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# Waiting for the Second Coming: The Canterbury Shakers, An Archaeological Perspective on Blacksmithing and Pipe Smoking

## **Cover Page Footnote**

The author began to direct archaeological research at Canterbury Shaker Village in 1978, and since 1993, much of this work has been conducted under the auspices of Plymouth State College (Plymouth, New Hampshire). The staff of Canterbury Shaker Village have been extremely helpful in assisting this research, and I am indebted to Scott T. Swank, Director and President, Sherry Hack, Chief Curator, Darryl Thompson, and the other staff of the Village. The work of processing and analyzing artifacts from the two blacksmith shops has been ongoing since 1996 and is being directed by Elizabeth Hall, also of Plymouth College. Hall is to be credited for preparing all of the data that appear here in Tables 1 and 2. Assistance in identifying artifacts from the Second Family Blacksmith Shop was also given by William C. Ketchum, an expert in American material culture, and by Merle and Robert Parsons. I wish to thank Canterbury Shaker Village for giving us the opportunity to conduct this research, and I also wish to thank David Curtis, owner of the site of the Second Family Blacksmith Shop, for kindly allowing us to excavate on his property. Both property owners have done much to make this a very pleasant experience. I also wish to thank the two anonymous reviewers of this article, who correctly pointed out that a second paper still needs to be written, specifically addressing the evidence these shops contain for blacksmithing techniques and technology.

## Waiting for the Second Coming: The Canterbury Shakers, An Archaeological Perspective on Blacksmithing and Pipe Smoking

David R. Starbuck

*While the Shakers are primarily known for their religious beliefs, their lives have also reflected a fascination with technological innovation and a desire for self-sufficiency in certain manufactures. Over the past six years, excavations have been conducted at the Shaker Village in Canterbury, New Hampshire, into the remains of two Shaker blacksmith shops, one of which was accompanied by a waster dump filled with redware tobacco pipes, indicating that this had been a site of pipe manufacture. This was the very first evidence that the Canterbury Shakers had engaged in pipemaking, probably prior to the Shaker prohibition upon tobacco in the 1840s. Shakers at the second blacksmith shop did not manufacture pipes, but its dump revealed the working of soapstone, probably into gravestones, as well as evidence for a wide range of maintenance activities, for gunsmithing, and for Shaker blacksmiths actually living in the shop. The second shop also contained numerous blackened pipes that the Shaker blacksmiths had smoked themselves. This paper discusses some of the activities that went on within the Shaker smithies and explores issues related to the Shaker use of tobacco. While it does not principally focus on the technological aspects of blacksmithing, that type of analysis definitely needs to be performed on the Canterbury materials.*

*Même si les Shakers sont principalement connus pour leurs croyances religieuses, leurs vies témoignent aussi d'une fascination pour les innovations techniques et d'un désir d'autosuffisance dans certains secteurs manufacturiers. Depuis les six dernières années, des fouilles ont été menées au Shaker Village de Canterbury (New Hampshire) à l'emplacement de deux boutiques de forge, dont l'une comportait un dépotoir de déchets de pipe en terre cuite rouge, ce qui signifie que l'on y fabriquait également ce type d'objets. Il s'agit de la toute première indication que les Shakers s'adonnaient à la fabrication de pipes, vraisemblablement avant la prohibition du tabac, dans les années 1840s. Aucune trace de la fabrication de pipes n'a été trouvée à la seconde boutique de forge. Cependant, son dépotoir témoigne du travail de la stéatite, probablement pour en faire des pierres tombales, de divers travaux d'entretien et d'armurerie ainsi que d'activités domestiques. La seconde boutique comportait également plusieurs pipes noircies que les forgerons ont eux-mêmes fumé. L'article qui suit présente certaines activités qui ont eu lieu dans ces boutiques de forges et examine les questions reliées à l'utilisation du tabac par les Shakers. Même si l'attention ne porte pas principalement sur les aspects technologiques du travail de forgeron, ce type d'analyse aurait définitivement avantage à se faire sur le matériel de Canterbury.*

### Introduction to the Shakers

The Shakers have been America's most influential millennial and communal society for over 200 years, although experiencing a steady decline in membership throughout the 20th century. While they initially formed in Manchester, England, in the mid-1700s, the Shakers came to the New World in 1774 and formed their first "Shaker Village" in Watervliet, just outside Albany, New York. They established a total of 19 villages, extending

from Maine to Florida, and west to Ohio and Kentucky. Formally known as "The United Society of Believers in Christ's Second Appearing," the Shakers numbered as many as 6,000 members at a time in the 19th century but now are reduced to fewer than ten members at the village of Sabbathday Lake in southern Maine.

From 18th-century England until today, Shakerism has been a Christian communal society whose distinctively-dressed members believe in the sharing of property, pacifism,



and the equality of men and women. They do not vote or bear arms but are obedient to the Millennial Laws of the Shaker Society. Celibacy has always been a central tenet of the Shaker faith, which, coupled with separation from the "world's people," was intended to facilitate one's complete devotion and service to God. In the absence of sex and marriage, new members necessarily arrived from among "the world's people" and converted; many others originated as orphans who had been placed with the Shakers as children and later chose to join when they reached maturity.

