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BLACKSMITH SHOPS IN CATAWBA, VIRGINIA

**ARCHAEOLOGICAL AND HISTORICAL
INVESTIGATIONS**

Thomas S. Klatka and John R. Kern

Roanoke Regional Preservation Office

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by

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Roanoke Regional Preservation Office
Virginia Department of Historic Resources

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Abstract

Blacksmiths and their shops were once common features of all communities. During the nineteenth and twentieth centuries the process of industrialization and its many technological innovations abruptly supplanted blacksmithing. By the mid-twentieth century, blacksmith shops quickly disappeared from sight and memory. Today, few people remember the integral role of blacksmiths in early communities, and blacksmith shops are now uncommon features on the landscape.

The Roanoke Regional Preservation Office of the Virginia Department of Historic Resources conducted a thematic investigation of blacksmiths and their shops in the rural Catawba Valley of northwest Roanoke County, Virginia. Archaeological and historical investigations were conducted on a sample of seven blacksmith shops. The sites represent both commercial and farm shops which operated from circa 1850 through circa 1950. These investigations were undertaken to develop a better understanding of the material similarity and variability between blacksmith shops and to chart the diachronic changes in the shops as blacksmithing was transformed during the process of industrialization.

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Introduction

Blacksmiths, like other artisans, were once a necessary component of all communities. By the 1940s, however, blacksmithing had been abruptly supplanted by the process of industrialization and its many technological innovations. Blacksmith shops, once a common and ordinary feature on the landscape, quickly disappeared from sight and memory. Few people now remember the integral role of blacksmiths in early communities, and blacksmith shops are no longer common features on the landscape.

As federal and state legislation regarding historic preservation developed over the last thirty years, cultural resource management has contributed greatly to the recordation of historic material culture and to our understanding of past cultural and historical processes. Perhaps due to their seemingly insignificant role in larger developmental processes, blacksmiths and their skills and shops have received little study.

With the growth of social history, blacksmiths and their methods and products have gained the attention of historians (e.g., Lasansky 1980). Archaeologists have also developed a recent interest in the study of the material remains of blacksmiths (e.g., Light 1984, 1987; McBride 1987; Harmon 1992).

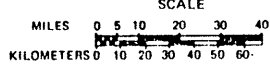
This report represents the results of a thematic investigation of blacksmiths and their shops in the rural Catawba Valley of northwest Roanoke County (Figure 1). Seven blacksmith shops, ranging from standing structures to deteriorating structures and

COMMONWEALTH OF VIRGINIA

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AND TRANSPORTATION INFORMATION SERVICES DIVISION

VIRGINIA BASE MAP



1 MILE EQUALS 1.6093 KILOMETERS

- STATE LINE
- COUNTY LINES
- CITY LIMITS

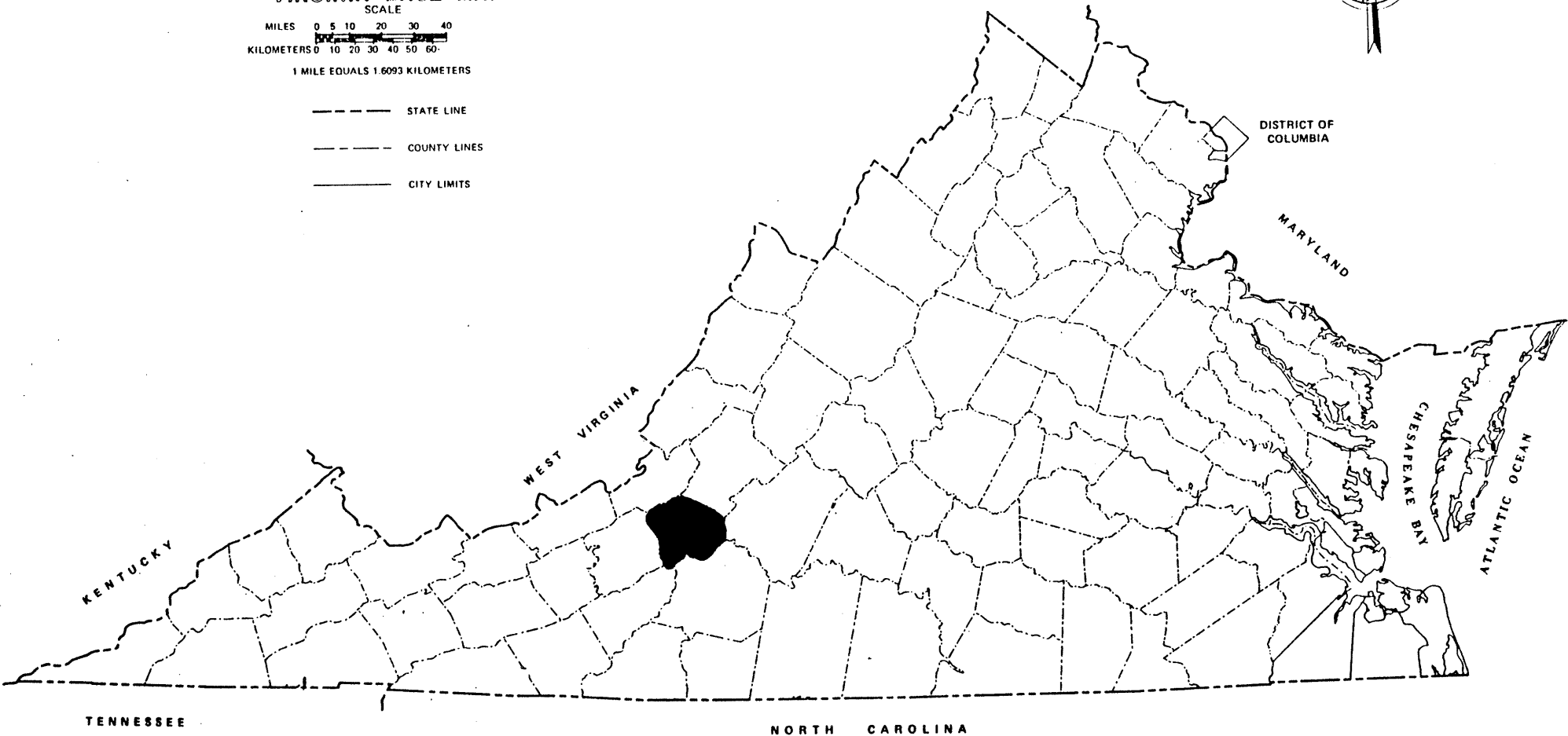
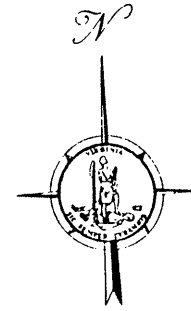


Figure 1. Index map illustrating the location of Roanoke County.

archaeological sites, were recorded and studied during this project (Figure 2).

A field survey of Catawba Valley's standing structures was conducted in 1989 and 1990 pursuant to the completion of a Historic District Preliminary Information Request Form. The standing structure survey was completed by Daniel Pezzoni, an architectural historian formerly with the Roanoke Regional Preservation Office. The archaeological field survey and site testing for this report was initiated in June 1991 and completed during November and December 1991. Historical research for this study was initiated in the spring of 1991 and was completed during the winter of 1991 - 1992. John Kern conducted historical research, directed historical research by Roanoke College intern Nicole Martin, wrote the historic context chapter and collaborated on the research methodology and site specific historic research. Thomas Klatka conducted historical research, archaeological research, oral history interviews, collaborated on the research methodology and site specific historic research and prepared other sections of this report.

All of the research notes, artifacts and photographs generated during this study are curated by the Virginia Department of Historic Resources. Site inventory forms documenting the standing structures and archaeological sites are filed with the Virginia Department of Historic Resources in Richmond, and with its branch office in western Virginia, the Roanoke Regional Preservation Office.

Research Methodology

Historical Research Methodology

To establish the earliest patterns of transportation and settlement, the project historian examined eighteenth and early-nineteenth century maps, road orders and land patents. To establish a comprehensive overview of mid-nineteenth-to-early-twentieth century land ownership in the study area, the project historian directed Roanoke College intern Nichole Martin who referred to Roanoke County Land Books to transcribe the names of all property holders in the study area at ten year intervals from 1840 to 1910. Recorded information included the name of each property holder, the acreage of the property, locational information on the distance of the property from the county courthouse, the property drainage system (North Fork of the Roanoke River or Catawba Creek), the value of the land holding, the value of buildings on the land and the residence of property holder (whether or not the property holder lived in the county and on the drainage system of the land he or she owned). This information is abstracted in Table 1.

To learn about agricultural production in the study area, the project intern examined the Roanoke County manuscript agricultural census for 1850, 1870 and 1880, and recorded information on all study area landowners identified in the Land Books. This information is abstracted in Table 2.

To establish a comprehensive demographic picture of study area occupants (tenants and renters as well as landholders and their

households), the project historian and intern examined Roanoke County manuscript census records for 1870 (the first year that Catawba was listed as a separate census district), 1880 (1890 census records are not extant) and 1900. This information is abstracted in Tables 3 and 4.

The project historian also examined Roanoke County manuscript census records from 1850 to 1910 to determine all blacksmiths listed in the study area. The blacksmith's names were cross-referenced with land book records to determine if they were property owners. The occupations of the five households listed in the manuscript census on each side of each blacksmith were also recorded. This information is presented in Table 5.

For site specific research, relevant land book and manuscript census research was supplemented by additional archival records and oral accounts. The project historian examined pertinent Works Progress Administration Historical Inventory records for the study area. The project archaeologist reviewed Roanoke County Deed Books and Appraisal and Inventory Records for each site and manuscript census records for 1910 and 1920. Property owners and other local residents were interviewed by the project archaeologist.

Archaeological Research Methodology

Exteriors of standing structures were photographed and mapped, and architectural features were noted. Interiors of the standing structures were also documented with photographs and scaled drawings. The land areas immediately surrounding the sites were

examined for additional surface evidence. All landscape features, structural evidence and artifacts visible on the ground surface were mapped and noted.

Archaeological field investigations were conducted to verify the site locations provided by local residents. Following site verification, the goals of subsurface testing at the sites were directed at establishing site boundaries and identifying the specific location of the shop within the site. A secondary goal of subsurface testing was the identification of probable activity areas in and around the blacksmith shops.

Based upon previous archaeological investigations of blacksmith shops (e.g., Light 1984; Light and Unglik 1987; McBride 1987) the overall size of each site was expected to be small and boundaries were expected to be easily defined. Therefore, a systematic unaligned subsurface testing methodology was used to investigate the sites. Two variations of this testing methodology were evaluated. At the Johns' and Anderson blacksmith shops, shovel testing was conducted at intervals of ten feet along grid lines which were also placed at intervals of ten feet. At the John-Sheppard and Woods sites, shovel test pits were placed at intervals of ten feet with one axis of the grid system compressed at intervals of five feet.

All shovel test pits were approximately one foot in diameter, and were excavated until culturally sterile soil was reached. All excavated soil was screened through one-quarter inch mesh hardware cloth. Subsurface soil profiles in each shovel test pit were

measured and mapped.

Subsurface integrity at each site was assessed through the excavation of two formal excavations units. All of the excavation units were excavated by trowel, and all excavated fill was screened through one-quarter inch mesh hardware cloth. Documentation of the excavation units was accomplished with photographs and scaled drawings of the base and two sides of the units.

Additional information regarding research methods at specific sites is presented in the following discussions of the individual sites. This includes information regarding the collection of oral accounts, the documentation of standing structures and the field procedures at archaeological sites.

Historic Context

Introduction

The earliest Fry and Jefferson map of Virginia in the 1750s shows Catawba Creek as a principal western tributary of the James River beyond the Blue Ridge (Fry and Jefferson 1754). Catawba Creek became a significant transportation route for the first Euro-American settlers who began migrating west into the New River Valley in the mid-1740s. F. B. Kegley depicts "the Road up Catawba" as a road or trace that by around 1750 ran along the north side of Catawba Creek in what is now Roanoke County. To the west the road followed the headwaters of the North Fork of the Roanoke River and then crossed Drapers Meadows to follow Toms Creek to its confluence with the New River in what is now Montgomery County. To the east the road crossed Catawba Creek north of Tinker Mountain and then branched south and east to connect with the major road through the Great Valley that crossed the James River at Looneys Ferry and the Roanoke River near Big Lick (Kegley 1938: facing 176).

Kegley reports surveys on the headwaters of Catawba Creek during the 1740s and 1750s (Kegley 1938: 165-176), but settlement was interrupted by the French and Indian War, and land patents in the study area have not been traced past the creation of Botetourt County in 1769 and Montgomery County in 1775. By 1807 James Madison's map of Virginia shows a road from Catawba running north up McAfee Run to Craig Creek and thence east to the James River (Madison 1807). Still, the main trade route along Catawba Creek

ran west through Blacksburg, established in 1798, to the New River and ran east through Fincastle, established in 1772, and on to Buchanan, established in 1812 near Looneys Ferry on the James River. In the 1830s Mitchell described Buchanan as "at the head of boat navigation on James River" (Mitchell 1836: 347).

In 1838 the headwaters of Catawba Creek became part of Roanoke County, and settlers in the study area needed access to the county seat in Salem. That same year the Salem and New Castle Turnpike was incorporated by an act of the General Assembly. Gilmer's map of 1864 shows the route followed by the turnpike up Mason Creek, through Masons Cove, over Catawba Mountain and into the Catawba Valley where it joined the extant road to Craig Creek and New Castle, established in 1818 (Gilmer 1864). Even after completion of the Salem and New Castle Turnpike, natural topography dictated that most commercial traffic along the Catawba Valley in the study area followed the east-west Blacksburg and Fincastle Road.

In 1849 the General Assembly moved the boundary of Roanoke County west of the Catawba Creek drainage so that it included the headwaters of the North Fork of the Roanoke River. Hereafter the study area will be referred to as Catawba Valley even though a small portion of the land under investigation is drained by the North Fork.

Landholdings and Buildings

Land book research shows that over 50 landowners resided in Catawba Valley in 1850 and 1860, and over 70 resided there in 1880.

The average landholding per owner dropped from 200 acres in 1850 to 170 in 1880 while the average value of landholding per owner fluctuated from \$800 in 1850 to \$1,600 in 1870 and then dropped to \$850 in 1880. Land parcels with buildings increased in number from 46 in 1850, to 54 in 1870, to 72 in 1880 whereas the average value of buildings varied only slightly from \$320 in 1850 to \$370 in 1880. By 1900 Roanoke County Land Books recorded black as well as white landownership. In that year over 90 white landowners lived in Catawba Valley; white landholdings had dropped to an average of 130 acres and to an average land value of \$700. White-owned buildings in 1900 retained an average value of \$330 which reflected the average building values recorded over the last half of the nineteenth century. By 1900 about 20 blacks owned small parcels of land in Catawba Valley, with an average size of six acres and an average building value of \$12. See Table 1.

Agriculture

Land book and agricultural census research indicates that in 1850 about 40 landholders resided on farms in Roanoke County along the North Fork of the Roanoke River and Catawba Creek. The number of farms remained constant from 1850 to 1880. The number of improved acres of land increased from 3,800 in 1850 to a high of 5,600 in 1870. Corn and oat production was highest in 1850 at 10,000 and 6,800 bushels respectively; whereas wheat production was highest in 1870 at 8,300 bushels. Tobacco production was 7,300 pounds in 1850, 1,000 pounds in 1870, and 9,300 pounds in 1880. The

Table 1. Catawba Valley, Roanoke County: Landowners and Buildings 1850-1900.

Year	1850	1870	1880	1900: Whites	1900: Blacks
Resident Landowners	57	53	72	92	19
Absentee Landowners (Includes Heirs)	10	17	13	18	2
Average Acres/Landowner	202	195	171	131	6
Average Value of Landholding	\$881	\$1,592	\$846	\$695	\$12
Number of Land Parcels with Buildings	46	54	72	66	13
Average Value of Buildings	\$323	\$361	\$369	\$334	\$42

(Data compiled from Roanoke County Land Books by Nicole Martin, Roanoke College intern, 1991.)

most notable increase was recorded in forest production which rose from \$200 in 1870 to \$1,800 in 1880. See Table 2.

Occupations and Population

An examination of free and slave manuscript census schedules for the Catawba Valley in Roanoke County suggests that approximately 260 whites and 48 slaves, 16 percent of the aggregate population, lived on or near lands owned by resident property holders in 1850. Among the 260 whites there were 31 farmers, 4 laborers, 2 blacksmiths, 1 gunsmith, 1 mechanic, 1 peddler, and 1 retail merchant.

In 1870 Catawba became a supervisor's district and a census district for Roanoke County, and thereafter census returns can more accurately be equated with residence instead of landownership. An examination of the Catawba District census returns for Roanoke County from 1870 to 1900 indicates a constant number of households, approximately 160; a relatively constant proportion of black population, from 15 percent to 18 percent; and a total population which grew from 850 in 1870 to 1,032 in 1880 and then dropped to 813 by 1900. See Table 3.

Much of the loss of Catawba Valley population between 1880 and 1900 probably resulted from out-migration to the city of Roanoke, which incorporated in 1884 with approximately 1,000 inhabitants and grew rapidly thereafter as a major rail center to attain a population of 21,500 by 1900.

Tabulation of occupations listed in the Catawba Valley

Table 2. Catawba Valley, Roanoke County: Agricultural Census for Resident Property Owners 1850, 1870, 1880.

Census Year	1850	1870	1880
Farms	42	41	39
Total Acres	12,295	14,019	15,042
Improved Acres	3,846	5,625	4,531
Forested Acres	-	5,835	7,235
Value of Implements	\$3,846	\$4,398	\$3,045
Value of Livestock	\$15,576	\$26,859	\$16,025
Tobacco (pounds)	7,300	970	9,270
Indian Corn (bushels)	9,990	5,480	8,530
Oats (bushels)	6,790	4,690	3,313
Wheat (bushels)	4,716	8,304	3,174
Forest Products	-	\$200	\$1,758
Wages Paid	-	\$5,622	\$4,075

(Data compiled from Manuscript Census records by Nicole Martin, Roanoke College intern, 1991.)

Table 3. Catawba Valley, Roanoke County: Population 1870, 1880, 1900.

Census Year	1870	1880	1900
Households	160	161	162
Aggregate Population	850	1,032	813
Blacks (% of Aggregate)	129 (15%)	182 (18%)	149 (18%)

(Data compiled from Manuscript Census records.)

Manuscript Census returns from 1870 to 1900 demonstrate the predominance of an agricultural economy in the study area. More than 75 percent of those employed worked as farmers or farm laborers, 81 percent in 1870, 77 percent in 1880 and 76 percent in 1900. Domestic servants declined from 10 percent to 4 percent of the work force during the last three decades of the nineteenth century. Day laborers, not recorded in 1870, comprised 12 percent of the labor force by 1900; one of the day laborers worked as a wood chopper, and others may have been employed by portable lumber or stave mills which began to operate in the study area by 1900 (Mabel Hylton, personal communication). Between 8 and 5 percent of the labor force worked as artisans in the manufacturing and building trades from 1870 to 1900. Blacksmiths represented the most numerous category of artisans employed in 1880 and the second largest category in 1870 and 1900. See Table 4.

Blacksmiths

Manuscript Census records show that 12 different blacksmiths worked in Catawba Valley from 1850 to 1910. Two blacksmiths, Griffith John and his son John, worked the Johns' Shop in 1850. In 1860 Griffith John, his son John, and William Alls worked in the John shop. In 1870 John John worked the family shop on the North Fork; William Hincer worked a shop near William Woods' mill; and former slaves John Hackley and his son Eli worked a shop near the intersection of the Salem and New Castle Turnpike and the Blacksburg and Fincastle Road. In 1880 John John and his son

Table 4. Catawba Valley, Roanoke County: Occupations 1870, 1880, 1900.

Census Year		1870	1880	1900
Agriculture:	Farmer	106	134	112
	Farm Laborer	67	77	72
Artisan:	Blacksmith	4	4	3
	Cooper	6	3	
	Wagon Maker		1	
	Wheelwright		1	
	Machinist			2
	Miller	1	3	2
	Carpenter	1	4	4
	House Painter			1
	Shoemaker	2	1	
	Harness Maker		3	
Retail:	Merchant	2	4	2
	Clerk in Store		1	
	Hotel Keeper		1	2
	Hotel Clerk		1	
	Lumber Dealer		1	
Domestic:	Servant	21	9	3
	Cook		5	1
	Waiter		1	
	Washer Woman			4
	Gardener			1
	Nurse			1
Professional:	Doctor	2	1	
	Clergyman	1		2
	Teacher		10	2
Other:	Day Laborer		7	28
[Total Occupations]		[213]	[272]	[242]

(Data compiled from Manuscript Census records.)

George worked the John Shop on the North Fork; Hackley worked his own shop near the Catawba crossroads; and Joseph Hellums worked a shop near Woods' mill. In 1900 Joel Croy worked his own shop on the North Fork; John Moore apparently worked a shop on the North Fork; and Samuel Vandergrift worked a shop near the Catawba crossroads. By 1910 Joel Croy worked his shop on the North Fork; John Moore apparently worked a shop near James Custer's store between Woods' mill and the Johns' Shop; and William Anderson worked his own shop near the Catawba crossroads. See Table 5.

This summation demonstrates that between 1850 and 1910 there was always at least one blacksmith shop in the study area at the headwaters of the North Fork of the Roanoke River. There was a blacksmith shop near the Catawba crossroads from 1870 to 1910, and there was always at least one additional shop on Catawba Creek west of the Catawba crossroads during the years from 1870 to 1910.

The Johns, John Hackley, Croy and Anderson each owned their own shops in Catawba Valley, and each worked their shop for more than a decade; (William Anderson, first enumerated by the 1910 census, continued to work his shop until around 1940). Alls, Hincer, Hellums, Vandergrift and Moore were renters; of the renters only Moore is recorded as working in the study area for more than one census enumeration.

The tabulation of Catawba Valley blacksmiths and the occupations of their neighbors shows that other artisans often lived near the blacksmith shops. A gunsmith, a shoemaker and a machinist lived and presumably worked close to the John shop from

1850 to 1880. Later in 1900 and 1910 a machinist and two carpenters worked on the North Fork near Joel Croy's shop. A blacksmith shop operated near Woods' mill in 1870 and 1880. And a miller, a cooper and a stonemason worked near the blacksmith shops at the Catawba crossroads in 1900 and 1910. See Table 5.

Of course, all of the Catawba blacksmiths lived among farmers who worked land throughout the valley. There was one blacksmith for every 27 farmers enumerated in 1870; one blacksmith for every 34 farmers in 1880; and one blacksmith for every 37 farmers recorded in Catawba Valley in 1900. See Table 4.

Table 5. Catawba Valley, Roanoke County: Blacksmiths 1850-1910.

Year	Name	Head of Household	Age	Race	Property Owner	Occupations in Neighboring Households ¹ [Other Than Farmer]	Location of Household: ² Drainage	Miles From Courthouse
1850	John, Griffith	Y	44	W	Y	1 gunsmith	N Fk Rk Rv	20
	John, John ³	N	19	W	N			
1860	John, Griffith	Y	54	W	Y	1 blacksmith 1 day laborer	N Fk Rk Rv	20
	Alls, William John, John ³	Y N	30 30	W W	N N	1 blacksmith 1 day laborer	[N Fk Rk Rv]	[20]
1870	John, John	Y	39	W	Y	1 shoemaker	N Fk Rk Rv	20
	Hincher, William	Y	38	W	N		[Catawba]	[14]
	Hackel, ⁴ John Hackel, Eli ³	Y N	28 17	B B	N N	1 merchant	[Catawba]	[10]
1880	Hackley, John	Y	51	B	Y	1 blacksmith 1 merchant	[Catawba]	[10]
	Hellums, Joseph	Y	61	W	N	1 blacksmith 1 merchant	[Catawba]	[14]
	John, John John, George ³	Y N	49 18	W W	Y N	1 merchant 1 machinist	N Fk Rk Rv	18
1900	Vandergrift, Sam.	Y	46	W	N	1 miller	[Catawba]	[10]
	Croy, Joel	Y	38	W	Y	1 machinist	N Fk Rk Rv	20
	Moore, John	Y	35	W	N		[N Fk Rk Rv]	[18]

Table 5

Table 5. Catawba Valley, Roanoke County: Blacksmiths 1850-1910 (continued).

Year	Name	Head of Household	Age	Race	Property Owner	Occupations in Neighboring Households ¹ [Other Than Farmer]	Location of Household: ² Drainage	Miles From Courthouse
1910	Moore, John	Y	45	W	N	1 merchant 1 cooper 1 blacksmith	[Catawba]	[15]
	Anderson, William	Y	41	W	[Y] ⁵	1 merchant 1 blacksmith 1 cooper 1 stonemason	[Catawba]	[10]
	Croy, Joel	Y	48	W	Y	2 carpenters	N Fk Rk Rv	20

(Data compiled from Roanoke County Land Books and from Manuscript Census records.)

1. Neighboring households counted here are the 5 households on each side of the named blacksmith.
2. Locational information is taken from relevant land book entries. Brackets are used to indicate the location of the closest property owner in the appropriate census enumeration if the named blacksmith is not a property owner.
3. } represents 2 blacksmiths living in the same household. The head of household is listed first.
4. John Hackel in the 1870 census is the same person as John Hackley in the 1880 census. Hackley's age is recorded correctly in 1880. Deed books list Hackley as a property owner in 1879, but Roanoke County Land Books do not record black landownership until 1891.
5. William Anderson is listed as a property owner in the 1910 manuscript census but is not listed in the land books until 1913.

Table 5 continued

The Johns' Blacksmith Shop (44RN236)

Introduction

The Johns' Blacksmith Shop site is a single component site of a commercial blacksmith shop. It is located at a topographic transition between the northwest flank of Catawba Mountain and a small floodplain along the North Fork of the Roanoke River. The site is situated adjacent to the river at an elevation of about 1,830 feet above mean sea level.

The structure enclosing the blacksmith shop was dismantled sometime after 1917. Over the last 75 or so years the site has been alternatively used as pasturage or covered with brush overgrowth. This land use history has enhanced the subsurface integrity of the site. Nonetheless, cultural and natural processes have caused recent disturbance to portions of the site periphery.

