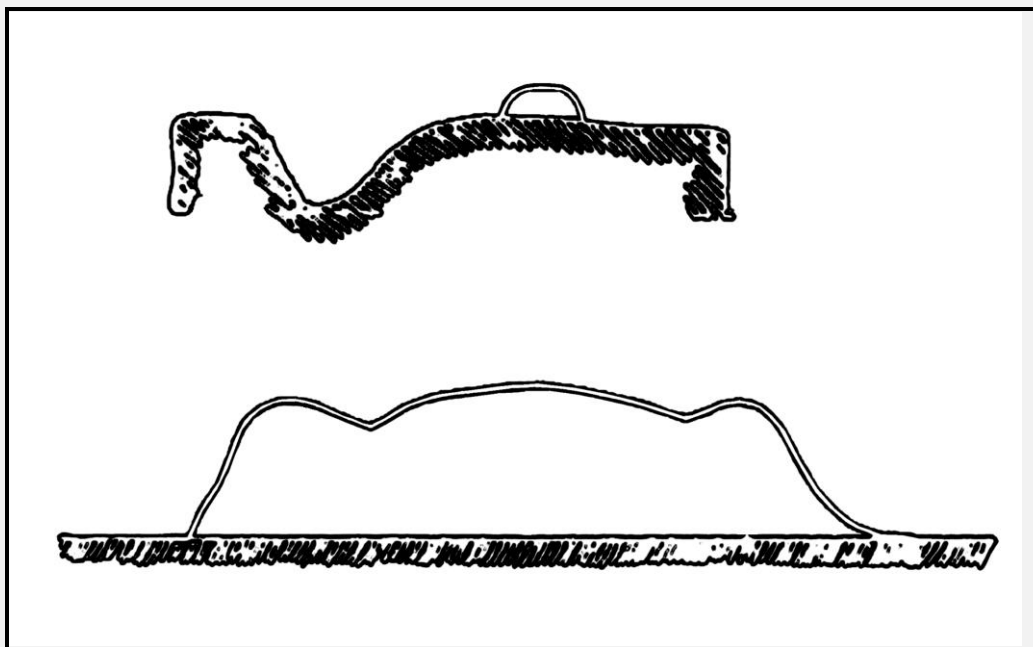
Archaeological evidence, as opposed to first-hand observations, also provides information. Thomas Jefferson actually conducted the first scientifically-correct excavation of a mound sometime before 1781. Jefferson remarks that Virginia, his home and the location of his excavation, "lacks the lengthy earthen embankments of the Western territories and the large flat-topped pyramids of the South, although it has an abundance of burial mounds." Jefferson concludes that the skeletal remains and their arrangement within the mound indicate three things: First, the bones rarely show signs of injury caused by violence; this tells us this is not the site of some prehistoric massacre. Second, remains of men, women and children of mixed ages are included, not only warriors, so this was not a battleground. And third, the bones were arranged regularly, in different layers over a long period of time, so this was not the site of a mass burial related to some singular catastrophe (Jefferson 1955:97-100).

Further testimony comes with the founding of the Smithsonian Institution in 1846. The first secretary of the Smithsonian, Joseph Henry, was charged with the mission of increasing and diffusing knowledge among men. He initiated this mission by publishing *Ancient Monuments of the Mississippi Valley*, authored by E.G. Squier and E.H. Davis, who conducted a thorough survey of earthworks scattered throughout Ohio and studied reports of other surveys of surrounding areas.

They proposed a classification system divided into two main classes: *Enclosures*, groups of embankments or walls and *Mounds*, tumuli or hills. They further divided *Enclosures* into enclosures for defense, sacred enclosures, and miscellaneous enclosures and *Mounds* into mounds of sacrifice, temple mounds, and mounds of sepulture or burial. They also reported the work of others in the field, including that of Colonel Charles Whittlesey, who theorized something that would prove to be correct when science caught up with speculation---that there were two different mound-building cultures in the area (Silverberg 1968:113-117)(**Figure 4**).

As we will see, there were at least three main mound-building periods, each composed of multiple cultures or groups. The mounds built by these cultures do not comprise a few isolated instances of random or circumstantial building activity, but are major components of the list of megalithic structures noted in world history. Consider that the earliest of the mounds date to at least 1,000 years before the Great Pyramids were built in Egypt; 1,500 years before Stonehenge (an

astronomical sun calendar in Britain) and 2,000 years before the Olmecs (the earliest known Mesoamerican civilization) built pyramids in Central America (Gilbert 1998:346). Indeed, according to Robert Connelly, an archaeologist at Poverty Point, Watson Brake is more than just the earliest mound site in North America, "It also lays to rest the notion that Mesoamerican cultures, such as the Olmecs...were the source for monumental architecture in North America. People in northeast Louisiana were 'doing Olmec' before the Olmecs" (Spotts 1997).