Each Shaker Village was made up of several "Families," consisting of unmarried Elders and Eldresses, Deacons and Deaconesses, Trustees who handled business dealings with the outside world, children (who had not yet decided whether to become Shakers), and rank and file members who were called "Brothers" and "Sisters." Shaker Families averaged between 50 and 100 members, and each Shaker Village might have from 200–1000 occupants. Shaker communities provided an unusually humane environment in a pleasant rural setting, but they rarely became large, and it was explicitly recognized that the Shaker way of life was not for everyone. (For general background about the Shaker faith, see Andrews 1963; for information about the Canterbury experience, see Starbuck and Swank 1998; Sprigg 1998; Swank 1999; Borges 1988.)

Two Shaker Villages were formed or "gathered" in New Hampshire, in the towns of Canterbury and Enfield, and Canterbury has survived with most of its landscape and 24 of the buildings from its Church Family still intact. Quite a few journals and some oral histories exist for the Church Family, providing a solid context within which to conduct archaeological research. Only one building each survives from the Canterbury North and Second Families, however, and none from its West Family. The rest of the outlying buildings, torn down a century ago, now exist only as archaeological sites, and few historical records survive for the three outlying Families. Sadly, modern visitors to Canterbury often form the impression that the surviving core of the Church Family was once the entire community, when in reality there were four interdependent Families or villages spread out along Shaker Road.

## Archaeological Research in Canterbury

Archaeological research has been ongoing at Canterbury Shaker Village (CSV) since 1978, and the results are available in several articles and monographs (see Starbuck 1981, 1984, 1986, 1988, 1990a, 1990b). The early stages of research consisted of mapping the surface of Shaker Village, including all buildings, archaeological sites, fields, orchards, stone walls, etc., with every known site being assigned a locational designation to make it easier to refer to later (e.g., site 1:N0E0 represents site "1" as drawn on map "N0E0"). All of these surface maps have been published (Starbuck 1990a), and these maps continue to be of use in guiding the ongoing research and development at Shaker Village. Figure 1 shows the approximately 600 acres that were mapped, out of about 4,000 acres that comprised Shaker Village at its peak in the late 19th century.

Most of the Canterbury excavations have been small-scale, unless one of the known historical sites was threatened in some way. For example, in 1979 and 1980 several test pits were dug at foundations of the Shaker West Family because the property owner was about to begin plowing the surrounding fields and was starting to clear trees from the surface of several house foundations. Also, some of the Shaker mill sites, along the eastern side of the village, were surface-cleared, and rubble was removed from wheel pits and raceways to permit surface mapping (Starbuck 1986). In subsequent years, Shaker stone drains and small trash deposits were occasionally encountered during construction and these, too, were archaeologically recorded. Also, a sizeable project was undertaken in the summer of 1994 at the site of a Garden Barn and at the original site of the Shakers' Bee House, both in the Church Family, as a prelude to reconstruction of one of the barns.

Nearly all of the archaeological work before 1996 focused upon the Canterbury Church Family because the rapid pace of repairs and improvements within the present-day museum environment necessitated frequent archaeological monitoring. Archaeological research at the more outlying Shaker Families simply did not occur because these former Shaker landholdings are in active use among a