Modern improvements to Gravel Hill Road (Route 659) and the Blacksburg Road (Route 785) have caused disturbance to the site. The construction of a rock-lined ditch associated with the road improvements has affected the western and southwestern parts of the site. Also, the southern portion of the site received limited disturbance during the construction of an embankment adjacent to the Blacksburg Road. The periodic flooding of the North Fork of the Roanoke River has also impacted the site through bank erosion and subsequent soil slumping. Disturbance to the northern portion of the site is limited to the displacement of some stones which form a foundation retaining wall.

Research Methods

The Johns' Blacksmith Shop site was initially identified through a review of historic documents, and its exact location was provided by local individuals. "Johns Shop" was marked on the "Northern Section of Roanoke County," an 1864 J. F. Gilmer map, and John John was listed as a blacksmith in an 1897 business directory (Hill 1987: 1032). Kyle Shelor, who witnessed the shop in operation, was interviewed, and his accounts of the shop were noted. Since the site was bounded on three sides by roads and a stream, the overall site size was expected to be small and easily established. A systematic unaligned subsurface testing methodology with shovel testing at intervals of ten feet was used to investigate the site. Close interval testing was used to refine the definition of site boundaries since the subsurface distribution of artifacts was restricted to a small area. Close interval testing consisted of the placement of additional test pits at intervals of five feet on the original grid lines.

The subsurface integrity of the site was further assessed with two formal excavation units. One excavation unit was randomly placed within the site. This excavation unit measured 1.5 feet squared in size. Another excavation unit was purposively placed to identify the remains of the structural foundation. This unit measured 2.5 feet squared in size.

Results of Historic Research

Born in Pennsylvania in 1806, Griffith John married Liona

Hambrick in 1829 and purchased 142 acres on the North Fork of the Roanoke River in 1837. By 1850 Griffith John headed a household of 11 on his 142-acre tract with buildings valued at \$400. The 1850 census recorded Griffith John as a blacksmith, the head of a household which included a 19-year-old son John who was also a blacksmith. The Griffith John farm was valued at \$1,500, about average for Catawba Valley farms in 1850, but the Johns produced \$100 of homemade manufactures, the highest value recorded for Catawba Valley by the Agriculture Census of that year. The Johns were not slaveholders.

By 1870 John John had acquired from Jacob Brunk a 150-acre farm on the North Fork drainage with buildings valued at \$200. John John's land was near his father's, and the son probably had taken over the work in his father's shop. The 1870 census listed John John as a blacksmith and farmer, while Griffith John was listed only as a farmer. The Roanoke County Property Records for 1872 indicated John John possessed of \$20 of mechanic tools, the second highest assessment for that category in Catawba Valley. The 1880 census recorded John John as a blacksmith, the head of a household of nine including an 18-year-old son George who also worked as a blacksmith; another 15-year-old son Milton worked on the farm.

When Griffith John died in 1883, his estate inventory included a set of blacksmith tools and one lot of wagon tools, each valued at \$10. The sale bill of Griffith John's personal effects documented the interwoven nature of his career in blacksmithing,

wagon making and woodworking (Table 6). The sale bill also indicated that Griffith John, like other members of the local community, raised livestock and operated a farm.

Griffith John's daughter Susanna Shelor inherited a 64-acre portion of her father's land which she willed to her son D. H. Shelor in 1898. In the 1930s D. H. Shelor still possessed a walnut chest that had belonged to his grandfather Griffith John. The chest had "a jaw-like lock and half strap hinges," perhaps crafted by Griffith John at his blacksmith shop (WPA Patterson-Griffith John House). The chest is now in the possession of Jack Shelor.

Between 1884 and 1886, John John reconsolidated much of the land formerly owned by his deceased father. Numerous property deeds documented John and Ellie John's acquisition of property rights from the heirs of Griffith John and other individuals (Deed Book P, page 305; Deed Book Q, pages 213-216; Deed Book Q, page 585). By 1900 John and Ellie John were in possession of the other portion of Griffith John's land. In that year John and Ellie John also owned three other parcels of land totaling 127 acres with buildings valued at \$250. John and Ellie John had sold their original 150-acre farm to their son and daughter-in-law, Milton and Louvenia John, in 1897 (Deed Book 35, page 438; WPA Jacob Brunk Home). In 1910 Roanoke County Land Books recorded John and Ellie John's ownership of two parcels totaling 214 acres, the same land they had owned by 1900. Remarks in the 1910 land book identified their land as the John Shop tract.

John John is not listed as a blacksmith in the 1900 or 1910

Table 6. Listing of Selected Purchasers and Items Purchased From the Sale Bill of Personal Effects of Griffith John.

Purchaser	Items Purchased
J. D. Henderson	300 spokes
John A. Henderson	1 log chain
M. M. Moore	chains and wedges
Clifton Francisco	1 set planes
Wm. Garm(?)	tenant auger
John W. Woods	axe and froe, 1 maul
J. T. Woods	1 square, foot adze
Jessee Croy	1 lot augers
John McConkey	2 drawing knives
John E. Eakin	2 drawing knives, 2 plane stocks, 1 pr. gears
John John	1 set chisels
Allen Spessard	brace and bits, 1 cutting box
D. H. Bennett	1 hand saw, 1 square, 1 wood horse, 1 grind stone, 1 pr. wagon lathers [sic], 1 maul
John W. Doosing	2 small saws, 1 box saw
P. W. Layman	1 set chisels
Geo. Webb	spoke shaves
J. M. T. Croy	tenant auger, 1 lot wagon lumber
P. W. Hilton	lot gages [sic]
Wm. Hall Sr.	hammers and mallets
P. P. Garman	bevel square
Susan Shelor	1 pr. gears

(Roanoke County Appraisement and Inventory Records, 1883, Book 6, pages 265-269.)

census, although oral accounts suggest he still worked his shop (Kyle Shelor, personal communication). When he died in 1917, John John's estate inventory documented his agricultural pursuits and included the following blacksmith tools: one vise \$.50, one bellows and fixtures \$3.00, one anvil \$4.00, one mandrel \$.50. Various aspects of his blacksmithing were further suggested by the sale bill of his personal effects (Table 7).

The final years of John John's blacksmithing were witnessed by Kyle Shelor, a great-nephew born in 1900. The following is abstracted from interviews with Kyle Shelor. John John's work included the forging of some equipment, such as plowshares, hoes, axes, gate hinges and strap hinges. However, the bulk of his work revolved around shoeing horses and repairing wagons, tools and agricultural equipment. The Johns bought and made nails. They also bought "wagon tire." In the shop they would cut the "tire," bend it on a rolling machine, and weld it together. John John retired from the blacksmithing profession around 1912. Thereafter, he did very little work in his shop.

The Johns' Blacksmith shop was large, approximately 40 feet long. It contained two forges and two bellows in the rear of the shop, and a front bay capable of holding two wagons. The front doors of the shop faced the Blacksburg Road. A small rear door was located on the northwest side of the shop. Work was usually handled inside the shop; however, horseshoeing and plow sharpening were done outside during warm weather. John John would drive into Blacksburg to purchase "hard coal" and metal stock. Following John

Table 7. Listing of Selected Purchasers and Items Purchased From the Sale Bill of Personal Effects of John John.

Purchaser	Items Purchased
D. H. Shelor	shoeing outfit
W. W. Bradford	20 rods wire
R. Hoge(?)	1 lot boards
G. C. Bain	1 bellows
M. M. John	3 buggy springs
Levi Garst	1 vise
John Wissiner(?)	1 lot punches
B. R. All	1 lot screw plates
Joel Grisso	1 pr. tongs
J. A. Moore	1 lot tongs, 2 lots junk
R. W. Layman	1/2 side grinder
J. C. Croy	1 barrel, 1 lot junk
Earnest Brillhart	2 lots junk

(Roanoke County Appraisalment and Inventory Records, 1919, Book 10, pages 23-27.)

John's death in 1917, the shop was dismantled on a date lost from memory (Kyle Shelor, personal communication).

Results of Subsurface Testing

Subsurface testing of the Johns' Blacksmith Shop site provided a clear identification of site boundaries and intact subsurface deposits. The testing resulted in the identification of a subsurface distribution of structural remains and artifacts which measured approximately 50 feet by 36 feet. Twenty-six shovel test pits were excavated to identify the extent of the site. The definition of site boundaries was refined with the excavation of an additional twelve shovel test pits. Two formal excavation units were used to verify subsurface integrity (see Figure 3).

The 38 shovel test pits produced 1,298 artifacts for a total artifact recovery rate of more than 34 artifacts per shovel test pit. Forty-two artifacts, such as fragments of a clay target, a rubber strip and segments of fencing wire, were considered modern, intrusive elements. After discounting the intrusive artifacts, the artifact density was still extremely high with more than 33 artifacts per shovel test pit (1256/38). A listing of the 1,613 recovered artifacts is presented in Appendix 1.

Coal fragments and cinder comprised more than 62 percent (1001/1613) of the artifacts recovered from subsurface testing at the Johns' Blacksmith Shop site. The distribution of coal fragments and cinder was confined to the central and rear portions of the shop. A disposal area for this waste material was

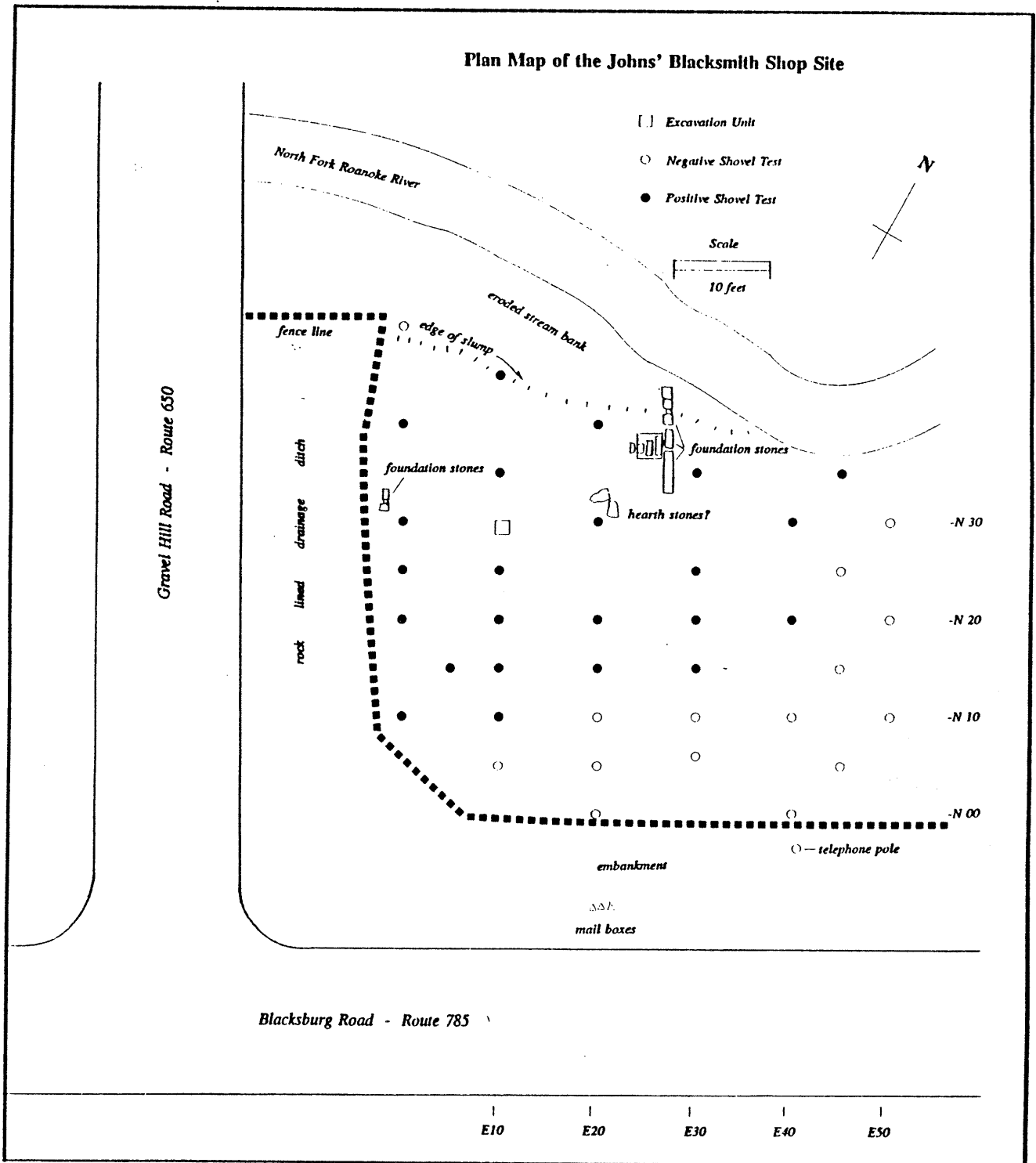


Figure 3. Plan map of the Johns' Blacksmith Shop Site.

identified outside the northeast corner and along the eastern wall of the shop.

The second largest category of the recovered artifact assemblage was comprised of fasteners, such as nails, screws and bolts. Almost 32 percent (493/1613) of the artifacts recovered from subsurface testing were fasteners. More than 61 percent (302/493) of the recovered fasteners were horseshoe nails. These nails included machine-cut and hand-made examples. Variation in the morphology of the nail heads and shanks may indicate the hand-made nails were manufactured by different smiths. The highest concentrations of horseshoe nails were found in the central and rear portions of the shop interior and in the disposal area along the eastern wall of the shop.

Subsurface testing in the southern portion of the site identified a layer of limestone gravel buried under an accumulation of four to five inches of brown loam and artifacts. Evidence for the gravel layer was recognized in nine contiguous shovel test pits. The gravel layer was approximately 20 feet wide by 30 feet long with an average thickness of about 0.3 feet. It was located in the central part of the site between the projected walls of the shop.

Along the southwest side of the site an exposure of three cut stones was identified on the ground surface. Three nearby shovel test pits also contained a layer of cut stone. These rocks were inferred to represent an intact portion of the shop foundation. Ground surface inspection and subsurface testing indicated that

other portions of the foundation were disturbed by the construction of an adjacent drainage ditch.

Another line of cut stone was exposed on the ground surface in the northern portion of the site. Kyle Shelor identified the line of stone as the remains of a partial wall foundation and rear corner of the blacksmith shop. Excavation Unit #1 was purposively placed adjacent to this surface exposure of stone. The excavation unit measured 2.5 feet squared and was excavated to a depth of 0.35 feet below ground surface. Additional stones revealed in the excavation unit verified Kyle Shelor's information (see Figures 3 and 4).

Stone blocks exposed on the ground surface and in the excavation unit represented the northeast corner of the shop foundation, portions of the rear and side walls and a section of a retaining wall. The retaining wall extended from the shop corner in a northern direction to the North Fork of the Roanoke River.

Identified portions of the shop foundation, in the northern and southwestern portions of the site, suggested the shop had a width of 29 feet and a length of at least 35 feet. No evidence for other portions of the foundation was identified during investigations at the Johns' Blacksmith Shop site.

Excavation Unit #2 was randomly placed within the site boundaries and excavated to a depth of about 0.6 feet below ground surface (see Figure 5). The fill of the unit consisted of brown sandy clay-loam overlying yellowish brown clay. Based upon contextual evidence the layer of yellowish brown clay was inferred

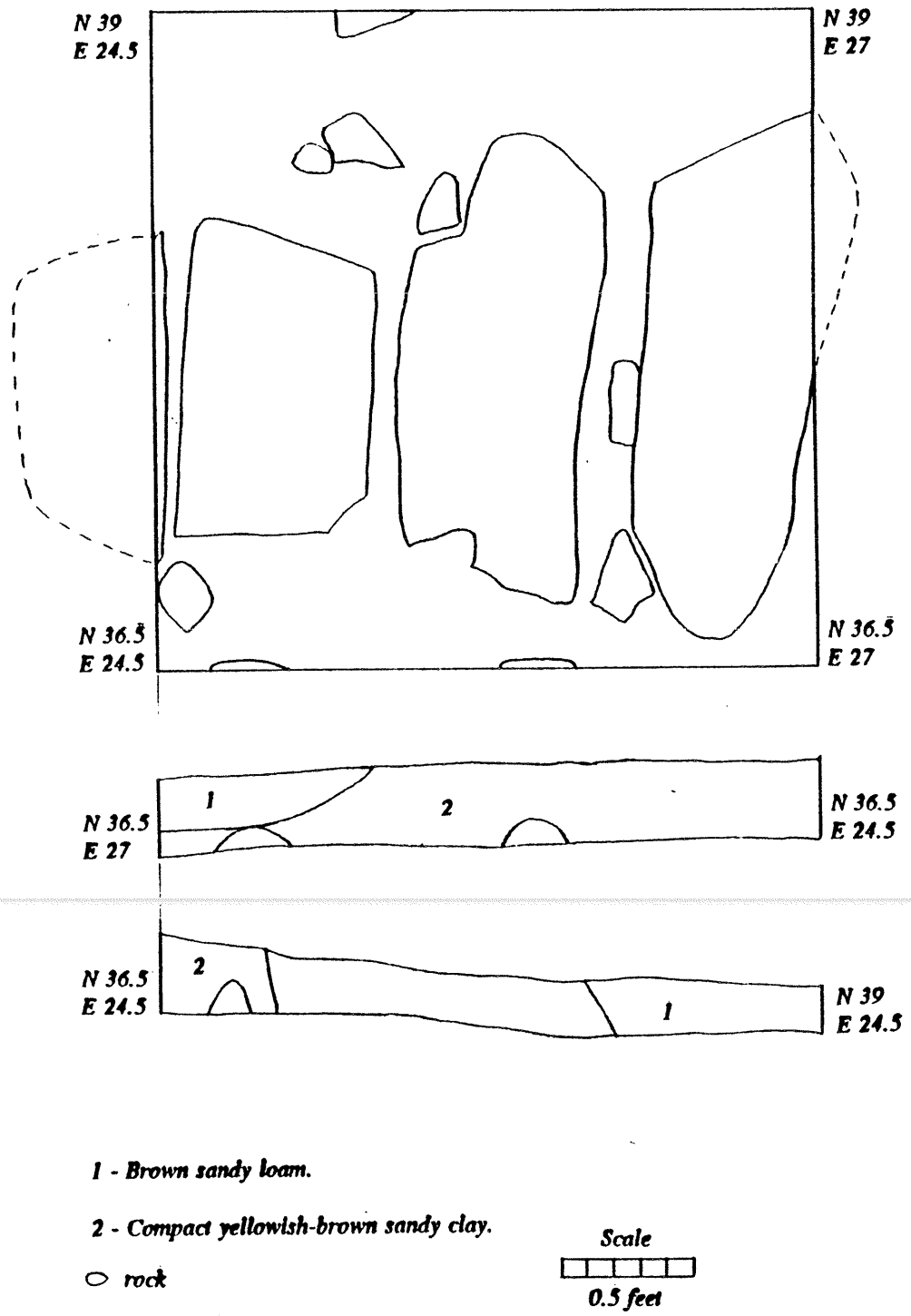
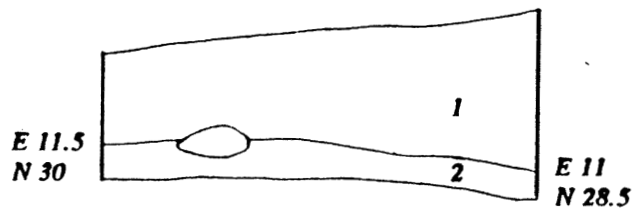
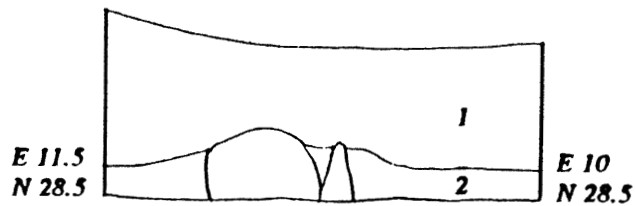
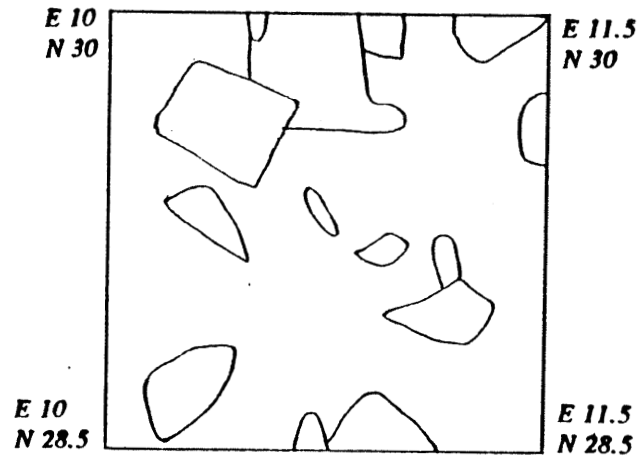


Figure 4. Plan and profile drawings of Excavation Unit #1, Johns' Blacksmith Shop Site.



1 - Brown sandy clay loam.

2 - Yellowish-brown clay.

○ rock

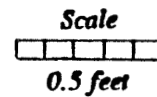


Figure 5. Plan and profile drawings of Excavation Unit #2, Johns' Blacksmith Shop Site.

to represent the blacksmith shop floor.

Numerous flat rocks were exposed at the top of the clay layer, and most of these rocks were flush with the top of the clay layer. The rocks probably represent a partial floor paving. The majority of the recovered artifacts were immediately overlying the yellowish brown clay floor. Only one nail was recovered from the upper portion of the clay floor. Of the 306 artifacts recovered from the excavation unit, almost 58 percent (176/306) were fasteners. Other artifacts consisted of coal and cinder fragments, metal fragments, a horseshoe fragment and glass fragments.

Discussion

The Johns' Blacksmith Shop site represents a well-preserved commercial blacksmith shop which operated from the mid-nineteenth century through the early twentieth century. Historical and archaeological research indicate the shop functioned in the production, maintenance and repair of wagons, agricultural equipment and household items. The shop also had an important function in the completion of farrier work. Although the site has been partially disturbed by natural and cultural processes, archaeological evidence indicates it still maintains a high degree of subsurface integrity.

The Johns' Blacksmith Shop appears to have been oriented in a fashion similar to other blacksmith shops reported in this study. Based upon oral accounts and subsurface testing, the blacksmith shop was oriented with its front doors facing southeast. Other

shops reported in this study also have door or window openings facing either south or east. This building orientation would have afforded protection from the natural elements since most of the winds and precipitation originate from the north and west.

Little is known of the form or location of shop window openings or secondary doors. Kyle Shelor (personal communication) believes the Johns' Shop had one plank door on the northwest side of the building and had windows sealed with pane. He is not sure if the shop had shuttered window openings. The recovery of eleven fragments of windowpane suggests there were windows on the west side of the shop. No other windowpane fragments were recovered from the site.

The subsurface testing methodology used to investigate the Johns' Blacksmith Shop site was designed to identify the site and delineate its boundaries. The methods were not designed to recover information necessary for the clear delineation of specific work areas in the shop or for the detailed reconstruction of internal shop layout. However, the results of the subsurface testing can be used with oral descriptions of the shop to develop inferences of the internal layout of the shop.

The forge was probably constructed of local stone since this was the only type of rock material exposed on the ground surface, or in shovel test pits, within the rear portion of the shop. The sale bill of John John's personal effects (Table 7) indicate the shop bellows was sold following his death. The forge was probably dismantled at the same time the shop was dismantled. Kyle Shelor

indicated the shop contained two anvils, and one was located in the northeast part of the shop. The shop was probably designed with a centrally located forge since both smiths required unobstructed access to the forge. Documented plans for shops with multiple anvil work areas commonly exhibit centrally located forge areas (Richardson 1978: 33-98). Subsurface testing at the Johns' Blacksmith Shop site identified two probable anvil work areas, with associated evidence for the location of a forge.

One shovel test pit (grid locus East 20, North 30) excavated adjacent to possible hearth stones exposed on the ground surface produced artifacts indicative of an anvil/forge work area. Artifacts denoting an anvil work area included a brace, a bar fragment, a section of nail stock, a horseshoe fragment and numerous nails. Artifacts suggestive of a possible forge included 70 cinder fragments and 25 coal fragments. All of these materials were recovered from the northeastern portion of the shop where Kyle Shelor reported the location of an anvil.

Another probable anvil work area, with stronger evidence for the forge location, was located about 14 feet to the southwest (grid locus East 10, North 25). Recovered artifacts indicative of a forge location included nearly 650 cinder and coal fragments (see Light 1987: 61). Artifacts suggesting an anvil work area included 32 metal fragments and 135 nails. Excavation Unit #2 located five feet to the northwest produced similar iron artifacts. These three excavation units, along with one shovel test at grid locus North 20, East 20, delineated the highest concentration of artifacts in

the shop. These excavation units also produced nearly 80 percent of the total recovered metal artifacts, excluding fasteners. The forge and two anvil work areas represent the primary work areas in the Johns' Blacksmith Shop site.

Subsurface evidence for a prepared gravel floor was recovered from nine shovel test pits located in the southern portion of the site. The extent of the gravel floor corresponded to the internal shop bay that was reported by Kyle Shelor. He described the internal bay as a large area for general work. It was used for horseshoeing, manufacture, repair work and temporary storage. Documented shop plans often illustrate general purpose work areas immediately inside the main shop doors (Richardson 1978: 33-98).

Previous archaeological research at blacksmith shops suggest doorway areas should contain few artifacts other than building hardware (Light 1987: 61). Subsurface testing in the front section of the gravel floor at the Johns' shop produced very few artifacts. High concentrations of horseshoe nails were recovered from the rear section of the gravel floor. Most of these horseshoe nails were used, and their distribution within the shop suggests that most of the farrier work was conducted at the rear of the bay close to the anvil/forge work areas. The bay was probably also used for the repair of agricultural equipment and wagons. The shop bay represented a secondary work area in the Johns' Blacksmith Shop site.

Evidence for storage areas and other secondary work areas in the shop was not conclusive. The distribution of windowpane

fragments from the shop suggests that windows were located along the western walls of the shop. Since the work performed at shop workbenches required suitable lighting, it is likely that a workbench was located adjacent to the windows. However, oral accounts and archaeological evidence for the number and type of windows at the site is not strong.