**FIGURE 4. PROFILES OF TWO DISTINCT MOUND TYPES,
BOTH LOCATED IN CLERMONT COUNTY, OHIO.**
(Whittlesey 1852:Plate III, No.1)

So, who were these people? Based on the cultures extant at the time, Americans of the late 1700s had concluded that Indians could not have been the creators of the mounds. Therefore, the idea of a "Lost Race" gained a foothold on the public's imagination. Silverberg says:

The discovery of the mounds of North America provided a link to Herodotus and Homer, to Rome and the Vikings, to England's barrows, to all the mounds of Europe and Asia.... In a stroke, North America was joined to the world's past, and no longer floated tradition-free [sic] and timeless.... The builders of the mounds were transformed into the Mound Builders, a lost race of diligent and gifted artisans, who had passed across the scene in shadowed antiquity [Silverberg 1968].

Major John W. Powell, the founder of the Smithsonian Institution's Bureau of American Ethnology, somewhat regretfully demythologizes the idea and stated:

It is difficult to exaggerate the prevalence of this romantic fallacy, or the force with which the hypothetic "lost races" had taken possession of the imaginations of men. For more than a century, the ghosts of the vanished nation have ambuscaded in the vast solitudes of the continent, and the forest-covered mounds have been usually regarded as the mysterious sepulchres of its kings and nobles. It was an alluring conjecture that a powerful people, superior to the Indians, once occupied the valley of the Ohio and the Appalachian ranges, their empire stretching from Hudson Bay to the Gulf, with its flanks on the western prairies and the eastern ocean; a people with a confederated government, a chief ruler, a great central capital, a highly developed

religion, with homes and husbandry and advanced textile, fictile, and ductile arts, with a language, perhaps with letters, all swept away before an invasion of copper-hued Huns from some unknown region of the earth, prior to the landing of Columbus... [Powell 1881].

Perhaps there may have been an even more compelling element at work than the fevered imaginations of Americans. 1890, just a few years after Powell's annual report was published, was the year of the Great Land Race --- the parceling-out of vast reaches of the prairie. These were the last large tracts of land available to settlers avid for land. Could the presence of the Native Americans in these territories have been a factor? Silverberg says:

Some deep national need was fulfilled by the myth of the Mound Builders and debunkers were unpopular...The people of the United States were then engaged in undeclared war against the Indians who blocked their path to expansion, transporting, imprisoning, or simply massacring them; and as this century-long campaign of genocide proceeded, it may have been expedient to conjure up a previous race whom the Indians had displaced in the same way. [Silverberg 1968:57]

The possibility that Americans would seize on this myth to rationalize a desire for expansionism corresponds to currently accepted historical theory. It seems entirely possible that the "Lost Race" is, indeed, a myth. By default, therefore, the Native Americans become the most viable candidates for being the Mound Builders.

A further exploration of the classifications of mound-building cultures may shed light on the question.

Gordon Willey presents a more current configuration than the mounds and enclosures defined by Squier and Davis. Interestingly, the idea of multiple cultures bearing responsibility for the construction of the mounds, first theorized by Squier and Davis in the mid-1800s, is supported and expanded by Willey in 1966 (Willey 1966:269). **Table I** shows how Willey classified mound builders into four main time periods: Paleo-Indian, Archaic, Burial Mound, and Temple Mound (Willey 1966:Chart I). An in-depth look at the main cultures of these time periods will include examples of each of the major mound types.

The earliest people, the Paleo-Indians, did not build mounds, but may have been the ancestors of later mound builders. The earliest artifacts of human occupation of the North American continent are spear points found embedded in a fossilized bison skeleton in New Mexico in 1926. These artifacts were dated to about 7000 B.C., near the end of the last Ice Age. These people came from Asia over a land bridge to Alaska and drifted south and east into the high plains, west of the Rocky Mountains and south into Central and South America. With climate changes due to the end of the Ice Age, the land bridge was covered again by the Bering Strait. These Paleo-Indian hunters of bison, mammoths, and saber-toothed tigers, faced a dramatic decrease in rainfall, and, as a result, the extinction of the animals they relied upon. Their way of life ending, groups scattered all over the continent, developing different lifestyles, each adapted to their specific environments (Oswalt 1988:12,13).