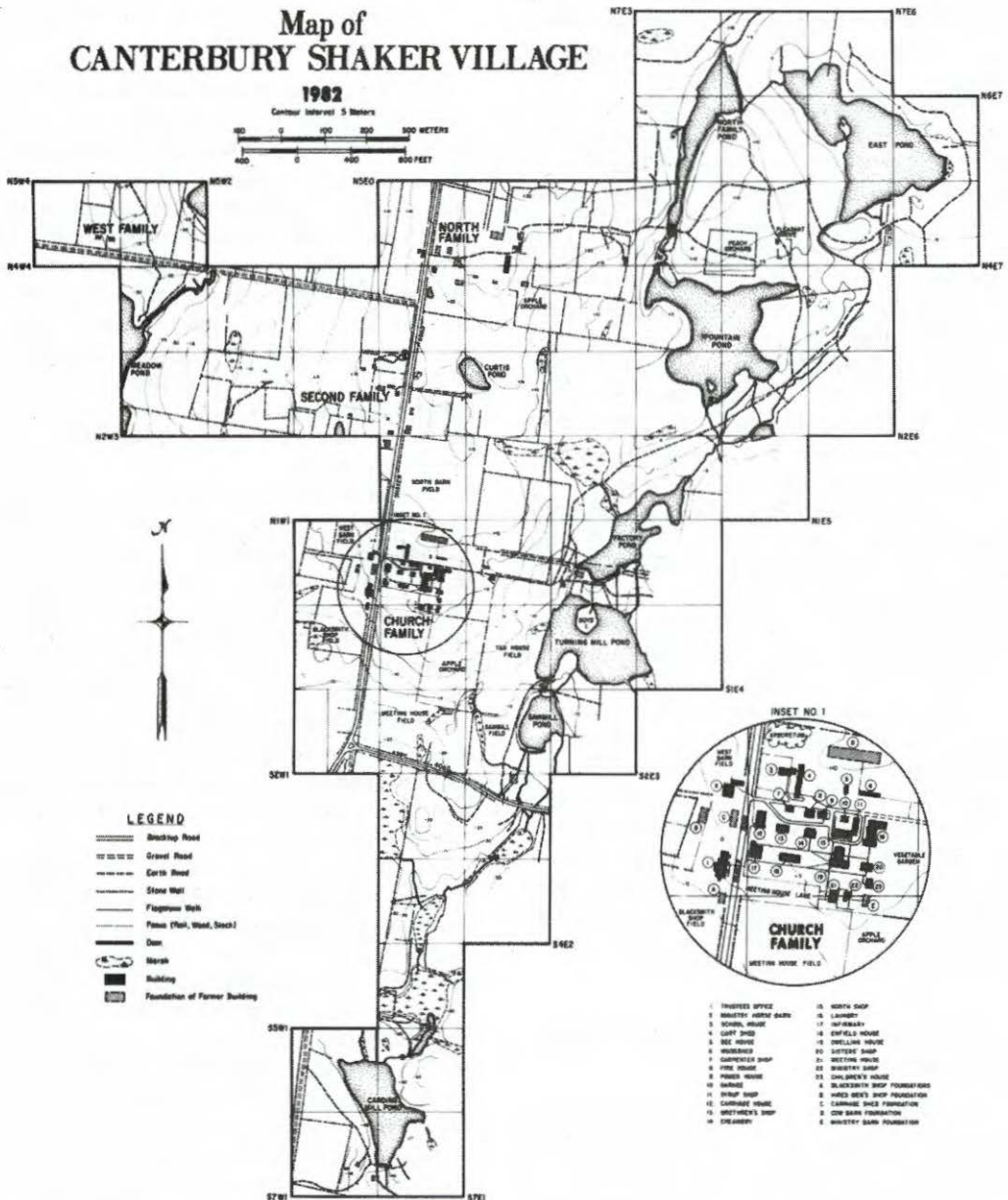


Figure 1. Archaeological base map of Canterbury Shaker Village, showing the surface in 1982.

number of private owners, and it did not appear timely or appropriate to initiate research outside of the museum village. Nevertheless, it was explicitly recognized that the dominant Church Family, with its wealth of

surviving architecture, and the West Family—which existed for only a few years in the early 1800s—did not represent the full range of the Shaker experience in Canterbury. Rather, the Second and North Families, which once con-



tained newly-arrived converts, also needed to be studied in order to better understand those who were considered less mature in their faith.

Research finally became more inclusive in 1996 when an ISTE grant received by Canterbury Shaker Village made it possible to conduct a systematic program of archaeological testing in the village's Second and North Families. This included intensive excavations in 1996–1997 within the site of a Blacksmith Shop in the Second Family. It also included the complete salvage of a garbage-filled root cellar within the Church Family, discovered during the installation of a culvert on the west side of Shaker Road (see Starbuck 1997, 1998, 1999, n.d.). Testing was also conducted between 1996 and 2000 in a dump located within the eastern ramp of the Church Family Cow Barn. These more recent projects have resulted in the recovery of thousands of late 19th- and early 20th-century artifacts, documenting a period when Shaker separateness was breaking down and mass-produced commodities were flowing in from the world's people.

Most recently, the need for more restaurant space at Canterbury Shaker Village has necessitated the salvage excavation of the site of a Blacksmith Shop in the Church Family, where the building had stood upon its foundation as recently as 1952. This required a sampling of the foundation and the complete excavation of the Shop's dump during the summer of 2000, resulting in the recovery of a large sample of blacksmith-related artifacts.

### **Blacksmith Shops in Canterbury, New Hampshire**

Blacksmith shops were practically ubiquitous in American towns in the 19th century, and Canterbury had as many as nine or ten, including one at each of the Families at Shaker Village. According to a town history written in 1912,

The Shakers have always maintained one or more blacksmith shops, and for a number of years each of the three families had one of its own. Some of the buildings are still standing. If there was no one of that trade among the members some one was employed from outside. One shop

[probably the one at the Church Family] now does the work for the entire community. (Lyford 1912: 196)

Blacksmith shops were critical, up until the late 19th century, for the manufacture of nails, horseshoes and oxshoes (all from bar iron), and for the repairs performed on barrel hoops, shovels, axes, and every conceivable type of farm implement. Generally speaking, the processes involved in blacksmithing are well known, as are the tools and spatial layouts of specific smithies, yet archaeological work at blacksmith shops has rarely been reported in print, with the notable exception of John Light's and Henry Unglik's work at the Fort St. Joseph Blacksmith Shop (Light 1984; Light and Unglik 1984).

It was recognized that excavations within the blacksmith shops at Canterbury Shaker Village had the potential to recover smithy tools, farm machinery that was intended for repair, and evidence for a variety of crafts or occupations. There also was the chance to compare two Shaker blacksmith shops, thereby determining whether each had been "assigned" specific tasks not represented in the other. There also was the opportunity to look for evidence of some of the activities that had been "banned" by the Shakers, e.g., the consumption of tobacco.