The identification of shop storage areas with archaeological evidence have been difficult because metal stock and reusable metal scrap generally were not left behind after shop abandonment (Light 1984: 60; McBride 1987: 81). Concentrations of metal stock or useable metal scrap were not identified at the Johns' Blacksmith Shop site.

In general, the artifacts recovered from the site were high in number, but low in diversity. Nearly 93 percent of the recovered artifacts consisted of fasteners and fragments of coal and cinder. Tools or tool fragments were not recovered. Parts from agricultural equipment or wagons were not recovered. Equipment parts relating to blacksmithing, wagon making, or farrier work were not recovered.

An explanation for this paucity of tools, spare parts and equipment is offered by the sale bills of Griffith John's and John John's personal effects (Tables 6 and 7). The sale bills of their personal effects indicated a large amount of the shop contents was sold following their deaths. Items sold included spare parts, tools and equipment relating to blacksmithing, woodworking and farrier work.

The sale bill of John John's personal effects also listed metal stock and five "lots of junk." Since these were listed on the sale bill next to blacksmith and farrier equipment, it is reasonable to assume that the materials were from the shop. Furthermore, three of the five "lots of junk" were purchased by J. C. Croy and J. A. Moore who were identified as blacksmiths in the manuscript census records for 1900 (see Table 5). It is probable that the five lots of junk consisted of material useful to a blacksmith, such as metal scrap, metal stock, hardware and spare parts. The collection and sale of this material would have left the shop storage areas relatively devoid of artifacts. Shop contents not listed on the sale bill, such as anvils, retained use-value in rural areas and were probably salvaged from the shop.

Subsurface testing in areas outside the inferred walls of the blacksmith shop produced evidence of one activity area. Three shovel test pits (grid loci East 30, North 20 - 40) along the eastern wall of the shop located an exterior refuse pile. Recovered artifacts included three metal fragments, 38 fasteners, and 94 coal and cinder fragments. Twelve artifacts recovered from three shovel test units to the northeast were inferred to have been redeposited by down slope movement from the refuse pile.

Potential activity areas immediately in front of the shop may have been buried or destroyed when the Blacksburg Road was paved and probably widened. Other potential activity areas on the west side of the shop may have been destroyed by the construction of a drainage ditch associated with improvements to Blacksburg Road and

Gravel Hill Road.

The archaeological and documentary investigations of the Johns' Blacksmith Shop site suggest that it provided a wide range of services to the surrounding community. Services were likely concentrated on transportation related activities, such as farrier work or the construction and repair of wagons. General agricultural related services were also important and included the construction of basic equipment such as axes and hoes. But the bulk of the agricultural services probably included tool sharpening and repair work. While these services were diverse they were also typical of rural commercial blacksmith shops in the late nineteenth and early twentieth centuries (Lasansky 1980: 24-26).

The Woods Distillery/Blacksmith Shop (44RN241)

Introduction

The Woods Distillery/Blacksmith Shop is one component of an extensive domestic, agricultural and commercial complex. The site is located along a topographic transition between the southeastern flank of Sandstone Ridge and a narrow floodplain of an unnamed drainage which cuts through the ridge. The unnamed drainage is a tributary of Catawba Creek and is locally known as Indian Camp Creek. The site is approximately 35 feet east of the unnamed drainage, and rests at an elevation of about 1,750 feet above mean sea level.

The Woods Distillery/Blacksmith Shop is part of a multicomponent site which includes three historic period components and one prehistoric period component. The structure which encloses the Woods Distillery/Blacksmith Shop is in deteriorating condition, and recent wind damage to the southwestern portion of the roof has increased the rate of structural deterioration. Cattle pasturage currently surrounds the site, and the landscape appears to have few modern alterations. Modern alterations include the paving and probable widening of the former roadbed of the Blacksburg Road (Route 785) adjacent to the site, and the placement of an electrical utility pole to the northeast of the structure.

Research Methods

The Woods Distillery/Blacksmith Shop site was initially

identified by a review of business directories (Boyd 1871: 319; Chataigne 1880: 442) and the 1864 J. F. Gilmer map of the "Northern Section of Roanoke County." The components of the Woods Distillery/Blacksmith Shop site were identified through inspection of structural remains and subsurface testing. The interior and exterior of the distillery/blacksmith shop structure were documented with photographs. The interior of the structure was also documented with scaled drawings. Grace Morehead and Katherine McNeil were interviewed, and their accounts of the site were noted.

Subsurface testing of the Woods Distillery/Blacksmith Shop site was directed toward identifying the location of any activity areas around the structure and establishing site boundaries. Since the landscape surrounding the site appeared to maintain a high degree of integrity, the overall site size was expected to be limited in extent and easily defined. Therefore, a systematic unaligned subsurface testing methodology was used to investigate the site. Individual shovel test pits were placed at intervals of ten feet along grid lines that had been placed at intervals of five feet.

Three formal excavation units were purposively placed inside the standing structure to assess subsurface integrity and to identify activity areas associated with the blacksmithing operation and the purported distillery operation. Each of the excavation units measured 1.5 feet squared.

Results of Historic Research

William Woods owned substantial property on Catawba Creek. His landholdings reflected considerable wealth derived from diversified commercial ventures. Like the majority of Catawba Valley's nineteenth century residents, William Woods received an income from his agricultural operation. This was augmented by income derived from sales of orchard products, saw mill products and distilled products.

Gilmer's map of 1864 depicted "Woods Mill" on a tributary of Catawba Creek approximately three miles west of the Catawba crossroads. His mill was one of five saw mills depicted on the 1864 map of the valley. Business directories documented William Woods distillery operation in late nineteenth century (Boyd 1871: 319; Chataigne 1880: 442). Little else is known of Wood's distillery and saw mill operations. The whereabouts of the saw mill account books are unknown, and the distillery account books were consumed in a 1975 house fire (Grace Morehead, personal communication). The sale bill of William Woods' personal effects (Table 8) documented the saw mill and distillery operations, and suggests both were sizeable.

In 1880 William Woods' farm, valued at \$9,300, produced \$1,000 of products, including 500 bushels of apples and \$150 of forest products. William Woods died in 1882, and, by 1900, his 36-year-old son Joseph R. Woods had consolidated nine tracts of land in Catawba Valley with a total of 430 acres and buildings valued at \$800. In 1910 J. R. Woods, then residing in Salem, sold four

Table 8. Listing of Selected Purchasers and Items Purchased From the Sale Bill of Personal Effects of William Woods.

Purchaser	Items Purchased
J. W. Woods	3 still tubs, 1 cider mill
John W. Woods	1 still tub, approximately 1,600' walnut lumber, 1 lot poplar planks, 1 lot brandy, 1 crosscut saw, 1 grind stone
Giles Barnett	1 still tub
Geo. W. Lewis	1 lot mill stones, 1 log chain, 1 lot chains, 600' inch planks, 904' wagon planks, 406' ceiling planks, 3,224' boxing, 167' hickory
J. C. McDaniels	20 still tubs, 2 stills and fixtures, 1,400' inch lumber, 1,266' weatherboarding, 1,400' studding, 1,200' sheeting, 1,900' poplar, 1,113' mixed, 1,169' ceiling, 368' inch planks, 1,063' walnut
Edmund Sandys	12 still tubs
David Barnett	1 mill saw
Geo. Painter	1 set blacksmith tools
F. A. Wright	1 cider mill
Geo. McConkey	1 still tub
Andrew Huffman	558' studding, 328' lumber
Jo. Simons	3,200 shingles
Henry ---	2,900 shingles

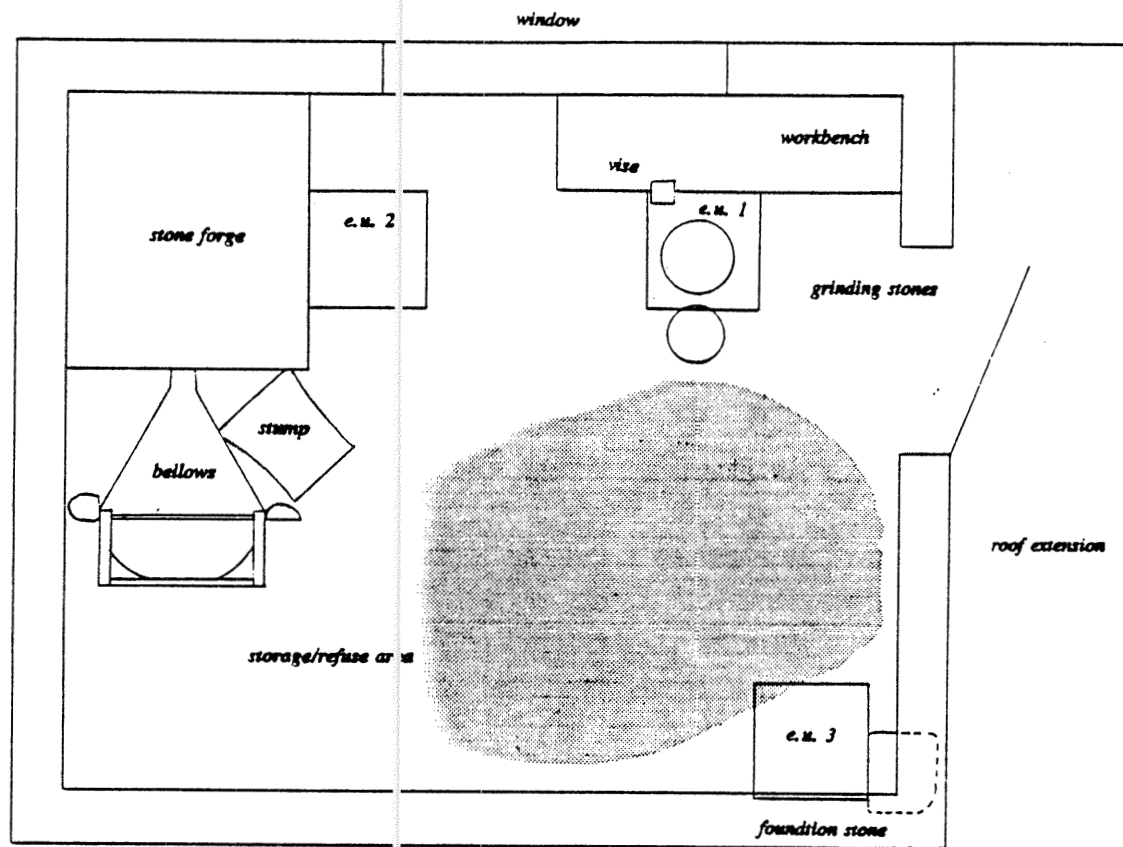
(Roanoke County Appraisement and Inventory Records, 1882, Book 6, pages 271-273.)

tracts of land to C. L. Hutton. The tracts included his 430-acre tract in Catawba with buildings valued at \$910 (Deed Book 51, pages 120-123). C. L. Hutton's trustees sold the 430 acres with buildings valued at \$910, plus an additional 85 acres, to E. Y. Morehead in 1918 (Deed Book 85, pages 215-216).

According to oral accounts, the distillery shop was converted to a blacksmith shop sometime after the death of William Woods (Grace Morehead and Katherine McNeil, personal communication). It is not known if the blacksmith shop was operational when the property was owned by the Woods family, or if it was in use only during ownership by C.L. Hutton. The shop was standing when E.Y. Morehead purchased the property in 1917. Grace Morehead believes her father used the blacksmith shop for storage and possibly used the shop workbench for some repair work.

Shop Description

The structure measures 16 x 14 feet, and is constructed of logs v-notched at the corners (see Figure 6). Drilled holes and chiseled mortises in some of the logs suggest that they were recovered from a previous structure. Only remnants of a vertical plank exterior covering applied with wire and machine-cut nails remain. The structure has no foundation. Rather, logs of the structural walls rest on the ground surface. Only a couple limestone blocks are apparent along the southwestern wall to level the structure on the slightly sloping ground surface. The gabled roof of the structure is covered with standing seam metal. The



Scale
 2 feet

e.m. = excavation unit



Figure 6. Plan map of the Woods Distillery/Blacksmith Shop.

metal covering on the roof was applied entirely with wire nails and may represent a modern replacement.

A 3.4 feet roof extension shelters the vertical plank door on the southeastern side of the structure (see Plate 1). Various carvings decorate the door of the structure. The door exterior features a carving of a roosting owl, the letter M and the letters AMS. The door interior is covered with numerous carvings including geometric shapes, an owl, an animal, two human figures and the letters LH. The letters LH may refer to the initials of previous land owner C. L. Hutton or his son, Lance Hutton (Grace Morehead and Katherine McNeil, personal communication).

A final attribute of the structure is a window opening on the northeastern side. The window is six feet long and 1.35 feet high. A portion of a strap hinge and associated nail holes over the window opening indicate it was previously closed by a plank shutter. The window opening provided light to the interior work bench and forge area.

The interior of the structure still houses much of the blacksmithing equipment. The eastern portion of the shop contains the forge area and work bench. The western portion of the structure is now used as a general storage area. It is covered with historic blacksmithing equipment and an assortment of modern and historic agricultural equipment. A ceiling rack constructed of logs covers the entire length of the shop interior. Although deteriorating, the ceiling rack still holds scythes and scythe



Plate 1. Exterior of the Woods Distillery/Blacksmith Shop.

A six feet long workbench is attached to the southeastern wall of the shop (see Plate 2). The plank workbench is supported by a single post. A leg vise is mounted to the workbench adjacent to the bench's support post. The bottom of the vise leg extends into the remains of a wooden block in the dirt floor of the shop.

handles. Material on the workbench includes: two modern tractor batteries, a modern hoe and shovel, a mower blade, a hand forged gate hinge, a section of chain and a scythe handle.

The forge and bellows are located in the northeast corner and along the northwest side of the shop (see Plate 3). The forge is 4.8 feet long and 4.15 feet wide; it is approximately four feet from the workbench. The forge was constructed of local stone, and its lower portion was enclosed by planks. The open hearth of the forge does not have an exhaust hood or flue. The bellows is supported by a post and sawn lumber frame. The three-foot-long bellows lever is no longer connected. It was previously connected to the bellows with hand forged fixtures.

Associated artifacts cover the floor near the bellows and workbench. These materials include a wagon wheel, numerous metal fragments and scythe handles. Remains of a wooden crate behind the bellows may represent the fuel box. A stump lying on the shop floor next to the bellows is most likely the anvil stump. Also contained within the material stored on the shop floor is a deteriorated slack tub. The hoops of the tub were attached with hand forged, large-headed nails.

Most of the central and southwest portions of the shop floor are cluttered with modern and historic materials. Bales of barbed wire, fencing wire, sheet metal and lumber are modern items stored on the floor of the shop. Various other pieces of metal on the floor may or may not represent materials originally associated with the blacksmith shop. Also on the floor are two wagon wheels, two



Plate 2. Workbench, Woods Distillery/Blacksmith Shop.



Plate 3. Bellows and forge, Woods Distillery/Blacksmith Shop.

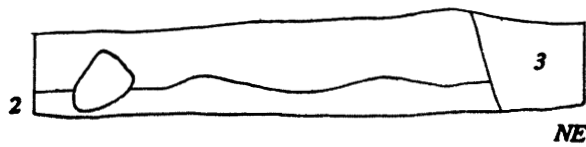
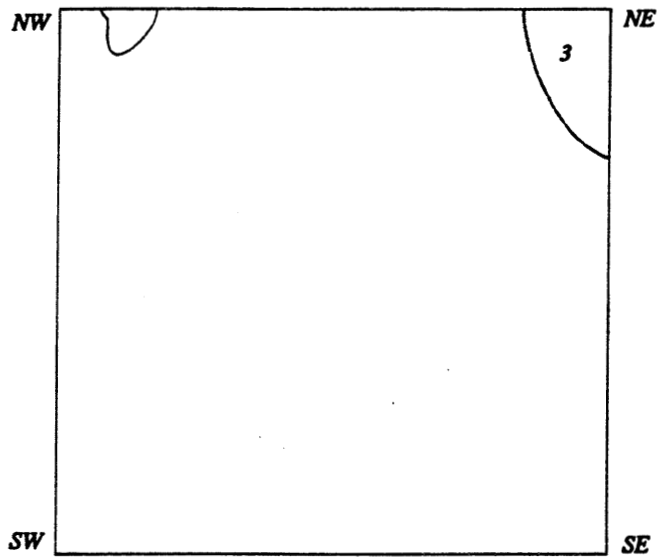
incomplete "Oliver Chill" horse-drawn plows, a grinding stone frame and two grinding stones. These materials are most likely associated with the blacksmithing operation.

Grace Morehead reported that this portion of the shop interior was more open when her family purchased the property. It contained an unassembled grinding stone and frame, and an operational grinding stone and frame. This latter piece of equipment is now stored in a scale house on the south side of the Blacksburg Road.

Results of Subsurface Testing

Subsurface excavations inside the distillery/blacksmith shop structure consisted of three excavation units which measured two feet squared. These units were purposively placed in front of the workbench, adjacent to the forge, and in the section of the shop currently used for storage (see Figure 6). Appendix 2 provides an inventory of all artifacts recovered during subsurface testing at the Woods Distillery/Blacksmith Shop Site.

Excavation Unit #1 was placed in front of the workbench, and was excavated to a depth of about 0.3 feet below ground surface (see Figure 7). Of the 278 artifacts recovered from the excavation unit, almost 62 percent (172/278) were fasteners such as nails, staples, rivets, screws and bolts. The remaining artifacts consisted of metal bar and plate fragments, metal parts of harnesses, mower blades and other fragments of agricultural equipment. One hacksaw blade and one awl fragment were also recovered. The excavation unit exposed a portion of the post hole



1 - Dark brown/black loamy clay lightly mottled with yellow-brown clay-mixed with artifacts.

2 - Yellow-brown clay lightly mottled with dark brown/black loamy clay.

3 - post mold

□ *rock*

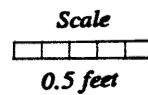


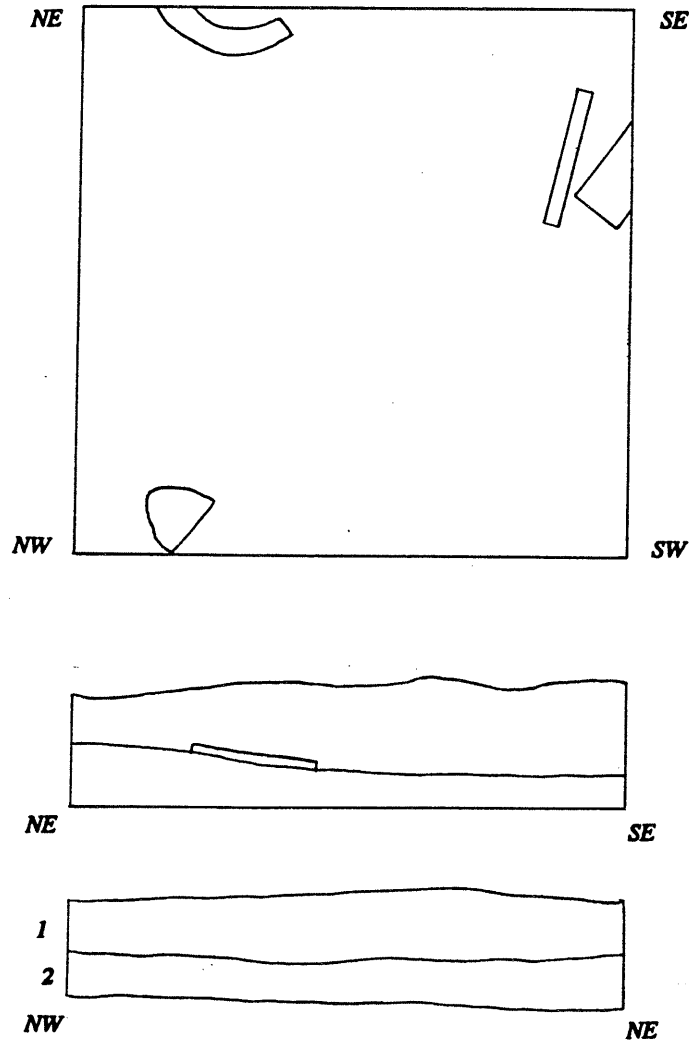
Figure 7. Plan and profile drawings of Excavation Unit #1, Woods Distillery/Blacksmith Shop.

stain where the leg of the vise was secured in the shop floor.

Excavation Unit #2 was placed adjacent to the forge, and was excavated to a depth of about 0.4 feet below ground surface (see Figure 8). The excavation unit produced 42 artifacts and a large quantity of cinder and coal fragments. The cinder and coal fragments were considered to be disposed by-products of forging. Nearly 74 percent (31/42) of the recovered artifacts were fasteners such as nails, staples and bolts. Other recovered materials include a mower blade and unidentifiable metal fragments.

The third excavation unit was placed in the storage area of the shop, and its location was dictated by the only available exposure of the shop floor. The unit abutted the wall in the southern corner of the shop (see Figure 9). Material recovered from the excavation unit was similar to the other excavation units in the shop. More than 84 percent (26/31) of the recovered artifacts consisted of nails and unidentifiable metal fragments. One white glass canning jar lid may be related to the blacksmithing or the distilling operations; however, it may also be intrusive. Three clear windowpane fragments are considered intrusive since the shop contains no glass windows.

Subsurface testing around the standing structure included 120 shovel test pits and resulted in the identification of one archaeological site comprised of four components (see Figure 10). The components consisted of subsurface deposits associated with the blacksmith/distillery shop, the remains of a historic domestic structure, refuse associated with the domestic structure and the



1 - Layer of cinder and coal fragments intermixed with dark brown/black loamy clay.

2 - Yellow-brown compact clay intermixed with eroding rock.

□ *metal artifact*

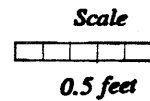
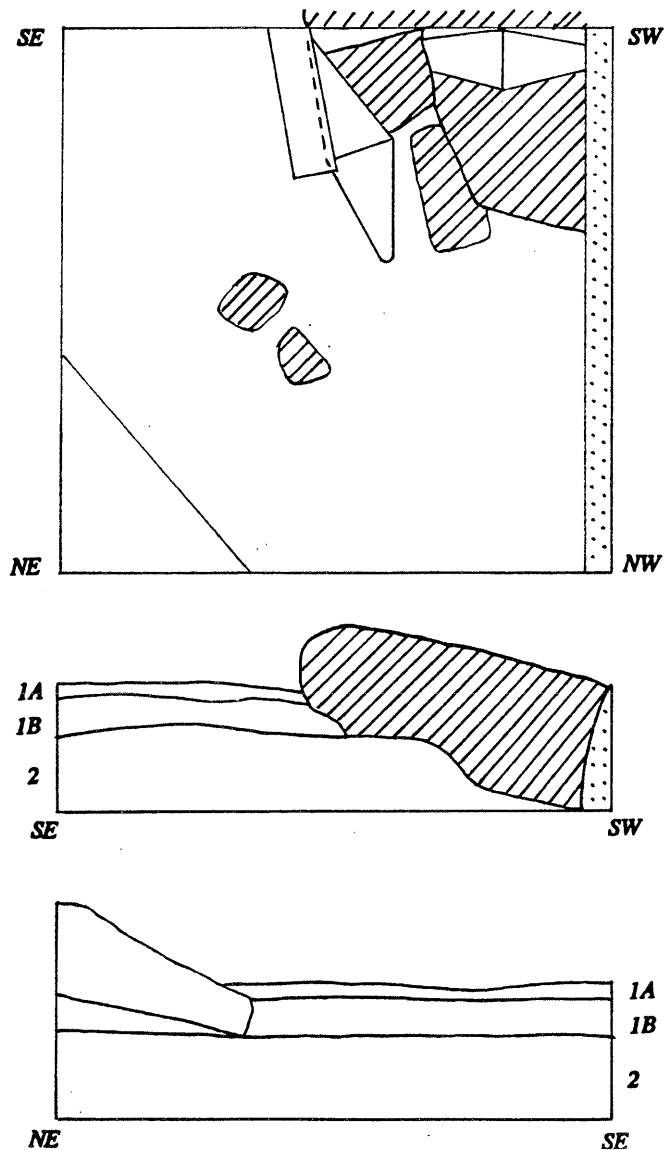


Figure 8. Plan and profile drawings of Excavation Unit #2, Woods Distillery/Blacksmith Shop.



1A - Decomposing wood fragments.

1B - Dark brown clayey loam.

*2 - Unexcavated yellow-brown clay lightly mottled
with dark brown clayey loam.*

□ *metal artifact*

▣ *structural log*

▨ *rock*

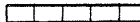
Scale

 0.5 feet

Figure 9. Plan and profile drawings of Excavation Unit #3,
Woods Distillery/Blacksmith Shop.

blacksmith/distillery shop, and a diffuse scatter of prehistoric lithic artifacts.

The initial testing regime along the flanks of the structure produced anticipated results. A low to medium density of artifacts was recovered (1.1 artifacts per shovel test pit) with more than 73 percent (17/23) of the recovered artifacts representing structural debris. Most of the recovered structural debris (88%) consisted of wire nails used to apply the vertical plank exterior and the metal roof to the structure.

As subsurface testing proceeded behind the structure, a very low density of artifacts was recovered (0.1 artifacts per shovel test pit) until an area of sheet refuse was encountered (Component #2 on Figure 10). Artifacts recovered from the sheet refuse appear to be associated with both the distillery/blacksmith shop and a probable domestic site located to the northwest of the sheet refuse. As subsurface testing continued beyond the sheet refuse, the remains of the probable domestic structure were encountered (Component #4 on Figure 10).

The domestic structure was defined on the basis of an intact pargetting floor and characteristics of the overlying soil. The pargetting floor was located immediately beneath a deposit of architectural and domestic artifacts. Overlying soils appeared very dark brown/black in color due to a high content of charcoal. A dense concentration of charcoal fragments and flecking in the soil suggests that the structure had burned. Sixty percent (33/55) of the recovered historic artifacts were architectural. These

artifacts included machine-cut nails and pargetting fragments. Twenty-nine percent (16/55) of the recovered artifacts were domestic artifacts. These included: redware sherds, clear and lavender glass fragments, an iron kettle fragment, bone and a shell button. Other artifacts recovered from the site included coal and cinder fragments and one plow part.