The Archaic period was the first period during which mounds were built. Watson Brake and Poverty Point are both examples of this time period. Gordon Willey does not consider the Archaic people to be mound builders (Silverberg 1968:227). Silverberg said, "The artifacts found at Poverty Point are mostly of Archaic type; the site would be pure Late Archaic but for the presence of those astonishing earthworks." In other words, Silverberg feels that if there are earthworks, then the site cannot be of the Archaic period. He describes these earthworks as, "...a set of six concentric octagons totaling three-quarters of a mile across. The largest mound measures 700 to 800 feet at the base and rises 70 feet." (Silverberg 1968:257)

Background: The Etowah Mound "birdman."

TABLE I

A Chronological Chart of the Prehistory of Eastern North America by Willey

DATE	PERIOD	TRADITION	CHARACTERISTICS
20,000(?) – 8,000 BC (Glacial Era)	Paleo-Indian Early Middle Late	Big-game Hunting Early Middle Late	Nomadic hunting cultures; stone weapons; knowledge of fire
7,000 – 1,000 BC	Archaic Early Middle Late	Archaic Early Middle Late	More or less permanent village life; with some seasonal travel; improved weapons; greater reliance on fishing and food-gathering
1,000 BC – 700 AD	Burial Mound I Burial Mound II	Woodland Early Middle Late	Farming cultures with expanded population and more complex social structure; use of pottery; burial mounds
700 AD – 1700 AD	Temple Mound I	Mississippian Early Middle Late	Stockaded towns and agricultural life; fine pottery and artwork; temple mound structures.
<p>“A <i>period</i> is a fixed span of time during which a given tradition was dominant; a <i>tradition</i> is a broadly defined way of life practiced more or less the same way by different cultures at different times. A <i>culture</i> is a specific social group with a distinct way of life. The Hopewell and Adena cultures existed during the Burial Mound Period and were representative of Woodland tradition; many specific cultures — Tchefuncte, Poverty Point, Dalton, etc. [sic] — existed in the Mississippi Valley and southeastern United States during the Temple Mound Period and exhibited the characteristics of the Mississippian Tradition.”</p>			

Watson Brake now provides us with convincing evidence that people of the Archaic culture were builders of enclosures and mounds. The site is firmly dated by multiple methods and is well within the Archaic time period. Therefore, if Watson Brake, the earlier of the two sites, is Archaic, then so must be Poverty Point. It is now obvious that these enclosure mounds were the earliest type of mound built, and they were built during the hunter-gatherer period. Although there is still no evidence to explain the purpose of these structures, surely they must have been of vital importance. There had to be good reason for construction, to justify such a huge expense of time and manpower by people with a subsistence economy.

The next period presented by Willey is the Woodland period, named for the primal forests of much of eastern North America (Willey 1966). There were two main cultures during this period, the Adena and the Hopewell. The two somewhat overlapped in time and in dominance in different geographical areas. The Adena were most influential from approximately 1000 B.C. to 1 A.D., and the Hopewell from 1 A.D. to 700 A.D. (Grave Creek Mounds State Park Homepage 1998). Both cultures built mounds, primarily burial mounds, with some enclosures. Attention to the dead was an important factor in both cultures, with the later Hopewell developing a focus on elaborate grave goods in massive quantities. Beginning with the Adena, and becoming more dramatic during the progression to Hopewellian times, trade with distant groups—some as far away as Mexico—became highly advanced. A political system began with, perhaps, a clan hierarchy and eventually became an intricate form of government, extending to more and more widely-spread areas under Hopewell influence (Oswalt 1988:16).