Other research opportunities existed in that the large size of the Church Family Blacksmith Shop suggested that some craft manufacturing, and not just traditional blacksmithing, may have been going on inside this structure. For example, the last Canterbury Eldress, Bertha Lindsay (FIG. 2), stated that tinware was manufactured there (Bertha Lindsay, personal communication, 1978). This raised the question of whether dumps scattered either around or within the blacksmith shop foundations might shed light upon previously-undocumented craft activities. Finally, there was the question of who was actually living and working within the shops. Not only were most of the blacksmiths unknown, but it was not known for sure whether the blacksmiths and their assistants actually lived within the buildings. Clearly the quantities and types of refuse found—whether industrial or domestic or both—might give some insights





Figure 2. Eldress Gertrude Soule (center left, 1895–1988) and Eldress Bertha Lindsay (center right, 1897–1990), surrounded by archaeology students in front of the Church Family Trustees' Office. Eldresses Gertrude and Bertha were the last two Eldresses of the Shaker faith.

into whether these had been residences as well as workplaces.

### The Second Family Blacksmith Shop

The Second Family at Canterbury Shaker Village was established as a covenantal order, or gathered, on November 10, 1800, at which time members consecrated their possessions for the collective use of the Second Family. This had in effect functioned as an unofficial Family for a number of years, however, prior to its actual founding (Blinn n.d.: 66). The Canterbury Second Family was home to Shakers who were neither the most powerful nor the most recent arrivals; rather, they were full-fledged Shakers who simply had not attained the senior status of those in the Church Family. Because the only extant accounts of the Second Family are in journals kept by members of the Church Family, they nearly always refer to instances of monetary or physical assistance; for example, the first recorded instance of direct monetary assistance to the Second Family was in December of 1817, when the Deacons and Ministry agreed to "support and maintain" four elderly or handicapped Second Family members "to the value of \$200.00 yearly, until some of them

die" (Winkley 1784–1845: December 1, 1817). Another type of financial assistance was to give one Family a monopoly over a particular industry, as in 1819 when the Church gave the Second Family sole sales rights in 21 towns for their garden seed business (Blinn n.d.: 177).

Such accounts leave the impression of a Second Family closely tied to, and somewhat dependent upon, the dominant Church Family. This view may be the result of a biased sample, however, and not truly reflective of the integration of the Second Family into the larger Canterbury Shaker community. Financial and recruitment problems persisted, and in 1871 "after several conferences" by the Trustees, Ministry, Elders, and Eldresses, the decision was reached to make the Second Family "a branch of the Church" (Winkley 1784–1845: October 9, 1871). Most of the Brethren and Sisters moved to the Church Family, although a few Sisters were left to care for the buildings. It was not until January of 1915 that the actual process of closing the Branch began. The livestock were sold, and during the following spring the remaining Sisters moved to the Church Family (Greenwood n.d.: 150, 258).

In 1951 David Curtis and William Meeh purchased most of the Second Family land, and Curtis erected his own house on the west side of Shaker Road, atop the foundation of the Second Family Sisters' Brick Shop. One Shaker Second Family building has survived, a barn or shed (2:N2E0), but many of the Second Family building foundations on the west side of Shaker Road have been bulldozed. The east side of the road has been less disturbed, and several foundations stand open where they are now covered with brush and poison ivy. Of the dozens of foundations from buildings known to have existed in the Second Family before its closing in 1915, there was time to test and map only three during the 1996 archaeological survey, one of which was the site of the Second Family Blacksmith Shop. (All of these buildings are depicted on Elder Henry Blinn's watercolor of Shaker Village, as drawn in 1848; see FIG. 3.)

Given the importance of smithing to the residents of Canterbury, the Second Family Blacksmith Shop was probably constructed soon after the gathering of the Family in 1800.





Figure 3. A section of Elder Henry Blinn's 1848 watercolor map of Canterbury Shaker Village, showing buildings of the Second Family. (Courtesy of Canterbury Shaker Village Archives.)

The shop is depicted on Blinn's 1848 watercolor, as is a coal shed just east of it, and it appears again in the background of photographs dating to the early 20th century. It could easily have been one of the still-standing buildings that Lyford referred to in 1912, although it probably was taken down about the time the Second Family folded in 1915. Most likely the only Shaker Blacksmith Shop in use after that time was the one at the Church Family.

When the surface was mapped in 1978–1980, Starbuck (1990a) identified this Second Family foundation as site 6:N2E0, and it has been covered with poison ivy and brush in recent years. After the poison ivy was removed in 1996, the southern half of the foundation was found to be covered with round field stones, probably thrown there during plowing of the surrounding field. According to Curtis, he had never disturbed the foundation since purchasing it in 1951, except for pushing over one large stone, which he considered to be the base for an anvil; this more likely had been a prop underneath an anvil stump, and not an actual base. As the surface was cleared, it became clear that the northern half of the foundation was covered with a dense scatter of iron artifacts, indicating that

when the building was taken down, everything not worth salvaging was left behind.