Subsurface testing also resulted in the identification of a prehistoric component (Component #3 on Figure 10). The diffuse, low-density lithic scatter consisted of six lithic artifacts. This component was partially overlapped by artifacts associated with the historic sheet refuse and probable domestic structure.

Discussion

Although "agricultural outbuildings of the Catawba Valley were almost invariably constructed of logs during the nineteenth century" (Pezzoni 1990), the Woods Distillery/Blacksmith Shop was the only verified blacksmith shop of log construction in the valley. While it is very likely that other log blacksmith shops existed in the Catawba Valley, evidence supporting their existence is lacking.

The log construction of the Woods Distillery/Blacksmith Shop is combined with structural elements typical of local blacksmith shop design. The vertical plank exterior siding, shuttered window opening and roof extension on the shop represent structural elements which recur on many of the blacksmith shops reported in this study. The window opening and roof extension appear to be

combined elements specific to blacksmith shops in the local region. The shuttered window opening and roof extension allow the ventilation and illumination of interior work areas, and offer some protection from natural elements.

The orientation of the building also affords protection from the natural elements. The window opening and door of the Woods Distillery/Blacksmith Shop face northeast and southeast, respectively. Uninterrupted walls along the northwest and southwest sides of the shop face directions from which most of the winds and precipitation originate.

The internal contents of the Woods Distillery/Blacksmith Shop reflect the conventional and varied roles of blacksmith shops in the rural Catawba Valley. The contents of the shop suggest it functioned in the maintenance and repair of agricultural equipment and the completion of farrier tasks. Indicative of these tasks is the storage of spare and expended part from agricultural equipment, forged gate hinges, expended horseshoes and horseshoe nails, hardware, metal scraps and lumber. The overall pattern of the shop contents suggests a curation of agricultural equipment, the completion of basic farrier tasks and the expedient production of items commonly needed during daily farm operations in rural areas.

Although the shop contains much of the original blacksmithing equipment, there is a notable absence of blacksmithing tools. Only two fragments of tools (a broken awl and a broken hacksaw blade) were recovered from limited excavations in the shop. The absence of tools in the shop precludes additional inferences regarding the

range of activities carried out in the shop.

Subsurface testing of areas immediately surrounding the blacksmith shop did not produce evidence of activity areas related to smithing. Potential activity areas immediately in front of the shop may have been covered with asphalt when the adjacent roadway was paved. A scatter of artifacts recovered from the west side of the structure consisted of wire and machine-cut nails. These artifacts likely resulted from recent deposition since their distribution corresponded to a surface distribution of structural debris produced by recent wind damage to portions of the structure's roof and siding. Moreover, the form of the recovered nails was similar to nails still visible in the roof and siding of the structure.

The large quantities of forge waste material recovered from the shop interior may account for the absence of an exterior disposal area. Excavation Unit #2, located adjacent to the forge, produced a large quantity of coal fragments and cinder, or slag. This evidence suggests the smith dumped waste material from the forge on the shop floor near the forge, negating the need for an exterior waste disposal area.

Subsurface testing in and around the standing structure produced no definitive information regarding a former distillery operation. Archival records documented a distillery operated by William Woods, but the location of the distillery was not documented. Oral tradition purports that the blacksmith shop formerly functioned as the distillery; however, archival and

archaeological evidence neither support nor contradict this claim. The sale bill of William Woods' personal effects (see Table 8) indicated his distillery equipment and products were sold after his death. It is conceivable that his distillery was thoroughly cleaned before and during conversion to a blacksmith shop. In such a case, archaeological evidence for the distillery operation would be very difficult to discern.

Archaeological remains of another structure were identified to the northwest of the blacksmith shop. It is possible that the structure represents the distillery. It is equally possible that the remains represent a tenant or slave house. The subsurface testing methods employed in this study were designed to identify sites, estimate site boundaries and assess subsurface integrity. Conclusive answers to questions regarding site function are contingent upon more rigorous excavation methods.

The John-Sheppard Blacksmith Shop (44RN237)

Introduction

The John-Sheppard Blacksmith Shop is one element of a domestic and agricultural complex. The site is located along a topographic transition between a ridge slope and a floodplain in a narrow hollow on Crawford Ridge. The elevation of the site is about 2,050 feet above mean sea level. Two spring channels are adjacent to the northern portion of the site. These spring channels enter an unnamed tributary of the North Fork of the Roanoke River within 15 feet of the site.

The John-Sheppard Blacksmith Shop site is a multicomponent site that includes the archaeological remains of a blacksmith shop, a domestic refuse scatter and a scatter of prehistoric lithic debitage. The structure which enclosed the blacksmith shop was dismantled sometime after 1947 (Jack Shelor, personal communication). Since that time, the site has been used as pasturage for cattle. This land-use history has contributed to the preservation of the site's subsurface integrity; however, cultural and natural processes have caused some disturbance to the site.

A modern fence line, water pipe and camp fire have caused a limited amount of disturbance to the site. A greater impact to the integrity of the site has resulted from the wet soils in the immediate site vicinity. The continuous presence of water, combined with seasonal fluctuations of the local water table, have produced heavily oxidized and gleyed soils. These processes have

increased the rate of deterioration for metallic artifacts, and have blurred the stratigraphy of local soil profiles.

Research Methods

The location of the site was provided by local residents, Frankie and Louise Garman. The site location was verified by subsurface testing. Frankie and Louise Garman, Jack Shelor and Kyle Shelor were interviewed and their accounts of the blacksmith shop were noted.

Since the site was bounded by a ridge slope to the west and by a small drainage on the east, the overall site size was expected to be small and easily established. Therefore, a systematic unaligned subsurface testing methodology was used to investigate the site. Shovel test pits were placed at intervals of ten feet along north-south grid lines which had been placed at intervals of five feet.

Assessment of the subsurface integrity of the site was accomplished with two randomly placed excavation units. Both excavation units measured 1.5 feet squared.

Results of Historic Research

John John purchased two tracts of land totaling 150 acres from Jacob Brunk in 1867 for \$1,500. In 1895 John and Ellie John began the process of transferring the 150 acre tract to their 30 year old son Milton, and his wife Louvenia, in exchange for \$1,600 and 78 acres. The property deed was initiated in November of 1895, but was not entered until March of 1897 (Deed Book 16, page 463; WPA

Jacob Brunk Home). An article of agreement, dated January 1896, for Milton John's rental of William Burton's land and personal property suggests that Milton and Louvenia John did not reside on the 150 acre farm until 1897 (Deed Book 14, page 693).

Milton and Louvenia John retained the 150-acre parcel in 1900 with buildings valued at \$250. Land books recorded an increased value of buildings on their 150-acre tract from \$250 to \$450 between 1903 and 1904. By 1906, Milton and Louvenia John had acquired an additional 16 acres and sold their entire 166 acre landholding to John T. Sheppard for \$3,000 (Deed Book 35, page 438; WPA Jacob Brunk Home). In 1910 John T. Sheppard was recorded as the owner of the 166 acre parcel with buildings valued at \$500; the relevant land book entry identified Sheppard's property as part of the John Shop tract. The 166 acre tract was conveyed by the children and heirs of John T. Sheppard to Lloyd Shelor in 1947 (Deed Book 369, pages 479-481).

The two 1910 land book references to the John Shop tract, one portion in the possession of John John and the other owned by John T. Sheppard, may suggest the presence of two blacksmith shops operated by three generations of the same family. The first, established by Griffith John by 1850, was owned by Griffith's son John John at the end of the century. The second John Shop may have been established by John John after he acquired the Brunk tract in 1867; or John John may have always worked the Griffith John shop, and the blacksmith shop on the Brunk property may only have been established by Milton John after he acquired that property from his

father John John in 1897.

According to Kyle Shelor (personal communication), while John John owned the property from 1867 to 1897, he continued to work the shop established by his father Griffith John. The second shop was established by Milton John after he acquired the property from his father in 1897. Milton John operated the shop until he sold the property to John T. Sheppard. Later in time, Milton John operated blacksmith shops along the Blacksburg Road in Montgomery County and in Shawsville. It is not known if John T. Sheppard worked the shop established by Milton John.

Shop Description

The John-Sheppard Blacksmith Shop is no longer standing; however, photographs in the collection of Frankie and Louise Garman provide a depiction of the shop. The photographs were made shortly after Lloyd Shelor purchased the property in 1947.

The photographs depict the southern and eastern sides of the shop, and a partially collapsed lean-to shed flanking the southern side of the shop. Architectural characteristics of the shop include pole and sawn lumber framing, a gabled roof covered with wood shingles and a roof extension over the door. No apparent foundation is observable in the photographs.

The photographs also indicate the structure was built on top of a prepared earthen platform. The platform was raised on the narrow floodplain and it merged with the adjacent ridge slope terminus. The platform stood about two feet high, and it elevated

the shop out of the often wet conditions of the floodplain.

Oral accounts provide meager information regarding the internal layout or contents of the shop. A bellows in the possession of Jack Shelor may have originated from the John-Sheppard Blacksmith Shop (Kyle Shelor & Jack Shelor, personal communication).

Results of Subsurface Testing

Subsurface testing of the John-Sheppard Blacksmith shop site resulted in the identification of a large site comprised of three overlapping components. The components included the remains of a small prehistoric lithic scatter, a diffuse scatter of domestic refuse associated with a nearby house and spring house and a dense concentration of artifacts associated with the blacksmith shop. These components were defined through the excavation of 64 shovel test pits (see Figure 11).

The shovel test pits produced 1,387 artifacts for a total artifact recovery rate of more than 21 artifacts per shovel test pit (1387/64). Forty-three of the artifacts were ascribed to the prehistoric occupation and to modern use of the site area. Excluding these artifacts, the recovery rate for historic artifacts was extremely high, with 21 artifacts per shovel test pit (1344/64). Two formal excavation units, randomly placed within the defined boundaries of the blacksmith shop component, produced 136 artifacts. An inventory of the total 1,523 recovered artifacts is presented in Appendix 3.

The prehistoric component was characterized by a diffuse scatter of lithic artifacts. Five artifacts were recovered from five shovel test pits located within an area approximately 50 feet long by 25 feet wide. Temporally diagnostic artifacts were not recovered.

Domestic refuse associated with the farm house to the west and a spring house to the northwest was recovered over an area 85 feet long and 40 feet wide. The eastern boundary of this refuse scatter was adequately defined; however, definition of its western boundary was not pursued. The refuse scatter likely extends up the adjacent slope to the farm house and to the spring house. Artifacts recovered from the refuse scatter included ceramic sherds, windowpane fragments, a portion of a porcelain doll and fragments of container glass and coconut shell.

Although the historic refuse scatter overlapped the remains of the blacksmith shop, the subsurface distribution of artifacts associated with the blacksmith shop was clearly defined. These artifacts were restricted to an area approximately 55 feet long and 30 feet wide.

Coal and cinder fragments comprised more than 76 percent (1110/1458) of the historic artifacts recovered during subsurface testing of the blacksmith shop component. Almost 81 percent of the coal fragments and cinder were recovered from three shovel test pits located in a disposal area to the immediate north of the inferred shop walls. The remaining coal fragments and cinder were confined to the prepared earthen platform which served as the base

of the blacksmith shop.

The second largest category of the recovered artifact assemblage was comprised of fasteners, such as nails, rivets and screws. More than 11 percent (161/1458) of the historic artifacts recovered from the blacksmith shop component were fasteners. The majority of the fasteners were complete nails and fragments of nails (n = 151). Horseshoe nails, machine-cut nails and wire nails were equally represented in the recovered assemblage of historic artifacts. While the distribution of horseshoe nails was restricted to the blacksmith shop component, machine-cut and wire nails were widely distributed over the entire site area.

The recovered horseshoe nails and machine-cut nails represent both machine-made and hand-made varieties. Many of the machine-cut nails were cut from nail stock and hand-headed. Both machine-made and hand-made horseshoe nails were recovered. Also, one hand wrought staple was recovered.

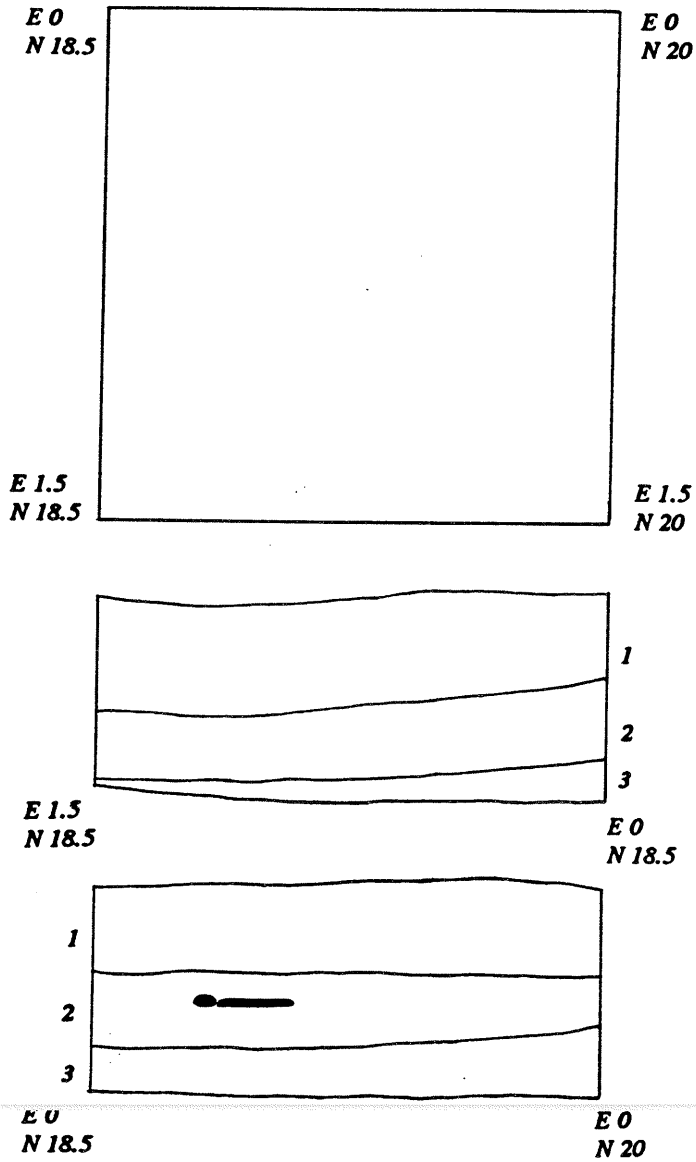
Jack Shelor has a collection of nails and staples found in an outbuilding of the farm. All staples in the collection were hand-made. The majority of the nails consisted of machine-cut nails, but hand-headed nails were also present in the collection. All the hand-headed nails have flat heads of irregular size. One side of the shanks of these nails have been tapered by hammering. A few hand wrought nails were present in the collection. The hand wrought nails have rose heads with both flat and sharp points. It is probable, but not certain, that these nails were produced by either John John or Milton John. Both men had owned the property

and both were known to have produced limited quantities of nails (Kyle Shelor, personal communication).

A linear exposure of cut stones was identified on the ground surface along the eastern side of the blacksmith shop component. These stones marked the edge of the prepared earthen platform which served as a base for the blacksmith shop. Two shovel test units, located to the north and south of the exposed stones, revealed additional cut stones at depths of less than one foot below ground surface. These stones were inferred to represent a retaining wall for the earthen platform.

Two excavation units were randomly placed within the defined boundaries of the blacksmith shop component. The fill from each unit was composed of three soil layers (see Figures 12 and 13). The first layer consisted of recently deposited brown clay-loam. Only a few artifacts were recovered from the base of this layer. The second layer contained partially oxidized clayey-loam and was interpreted as the shop floor. Artifacts recovered from this layer were concentrated in the upper portions of the layer. Only a few small artifacts were recovered from the lower portions of the layer. The final layer consisted of gleyed soils and contained no artifacts.

The artifacts recovered from the two excavation units were similar to those recovered from the shovel test pits. Of the 136 artifacts recovered from the excavation units, about 46 percent (n=63) consisted of coal fragments and cinder. Fasteners represented more than 31 percent (n=43) of the recovered artifacts.



- 1 - Brown clayey loam.
- 2 - Grayish-brown clayey loam lightly mottled with yellowish-brown sandy clay.
- 3 - Yellowish-brown sandy clay lightly mottled with grayish-brown clay loam.
- Metal Artifact

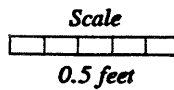
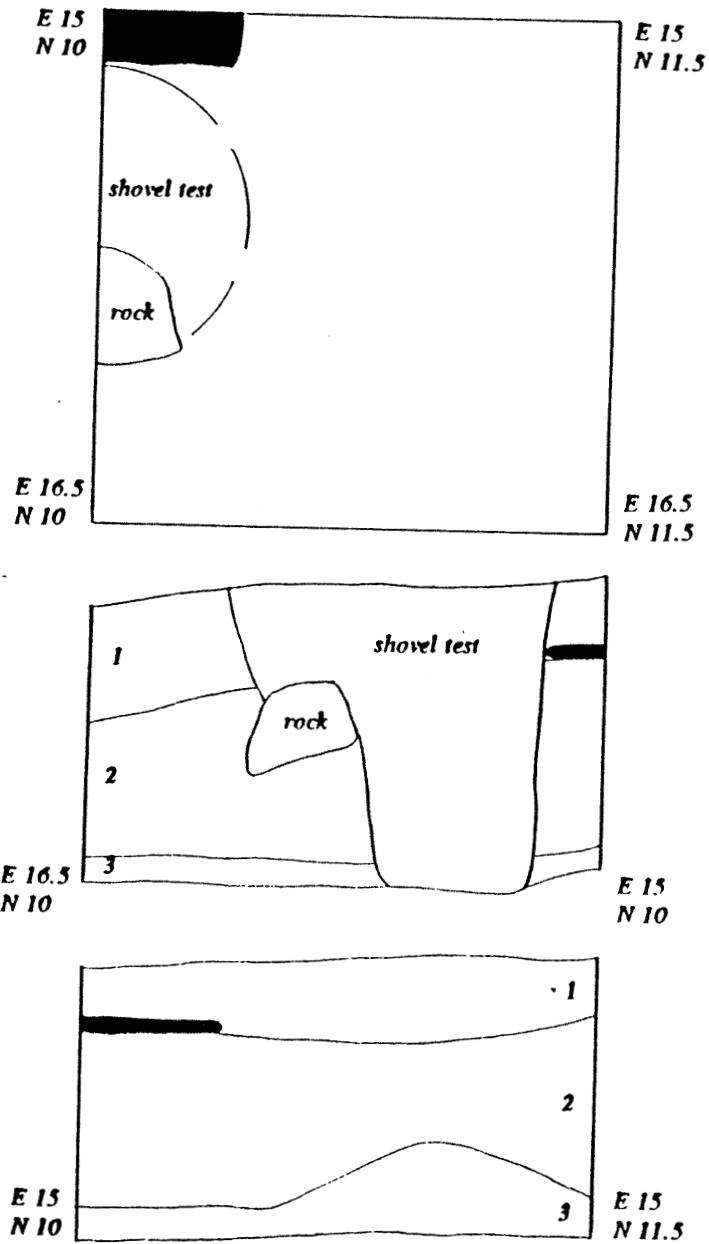


Figure 12. Plan and profile drawings of Excavation Unit #1, John-Sheppard Blacksmith Shop Site.



- 1 - Brown clayey loam.
- 2 - Grayish-brown clayey loam lightly mottled with yellowish-brown sandy clay.
- 3 - Gray gleyed sands.
- Metal artifact

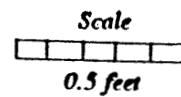


Figure 13. Plan and profile drawings of Excavation Unit #2, John-Sheppard Blacksmith Shop Site.

The remainder of the recovered artifact assemblage included one prehistoric lithic artifact, 12 glass and ceramic fragments and 17 metal artifacts other than fasteners.

Discussion

The John-Sheppard Blacksmith Shop represents a well preserved rural farm shop which operated from the late nineteenth century through the first half of the twentieth century. The standing structure, which formerly enclosed the shop equipment, incorporated structural elements typical of blacksmith shops in the Catawba Valley. Archaeological evidence indicated the shop was used for the typical and varied functions of rural farm shops.

The John-Sheppard Blacksmith Shop was constructed with pole and sawn lumber framing, vertical plank siding, a roof extension over the shop door and probably a shuttered window opening. These structural elements recur on many of the blacksmith shops in the Catawba Valley. The shuttered window opening and roof extension appear to be combined elements specific to blacksmith shops in the local region. These structural features allow the ventilation and illumination of interior work areas, while offering some protection from the natural elements.

The John-Sheppard Blacksmith Shop was oriented in a fashion similar to other blacksmith shops reported in this study. Existing photographs depict the shop with its front door facing northeast. This building orientation would have afforded some protection from the natural elements since most of the winds and precipitation

originate from the west and north.

Little is known of the form or location of the shop windows. Jack Shelor (personal communication) believes the shop had a shuttered window opening along one wall. Existing photographs depict the blacksmith shop with a flanking lean-to shed on the southern side; therefore, the shuttered window opening was probably located on the northern side of the shop. Archaeological evidence for the shuttered window opening or for other structural components was not produced during subsurface testing.

The methodology employed for subsurface testing at the John-Sheppard Blacksmith Shop was useful for site identification and estimation of site boundaries, but it produced very limited information regarding shop architecture or internal layout. Coupled with the lack of oral accounts for the shop interior and the impermanent nature of the building, inferences regarding the shop interior are limited. Archaeological evidence for the architectural elements of the shop is expected to be incomplete due to the impermanent nature of the shop and the lack of substantial architectural features, such as a foundation. Archaeological evidence for the shop architecture and internal layout is probably limited to the spatial patterning of artifacts and post hole stains from the framing timbers, bellows support posts and workbench support posts. The excavation of large units should provide a better opportunity for recovering such evidence.

Excavation Unit #1 produced a dense concentration of coal fragments, horseshoe nails, nail fragments and other metal

artifacts. This artifact concentration may reflect an anvil work area. The lack of artifacts to the immediate west of Excavation Unit #1 may suggest the location of the bellows, and associated storage area (see Light 1987: 57, 60). Additional support for this inference is derived from oral accounts suggest that the shop probably had a shuttered window opening along the northwest wall. A window opening would provide the necessary light for the primary internal work areas, such as the anvil/forge work area and the work bench. All the standing blacksmith shops reviewed in this study exhibited work benches adjacent to window openings. It is reasonable to assume that the John-Sheppard shop was similarly designed.

A concentration of ceramic sherds and fragments of container glass from Excavation Unit #1 and a shovel test pit to the east may also suggest the general location of a work bench. Glass and ceramic containers were commonly used in blacksmith shops to hold fluxing agents and lubricants (Light 1987: 9, 16-17). However, the fragments of glass containers and ceramic vessels may be associated with the domestic refuse scatter which overlapped the blacksmith shop.

Photographic documentation of the blacksmith shop, and the subsurface distribution of artifacts related to the blacksmith shop, suggest three activity areas immediately outside the shop. The activity areas include two work areas and a single waste disposal area.

Three shovel test pits (grid loci East 5/North 30, East

10/North 25, and East 10/North 35) were located adjacent to the inferred location for the northwest wall of the blacksmith shop. These three shovel test pits produced numerous pieces of scrap metal and almost 81 percent of the total recovered fragments of coal and cinder. This area was interpreted as the shop disposal area.

High concentrations of horseshoe nails and nail fragments were recovered from the eastern edge of the prepared earthen platform. This area is depicted on the photographs of the blacksmith shop as a level ground area immediately outside the shop door and partially sheltered by the roof extension. Most of the horseshoe nails were used, and their distribution immediately outside the shop door suggests that the area was used for farrier work.

A concentration of used horseshoe nails, nail fragments, equipment parts, hardware and unidentified metal fragments was recovered from the southern edge of the prepared earthen platform. This is the area of the collapsed lean-to shed as depicted on the photograph of the blacksmith shop. The distribution of these artifacts suggests that this area was used as a general work area.

The archaeological investigations of the John-Sheppard Blacksmith Shop site indicated the shop maintained a functional pattern similar to other rural farm blacksmith shops in the Catawba Valley. The recovery of horseshoes, horseshoe nails and parts of agricultural equipment suggested the completion of basic farrier tasks and the maintenance and curation of agricultural equipment. Similar patterns were interpreted for all the other rural farm

shops reported in this study.

A hand forged object from the blacksmith shop is in the possession of Frankie and Louise Garman. The object, possibly a betty lamp or lamp holder, may indicate the limited production of household items. Archaeological evidence of hand-made nails, staples and horseshoe nails also indicates the limited production of building and shoeing hardware.

Many of the recovered artifacts reflect the typical tasks which were completed in rural farm shops. The addition of hand-forged items in the recovered artifact assemblage suggest that the operator of the shop possessed more than the rudimentary skills characteristic of most blacksmiths in rural farm shops.

The Spessard-Hylton Blacksmith Shop (44RN239)

Introduction

The Spessard-Hylton Blacksmith Shop comprises one element of a large domestic and agricultural complex. The shop is located on a gentle ridge slope along the southeastern side of Sandstone Ridge. Site elevation is approximately 1,860 feet above mean sea level. A spring channel flows about 50 feet to the west and south of the shop. This spring channel makes its confluence with Catawba Creek about 650 feet southeast of the shop.

Pasturage separates the blacksmith shop from the core area of domestic and agricultural outbuildings. Modern alteration of the surrounding landscape is limited to a recently constructed springhouse.

The standing blacksmith shop has not been used for about 15 years (Mabel Hylton, personal communication), but it retains exceptional above ground integrity. The structure is well maintained, and portions of the exterior siding and roof have been recently repaired. Ironically, the high degree of above ground integrity is contrasted by subsurface deposits disturbed by groundhog burrowing.

Research Methods

The Spessard-Hylton Blacksmith Shop was field inspected, mapped and photographed. Intensive subsurface testing was not conducted in or around the shop. One trowel test was made adjacent

to the workbench to verify the existence of subsurface deposits. Mabel Hylton was interviewed, and her oral accounts of the shop were noted.