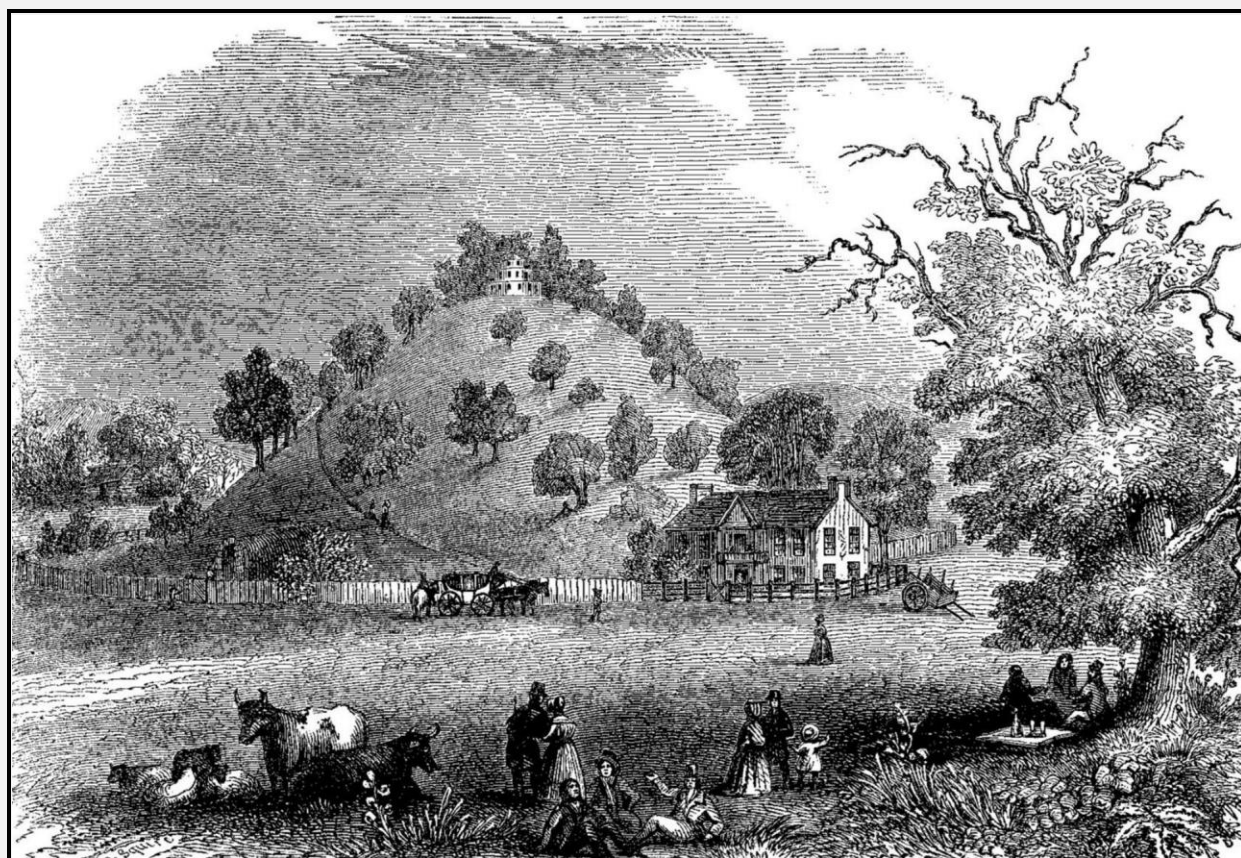


FIGURE 5. GRAVE CREEK MOUND
(Squier and Davis 1882:Figure 56)

Grave Creek Mounds State Park in West Virginia preserves a mound of some 60,000 tons of earth; the largest conical burial mound in the United States (**Figure 5**). The mound and two forts were the main parts of a typical Late Adena town, laid out in a triangular formation. According to the *History of Marshall County West Virginia*:

The mound construction probably began with the death of a very important person. There is no way to know who this person was—great warrior, chieftain, or religious leader. We know that 25 to 30 years later another important person died and his remains were placed in an 8 x 12 foot vault on the top of the mound when it was approximately 35 feet high. The natives then covered this with dirt until the mound reached its maximum height [Marshall County Historical Society 1984:6].

Burial mounds were not the only types of mounds built by these cultures. Perhaps the most spectacular earthwork of all is the Great Serpent Mound near Locust Grove, Ohio. It is an earthen effigy 1348 feet (411 m) long x 20 feet (6 m) wide x 2 (61 cm) to 6 feet (1.8 m) high (J. Paul Getty Trust 1997). The visual impact of the size of this monument is difficult to describe (**Figure 6**).

These effigies are comparable to the Archaic earthworks of Watson Brake and Poverty Point. The purpose of these structures was probably mystical or religious in nature. However, modern investigators remain puzzled and frustrated by the lack of more specific information about the belief systems or rituals of the Mound Builders (Silverberg 1968:249).

The archetype of mound-building cultures occurred during the Temple Mound Building period. The Cahokia mounds near St. Louis, Missouri are the best-preserved examples of the several large cities of the Mississippian culture. One hundred and twenty mounds formed a community of 20,000

people. Cahokia was first settled about 700 A.D. and reached its peak between 1100 and 1200 A.D. Three main types of mounds are surrounded by a stockade of 20,000 logs. The first type of mound is represented by Monks mound (**Figure 7**).