The surface of the foundation was gridded with pins at 1 m (3.28 ft) intervals and then the surface was mapped, including foundation stones, field stones, and artifact scatters (FIG. 4). (None of the test pits could be mapped in the southwest corner because the poison ivy was too dense to permit visibility of the underlying surface.) Iron artifacts were found lying everywhere just below the grass and poison ivy. Notable among these were oxshoes and a couple of drills, suggesting that a drill press may have been in use inside the shop. As the work proceeded (FIG. 5), it gradually became clear that this was not merely the site of a typical blacksmith shop—with a mix of broken tools and parts undergoing repair—but that a significant craft industry had been practiced there. Both inside and outside the northeast corner of the foundation was an extensive waster dump filled with the warped and asymmetrical bowls of redware tobacco pipes (FIG. 6), as well as a lesser number of waster pipes of white clay; both types were large-bored and were intended to have a separate reed stem inserted into the bowl. Both the red and white pipes have much the same dimensions (see TAB. 1), and the white pipes were probably being made in the same molds as the redware pipes. Because white clay was the preferred color for pipes throughout the 19th century, it may well be that the Shakers started out importing white clay from a distance (perhaps from England), but because of cost gave up and then switched to the local, cheaper, red clays that are ubiquitous throughout New England (William Ketchum, personal communication, 2000).

Shaker blacksmith shops were sometimes the location for pipe manufacture, with a pipe kiln in one corner of the shop to maximize use of the heat (William Ketchum, personal communication, 2000). The pipes would have been held by pipe kiln racks of wrought iron while they were being fired. From the few thousand pipe waster fragments that were excavated (FIG. 7), pipes were clearly manufactured at the Second Family in the early or mid-19th century. Some of the redware pipes contained bits of white clay, creating a marbled or mottled effect (FIG. 8). The white clay may have been mixed in for aesthetic reasons, or perhaps they were merely trying to use up the white clay. This resulted in pipe wasters that



Table 1. Tobacco pipes found within the Second Family blacksmith shop.

Pipe Type	Total Fragments	Minimum Number of Pipes
White ball clay	481	14
Red earthenware	1759	151
Marbleized	301	62
Total	2541	227

Bore Diameters	Pipe Types		
	White Ball Clay	Red Earthenware	Marbleized
4/64		3	
5/64	1	1	
7/64		28	1
8/64	45	7	2
9/64	6	3	2
10/64	6	19	6
11/64	13	186	117
12/64	4	17	7

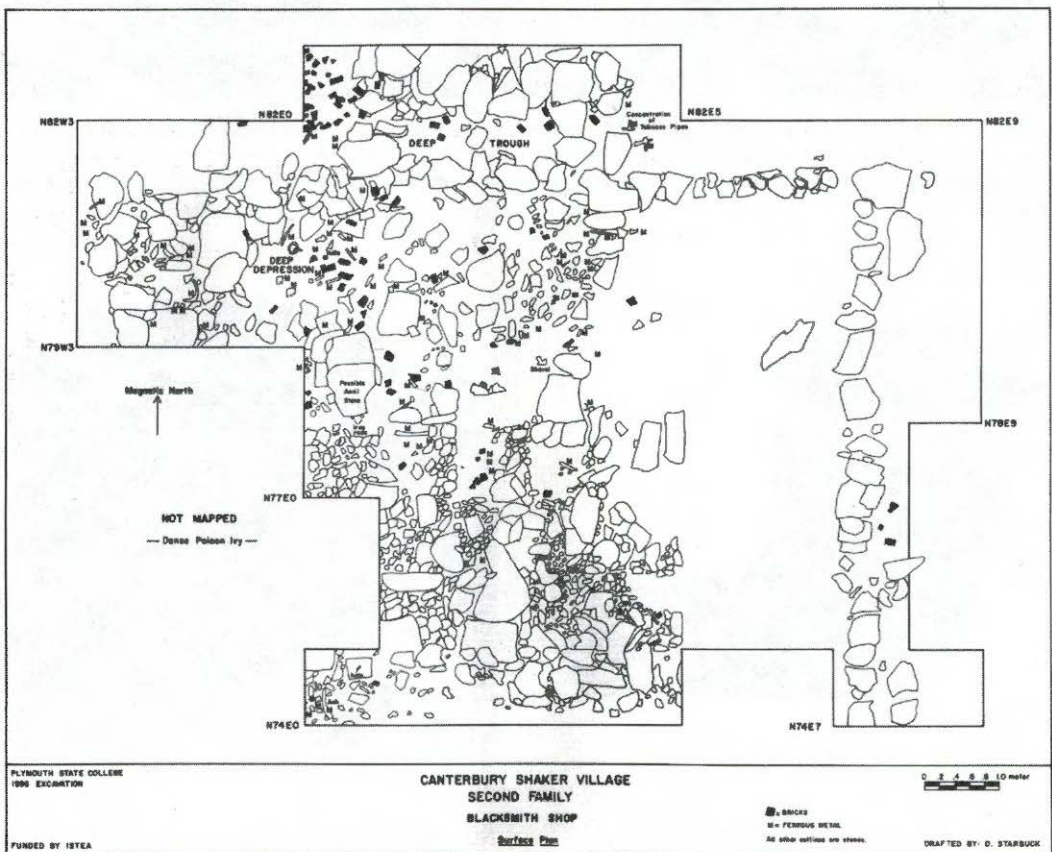


Figure 4. A plan view of the Second Family Blacksmith Shop as mapped and excavated in 1996.