Results of Historic Research

In 1889 Allen Spessard deeded 282 acres to his brother and sister, Michael G. and Roberta A. Spessard (Deed Book T, pages 640-642). Michael G. and Roberta A. Spessard jointly owned 220 acres of this land on Catawba Creek with buildings valued at \$1,000 in 1890. Michael and Roberta Spessard increased their landholding to 382 acres by 1900 with buildings valued at \$900. The same property with the same building value was recorded in the possession of Michael Spessard and R. A. Woods in the 1910 land book, though Michael Spessard had died two years before.

Mabel Hylton reported her father Michael Spessard married Sarah Grisso, and her aunt Roberta Ann later married J. T. Woods, a son of William Woods. By 1910, ownership of the farm was maintained by Roberta Ann and the heirs of Michael Spessard. Following the deaths of Michael in 1908 and Roberta Ann in 1917, Sarah Grisso Spessard and J. T. Wood were wed. Property rights were later transferred by intestate succession to Mabel Hylton and her husband J. W. Hylton (Mabel Spessard, personal communication).

Mabel Hylton believes that the blacksmith shop was built by her father Michael Spessard in the late nineteenth century when the farm was jointly owned by Michael and his sister Roberta Ann. The shop remained in continuous use from the late nineteenth century

through the early 1970s. The shop was used for farrier work, as well as the repair and manufacture of agricultural items (Mabel Hylton, personal communication).

Shop Description

The blacksmith shop measures 18 feet by 16.5 feet and is constructed with a heavy braced frame (see Figure 14, and Plate 4). A partial limestone foundation supports the southern portion of the structure and functions to level the building on the sloping terrain. The northern portion of the structure has no foundation. Machine-cut nails affix a board and batten exterior covering to the structure; however, many of the battens no longer remain. Recently replaced exterior boards have been applied with wire nails.

The gabled roof was originally covered with wood shingles. A standing seam metal covering was added to the roof after 1929 (Mabel Hylton, personal communication). Portions of the metal covering were replaced during recent repairs to the wind damaged southern portion of the roof. A one-foot roof extension shelters a door on the east gable end. The vertical plank door is mounted with hand forged strap hinges and hand wrought nails. The door latch is also hand forged. A modern latch and lock secure the door.

The structure is one and a half stories high. An upper room is used for storage, and entry is gained through a small door on the east gable end. The door is constructed of vertical planks and is mounted with hand forged strap hinges.

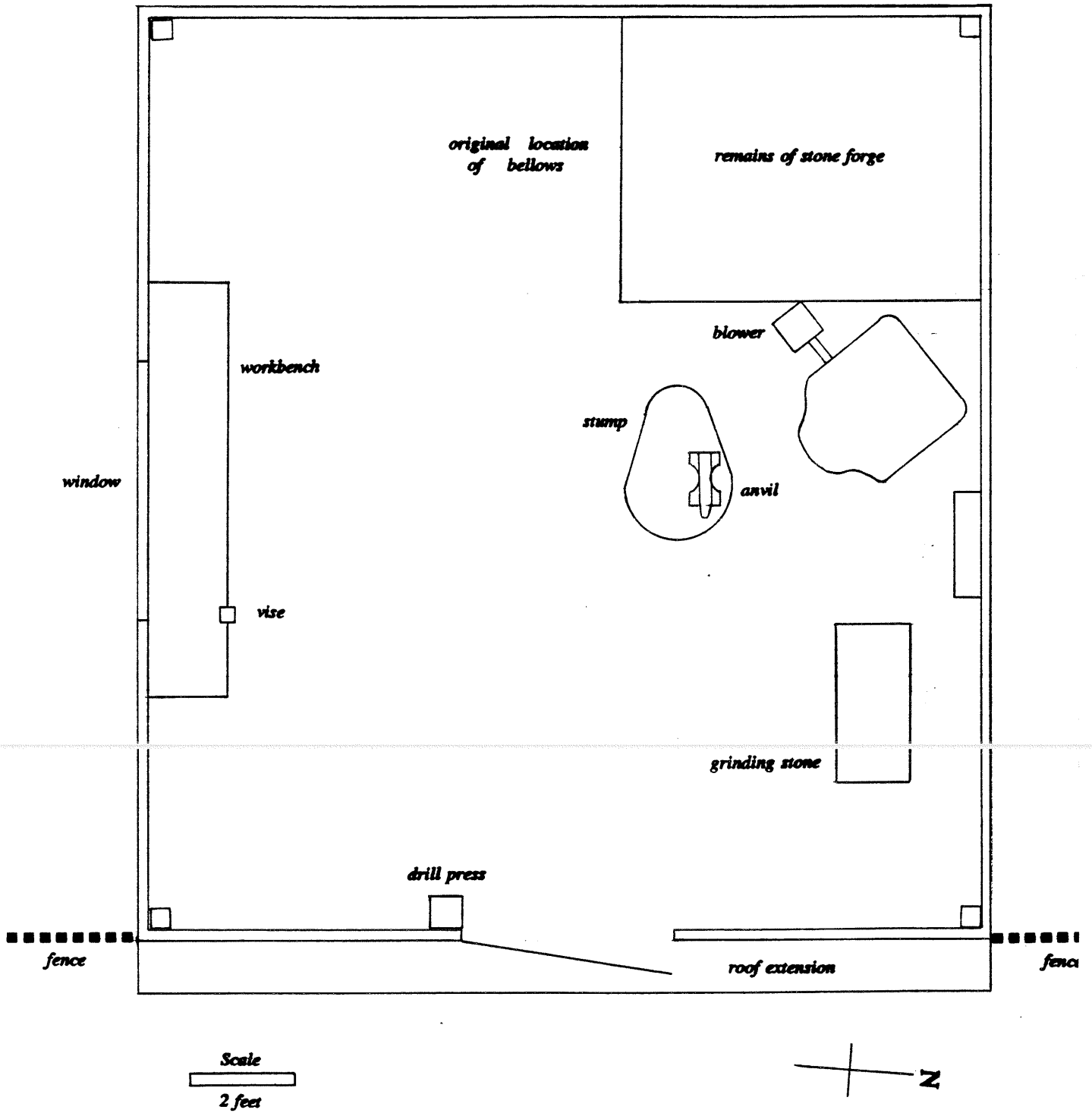


Figure 14. Plan map of the Spessard-Hylton Blacksmith Shop.

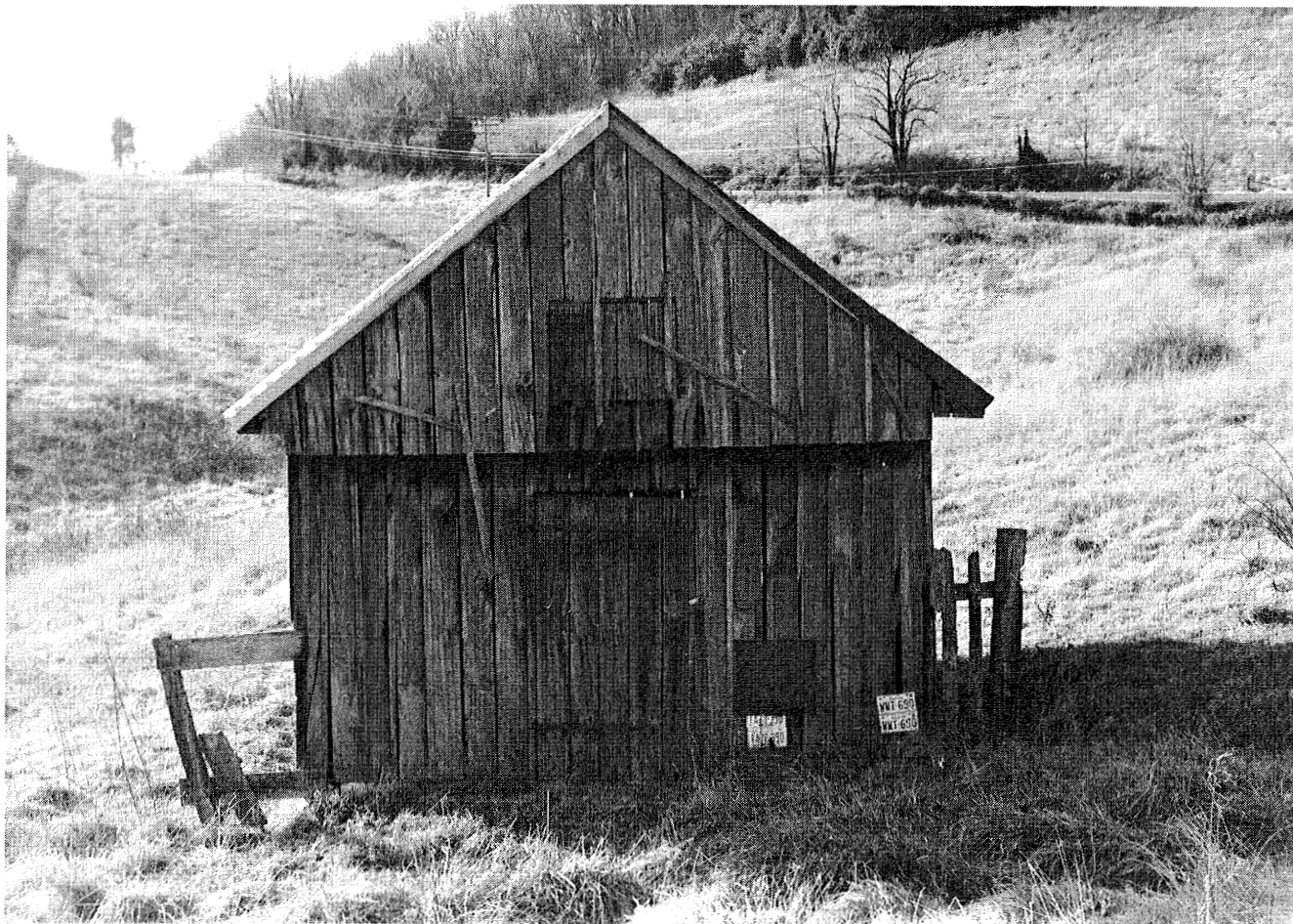


Plate 4. Exterior of the Spessard-Hylton Blacksmith Shop.

A final feature of the shop is a shuttered window opening on the south wall. The window opening is 5 feet long and 1.5 feet high. The horizontal plank shutter is mounted to the top portion of the window opening with strap hinges. The window provides light to the interior workbench and work area.

The shop interior contains a remarkably complete array of blacksmithing equipment and tools. Support posts for the bellows and the remains of a large stone forge line the west wall of the shop. The large forge is constructed of local fieldstone and measures five and one half feet wide by seven feet long. The large bellows is still in the shop but is no longer attached to its support posts. The bellows and forge remained in use until the 1930s when J. W. Hylton purchased a portable forge and blower (Mabel Hylton, personal communication).

The portable forge and blower now stands in front of the original stone forge (see Plate 5). The Model 400 forge and blower was produced by the Champion Forge and Blower Company. It features a detached blower operated by a hand crank, and a large - - 3 x 2.5 feet - - forge. A poker, a spade and a pair of flat tongs still rest on the forge. Neither the stone forge nor the portable forge have exhaust hoods or flues.

A large Fisher anvil is located in the central area of the shop. The anvil is fixed to the level surface of a large tree stump which rests on the surface of the shop floor. Several tools, including punches and chisels, hang on staples driven into the side of the stump. A sledge hammer and a box containing anvil tools,



Plate 5. Portable forge, Spessard-Hylton Blacksmith Shop.

horseshoe nails and scrap metal lie next to the anvil.

A hand-cranked grindstone mounted onto a wooden frame occupies the northeastern corner of the shop floor. A wall shelf and some hand forged pegs for hanging equipment are on the northern interior wall of the shop.

A Model 23 drill press produced by the Silver Manufacturing Company is mounted on the east wall adjacent to the door. The drill press can be powered by a hand crank or by a belt connected to a tractor's power take-off. The drill press was purchased by J. W. Hylton at the auction of William Anderson's blacksmithing equipment and tools (Mabel Hylton, personal communication). A wall shelf next to the drill press holds a set of wood bits and other tools.

The south wall is lined by an eight feet long plank workbench. A leg vise is mounted on the workbench. The leg of the vise extends into the dirt floor of the shop. Cluttered on the top of the workbench are numerous tools and pieces of scrap metal and hardware. Other tools rest on a narrow shelf above the window opening. Tools associated with the workbench and window shelf consist of both blacksmithing and woodworking tools. Examples of the tools include: tongs, hand-forged hammer heads, punches, chisels, draw knives, rasps, a pry bar and clippers. Other materials on the workbench include metal bars, shelf brackets and wooden handles.

Much of the shop floor is covered by sheet metal which had been removed from the roof during recent repairs. Other items on

the floor include: lumber, hand-made livestock yokes, hand-carved plow handles and other spare parts from agricultural equipment. Additional materials on the floor include: buggy tires and wheels, scrap metal, a lime barrel and an empty farrier box.

Unfortunately, much of the farrier equipment has been taken from the shop. Farrier tools remaining in the shop include horse rasps, a clinch cutter, a hand-made butteris and a wooden brace for supporting the lower leg of a horse. The butteris was made by J. T. Woods and the brace was made by J. W. Hylton (Mabel Hylton, personal communication).

Mabel Hylton (personal communication) recalls many shop activities which exemplify the varied uses of the blacksmith shop over time. The shop was often used for the expedient production of tools and equipment. Items still found in the shop which were made by J. T. Woods include tools, such as a driving hammer, and agricultural equipment, such as plow handles. Other shop work relating to agriculture involved the manufacture, sharpening, and repair of teeth for peg-toothed harrows. Also, after the Hyltons' purchased their first tractor in the 1940s, J. W. Hylton manufactured bands, or "tires," to cover cleats on the tractor wheels and allow road driving. Mabel Hylton also recalls assisting her step-father, J. T. Woods, in the blacksmith shop. Her chores included operating the bellows to the forge. Although girls and women did work in blacksmith shops, their involvement was rare (Lasansky 1980:11).

Discussion

The Spessard-Hylton Blacksmith Shop is an extremely well preserved rural farm shop in operation from the late nineteenth century through the third quarter of the twentieth century. The standing structure combines structural elements unusual for blacksmith shops in the Catawba Valley with design elements more typical of local blacksmith shops. The internal contents of the shop reflect the typical and varied functions of a rural farm blacksmith shop.

Vertical plank exterior siding, shuttered window openings and roof extensions are structural elements which recur on many of the blacksmith shops in the local area. The shuttered window opening and roof extension appear to be combined elements specific to blacksmith shops in the local region. These architectural features permit the ventilation and illumination of interior work areas and offer some protection from natural elements.

The orientation of the shop also affords protection from the natural elements and is similar to all the shops in this study. The window opening and door of the Spessard-Hylton Blacksmith Shop are on the south and east walls, respectively. Uninterrupted walls, on the north and west sides of the shop, face directions from which most of the winds and precipitation originate.

The heavy brace framing of the Spessard-Hylton Blacksmith Shop differentiates it from other shops in the local area. This framing system increases the stability of the building, provides greater weight bearing support, and permits an overhead storage room. The

longevity of the Spessard-Hylton Blacksmith Shop is attributed to its strong frame and proper maintenance.

The one and a half story height of the Spessard-Hylton Blacksmith Shop is also unusual for blacksmith shops in the Catawba Valley. The upper level of the building contains a storage area capable of holding a large amount of material. Excess lumber and metal can be stored safely in this area.

The contents of the Spessard-Hylton Blacksmith Shop reflect its functions in the maintenance and repair of agricultural equipment, and the completion of farrier tasks. Indicative of these tasks is the storage of numerous items. Stored materials include: spare and expended parts from agricultural equipment, farrier tools, a variety of woodworking and blacksmithing tools, hardware metal scraps and wood. The overall functional pattern of the shop contents suggests a curation of agricultural equipment, the completion of farrier tasks and the production of items commonly needed during daily farm operations in rural areas.

The nature of a rural farm blacksmith shop reflects a smith's level of skill and competence. Most blacksmith shops on rural farms contain a limited range of equipment and tools necessary for the completion of rudimentary forging and repair tasks. The type and variety of equipment and tools in the Spessard-Hylton Blacksmith shop suggest the operators of the shop possessed a greater degree of skill than was common for nonprofessional smiths on rural farms.

The larger size of the forges and anvil in the shop suggest

the working of larger and heavier materials than was common for other farm blacksmith shops in the region. The presence of hand forged strap hinges, nails, punches, chisels and a driving hammer indicate the skill necessary to produce tools and building hardware.

The handmade butteris and brace for farrier work suggest the skill and innovation necessary for the production of custom tools to compliment and ease common tasks. The handmade plow handles, livestock yokes, and harnesses also indicate a broad range of metal and woodworking skills necessary for the production of agricultural equipment.

The Starkey Blacksmith Shop (44RN240)

Introduction

The Starkey Blacksmith Shop represents one element of a large agricultural and domestic complex. It is located at a slope terminus along the southeastern flank of Sandstone Ridge at an elevation of 1,780 feet above mean sea level. The shop is approximately 65 feet east of a relict spring channel. The spring formerly made its confluence with Catawba Creek about 164 feet to the south.

Although the blacksmith shop is no longer in use, it still stands and is in good condition. Blacksburg Road (State Route 785) is located seven feet south of the shop. It separates the shop from the majority of the agricultural outbuildings. Other agricultural and domestic outbuildings are also separated from the shop by the farm house about 200 feet to the east. The area to the north of the site is currently used for pasturage.

The shop appears to have no modern alterations, and only minor changes have occurred to the surrounding landscape. A former carriage house once stood to the immediate southwest of the farm house. More recent changes to the surrounding landscape include the paving and probable widening of the Blacksburg Road, the introduction of a road sign, and the placement of utility poles adjacent to the shop.

Research Methods

The Starkey Blacksmith Shop was field inspected, mapped and photographed. Property owner William Starkey was interviewed, and his oral accounts of the shop were noted. Due to the wishes of the property owner, intensive subsurface testing was not conducted in or around the shop. One trowel test was made inside the shop to verify the existence of subsurface deposits adjacent to the interior workbench.

Results of Historic Research

By 1895 Ammon Starkey had acquired from S. F. Simmons 468 acres of land in Catawba Valley with buildings valued at \$875 (Deed Book 12, pages 391-392). Ammon Starkey maintained the same property with buildings valued at \$900 from 1900 until 1921 when the value of buildings on that parcel increased to \$1,590. Since other Catawba Valley land book entries for 1921 do not show an abrupt increase in building values, Ammon Starkey must have made substantial improvements or additions to his buildings between 1920 and 1921.

William Starkey, son of Ammon Starkey, believes that the blacksmith shop was built circa 1915. His father hired Frank Eakin as a farm laborer and to work in the shop. Blacksmithing at the shop was limited to farm related work and minor repairs to household items (William Starkey, personal communication).

Shop Description

The blacksmith shop structure measures 10.3 by 10.75 feet, and is constructed of pole and sawn lumber framing (see Plate 6). The vertical plank exterior siding was applied primarily with wire nails, although a few machine-cut nails were also used. The structure rests on the ground surface with no foundation. Its gabled roof is covered by standing seam metal applied with wire nails. A roof extension of 5.25 feet is supported by two poles. Lumber is stored over the ceiling in the roof extension. The roof extension shelters the vertical plank door and creates a sheltered work area on the eastern side of the shop. The shop door hangs on strap hinges and closes with a forged latch.

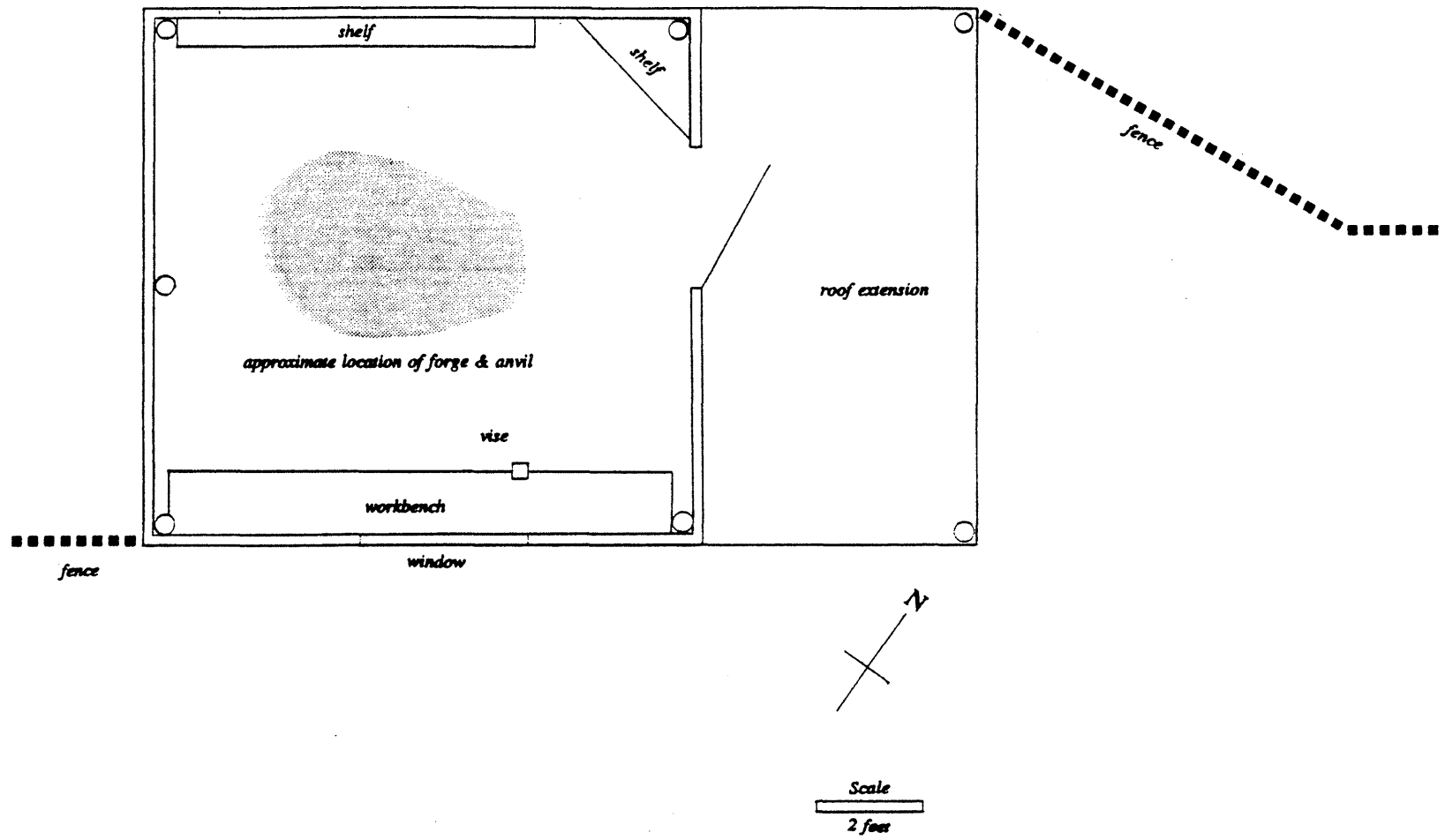
A final feature of the structure is a window opening on the south wall. The opening is 3.2 feet long and 1.75 feet high. The remains of two strap hinges on the top portion of the window opening suggest a previous plank shutter. The window provides light to the interior workbench and forge area.

Although the interior of the shop still holds evidence of blacksmithing, most of the blacksmithing tools and equipment are no longer present. The shop formerly housed a portable forge and blower, an anvil and associated tools; however, these articles were sold about 15-20 years ago. The forge and anvil were formerly located in the central portion of the shop (see Figure 15). The open hearth of the forge did not have an exhaust hood or flue (William Starkey, personal communication).

A workbench is attached to the interior wall along the



Plate 6. Exterior of the Starkey Blacksmith Shop.



Blacksburg Road - Route 785

Figure 15. Plan Map of the Starkey Blacksmith Shop.

southern side of the shop (see Plate 7). Two boards support the workbench by forming diagonal braces between the workbench and the wall. A leg vise is mounted on the workbench, but the leg of the vise no longer extends into the ground. The top of the workbench is cluttered with numerous items including some tools, hand forged gate hinges, farm equipment parts, mower blades and metal scrap. Metal stock and farm equipment parts for repair jobs also hang from the wall above the workbench.

The northern wall of the shop contains a shelf along its entire length, as well as one corner shelf. The wall shelf is supported by diagonal lumber braces. Spare parts from agricultural equipment, some horseshoe nails and a few tools are on these two shelves. Other items hang from the wall above the shelves.

The shop floor was originally dirt. Since the dirt floor was often muddy, William Starkey covered it with a rock pavement. The shop floor is also cluttered with scrap metal and lumber, plow parts, scythe handles, a saw and other items. These items were deposited after the floor was covered with rock.