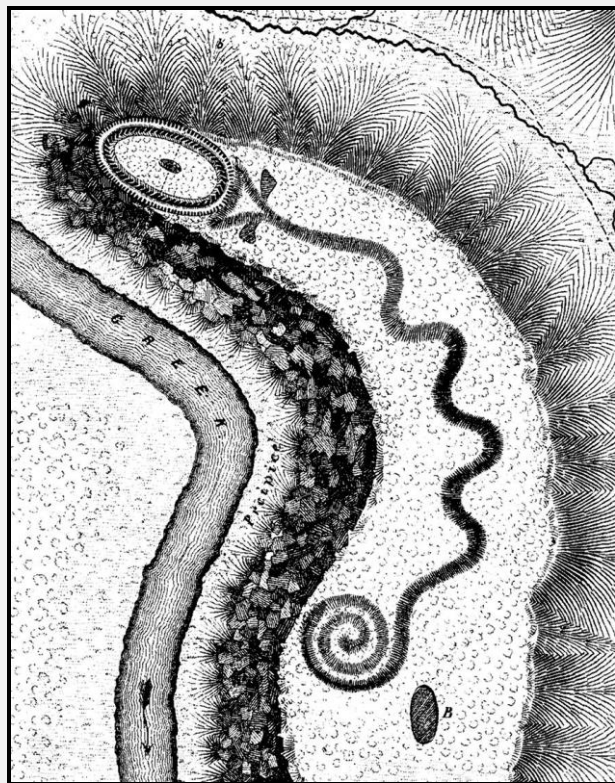


FIGURE 6. GREAT SERPENT MOUND.
(Squier and Davis 1882)

"Monks Mound is the largest prehistoric earthen construction in the New World... Its base covers 14 acres and it stands 100 feet high. There the principle ruler lived, conducted ceremonies, and governed the city," states literature provided by the Cahokia Mounds State Historic Site (Illinois Historic Preservation Agency 1997:2).

The unimaginatively titled "Mound 72" is an example of the second type of mound, a burial mound. But this is a burial mound of a different nature, than those of the Woodland period. Over 300 ceremonial burials of young women, ages 15 to 25, in one mass grave suggest that human sacrifice was part of the rites for burial of the elite or rulers (Illinois Historic Preservation Agency 1997:2). According to John Hale of the University of Louisville during a telephone interview, it is believed that some form of sun god worship, perhaps related to the Central American religions of the time, accounted for this change in the previous burial customs (John Hale, personal communication 1998).

The third type of mound studied by archaeologists at Cahokia lends support to this opinion. Five circular earthworks, termed "Woodhenges," comprise what are thought to be sun calendars, similar to Stonehenge in England. They were used to calculate the seasons and the proper dates of ceremonial rites to be performed in relation to the progress of the sun through the sky (Illinois Historic Preservation Agency 1997:3).

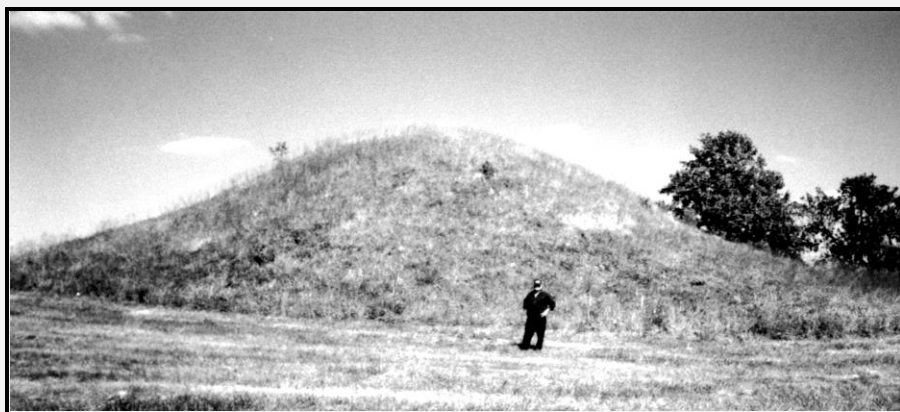
Cahokia was an incredible city, as large and complex as many small towns. But by 1400 A.D., it had been totally abandoned. It is inconceivable that a civilization, such as this, could disappear without a trace, but no definite cause has been determined. There are, according to Hale, some hypotheses that several strange, somewhat primitive earthen structures, such as Fort Hill in Ohio, may indicate a beleaguered population, retreating to hilltop defenses at the end of an ultimately unsuccessful campaign against an unknown invader (John Hale, personal communication 1998). There also are indications that the society itself may have been the cause of its own doom. Depletion of natural

resources (such as the use of 20,000 trees used in the stockade at Cahokia and of soil, game, and water), as well as, pollution of the environment, led to epidemic disease and weakened the culture, making it vulnerable to encroachment by neighboring groups. There is also speculation that the growing distance between the elite and the commoner may have led to revolt (Illinois Historic Preservation Agency 1997:1).