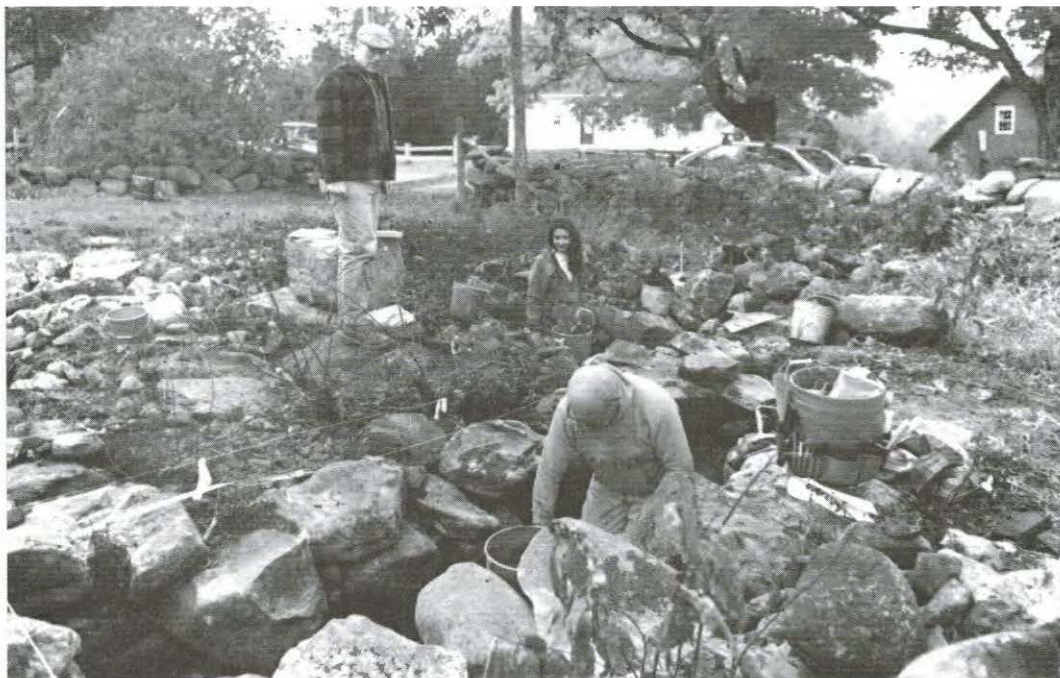


Figure 5. Foundation of the Second Family Blacksmith Shop (6:N2E0), facing southwest toward Shaker Road. The surface of the foundation has been cleared of brush, and the excavation is underway. David Curtis' house (1:N2E0) appears in the background center, and the only surviving Second Family barn (2:N2E0) is at the background right.



Figure 6. An unusually intact redware pipe bowl from the waster dump behind the Second Family Blacksmith Shop.



Figure 7. A sample of redware pipe bowl fragments from the Second Family Blacksmith Shop.





Figure 8. Marbleized (mottled) redware tobacco pipes from the Second Family Blacksmith Shop.

ranged from perfectly red, to slightly speckled with white clay, to some that were totally awash in white. The form and finish of the redware pipes was much plainer than the pipes manufactured after 1864 by John Taber and son at their factory in East Alton (and later in Wolfeboro), New Hampshire, which until now was the only known pipemaking establishment in New Hampshire (Jung 1996; Sudbury 1979: 170–171). The marbleized red and white pipes of Canterbury are not typical of local pipe manufacture, and it seems doubtful that marbleized pipes would have sold very well. Because none of the Shaker pipes are decorated—unlike most contemporary pipes in the outside world—it may well mean that they were produced strictly for the Shakers' own consumption. All of the pipes are amazingly similar, although different-sized bores were created after the pipes were molded.

While tobacco pipes are known to have been manufactured in great quantities at other Shaker villages, notably New Lebanon and Watervliet, New York (Andrews 1932: 166–167; see also Benning 1973: 82), no historical references have ever been found that describe pipemaking in Canterbury. During their early history, many of the Shakers were extremely fond of smoking, and

at this date [1800] it was almost the universal custom for the Brethren and Sisters to smoke tobacco, and quite a number of the pipes were taken into the social gatherings & the tobacco smoke, no doubt,

filled the room. This was, however, soon discontinued, as already some were to be found who could not endure the nauseating fumes of tobacco, and on this account would leave the company. (Blinn n.d.: 14)

Even after tobacco was banned,

We occasionally find a person who uses a pipe, but the cases are rare. The fumes of tobacco are not to be found in any of our buildings. It has proved to be a decided blessing to us that its use was not recommended by Believers. (Blinn n.d.: 51)

Because the revised Shaker Millennial Laws in 1845 were starting to place limitations on the use of tobacco, it appears most likely that the wasters discovered at the Second Family represent craft production before that date. The evidence for Canterbury pipe-making was unexpected and, because what we found in the dump were imperfect wasters, it was not simply a matter of Shaker Brothers sneaking out to the Blacksmith Shop to have a smoke where the Sisters would not catch them! These were pipes that had become defective during the manufacturing process, before firing was completed, and many of the pipe bowls had distorted and were no longer round in outline. The 2,541 pipe fragments recovered in 1996 (TAB. 1) represent a minimum of 227 discrete pipes that had been discarded. This total is based on counting the number of "elbows" among the pipe fragments, i.e., the point where the bowl meets the stem. Many of the pipes were nearly complete (FIG. 9), but there were no traces of the long willow stems that would have been inserted into the bowls for use. Numerous stove parts were discovered in the shop (FIG. 10), and it may be that the stoves were used for firing the pipes. Still, at least one stove was probably used to keep the smith warm.