Discussion

Although the central blacksmithing equipment is no longer present, the Starkey Blacksmith Shop is a good example of a well-preserved rural farm shop of the early to mid-twentieth century. The structure's construction techniques and internal contents reflect the typical design and function of blacksmith shops on rural farms. The structure combines construction elements common

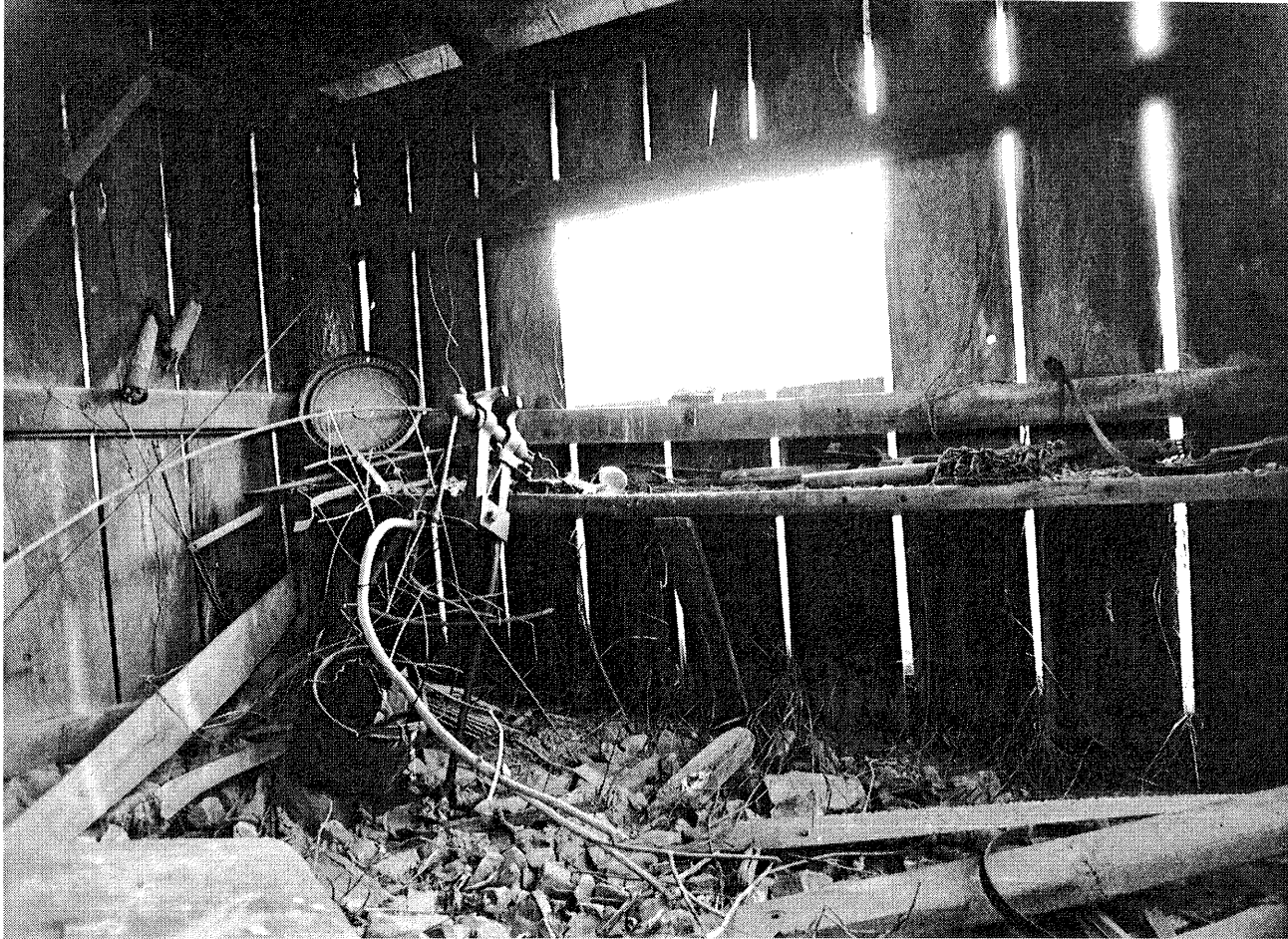


Plate 7. Workbench, Starkey Blacksmith Shop.

to early twentieth-century regional farm and domestic outbuildings with design elements that may be functionally specific to blacksmith shops in the Catawba Valley region. Construction elements common to twentieth-century regional outbuildings include vertical plank exterior siding, pole and sawn lumber framing and the use of wire nails. The presence of a few machine-cut nails in the structure suggests that machine-cut nails were still in use well into the twentieth century, even though nail production in 1900 was dominated by wire nails (Priess 1973: 90).

Shuttered window openings and roof extensions over doors are structural elements which recur on most of the farm blacksmith shops in the Catawba Valley. These structural elements facilitate the ventilation and illumination of primary work areas in the shop while offering some protection from the natural elements.

The orientation of the shop also affords protection from the natural elements. The window opening and door are on the southeast and northeast walls, respectively. Uninterrupted walls, on the northwest and southwest sides of the shop, face directions from which most of the winds and precipitation originate.

While the Starkey Blacksmith Shop no longer contains most of its original blacksmithing equipment and tools, the remaining contents appear to mirror a functional pattern common for rural farm smithies. The contents of the shop include metal scraps, forged gate hinges and horseshoe nails. The shop also contained spare parts from agricultural equipment which could be easily readapted during repair work. This pattern suggests a curation of

agricultural equipment, a completion of basic farrier tasks and the expedient production of small items commonly needed during daily farm operations in rural areas.

The McNeil Blacksmith Shop (44RN238)

Introduction

The McNeil Blacksmith Shop is part of a large agricultural and domestic complex. It is located on a ridge slope terminus along the northwest flank of Catawba Mountain at an elevation of 1,900 feet above mean sea level. A spring channel flows adjacent to the shop. This unnamed drainage eventually makes its confluence with Catawba Creek about 200 feet to the north. The shop is enclosed by a large agricultural outbuilding which stands among a group of historic and modern agricultural outbuildings.

While the shop is still functionally equipped for the completion of basic maintenance and repairs, blacksmithing has not been practiced in the shop for about 25 or 30 years (Katherine McNeil, personal communication). The shop and its enclosing structure are in good condition, and the larger structure still functions as a multipurpose agricultural outbuilding.

Research Methods

The blacksmith shop and its enclosing structure were field inspected, mapped and photographed. Katherine McNeil, the current landowner, was interviewed and her accounts of the shop were noted. Intensive subsurface testing was not conducted in or around the blacksmith shop. One trowel test was made adjacent to the portable forge to verify the presence of subsurface deposits in the shop.

Results of Historic Research

John W. Doosing owned 241 acres of land on Catawba Creek with buildings valued at \$900 in 1910. In 1916 title to the property transferred from J. W. Doosing to J. W. McNeil (Deed Book 83, pages 110-111; WPA Joseph Anderson Barn).

The McNeil Blacksmith Shop is owned by Katherine McNeil. She is unaware of the construction date of the blacksmith shop; however, she assumes it was built before her father-in-law J. W. McNeil purchased the farm in 1916. Use of the shop was confined to farrier tasks and the maintenance and repair of farm equipment and household items. Neighbors also used the shop for shoeing their horses, a practice common for farm blacksmith shops of the area (Katherine McNeil, personal communication).

Shop Description

The McNeil Blacksmith Shop occupies the central portion of a large, multipurpose agricultural outbuilding (see Figure 16 and Plate 8). A storage area for farm equipment borders the south side of the shop, and a storage area for farm equipment and hay borders the north side of the shop. The outbuilding is constructed with a framework of upright poles. Boards connect some of the poles to facilitate the attachment of corrugated metal siding. The north end of the building is open, and the east side of the building's southern portion is open. The structure is covered with a metallic shed roof, and it rests on a dirt floor.

The small blacksmith shop area measures 14 feet by 10 feet.

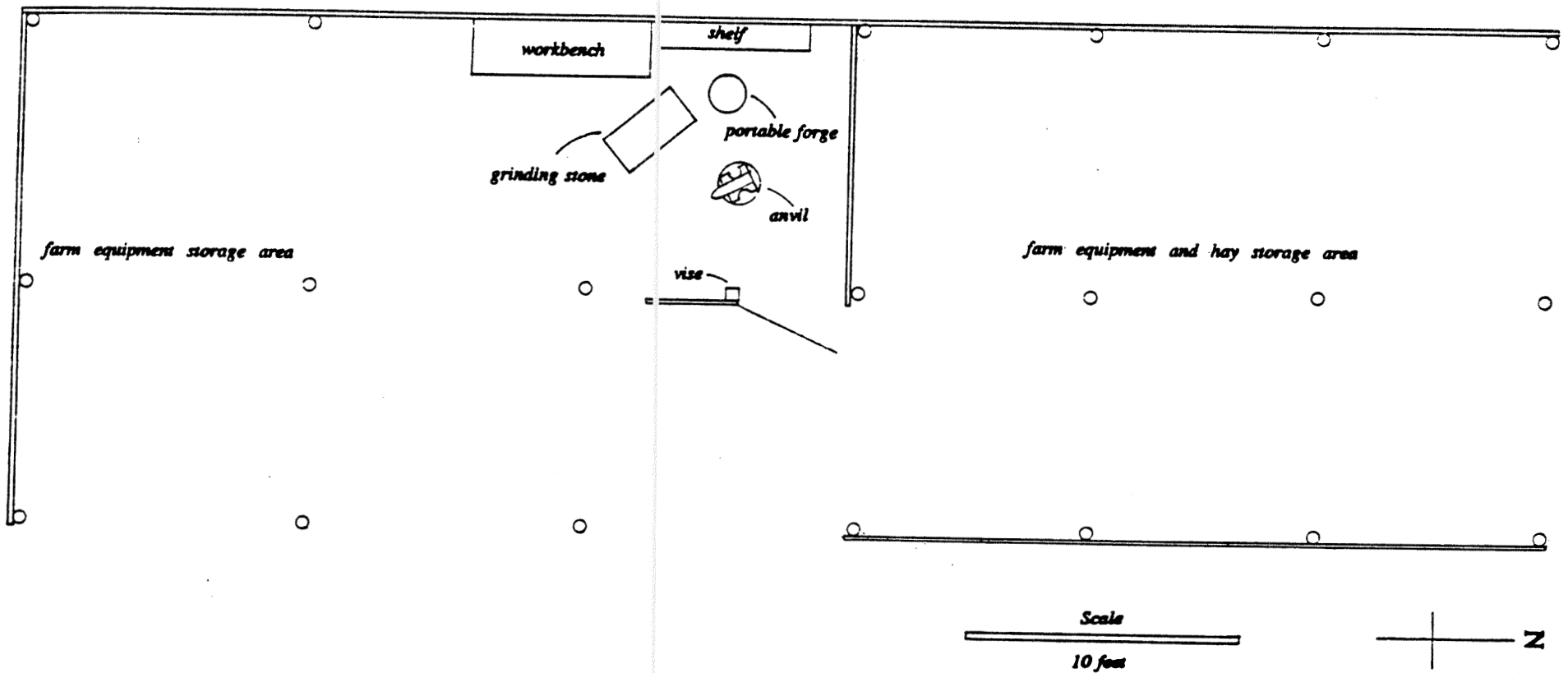


Figure 16. Plan Map of the McNeil Blacksmith Shop.

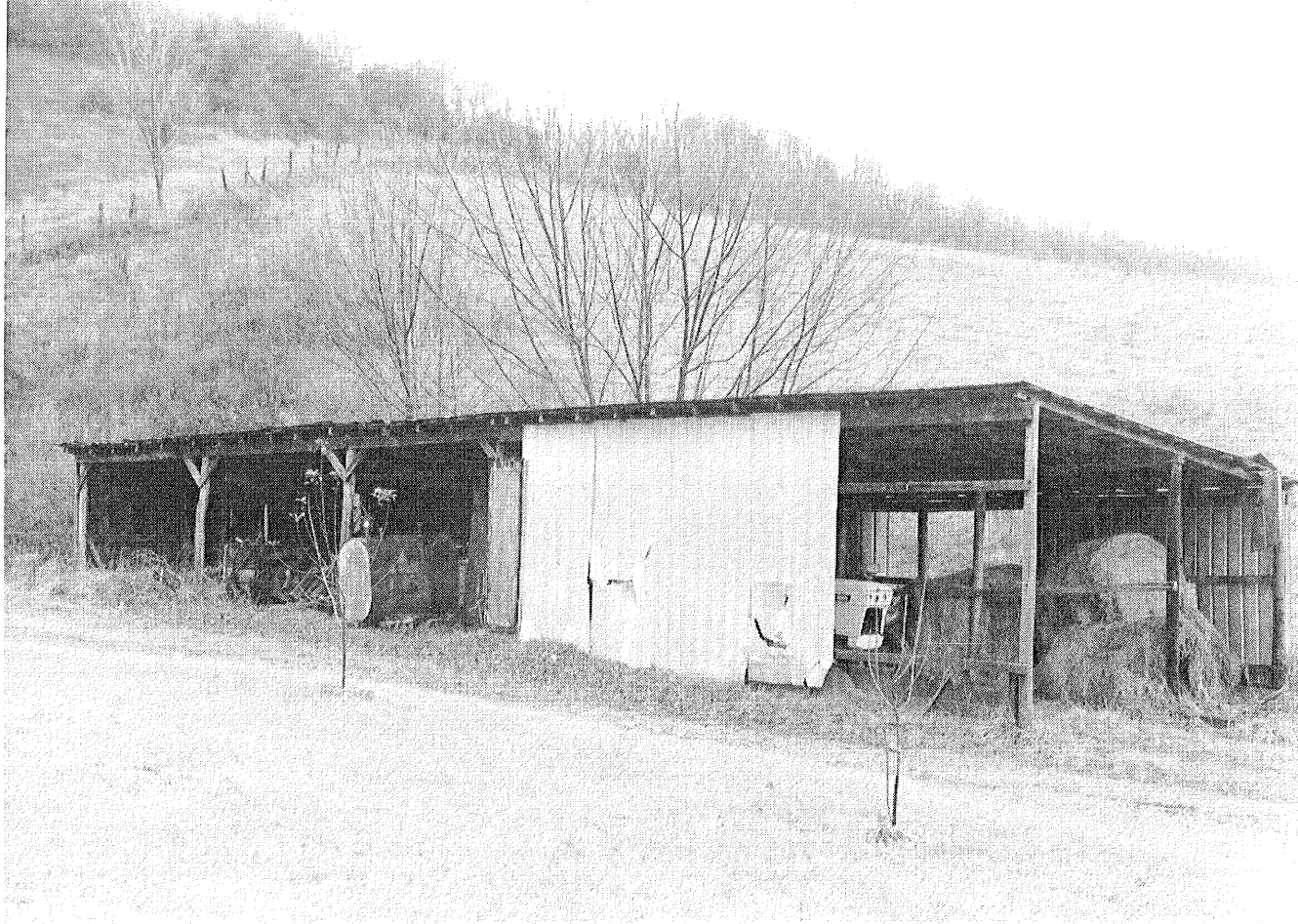


Plate 8. Exterior of the McNeil multipurpose agricultural outbuiding.

Vertical plank partitions and a plank door partially divide the blacksmith shop from the rest of the outbuilding (see Figure 16). The partitions and door are constructed entirely with wire nails. It is possible, but not certain, that the shop was completely enclosed in the past. The lack of a south wall for the shop precludes the need for a window or a window opening.

The shop still houses the primary blacksmithing equipment (see Plates 9 and 10). A portable forge with attached blower stands near the west wall of the shop. The open hearth of the forge does not have an exhaust vent or flue. An operational grinding stone and an anvil are adjacent to the forge. The grinding stone is mounted on a low wooden frame and has a geared hand crank. The anvil is on a stump which rests on the dirt floor of the shop. The anvil body bears the date 1906 and the eagle trademark of the Fisher & Norris firm (see Smith 1966: 65). A leg vise is attached to a post next to the doorway of the shop.

Other features of the shop include a workbench and a shelf attached to the west wall of the shop. The workbench is 6.5 feet long and the shelf is 5.5 feet long. Both are covered with parts from agricultural equipment, tools, metal scraps and hardware. Associated tools include hammers, wrenches, a saw, a brace and bits, a circular saw blade and an anvil hardie. Various other materials and equipment, such as livestock harnesses, are hung from the west wall above the shelf. Additional equipment and tools, such as blacksmith tongs and farrier tools, hang on and lean against the north wall of the shop.



Plate 9. Interior work area of the McNeil Blacksmith Shop.

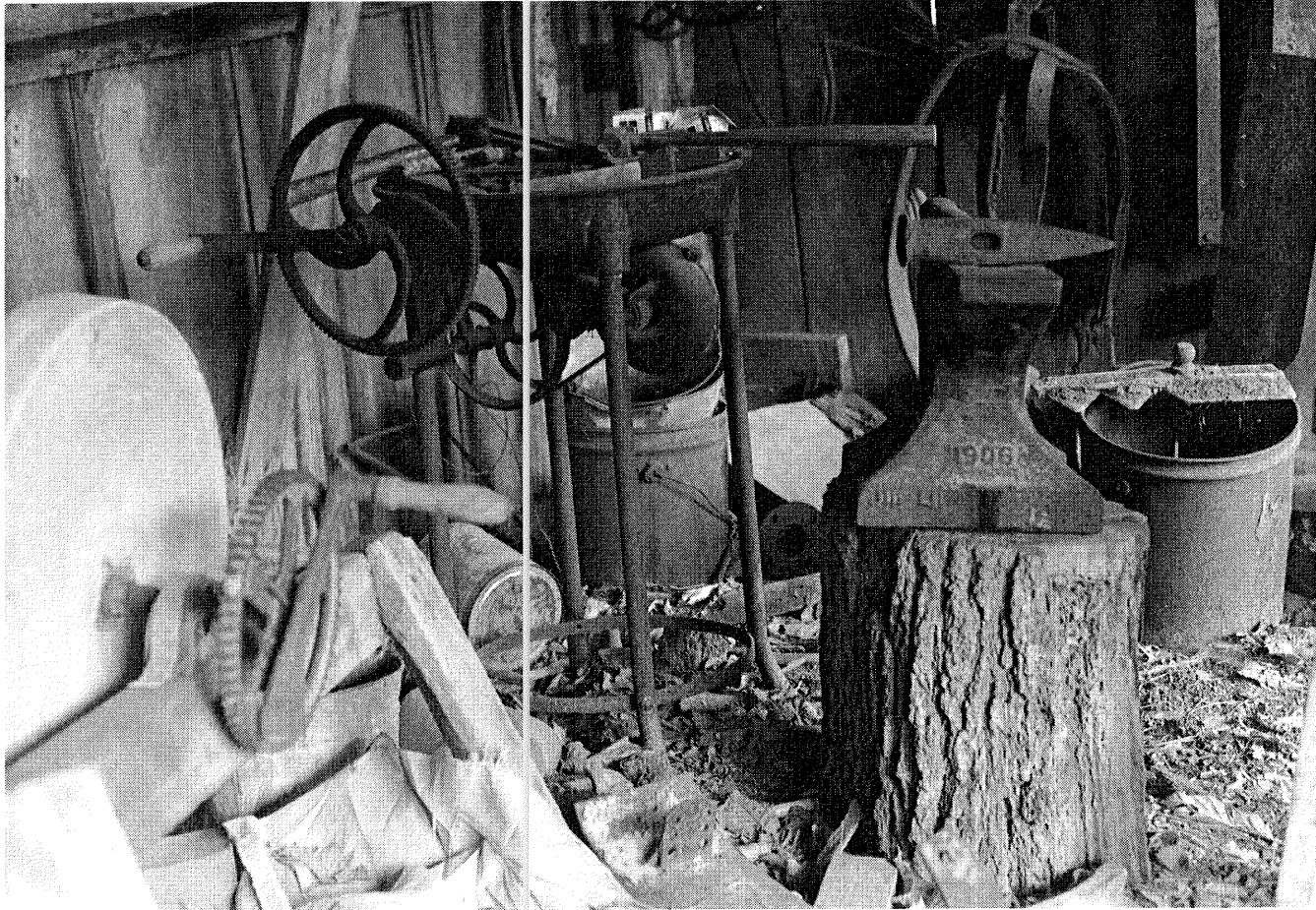


Plate 10. Interior work area of the McNeil Blacksmith Shop.

Discussion

The McNeil Blacksmith Shop is an example of a well preserved rural farm shop enclosed within a multipurpose agricultural outbuilding. The enclosure of the shop in a pole barn differentiates the McNeil Shop from other shops in this study. The interior of the shop maintains an integrity of internal work and storage areas, as well as the spatial layout of blacksmithing equipment. The internal contents of the shop also reflect the typical function of a rural farm blacksmith shop.

Although pole barns gained widespread popularity after the 1940s, their design was recommended as early as the 1880s (Noble 1984: 47). Modern popularity of the pole barn is due to its economy of cost, the ease in which it is adapted to a broad range of uses and the ease by which its internal design can be modified for optimal spatial organization (Noble 1984:47). The utility of the pole barn which encloses the McNeil Blacksmith Shop is reflected in its design.

Enclosing a blacksmith shop within an equipment storage building facilitates the periodic tasks of maintaining and repairing equipment. The open sides of the building allow equipment to be moved easily into internal bays, and provide illumination so the bays can also function as work areas. Proximity of the smithing equipment to the storage/work areas also compliments the repair process. An open space to the immediate east of the blacksmith shop is analogous to the roof extensions featured on other blacksmith shops of the area. It provides a

convenient and sheltered work area for repair work and farrier tasks. With the availability of nearby work areas, the need for a large work space in the shop is eliminated. This permits the blacksmith equipment and tools to be confined to a smaller area.

The contents of the McNeil Blacksmith Shop reflect its functions in the completion of farrier tasks, and the maintenance and repair of agricultural equipment and household items. The storage of numerous items is indicative of these tasks. Stored items include hardware, metal scraps, spare and expended parts from agricultural equipment and a variety of woodworking and metalworking tools. The overall functional pattern of the stored materials in the shop suggests a curation of agricultural equipment and household items, and the completion of basic farrier tasks.

The Anderson Blacksmith Shop (44RN235)

Introduction

The Anderson Blacksmith Shop site represents the remains of a commercial blacksmith shop which operated during the first half of the twentieth century. The site is located on a gentle slope along the southeastern flank of North Mountain. Site elevation is about 1,760 feet above mean sea level. An unnamed tributary of Catawba Creek flows about 262 feet west of the site area.

The structure which formerly enclosed the Anderson Blacksmith Shop was dismantled during 1948 or 1949 (Carl Smith, personal communication). Since then, the site has been used as pasturage or covered with brush overgrowth. This modern land use practice has helped preserve the subsurface integrity of the site. Nonetheless, recent cultural practices have caused a limited amount of disturbance to portions of the site.

Modern improvements to Keffer Road have undoubtedly caused some disturbance to the site area. The widening of the road and the construction of a drainage ditch alongside the road have probably affected the western perimeter of the site. Also, the modern placement of telephone poles and fence posts has caused a small amount of disturbance to the western portion of the site.

Research Methods

The Anderson Blacksmith Shop was initially identified through a review of historic business directories (Boyd 1917: 860). The

location of the Anderson Blacksmith Shop site was provided by local residents, Eugene Orr and Minor Keffer. Mabel Hylton, Minor Keffer, Katherine McNeil, Illamae Lindsay, Eugene Orr, Kyle Shelor, Kenneth Skelton and Carl Smith were interviewed and their accounts of the shop were noted. The location of the blacksmith shop was verified by subsurface testing.

Since local residents indicated that fence lines and Keffer Road demarcated the site on three sides, the overall site size was expected to be small and easily established. A systematic unaligned subsurface testing methodology with ten feet interval shovel testing was used to investigate the site. The subsurface integrity of the site was assessed with two formal excavation units. Both excavation units were randomly placed within the established boundaries of the site, and each measured 1.5 feet squared.

Results of Historic Research

William S. Anderson was born in 1869. He moved to the Catawba Valley after a term of employment in the coal fields of West Virginia (Carl Smith, personal communication). William S. Anderson first appeared in the 1910 Manuscript Census for Catawba Valley as a 41-year-old blacksmith who owned his own shop and house. However, the first recorded property deed for William S. and Clara Anderson in the Catawba Valley was dated March 1912. They acquired a 10 acre tract from the Morgan estate for \$200 (Deed Book 60, page 556). A second property deed, dated August 1912, documented the

exchange of land parcels between William S. and Clara Anderson and the Mountain View Sanitorium. The land parcels were approximately one-quarter acre in size, and the parcel acquired by the Andersons included improvements thereon. The description of the property boundaries in the deed referred to a "smith shop," indicating that a blacksmith shop was present on the property (Deed Book 62, page 361).

In 1913 William S. and Clara Anderson were first recorded in the Roanoke County Land Books as the owners of 10 acres of land in Catawba with buildings valued at \$300. William S. Anderson was still in possession of the tract of land by 1940 with buildings then valued at \$800. The final deed reference to William S. Anderson was dated February 1947. William S. Anderson, a widower, conveyed approximately 10 acres to his son-in-law and daughter, J. E. and Mary Smith (Deed Book 370, pages 368-369). William Anderson died in the winter of 1951 at the age of 82 years (Carl Smith, personal communication).

Although many of Catawba Valley's residents recall William Anderson, oral histories of the blacksmith or his business are scant. Minor Keffer, owner of the Catawba Mercantile, reported that William Anderson was the sole owner and operator of the blacksmith shop. Minor Keffer often contracted with William Anderson for the production of small items to be sold at the store. Illamae Lindsay and Carl Smith, the granddaughter and grandson of William Anderson, also reported the production of general tools, such as hammers and pry bars, and agricultural tools. Shortly

after retiring from the blacksmith profession, William Anderson auctioned his equipment and tools. Minor Keffer purchased a grinding stone at the auction, and E. W. Hylton purchased a drill press which was installed at the Spessard-Hylton Blacksmith Shop (Minor Keffer and Mabel Hylton, personal communication).

Oral tradition contains little information regarding William Anderson's blacksmithing work, although many individuals remember Anderson was often engaged to replace tires on the wheels of wagons and carriages and to complete other repair work (Mabel Hylton, Minor Keffer, Katherine McNeil, and Kyle Shelor, personal communication). Minor Keffer also related that a construction firm from Stone Mountain, Georgia encountered a problem while building the Catawba Sanitorium. Apparently, their drill bits were not adequately tempered for drilling local rock outcrops for building stone. William Anderson was hired to apply his skills to this problem. Following a period of experimentation, Anderson arrived at the precise degree of tempering necessary for the proper functioning of the drill bits. This account attests to the specialized skills of William Anderson as a professional blacksmith.

Shop Description

The Anderson Blacksmith Shop is no longer standing, but oral accounts and an existing photograph enable a partial description of the structure which enclosed the shop. The following general description of the structure is based upon one of Minor Keffer's

photographs, which depicts a portion of the shop exterior, and information reported by Carl Smith and Minor Keffer. The following description of the internal and external arrangement of the shop was provided by Carl Smith.

The Anderson Blacksmith Shop was constructed of pole and sawn lumber framing erected over a dirt floor. It had an exterior covering of vertical planks and a gabled roof covered with metal over tar paper. According to Minor Keffer, entrance to the shop was gained through two large plank doors along the south gable wall of the building. Windows sealed with pane interrupted the west and east walls of the building. Carl Smith, who assisted with the dismantling of the shop, provided a different recollection of the shop. According to Carl Smith, entrance to the shop was gained through a sliding plank door on the west side of the building. The dimly-lit shop was illuminated only by indirect light from the door, one window which interrupted the north wall, and a set of three windows which interrupted the east wall over the workbench. The existing photograph of the shop does not provide sufficient detail to resolve the contradictory accounts.