**FIGURE 7. SKETCH
OF MONKS MOUND.**



The fate of Cahokia remains a mystery. What is certain is that it was the zenith of the mound-building tradition, a major city with outposts and trading networks extending for hundreds of miles. Major Power's description of the range of the mound builders, from Hudson Bay to the Gulf and from the prairie to the Atlantic was not an exaggeration. It is certain that only highly-complex societies could build such extensive earthworks and mounds.

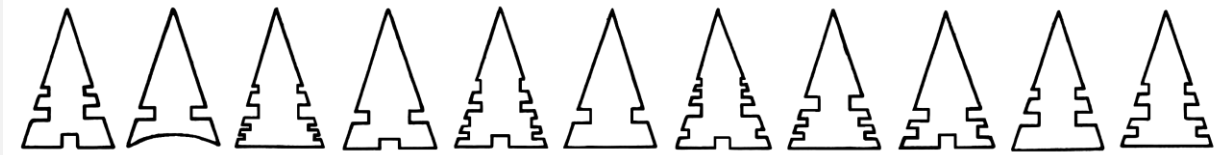


FOAS member, Mark Milliner, stands beside Roundtop, Mound 59 of the Cahokia group.

Let us now review the evidence for the identity of these mound builders---Native American Indians or Mythic Lost Race? We have heard the testimony of a number of early explorers and experts. Mound-building cultures were observed by the earliest European explorers in the 1500s, but were gone within 200 years. Another site that was visited by de Soto, according to seventeenth century ethnographer, Cyrus Thomas, was the Etowah mounds in Georgia. The site was abandoned by 1773, when later explorers mapped the same area (Thomas 1884). We know that contact with the earliest Europeans included contact with European diseases, decimating populations and disrupting the existing civilizations. Undoubtedly, the impact of disease at least partially accounts for the disappearance of the people at Etowah, as well as, at other sites, within this time period.

We know there were several types of mounds with different functions that were used by a number of increasingly complex cultures over a period of time, dating from 7000 B.C. to 1400 A.D. Burial, ceremonial, and monumental functions were served, utilizing extensive trade networks and governing systems. We know that even cultures still in the hunter-gatherer phase built mounds of no small magnitude and that later cities of the Mississippian period rivaled modern cities.

Finally, we know there were very definite reasons why later Americans may have needed to create a mythic Lost Race---to rationalize the attitudes and actions that modern society now recognizes as genocide; committed, because of greed and prejudice, against a culture devastated by disease, displacement and destruction. The conclusion that no Lost Race existed and that the mounds were built by the ancestors of today's Native Americans is inescapable. The questions that remain are ones that continue to fascinate and tantalize archaeologists, sociologists, and many members of the general public: What were the Mound Builders really like and why did they build the mounds?

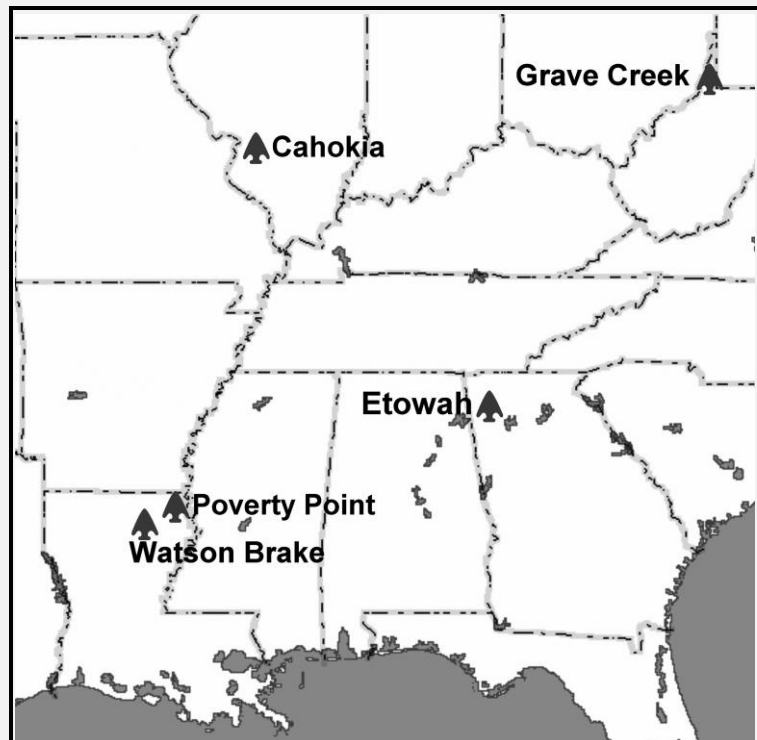


Projectile point styles, uniquely Cahokian.