A host of tools was also found inside the Second Family Blacksmith Shop that pertained to the more typical activities of the smithy, including tongs, files, calipers and hundreds of iron objects that were being shaped or repaired. These included many barrel hoops, horseshoes, oxshoes, one corrective horseshoe, shovel blades (FIG. 11), an ax head, a draw

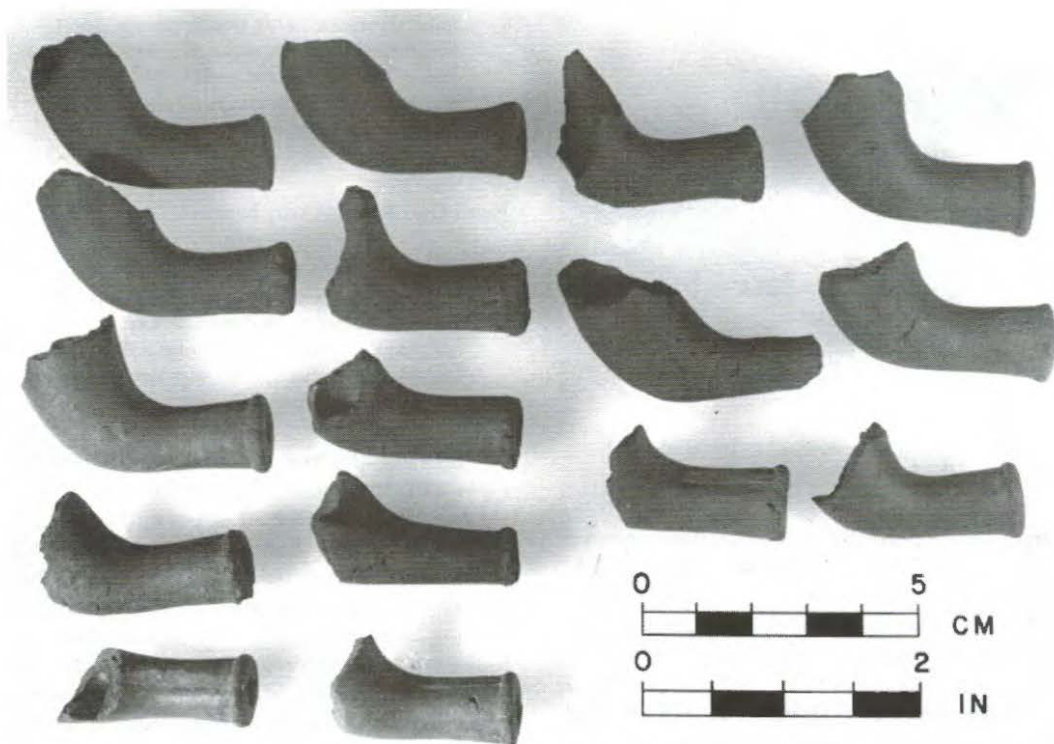


Figure 9. Some of the more intact redware tobacco pipes from the Second Family Blacksmith Shop.

knife (FIG. 12), teeth from a mowing machine (FIG. 13), and much more (see TAB. 2). This diverse range of tools includes items that had been made by the smith, as well as others that were in the smithy for repair. There were modest numbers of tin cans and bottle fragments, numerous sherds of unrefined stoneware, whiteware, and redware, and a ca. 1860 dime was found on the northern edge of the foundation. There were also small quanti-

ties of slag scattered around the perimeter of the foundation.

The blacksmith site was richest in the northwest corner where a large, cellar-like depression was excavated to a depth of over 1.2 m (4 ft) (see FIG. 4). This depression (nearly 2 m or 6.5 ft on a side) was literally packed with tongs, files, horseshoes and oxshoes, barrel hoops, stove plates, stove legs, and sherds from either one or two gray stoneware jugs. It is not known what the function of this area had been originally, before it was converted to a dump. All together, 21 one-meter-square test pits were excavated. Throughout the foundation, the soil layers consisted of a thin surface lens of recent topsoil, underlain by a 10–15 cm (4–6 in) band of dark, charcoal-stained earth, which contained most of the iron artifacts, and then by coarse yellow subsoil that was essentially sterile. No evidence was found for either a wood or stone floor within the Shop foundation. Also, no work was done on the site of the Coal Shed located about 6–7 m (19–23 ft) to the east, but it was observed that the ground there was covered



Figure 10. Cast iron stove plate from the northwest corner of the Second Family Blacksmith Shop. It reads: "PALACE ARCAD."





Figure 11. One of the spades from the Second Family Blacksmith Shop.