The shop door led to a central bay, which acted as the primary work area within the shop, and the internal lay-out of equipment within the shop was arranged around the central bay. A shaft and system of pulleys and tackle were mounted over the bay. A portable forge and blower was located at the rear of the bay and in proximity to the work bench. The work bench was mounted on the inside of the east wall directly below windows sealed with pane.

A bellows was also located along the southern wall of the building, although it may not have been operational.

A hand-cranked grinding stone mounted on a wooden frame was located outside the shop adjacent to the door. Obviously, the grinding stone could be moved into the shop during inclement weather. Conversely, the portable forge and bellows were sometimes moved outside of the shop when weather permitted.

Results of Subsurface Testing

Field investigations of the Anderson Blacksmith Shop Site resulted in the identification of a narrow and elongated site interrupted by an eroded road trace. The short road trace provided access to the shop from Keffer Road. A landscape feature and a dense scatter of domestic and blacksmith debris were exposed on the ground surface along the north side of the road trace. A diffuse scatter of blacksmith related artifacts was exposed on the ground surface to the south of the road trace. The boundaries of these two areas were defined by the excavation of 77 shovel test pits (see Figure 17).

The shovel test pits produced 3,636 artifacts for a total artifact recovery rate of more than 47 artifacts per shovel test pit (3636/77). Two formal excavation units were randomly placed within the defined boundaries of the site. Both excavation units were located in the southern component of the site, and produced a total of 120 artifacts. An inventory of the total 3,756 artifacts is presented in Appendix 4.

Fragments of coal and cinder comprised more than 68 percent (2495/3636) of the artifacts recovered from subsurface testing of the Anderson Blacksmith Shop site. The distribution of coal and cinder was concentrated in the southern portion of the site. Only six fragments of coal and cinder were recovered from the northern portion of the site. Fragments of coal and cinder were widely distributed throughout the southern portion; however, only two concentrations were identified. One concentration was located around grid locus East 20, North 45, and the other concentration extended from grid locus East 10, North 5 through East 10, North 35 (see Figure 17). The latter concentration corresponded to surface exposures of coal and cinder.

Fragments of sheet metal and unidentified metal pieces comprised the second largest category of artifacts recovered by shovel test pits. More than seven percent (265/3636) of the recovered artifacts consisted of metal fragments. These artifacts were widely distributed over the southern portion of the site. In the northern part of the site, metal fragments were limited to the area within the landscape feature.

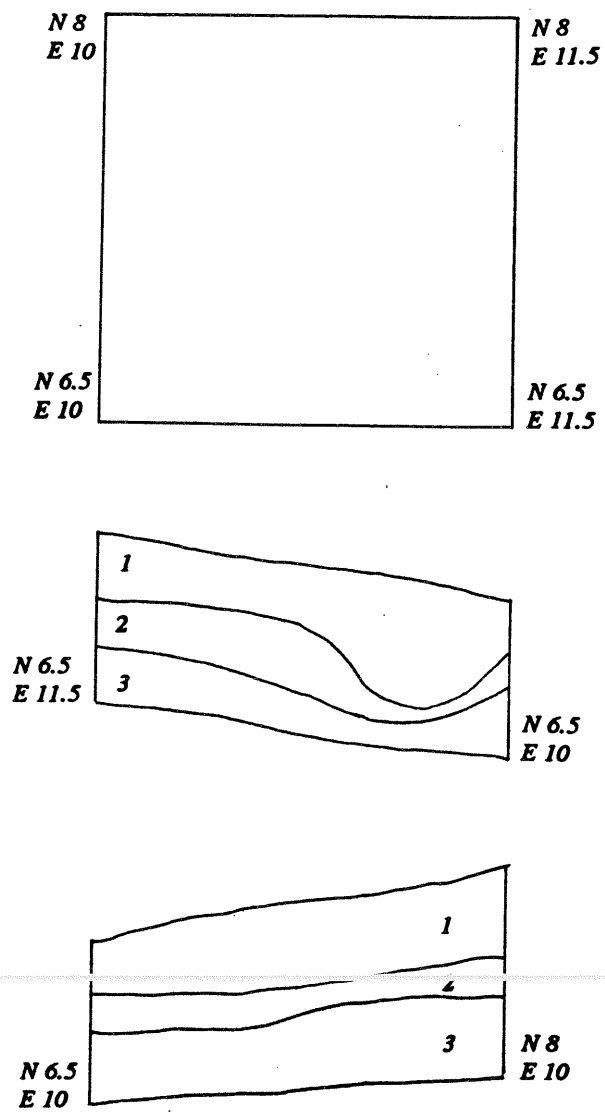
Fasteners, such as nails, bolts and screws, comprised almost six percent (205/3636) of the artifacts recovered from shovel test pits. Wire nails composed the largest category of fasteners (49%, 101/205) and were widely distributed over the entire site. More than 31 percent (66/208) of the fasteners were horseshoe nails. All but one of the horseshoe nails were recovered from the southern part of the site. Horseshoe nails were widely distributed in this

area with one concentration at grid locus East 10, North 00.

The remainder of the artifact assemblage recovered from shovel test pits at the Anderson Blacksmith Shop site was composed of architectural elements and a wide range of blacksmith related items. The architectural elements consisted of strap hinges and windowpane fragments. Item related to blacksmithing included hardware, machine parts and tool fragments.

Two excavation units were randomly placed within the defined boundaries of the site. Both of the excavation units were located in the southern part of the site. The fill from each excavation unit consisted of three soil levels (see Figures 18 and 19). The first layer was composed of a medium brown clayey loam. The majority of the artifacts recovered in Excavation Unit #1, and all of the artifacts from Excavation Unit #2, originated from this soil layer. Artifacts were recovered from depths of 0.15 through 0.3 foot below ground surface. The second layer consisted of yellowish-brown sandy clay loam. Only four artifacts were recovered from this layer in Excavation Unit #1. The third layer consisted of yellowish-brown sandy clay loam mottled with brownish clayey loam. The third layer contained no artifacts.

The artifacts recovered from the two excavation units were similar to those recovered from the shovel test pits. Of the 120 artifacts recovered from the excavation units, 55 percent (n=66) were metal fragments, more than 17 percent (n=21) were fasteners, and more than 16 percent (n=20) were fragments of coal and cinder. Other artifacts included hardware, a horseshoe, a drill bit



- 1 - Medium brown clayey loam.
- 2 - Yellowish-brown sandy clay loam heavily mottled with brown clayey loam.
- 3 - Yellowish-brown sandy clay loam mottled with reddish-brown clay.

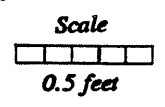
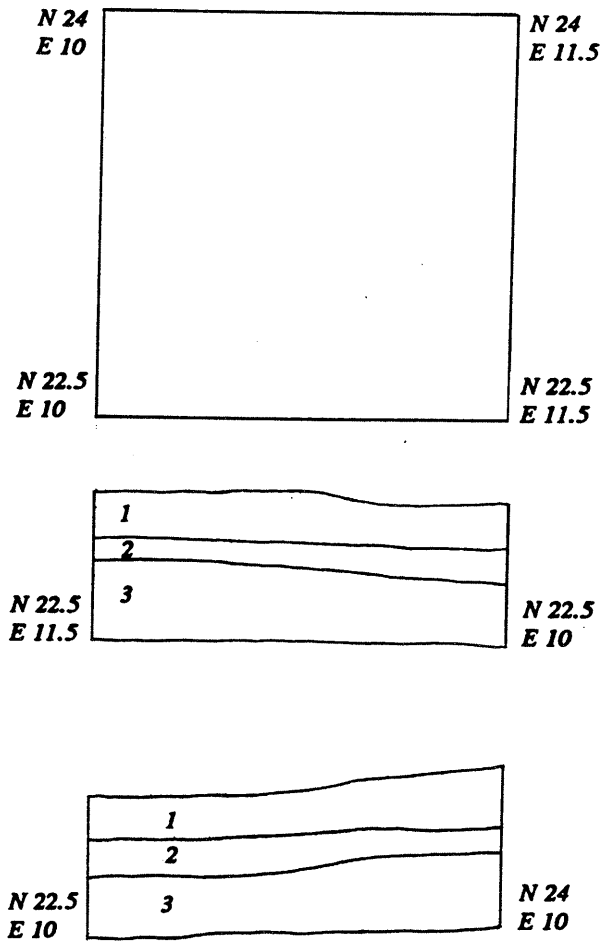


Figure 18. Plan and profile drawings of Excavation Unit #1, Anderson Blacksmith Shop Site.



- 1 - Dark brown clayey loam.*
- 2 - Medium brown clayey loam heavily intermixed with gravel.*
- 3 - Yellowish-brown sandy clay mottled with medium brown clayey loam.*

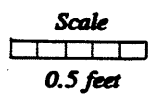


Figure 19. Plan and profile drawings of Excavation Unit #2, Anderson Blacksmith Shop Site.

fragment and fragments of windowpane.

Discussion

The Anderson Blacksmith Shop site represents the shallowly buried remains of a commercial blacksmith shop which operated from the early twentieth century through the mid-twentieth century. The site has undergone limited disturbance during recent times, but it still maintains a high degree of subsurface integrity. Research indicates the site functioned primarily in farrier tasks and the maintenance and repair of wagons. Secondary functions included the repair and maintenance of machines and tools. The operator of the shop also engaged in the limited production of items which entered the local market economy.

The exact location of the Anderson Blacksmith Shop within the identified boundaries of the site has not been conclusively determined. Oral accounts of the shop location were contradictory. Some informants indicated that the shop was located in the northern part of the site, while others reported the shop was located in the southern part of the site. Carl Smith, who assisted with the dismantling of the shop reported the shop was located in the northern part of the site. Aerial photographs for 1939 depict a structure on the northern part of the site. By 1953 the structure was no longer present (Soil Conservation Service 1939: BV-38-76, 1953: DTS-86-29). The aerial photographs do not depict a structure on the southern part of the site.

Carl Smith also reported that his aunt, a daughter of William

and Clara Anderson, indicated that William Anderson also operated a small grist mill on the small land parcel which contained his shop. Carl Smith reasonably assumed that William Anderson operated a blacksmith shop on the small land parcel, eventually acquired the land parcel and shop through a land exchange with the Mountain View Sanatorium and later constructed another small building next to the blacksmith shop to house his milling operation. Following the decline in his blacksmithing business, William Anderson moved his smithing equipment into the grist mill building and dismantled the older building which previously housed his smithing equipment.

Investigations on the site support Carl Smith's assumption. The northern part of the site was covered by a surface scatter of debris which measured approximately 20 feet by 25 feet. Domestic artifacts in the surface scatter included an arm from an electrical floor lamp, glass canning jars, whiteware/ironstone sherds and fragments of a porcelain commode. The only apparent item related to blacksmithing was a tire bender. Other artifacts exposed on the surface included probable architectural elements such as strap hinges, metal pipe, metal straps and roofing sheet metal. The eastern edge of the surface exposure of artifacts was bounded by a landscape feature which apparently demarcated the side and corner of a building. This landscape feature probably demarcated the wall and corner of the building depicted on the 1939 aerial photograph.

Twenty-eight shovel test pits were excavated in the northern part of the site. The shovel test pits produced 110 artifacts for a recovery rate of almost four artifacts per test pit (110/28).

More than 68% of the recovered artifacts consisted of nails and metal fragments. Architectural artifacts included three windowpane fragments and five asphalt sheet fragments. Blacksmithing artifacts included seven pieces of hardware, two horseshoes, one horseshoe nail and only six fragments of coal and cinder.

The southern part of the site contained a diffuse scatter of artifacts exposed on the ground surface. The artifacts included strap hinges, metal fragments and numerous fragments of coal and cinder. Forty-two shovel test pits excavated in this part of the site produced 3,526 artifacts for a recovery rate of almost 84 artifacts per shovel test pit. A large quantity of architectural and blacksmithing artifacts were recovered. Architectural artifacts included a strap hinge, 49 windowpane fragments, a disc fastener with attached asphalt sheeting and 518 asphalt sheet fragments. Blacksmithing artifacts included 23 pieces of hardware, three horseshoes, 65 horseshoe nails, three tool fragments and 2,489 fragments of coal and cinder.

The higher artifact recovery rate, and the higher frequency of blacksmith related artifacts, in the southern part of the site suggests the most likely location for a blacksmith shop. Archaeological investigations of other blacksmith shops in this study produced high artifact recovery rates with high frequencies of horseshoe nails, horseshoes, coal and cinder inside and around the shops.

Oral accounts of shop location and dismantling in the late 1940s, coupled with evidence from aerial photographs, suggest

William Anderson's original blacksmith shop was located in the southern portion of the site. Following a decline in his blacksmith business, William Anderson consolidated his two commercial pursuits into one building on the northern portion of the site. The relatively low frequency of artifacts in the northern part of the site probably reflects its limited use for blacksmithing over a short period of time. The relatively low frequency of artifacts may also reflect post-occupational disturbance to the site when the shop contents were auctioned and the shop dismantled. The high frequency of artifacts in the southern part of the site suggests the primary location Anderson's blacksmithing trade, and, possibly, its use as an outside activity and disposal area after Anderson moved his blacksmithing equipment to the grist mill building in the northern part of the site. Conversely, the southern part of the site may represent the location of John Hackley's blacksmith shop which operated at the Catawba crossroads just prior to the operation of William Anderson's shop.

While the exact location of the Anderson Blacksmith Shop within the identified boundaries of the site was not conclusively determined, the archaeological and documentary investigations suggested that the shop provided a wide range of services to the surrounding community. Oral accounts indicated that services were centered on transportation related activities, such as farrier work and the maintenance and repair of wagons. Supporting evidence was provided by the documentation of artifacts from surface and

subsurface contexts such as horseshoe nails, horseshoes, a clinching block and a tire bender. Other functions probably included the repair of agricultural equipment, as well as the production, repair and sharpening of agricultural tools. These general agricultural services were probably important; however, only minimal supporting evidence for these services was provided by the investigations. The shop operator also produced a limited amount of items for his professional use and for entry into the local market economy.

The service orientation of the Anderson Blacksmith shop indicates a continuity of services offered by commercial blacksmith shops since the nineteenth century. The inclusion of spent and modified machine parts in the artifact assemblage recovered from the Anderson Blacksmith Shop site indicates the added role of machinery repair. This reflects broad economic and technological changes which became widespread in the early twentieth century and affected the traditional services and products offered by blacksmiths.

Concluding Remarks

A Note on Limitations of the Research Methods

Research on blacksmithing in the rural Catawba Valley resulted in a list of 13 blacksmiths who worked from 1850 through 1920. This list included three blacksmith assistants and ten individuals who were presumably professional blacksmiths. This information was the product of oral histories complemented by manuscript census research.

Census records provided the best documentary evidence available for the occupations of Catawba Valley's residents. However, census records, like other records, can contain errors of inaccuracies and omissions. Beginning in 1850, census takers enumerated occupations including full time blacksmiths. Therefore, the information provided by census records is limited to ten year intervals after 1850. Other blacksmiths most likely lived and worked in Catawba Valley before 1850, or between census years after 1850, since the blacksmithing profession was necessary for the viability of all early communities. Manufacturers schedules often provide further documentation of specific aspects of a blacksmith shop. Manufacturers schedules pertaining to the study area, however, were either incomplete or absent. Finally, documentary records lacked information regarding small blacksmith shops which acted as ancillary structures on farms.

The archaeological component of this study was not formulated for the discovery of blacksmith shops. Rather, the archaeological

research was designed to verify purported blacksmith shops, and to investigate the size and nature of subsurface deposits. Field methods employed in this study provided an adequate means of verifying site locations and estimating site boundaries. The field methods also provided sufficient information for formulating preservation plans and guidelines for intensive excavations. Nonetheless, the interpretive power of the recovered information was limited. Intensive excavations would have been necessary for a better understanding of site structure and production, or to permit in-depth discussions of broader issues such as regional development within the context of technological, economic and social change.

Oral accounts of blacksmithing in Catawba Valley were collected from local residents for specific locational information of known blacksmith shops in the study area. Oral accounts also provided varied information regarding the architecture, internal shop layout, and activities and services performed at the shops. The nature of this information was, of course, limited to the memory of the informants. Oral accounts provided little information pertinent to the period before 1900. Comparisons of oral accounts with one another and with the archival and archaeological records indicated the accounts had a high degree of reliability.

Archaeological Features of Blacksmith Shops

The seven blacksmith shops reported in this study exhibited a

high degree of variability in building construction, location of interior and exterior activity areas, internal shop lay-out and other material remains. Variability among the shops may be attributed to functional differences between the shops, temporal changes in blacksmithing and local economic systems, the differential skill of individual shop operators, or the shop owners' predilections for efficient or convenient use of the shop.

While the material remains of blacksmith shops exhibit great variability, they also display similarities. These trends most cogently characterize blacksmith shops in Catawba Valley; however, they may be applied to other regions as guidelines for investigating and interpreting the material remains of blacksmith shops.

The four standing blacksmith shops reported in this study were small. The shops ranged in size from about 111 square feet (Starkey shop) to 297 square feet (Spessard-Hylton shop). The mean size for the four shops was 193 square feet. Archaeological investigations at four blacksmith shops also indicated that subsurface distributions of blacksmith-related artifacts were restricted in size. The Woods shop was the smallest shop with subsurface distributions of artifacts estimated at 41 feet in length and 26 feet in width. The Anderson shop was the largest of the shops with artifacts distributed over an area 140 feet in length and 40 feet in width.

The small size of blacksmith shops is probably one reason why few blacksmith shops have been identified during archaeological

surveys. Survey methodologies commonly structure subsurface tests at 20 meter (about 66 feet) intervals which may not detect small sites such as blacksmith shops. Other characteristics of blacksmith shops which may hinder their recognition and identification are topographic position and the nature of material remains. The shops recorded in this study were often on sloping terrain, at junctions of ridge slopes and floodplains adjacent to small drainages and in other topographic settings often perceived by archaeologists as areas with low or no potential for site occurrence. Finally, sites of blacksmith shops rarely exhibit surface exposures of artifacts, and subsurface remains are primarily composed of fasteners, such as nails, and small fragments of cinder and coal. These types of artifacts, when discovered in low frequencies, are sometimes disregarded or considered insufficient evidence to warrant continued testing and evaluation.

Subsurface excavations at the blacksmith shop sites in Catawba Valley produced very little architectural evidence. This is not surprising since standing blacksmith shops, and oral accounts of previous shops, indicated that local blacksmith shops were not constructed with substantial architectural features. None of the shops recorded in this study rested on complete foundations. Only at the Spessard-Hylton and Johns' shops were partial stone foundations used during shop construction. One other shop with evidence for a foundation was the Woods shop where two foundation stones were found. The foundation systems at these three shops functioned to level the structures on sloping terrain.

Other shops recorded in this study were constructed with pole and sawn lumber framing and had no foundations. The lack of substantial architectural features, such as building foundations, has been reported as an architectural characteristic of blacksmith shops in other areas of the Eastern United States (e.g., Lasansky 1980: 6; Rotenstein 1987; Harmon 1992: 1992). Other evidence for shop architecture was limited to artifacts such as nails and strap hinges which may represent building hardware. Without supporting contextual evidence, it is difficult to distinguish between hardware which was part of the shop and hardware which was being manufactured or repaired in the shop (Light 1984: 61).

Although historic plans for blacksmith shops often include wooden floors (Richardson 1973), all the shops in Catawba Valley had earthen floors. These floors were commonly covered with blacksmithing debris such as scrap metal and cinder. Harmon (1992) and Lasansky (1980: 6) have also reported earthen floors in blacksmith shops in North Carolina and Pennsylvania, while Rotenstein (1987: Figure 3) reported a shop with a partial wooden floor in Georgia.

Large commercial shops may also contain evidence for the prepared floors of internal bays. Subsurface testing at the Johns' shop produced evidence of a prepared gravel floor. The location and extent of archaeological evidence for the gravel floor corresponded with oral accounts of the shop's internal work bays. High concentrations of horseshoe nails at the rear of the internal bay also suggested the location of an internal activity area for

farrier tasks.

The lack of substantial architectural features at the John-Sheppard and Anderson shops made interpretations of building location and orientation difficult to discern from archaeological evidence. Existing photographs and oral accounts, however, indicated that these two shops were oriented similar to other shops in the valley. All the blacksmith shops in Catawba Valley were collectively oriented with doors or other wall openings facing eastern or southern directions. Uninterrupted walls commonly faced northern or western directions from which most of the winds and precipitation originate. Archaeological evidence and photographs also indicated that when shops possessed interrupted walls facing northern or western directions, the walls contained windows sealed with glass. Similar architectural designs and building orientations for blacksmith shops have been reported by Light (1984, 1987), McBride (1987), and Harmon (1992). Variations to this pattern do exist (e.g., Rotenstein 1987: Figure 3) and are most likely when a blacksmith shop has been incorporated into a building serving multiple functions (e.g., Wilhelm 1978: 212-217).

Subsurface distributions of artifacts aided interpretations of building location and orientation when substantial architectural features were lacking. Concentrations of small fragments of coal and cinder were commonly found within the interior areas of the blacksmith shops in Catawba Valley. The largest concentrations of coal and cinder fragments were usually identified outside the shops. These concentrations also contained small amounts of scrap

metal and represented exterior disposal areas (Light 1984: 61, 1987: 7). Exterior disposal areas for waste material identified at the Johns' and John-Sheppard shops abutted and defined portions of walls.

Small fragments of coal and cinder comprised the largest category of artifacts recovered during subsurface excavations at blacksmith shops in Catawba Valley. These materials were the most common waste products of forging, and composed 62 percent to 76 percent of the recovered artifact assemblages. Their subsurface distribution reflected forge/anvil work areas and waste disposal areas (Light 1984: 56, 61, 1987: 7).

Fasteners, such as nails, bolts and related hardware, comprised the second largest category of recovered artifact assemblages. The majority of the recovered fasteners were complete and fragmented nails. The presence of hand-made nails, staples, and horseshoe nails suggested the limited production of building and shoeing hardware at the Johns' and John-Sheppard shops. The majority of the recovered nails usually consisted of horseshoe nails. Contrary to modern blacksmithing practices, horseshoeing and other farrier work constituted a large part of the traditional blacksmith's work schedule (Lasansky 1980: 24). The distribution of horseshoe nails was restricted to the immediate area of the shops and usually reflected interior and exterior activity areas for farrier tasks or waste disposal areas.

Other categories of artifacts recovered at the investigated blacksmith shops included fragments of metal, windowpane and glass

or ceramic containers. These artifacts were usually low in frequency, but their distribution allowed inferences of shop structure. Concentrations of unidentifiable metal fragments combined with coal and cinder fragments suggested the location of forge/anvil work areas in the Johns' shop (see also Light 1984: 56-57). Distributions of glass and ceramic container fragments also suggested the location of exterior disposal areas and the location of interior workbenches. Containers were often used in blacksmith shops for holding fluxes, acids or lubricants (Light 1984: 59, 1987: 17). Window glass distributions suggest the locations of building windows, and by extension, possible locations for interior workbenches which required good lighting (Light 1984: 59, 1987: 8; McBride 1987: 81).

Interior workbench locations were difficult to ascertain and were usually inferred from the presence of window pane and container fragments, and proximity to the forge/anvil work area. Standing blacksmith shops in Catawba Valley contain interior workbenches which did not always have support posts which extended into the shop floor. Leg vises, however, were a common feature in the blacksmith shops. Excavations in the Woods shop suggested that evidence for post holes, where vise legs were secured in the ground, may also characterize other shops and assist interpretations of workbench locations. Investigations of a blacksmith shop in Canada have indicated that the analysis of soil for iron content aids in the delineation of workbench locations, as well as the location of grind stones (Light 1984: 58; Stewart et

al. 1987).

The anvil and forge composed the primary interior activity area in traditional blacksmith shops. Features associated with the anvil/forge area included a bellows and a slack, or quenching, barrel. Many of the standing blacksmith shops in Catawba Valley contained traditional forges. The forges were typically constructed of local rock and were located in a rear corner of the shop (see Figures 6 and 14). The bellows in each shop were affixed to support posts secured into the shop floor. Although the features of the anvil/forge activity area were usually removed when a blacksmith shop was abandoned and dismantled, archaeological evidence for these features, such as post stains and rock clusters, has been recovered from blacksmith shops (Light 1984: 56-58, 1987: 6-7; McBride 1987: 81; Harmon 1992).

The blacksmith shops in Catawba Valley also displayed temporal and functional variations of these patterns. Larger shops designed for more than one blacksmith, such as the Johns' shop, usually contained multiple anvils and workbenches. The forge was usually located in the central part of the shop since all the smiths required unobstructed access to the forge (Richardson 1973). Soon after the advent of industrialization, traditional types of forges and bellows were replaced by portable forges with attached blowers. These forges were easily moved around the shop interior or out of shop; therefore, archaeological evidence of forging could be widely distributed inside or outside the shop. Also, portable forges and blowers were commonly removed from a shop and sold when the shop

fell into disuse.

Historic plans for blacksmith shops often included anvil stumps which were secured into the shop floor for support (Richardson 1973). Historical and archaeological studies of blacksmith shops have echoed this claim and have provided supporting archaeological evidence (Lasansky 1980: 7; Light 1984: 57, 1987: 6; McBride 1987: 81; Rotenstein 1987: 120, 121). The blacksmith shops in Catawba Valley, however, diverged from this pattern. All the standing shops exhibited anvil stumps which rested on the surface of the shop floor. Oral accounts for the Starkey and Johns' shops also reported that anvil stumps rested on the floors of these shops. Obviously, all the Catawba Valley shops probably contain meager archaeological evidence for anvil placement.

All the blacksmith shop sites investigated in Catawba Valley produced very high artifact densities. Furthermore, artifact density rates were not directly related to length of site use. The Johns' shop was used for at least 67 years and produced an artifact recovery rate of more than 36 artifacts per shovel test. The John-Sheppard shop produced more than 21 artifacts per shovel test. The site was estimated to have been used between nine and 50 years. The Anderson shop produced the highest artifact recovery rate with more than 47 artifacts per shovel test. This shop was used for approximately 40 years.