Replica of the Birdman Tablet, found at the Cahokia Mounds.

Map of archaeological sites discussed in this article.



REFERENCES CITED

Atwater, Caleb

- 1820 Description of the Antiquities Discovered in the State of Ohio and other Western States. *American Antiquarian Society, Archaeologia Americana, Transactions and Collections* 1:209. Philadelphia.

Garcilaso de la Vega

- 1951 *The Florida of the Inca*. Translated by John Grier Varner and Jeannette Johnson Varner. University of Texas Press, Austin, Texas.

Gentleman of Elvas

- 1907 The Narratives of the Expedition of Hernando de Soto. In *Spanish Explorers in the Southern United States 1528-1543*, edited by F.W. Hodge and Theodore H. Lewis, pp. 134. Scribner's Sons, New York.

Gilbert, R.

- 1998 *Living With Art*. 5th ed. McGraw-Hill, New York.

Hale, John, personal communication 4 February 1998.

Illinois Historic Preservation Agency

- 1997 Cahokia Mounds State Historic Site. Illinois Historic Preservation Agency, Springfield, Illinois.

J. Paul Getty Trust

- 1997 Art and Ecology: Art Everyday. Great Serpent Mound. Electronic document, <http://www.getty.edu/artsednet/resources/Ecology/Earth/everyday.html>, accessed January 27, 1998

Jefferson, Thomas

- 1955 *Notes on the State of Virginia*, edited by William Peden. University of North Carolina Press, Chapel Hill, North Carolina.

Marshall County Historical Society

- 1984 *History of Marshall County West Virginia*. Marshall County Historical Society, West Virginia.

Menon, Shanti

- 1998 Archaeology Watch: The Earthmovers. *Discover*. February 19(2):30.

Oswalt, W. H.

- 1988 *This Land Was Their Land: A Study of North American Indians*. 4th ed. Mayfield, Mountain

View, California.

Powell, John W.

- 1881 On Limitations to the Use of Some Anthropological Data. Smithsonian Institution Bureau of Ethnology, First Annual Report, 1879-80, pp 71-86. Smithsonian Institution, Washington, D.C.

Pringle, H.

- 1997 Oldest Mound Complex Found at Louisiana Site. *Science* 277:1761.

Saunders, Joe W., Rolfe D. Mandel, Roger T. Saucier, E. Thurman Allen, C. T. Hallmark, Jay K. Johnson, Edwin H. Jackson, Charles M. Allen, Gary L. Stringer, Douglas S. Frink, James K. Feathers, Stephen Williams, Kristen J. Gremillion, Malcolm F. Vidrine, and Reca Jones

- 1997 A Mound Complex in Louisiana at 5400-5000 Years Before the Present. *Science* September 19 277:1796-1799.

Silverberg, Robert

- 1968 *Mound Builders of Ancient America: The Archaeology of a Myth*. New York Graphic Society, Greenwich, Connecticut.

Spotts, Peter N.

- 1997 Dirt Mounds Yield Clues to Antiquity. *The Christian Science Monitor*. September 9:1.

Squier, Ephraim G., and Edwin H. Davis

- 1881 *Ancient Monuments of the Mississippi Valley*. Smithsonian Contributions to Knowledge No.1. Smithsonian Institution, Washington, D.C.

Thomas, Cyrus

- 1891 *Report on the Mound Explorations of the Bureau of Ethnology*. In Twelfth Annual Report of the Bureau of Ethnology, 1890-1891, pp. 17-742. Washington, D.C.

Walker, Amélie A.

- 1998 Earliest Mound Site. *Archaeology*. January/February 51(1):1.

West Virginia Archives and History

- 1997 Grave Creek Mounds State Park. Electronic document, <http://www.wvculture.org/sites/gravecreek.html>, accessed January 28, 1998.

Willey, Gordon R.

- 1966 Archaeology of the Florida Coast. *Smithsonian Miscellaneous Collections: An Introduction to American Archaeology*, vol.1. Prentice Hall, Englewood Cliffs, New Jersey.

SUMMARY REPORT OF EXCAVATIONS AT THE CLARK'S POINT SITE

By

ANDREW A. WHITE

INDIANA UNIVERSITY-PURDUE UNIVERSITY

ARCHAEOLOGICAL SURVEY

FORT WAYNE, INDIANA

The Clark's Point site (12-CL-3) is one of several large Middle/Late Archaic midden sites near the Falls of the Ohio in Clark County, Indiana. In many respects, these Falls sites are comparable to those in the Green River region of Kentucky (e.g., Indian Knoll). Although E. Y. Guernsey, an associate of Eli Lilly, conducted excavations at the site in the 1930s, the results of his work have not been completely reported. Subsequent investigations have been more limited, and a modern understanding of the site is lacking.

In October and November of 2002, the Indiana University-Purdue University at Fort Wayne Archaeological Survey (IPFW-AS) excavated a 1.8 m by 2.4 m unit adjacent to the reconstructed George Rogers Clark cabin that now sits on the site. This unit will serve as the footer for a chimney and fireplace that will be added to the cabin. Many volunteers from the Falls area assisted during the excavations, and the IPFW-AS donated its field and travel costs to the project.

In agreement with the Division of Historic Preservation and Archaeology, Indiana Department of Natural Resources, the unit was excavated to approximately one meter below the current ground surface. The north half was excavated in 20 cm levels to expose the deposits in profile. Flotation samples were taken within the stratigraphic zones that could be discerned in the profile wall. The south half was then excavated, also in 20 cm levels. Auger cores were excavated through the floor of the unit to determine the total depth of the deposits.

The midden in this portion of the site is composed mainly of sediment and burned/broken rock. Mussel shell is a relatively minor constituent. Recent disturbance/deposition was evident in the upper portions of the unit, but was mostly limited to within 30 cm of the modern ground surface. Although there were some indications of stratigraphy within the prehistoric midden (there was variability in the size and amount of rocks and mussel shell, as well as the texture of the sediment), it was difficult to confidently define different zones within the confines of the unit.

In addition to shell, broken rock, and lithic debitage, the midden in this area contained a variety of stone and bone tools, including stemmed Late Archaic hafted bifaces (dating to approximately 3000-1700 B.C.), bone awl and needle fragments, and a bone atlatl hook fragment. Analysis of artifacts and botanical materials from the level excavations and the flotation samples, as well as analysis of the sediment data collected from the profile walls, will help to answer questions about the stratigraphy at the site and give us some indication of how the deposits were formed and what role the site may have played in Middle/Late Archaic settlement and use of the area. Artifacts and samples from the excavation are currently being processed. Following analysis, a full report of the excavation will be available on the IPFW-AS website (<http://www.ipfwedu/archsurv/home.html>).



The arrow points to the excavation site.

FOAS members help to move the Clark's Point project forward by digging...



Opening the excavation area.



View from the North side.



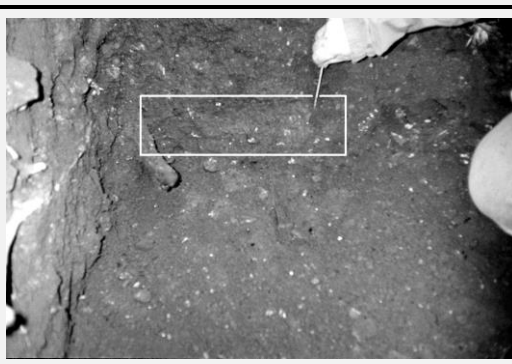
Dig, dig, dig!



Are we having fun yet?



Where did everyone go?



Anne Bader points out a red ochre feature, roughly outlined by the white rectangle.



View of the Ohio River
from the GRC cabin.

...and sifting.



FOAS REGISTRATION FORM

Name: _____

Street Address: _____

City, State: _____

Zip Code: -

Email Address _____ @ _____

Phone Numbers: -- Home
(Include Area Code)

-- Other

What is your age group? ☐ 6-12
 ☐ 13-18
 ☐ 19-25
 ☐ Over 25

How would you describe yourself? ☐ Professional Archaeologist
 ☐ Amateur/Collector
 ☐ Student (High School)
 ☐ Student (College)
 ☐ Other Professional
 ☐ Interested Public

Do you have prior archaeological experience? ☐ None
 ☐ Occasional Volunteer
 ☐ Some Professional Training

Would you be interested in serving as an FOAS officer? ☐ Yes
 ☐ No

Any additional information or comments?