As blacksmith shops in Catawba Valley fell into disuse, either due to obsolescence or the retirement of shop operators, natural

and cultural processes came into effect. Oxidation and disintegration of metallic remains have adversely affected artifact preservation and recovery rates, and have hindered artifact identification. Modern construction activities, primarily road construction, also have adversely impacted some of the sites. This is especially true for commercial blacksmith shops which were commonly located adjacent to roads. Perhaps the greatest impact to the sites occurred immediately after the shops closed. After a shop closed, the blacksmithing equipment and tools retained use-value and were salvaged and sold. The sale bills of Griffith John's and John John's personal effects (Tables 6 and 7) documented this process for the Johns' shop. This probably explains the paucity of tools in the recovered artifact assemblages. The sale bills also suggested that metal stock and reusable metal scrap were not left behind after shop abandonment.

The investigation of blacksmith shops in Catawba Valley has indicated that cultural and natural processes have affected the integrity of material remains. Subsurface testing at these sites, however, has clearly indicated that the sites maintain a sufficient degree of integrity to yield information important to the study of cultural and historical processes. Archival documents, photographs and oral histories have complemented the archaeological information.

In a general sense, the blacksmith shops investigated in the Catawba Valley displayed similar building designs, and contained similar internal features and artifact assemblages. The

similarities in material remains were derived by the shared functional orientation of the shops. All blacksmith shops, including commercial and farm shops, were focused on a limited set of mundane services related to transportation and agricultural activities. Services included farrier work and the maintenance and repair of wagons and carriages, as well as the maintenance and repair of agricultural equipment. These services required tasks which produced patterned material remains.

Variations in the material attributes of the investigated shops reflected the range of services offered by different blacksmith shops, and temporal changes in technology and community needs. Commercial shops maintained a broad service orientation which included an emphasis on production. Production requirements included an extensive range of skills, tools and equipment related to working both metal and wood. Production requirements also included the specialized skills of professional blacksmiths. These skills ranged from the precise tempering of various metals to the fabrication of metal and wood machine parts.

The material remains of small blacksmith shops on farms were derived primarily from the maintenance and repair of agricultural equipment and the completion of farrier tasks. These shops usually contained a limited inventory of farrier, blacksmithing and carpentry tools. These shops also contained numerous stored materials, including spare and expended parts from agricultural equipment, hardware, metal scraps and lumber. The tools and stored materials enabled the curation of agricultural equipment, the

completion of farrier tasks and the limited forging of small items commonly needed during daily farm operations. Except in rare cases where shop operators acquired unusual skill and competency in blacksmithing, the small shops on farms were used for only rudimentary forging and repair tasks.

As the process of industrialization matured and retail services grew in the twentieth century, the blacksmithing trade was modified. Factory-produced machines with interchangeable parts probably influenced the temporary growth of small blacksmith shops on farms, while decreasing the need for professional smiths. Professional smiths necessarily expanded their repertoires of skills to include the maintenance and repair of factory-produced machines, and used their traditional skills for the production of custom machine parts. Traditional farrier work also continued to comprise a large part of work schedules.

Material remains which reflect the new orientation of blacksmith shops include spent and modified machine parts, and a range of new tools and equipment. Factory produced portable forges and blowers became prevalent on small farm shops. New factory-produced machines for metalworking such as drill presses and tire benders became prevalent in commercial shops. These changes continued until machine shops became the common modern analogues of blacksmith shops.

Architectural Features of Blacksmith Shops

The seven blacksmith shops reported in this study represent

commercial blacksmith shops operated by professional blacksmiths, and rural farm shops operated by farmers with varying degrees of blacksmithing skills. Both commercial blacksmith shops were dismantled at least 45 years ago. Existing photographs and oral accounts allowed only incomplete architectural descriptions of these two shops. The other five blacksmith shops were rural farm shops. Four of these shops continue to stand; therefore, more detailed architectural descriptions of these shops are available. The fifth shop was dismantled more than 40 years ago and available information allows only an incomplete architectural description. Although the number of blacksmith shops reported in this study is small, several inferences regarding regional construction techniques can be presented.

All the farm blacksmith shops reported in this study were constructed from the mid-nineteenth century through the first quarter of the twentieth century. Most of these shops were constructed similarly to coeval outbuildings in the region. Architectural features which recurred on many of the farm blacksmith shops included pole and sawn lumber framing with vertical plank exterior siding, a gabled roof and one gable-end door.

The vertical-plank exterior sidings on these shops were variously applied with wire nails, machine-cut nails or a combination of both types. The percentages of nail types used in the construction and maintenance of these shops corresponded to temporal trends in nail production as discussed by Smith (1966b),

Nelson (1968), Priess (1973) and Michael (1974). The Johns' shop, constructed during the mid-nineteenth century and used through the early twentieth century, contained predominantly machine-cut nails. The Woods and Spessard-Hylton shops had reported construction dates in the late nineteenth century. Exterior siding on these two shops was applied predominantly with machine-cut nails. The other shops were constructed during the early twentieth century, and were built with no or few machine-cut nails.

The framing system of the Woods and Spessard-Hylton shops diverged from the pole and sawn lumber framing of the other reported blacksmith shops. The log construction of the Woods shop corresponds to the most common construction technique for agricultural outbuildings of Catawba Valley during the nineteenth century (Pezzoni 1990). The heavy braced frame of the Spessard-Hylton shop was used in other Catawba Valley buildings, but it was not a prevalent framing technique.

The McNeil shop may be the most recent shop reported in this study. It is differentiated from the other shops in Catawba Valley by its enclosure in a multipurpose outbuilding. Enclosing the shop in a multipurpose outbuilding, which also functioned for equipment storage, facilitated the periodic tasks of maintaining and repairing equipment. Proximity of the smithing equipment to the storage/work areas also complimented the repair process. The open side of the building and the shop door provided illumination to the blacksmith shop as well as to the equipment storage/repair areas. An eight and one-half foot open space to the immediate east of the

blacksmith shop also provided a convenient and sheltered work area for repair work and farrier tasks.

All the shop roofs are now covered with standing seam metal applied with wire nails. Oral accounts available for most of the shops reported the shop roofs were originally covered with wood shingles. Most of the shops were constructed without a foundation, and all the shops lack a complete foundation. The McNeil and Starkey shops rest on the ground surface without a foundation. Archaeological evidence and an existing photograph suggest the John-Sheppard shop did not have a foundation. The Woods shop was constructed with only a couple limestone foundation blocks which functioned to level the structure on the slightly sloping terrain. A partial limestone foundation supported the southern portion of the Spessard-Hylton shop and also functioned to level the building on the sloping terrain.

The farm blacksmith shops also shared other design elements. Shuttered window openings and roof extensions over doors were combined structural elements which recurred on all the farm blacksmith shops in Catawba Valley, except the McNeil shop which is enclosed in a large outbuilding. These structural elements facilitated the ventilation and illumination of primary work areas inside the shop and offered some protection from the natural elements. The combination of shuttered window openings and roof extensions on a building appears to be a design functionally specific to regional blacksmith shops.

Window openings on recorded blacksmith shops were long and

low, ranging from 3.2 feet to 6 feet long and 1.35 feet to 1.75 feet high. The window openings were enclosed by a horizontal plank shutter mounted to the top of the opening with strap hinges. The shutters could be fully opened during good weather or partially opened during inclement weather. A partially opened shutter allowed illumination and ventilation of the shop interior and offered some protection from precipitation. The shuttered window openings were also adjacent to interior workbenches which required good lighting.

Gable end roof extensions over the shop doors ranged in length from one foot to 5.25 feet. Roof extensions sheltered the shop door so it could be fully opened to increase the illumination of the shop interior. The longer (5.25 feet) roof extension on the Starkey shop also created a sheltered work area outside the shop.

The blacksmith shops in Catawba Valley were collectively oriented in a manner which afforded protection from the natural elements. The doors and shuttered window openings were usually on the eastern and southern sides of the shop. Uninterrupted walls were usually on the western and northern sides of the shop. Uninterrupted walls usually faced directions from which most of the winds and precipitation originated.

The architectural features of the commercial blacksmith shops in Catawba Valley are somewhat more difficult to discuss since they are no longer standing. The two commercial blacksmith shops represented in this study are the Johns' and Anderson shops. An existing photograph and the oral accounts of Carl Smith and Minor

Keffer allow a description of the Anderson shop, while information regarding the Johns' shop is limited to the oral accounts of Kyle Shelor.

The architectural features of the two commercial blacksmith shops reported in this study exhibited some similarities with the features of the farm shops. Pole and lumber framing, vertical plank exterior siding, and gabled roofs comprise the most common architectural features of the farm shops recorded in this study. Like to the farm shops, the Anderson shop was constructed with a pole and sawn lumber framing, an exterior siding of vertical planks and a gabled roof. The architectural features of the Johns' shop are less certain.

Regional research suggests the transition from log to frame construction occurred in the late nineteenth century and coincided with increasing frequencies of sawmills, the advent of portable steam-powered circular sawmills and the development of commercial lumbering (Eller 1982; Morgan 1990). Similarly, research on the standing structures in Catawba Valley indicates nineteenth-century agricultural outbuildings were consistently constructed of log (Pezzoni 1990). This suggests the Johns' shop, constructed during the mid-nineteenth century, was a log building.

Kyle Shelor's (personal communication) description of the shop indicated it was a frame building. While mid-nineteenth-century census records provide no information regarding sawmills in Catawba Valley, Gilmer's map indicates that five sawmills existed in the valley by 1864. Therefore, it is possible that sawmills existed in

Catawba Valley when the Johns' shop was constructed during the mid-nineteenth century. Perhaps the Johns' shop represented an early frame building, or perhaps an original log building was dismantled and replaced by a frame building prior to Kyle Shelor's memory. The available information hinders a conclusive statement regarding the shop's construction technique.

Another similarity between farm shops and commercial shops is the lack of substantial foundations. Archaeological evidence suggests that the Johns' shop had a partial foundation and one short retaining wall. Archaeological evidence and oral accounts suggests the Anderson shop did not have a foundation. Oral accounts also suggest the Johns' shop was covered with wood shingles. On the other hand, oral accounts for the Anderson shop were unsure if its standing seam metal roof was original or a replacement for a previous wood shingle roof.

Oral accounts suggest that neither the Johns' shop, nor the Anderson shop had shuttered window openings or roof extensions. Rather, both shops featured windows enclosed by pane and large door openings. Windows sealed with pane seems a reasonable feature of shops which probably operated throughout the year. Also, the larger size of the commercial shops with their large door openings allowed an interior work area of ample space and negated the need for a roof extension. The doors on both of the shops faced southeast and were protected from most of the winds and precipitation.

All historic communities probably contained, or were in close

proximity to, commercial blacksmith shops. While commercial shops were generally few in number their prevalence was dependant upon local demand. Today, no standing commercial blacksmith shop structures are known to exist in the Catawba Valley or its surrounding region. Farm blacksmith shops, which became prevalent during the late nineteenth through the early twentieth centuries, greatly outnumbered commercial shops. As traditional agrarian economies have been transformed during the twentieth century, agricultural outbuildings have become an endangered cultural resource. The number of farm blacksmith shops, and other agricultural outbuildings, which continue to stand in Catawba Valley make it unique in the local region. However, most agricultural buildings, including farm blacksmith shops, have been abandoned because they are no longer integral or necessary components of operating farms. Subsequent to their abandonment, the various types of agricultural outbuildings often have fallen into disrepair and have begun to deteriorate and disappear from the landscape. The deterioration of these buildings, or renovation without regard to their original form and use, has hindered their recognition and proper documentation during cultural resource surveys (Frazier and Associates 1992: 42).

A Narrative History of Blacksmithing in Catawba Valley

Blacksmiths, or at least blacksmithing skills, were probably present when Catawba Valley was first settled by European-Americans. However, the names of these people or accounts of their

lives remain anonymous. The first Catawba Valley blacksmith documented in this study was Griffith John. By 1850 Griffith John operated a blacksmith shop with his 19 year old son John John in the western part of the study area (Table 5).

Oral accounts indicated Griffith John operated a commercial enterprise which produced wagons and carriages (Kyle Shelor, personal communication). Nineteenth century commercial shops fulfilled a vital role in local economic systems. Along with other artisans, such as wheelwrights, commercial blacksmiths produced or repaired all the equipment necessary for the viable existence of an agrarian economy in a rural area. The commercial blacksmith provided numerous and varied services related to contemporaneous transportation, agricultural and veterinary practices. Commercial blacksmiths produced and repaired wagons and carriages, shod horses and practiced corrective shoeing (Lungwitz and Adams 1981). These blacksmiths also produced and repaired agricultural equipment, and probably household items. Other services included the production of mechanical parts for mills and other artisan services, building hardware and tools.

Catawba Valley undoubtedly underwent a period of rapid change between 1850 and 1870. In 1852 the Virginia-Tennessee Railroad reached present-day Roanoke, and by 1856 it extended to Bristol, Tennessee (Martin 1991: 14). The railroad introduced the market economy into the region and initiated the transformation of traditional economic systems rooted in self-sufficiency and relative independence. The advent of the Civil War, however,

slowed the tempo of economic and social change until the post-war period of reconstruction (Martin 1991: 15-16).

By 1870 Griffith John was listed in the census as a farmer, and his son John John was listed as a blacksmith and farmer. Presumably, Griffith John had retired as a professional smith at the age of 64, and his son John operated the blacksmithing business. John John became sole proprietor of the family business following Griffith John's death in 1883 (Kyle Shelor, personal communication). Griffith John's estate inventory and sale bill of personal effects included a large quantity of blacksmithing equipment and tools, as well as finished products. These documents suggest Griffith John had continued to maintain a strong interest in the blacksmithing business during his retirement.

The sale bill of Griffith John's personal effects (Table 6) documented his commercial activities through the listing of a large and varied quantity of metalworking and woodworking tools. He owned tools, equipment and finished products characteristic of the services and products offered by professional blacksmiths who operated commercial enterprises (Richardson 1973; Wigginton 1979: 122).

Although technological developments, such as improved anvils and machine-produced nails (Smith 1967a, 1967b), promoted changes in the blacksmithing profession, the need for a professional blacksmith persisted through the nineteenth century. Perhaps the greatest changes in the blacksmith profession occurred during the late nineteenth through early twentieth centuries with the

maturation of industrial capitalism in Europe and Eastern North America. The innovation and spread of new tools, materials and techniques allowed new methods of completing traditional tasks and extended the range of services offered by blacksmiths. These advancements in the profession also required the acquisition of new knowledge and skills (Lansansky 1980: 9, 11).

The requirements of these technological changes engendered an excess of textbooks and manuals on blacksmithing. One example was M. T. Richardson's (1973) "Practical Blacksmithing" published as four volumes from 1889 through 1891. "Practical Blacksmithing" was a compilation of articles previously submitted to the journal "The Blacksmith and Wheelwright" by smiths throughout the country. It provided practical knowledge of the methods for using new tools and materials. This manual well illustrated that, while technological developments had changed the nature of blacksmithing, contemporaneous blacksmiths continued to acquire knowledge and skills through the old traditions of experimentation and word-of-mouth.

The advent of accessible trade journals and manuals also meant that rudimentary blacksmithing skills could be acquired by anyone. This may have contributed to the development of small blacksmith shops on farms, but the extent to which these journals and manuals were read by people in rural areas is unknown. Oral accounts usually attribute the knowledge of blacksmithing as verbally transmitted through generations of family and friends (Wigginton 1979; Lasansky 1980).

The oral transmission of blacksmithing skills in Catawba Valley was illustrated by the accounts of Kyle Shelor (personal communication). He reported all the sons in the John family were taught to farm and to work metal. Although some of the sons did not continue in the blacksmith trade, members in three generations of the John family did become practicing blacksmiths. John John was the son, co-worker and successor of his father Griffith John. Two of John John's sons, George and Milton, were also known through oral accounts and census records to have practiced blacksmithing (Kyle Shelor, personal communication; see page 16 and 18). This same pattern recurred in other times and places in Catawba Valley. In 1870 Eli Hackley worked with his father John Hackley in a blacksmith shop near the crossroads in Catawba (see pages 16 and 18). Census records for 1920 also indicate William M. Anderson worked in his father's blacksmith shop at Catawba crossroads.

The manuscript census records indicate that blacksmithing, as with most other artisan services, was dominated by men. Although women in Catawba Valley were rarely involved in artisan services, the traditional and vital connection between women and the farm-household economy in rural, agrarian areas persisted into the late-nineteenth century and into the twentieth century (Ryan 1973: 77-79). Various aspects of the essential economic system women worked to create and reproduce probably continued because industrial capitalism was not as firmly established in Catawba Valley as it was in other mountainous areas of Virginia. In other areas of southwest Virginia, industries associated with extractive resources

tended to impede the continuation of traditional economic systems (Eller 1982: 235-237). Nevertheless, documentary records suggest it was highly unusual for women in Catawba Valley to enact even a minor, direct role in artisan services such as blacksmithing.

The evolution of blacksmithing as indicated by new tools, materials and methods was reflected in the blacksmith shops of the Catawba Valley. As more rail lines were laid and the coal mining industry of western Virginia developed in the late-nineteenth century (Eller 1982: 149-152), local blacksmiths were no longer reliant on wood charcoal or a low-grade anthracite coal for fuel. Earlier, many Catawba Valley blacksmiths relied on a locally mined, low-grade anthracite coal sold in Blacksburg (Kyle Shelor, personal communication). Wood charcoal was time consuming to produce and combust, and low-grade anthracite coal was difficult to coke (Richardson 1973: 63; Wigginton 1979: 124).

High quality bituminous coal was considered a preferred and more practical fuel because it was relatively free of impurities and easy to coke (Lasansky 1980: 14). Select grades of this material became more readily accessible to area blacksmiths through rail stops in Blacksburg and at the base of Catawba Mountain (Mabel Hylton, personal communication). The Johns' shop, which operated before and after the development and expansion of the mining and rail industries, contained waste material from both anthracite and bituminous coal. Later shops, such as the John-Sheppard and Anderson shops, contained waste material from only bituminous coal.

The development of regional industries and rail lines also

coincided with the establishment and growth of large commercial market centers in nearby Roanoke, Salem and Blacksburg. During the post-war reconstruction, industrial growth affected the agrarian economy in Catawba Valley. The development of increased lumber production coincided with a growing array of resident occupations and a strengthening of diversified agricultural production (Martin 1991: 21-27). These trends were tempered by inadequate road systems connecting Catawba Valley to regional market centers. Nonetheless, the gradual dissolution of community self-sufficiency occurred as the products of industrialization, such as new tools and equipment, were carried into the Catawba region. The availability of new tools and the improved design of traditional tools enabled the local smiths to complete traditional tasks in a more efficient manner.

Machines quickly replaced some manual tools and traditional techniques. A drill press in the Spessard-Hylton shop was acquired by the last operator of the shop during an auction of William Anderson's blacksmithing equipment. The drill press was powered by a manual crank or by a belt connected to the power take-off of a tractor or steam engine. The drill press was an efficient replacement for the more laborious bow drills and braces used by Griffith John (see Table 6). It also provided a labor saving alternative to the traditional technique of using an anvil pritchel hole to punch holes through hot metal. A tire bender at the Anderson shop was another example of a machine which replaced traditional techniques of working metal.

As the effects of industrialization became more widespread, mail order companies and local commercial market centers enabled equipment and parts to become more readily accessible to blacksmiths and other local residents. Articles traditionally made by the local blacksmith, such as nails, edge tools, horseshoes, plows and other agricultural equipment, were now mass produced in factories and shipped into the region. New tools and equipment such as tire benders, tire upsetters and portable forges, were also introduced. These new developments were probably received by the local blacksmiths with ambivalence since they both facilitated the traditional work of the smith and allowed many basic smithing and farrier tasks to be completed on the rural farm (Lasansky 1980: 13).

During the late nineteenth and early twentieth centuries, the expansion of the market centers into rural areas, and the introduction of factory-produced machines, tools and equipment, produced irreversible effects on blacksmithing and other small-scale industries in rural areas. The introduction of new equipment with standardized and interchangeable parts began to diminish the need for blacksmiths. Interchangeable parts and the availability of basic blacksmithing and carpentry tools and equipment allowed farmers to make basic repairs and complete rudimentary metalworking on their farms. The repair and modification of agricultural equipment, and the edging and sharpening of tools, could be completed easily on the farm. The building of small blacksmith shops as ancillary agricultural outbuildings became common on rural

farms of this period.

Examples of these small blacksmith shops on rural farms in the Catawba Valley include the McNeil and Starkey blacksmith shops. Both of these early twentieth-century shops were small and equipped with basic smithing equipment such as portable forges and blowers, small leg vises and a limited selection of tools. These shops were designed for farrier work and light metalworking. Their presence enabled the expedient and convenient completion of farrier tasks, the basic maintenance and repair of farm items and facilitated the curation of agricultural equipment.

As small farm shops were established in the early twentieth century, John John continued to operate his commercial blacksmithing business. By 1900 John John was 69 years old (see page 27 and Table 5) and he probably had decreased his level of production. Joel Croy had established his own shop by this time (see page 18), but archival documents and oral histories lack information regarding the nature of his business. The building of small blacksmith shops on farms may reflect local demands for a blacksmith as John John, the only well-established blacksmith in the area, decreased his work load. Although John John continued to use his shop until his death in 1917, he had retired as a professional blacksmith before 1912 (see page 27). The retirement of John John coincided with the establishment of William Anderson's commercial blacksmith shop at Catawba crossroads around 1910 (page 18).

As the process of industrialization became more widespread in

the first half of the twentieth century, blacksmiths were forced to specialize as farriers, expand their skills as mechanics or close up shop (McBride 1987: 91). These options were apparently played-out by one Catawba Valley blacksmith, John Moore.

John Moore was first listed in the 1900 census as a 35-year-old blacksmith who rented a house near the aging blacksmith John John. By 1910, John Moore was listed as a mechanic working in a blacksmith shop. He was enumerated in the census between James Custer, a retail merchant, and William Hall, the operator of a "barrel factory." Oral accounts reported that William Ellis and Ralph Myers operated a temporary stave mill on James Custer's property at this time and employed a blacksmith (Clovis Garman and Mabel Hylton, personal communication; see also Kagey 1988: 363-364). Blacksmiths were commonly employed with lumber-related enterprises for farrier work and the maintenance and repair of machinery and equipment (A. L. Fowler, personal communication).

Census information and oral accounts suggest that John Moore resided near, and may have been employed by, the Ellis and Myers stave mill and/or the Hall barrel factory. His professional listing as a mechanic may have reflected his need to expand his repertoire of skills to include the maintenance and repair of machinery. Shortly after 1910 the stave mill relocated to the Spessard property for a brief stay before leaving the Catawba Valley (Mabel Hylton, personal communication). By 1920 John Moore was listed in the census as a farmer. Apparently, the absence of the stave mill and the increasing influence of industrialization

diminished the need for his blacksmithing and mechanic skills, and forced him to "close up shop."

Industrial capitalism, centered on extractive industries like timbering and mining, was not as firmly implanted in Catawba Valley as it was in other mountainous areas of Virginia. Nevertheless, Catawba Valley residents were never removed from the effects of industrialization. The agrarian economy of Catawba Valley persisted into twentieth century; however, an increased diversity in the occupations of valley residents began between 1890 and 1900 (Tables 4 and 9). Services traditionally associated with rural agrarian economies, such as millers, carpenters and blacksmiths, were still present in Catawba Valley at the turn of the century. The 1900 manuscript census records initiate the listing of new occupations, such as machinist and mechanic, which signal the new era of industrialization.

Beginning in 1910 and continuing through 1920, several non-traditional occupations were listed in the manuscript census records. The new occupations were positions associated with the continued growth of rail and road transportation services (Table 9). Other regional changes include the growth of retail services, and the development of mechanized agriculture and wholesale grocery services. The growth of retail services and the establishment of commercial farming also corresponded with the decline of small scale industries (Table 9). These developments fixed Catawba Valley in a strong and irrevocable tie of dependence with regional and national market systems.

Table 9. Frequencies of Selected Occupations in Catawba, Valley, 1900 - 1920.

	Occupation	1900	1910	1920
Agriculture:	Farmer	112	94	138
	Farm Laborer	72	126	35
Artisan:	Machinist	2		
	Mechanic		2	
	Blacksmith	3	2	2
	Blacksmith helper			1
	Cooper		1	
	Carpenter	4	6	
	Carpenter, crushing plant		3	
	Miller	2		
Other:	Locomotive engineer		1	
	Rail laborer			1
	Rail salesman			1
	Rail signal fitter			1
	Lumberman		1	
	Retail service	2	3	5
	Wholesale service			1
	Wagon teamster			1
	Automobile driver			1

(Data compiled from manuscript census records.)

The number of blacksmiths in the valley during the early twentieth century was basically unchanged from the late nineteenth century (Tables 5 and 9). Local needs for blacksmiths had apparently persisted, although the decreased number of other artisans suggests that the role of small scale industries had declined. Blacksmiths were still needed for farrier work, basic maintenance, production of custom items or other tasks which required their specialized knowledge.

Census manuscript records for 1920 indicated that William S. Anderson and his son offered their blacksmithing services through a commercial shop at the crossroads in Catawba. The only other blacksmith enumerated in the 1920 census was Joel Croy who worked in the western portion of the valley. As automobiles became more prevalent and farm tractors entered the valley in the 1930s and 1940s (Mabel Hylton, personal communication) the need for rural blacksmiths probably declined sharply. William Anderson is remembered by local residents as the last blacksmith to work in Catawba Valley, and he retired from the profession in the 1940s.

Traditional blacksmithing skills were probably still required for a limited amount of custom work which could not be produced with standardized machines. Perhaps some area blacksmiths found employment in the rail yards and machine shops of Roanoke. The continuation of technological developments, such as modern arc and oxyacetylene welding, brought about new and efficient methods of metalworking and signaled the end of blacksmithing as a viable profession. With the new era of metalworking, blacksmiths and

blacksmithing were replaced by welders and machinists in factories and machine shops.

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