Figure 12. A draw knife from the Second Family Blacksmith Shop.

with charcoal deposits. Historical sources do not indicate the type(s) of fuel used at the Second Family Blacksmith Shop, so it is unknown whether it was fueled solely with coal, or with a mixture of coal and charcoal.

### The Church Family Blacksmith Shop

The largest of the Canterbury Blacksmith Shops was built at the Church Family in 1811, on the west side of Shaker Road and just to the south of the Trustees' Office (FIGS. 14, 15). This shop replaced one that had been erected in 1793 on the east side of Shaker Road, in

Table 2. Selected artifacts recovered from the Second and Church Family blacksmith shops.

	Second Family	Church Family
Ceramic Sherds		
whiteware	73	5567
pearlware		49
creamware		204
redware	51	1122
stoneware	290	524
Tobacco Pipe Fragments	2541	187
Metal		
knives	13	6
spoons	1	1
shovels/spades	7	
draw knives	1	1
files	25	25
ax head	1	1
hoe blades		2
scythe fragments		1
gouges	4	
wedge fragments		13
splitting wedges		2
punches	26	42
chisels	22	52
blacksmith tongs	5	
cast iron stove fragments	23	72
drills/ drill bits	5	11
ox shoes	14	27
horseshoes	17	
hinges	15	17
door latches	7	1
pail bails	8	2
barrel hoops	40	
cutter bar teeth	9	4
wagon/carriage parts	40	3
metal chain links	43	64
manure spreader parts	3	
buttons	2	20
buckles	19	15
tin can fragments	35	12
musket parts		1
Other		
gunflints		12
grindstone fragments		2
whetstone fragments		9
soapstone fragments		225

between the Infirmary and the Brethren's Shop (Starbuck 1990a: 32). An excellent early graphic representation of the 1811 shop appears in Elder Henry Blinn's 1848 watercolor of Shaker Village (FIG. 16). Other early views of the Shop, drawn by Peter Foster and Joshua H. Bussell, appear in Robert Emlen's *Shaker Village Views* (1987: figure 62, Plate XXIII). Each of these drawings also shows a small Ox Shed that was attached at the north end of the Shop, apparently because the shoeing of oxen was one of the Shop's primary activities.

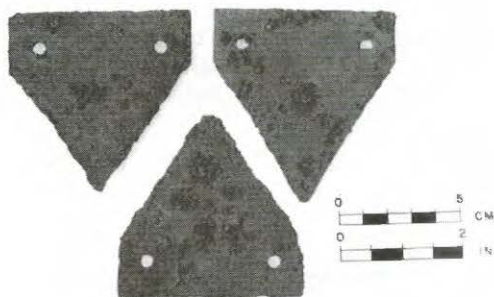


Figure 13. Cutter bar teeth from a mowing machine, found in the Second Family Blacksmith Shop.

The 1811 Blacksmith Shop contained a brick forge, measured 8.5 x 15.2 m (28 x 50 ft) and was "1 story and attic and basement" (Greenwood n.d.). The forge was removed in 1849 and replaced with two "cast iron forges and iron stack put in at a cost of \$200.00" (Greenwood n.d.). Also,

the old brick forges at the Blacksmith shop are taken away and two cast iron forges take their places. This is the first change or improvement that has been introduced into this place for a great many years. The floor is relaid and it presents a better appearance. The building finally became so much out of repair that in 1860 the roof was raised and a jst [*sic*] added. The whole front of the building was remodeled by enlarging the doors and by adding large windows in place of the old shutters. The underpinning was also repaired and the building painted, after which it was no discredit to the family. (Blinn n.d.: 1849)

Later modifications to the building appear to have been minor, and subsequently the Ox Shed was taken down in 1900 (Anonymous, n.d.: 8–16–1900). The Blacksmith Shop itself was removed in 1952, "Sold to a Mr. Sloan of Mass. Taken down in April by Mr. Noyes & helper also from Mass." (Clark n.d.).

After 1952, there were no further journal references to the Church Family Blacksmith Shop, or the site upon which it stood, but Eldress Bertha Lindsay remembered how the Blacksmith Shop was still well-stocked with tools in the 1940s. In the 1970s she provided a detailed description of the interior (Lindsay 1978: 14):

the upper room, a very large room, at the north end of the building here was used for the shoeing of the oxen and so forth, and then there was [*sic*] two little steps leading down to another level where they made the tinware. Then another little level led downstairs where you could go right outdoors at the south end of the building.

Bertha Lindsay proudly referred to the Church Family Blacksmith Shop as having been her favorite building at Shaker Village, but for the past 50 years the site saw little activity. That changed in the year 2000 as the modern museum made plans to reconstruct the Blacksmith Shop on its original site in order to house a new restaurant for visitors. That necessitated surface recording and archaeological excavations to define the footprint of the Blacksmith Shop and the contiguous Ox Shed, and it also required locating and sampling any surrounding dumps (FIG. 17).

The surface of the Blacksmith Shop foundation was littered with fragments of metal and glass, broken bricks, leather shoe fragments, a chisel, a knife blade, several ox shoes, and chunks of wood, some of which may have postdated the removal of the building in 1952 (FIGS. 18, 19). Clearing of the surface in June of 2000 revealed that the foundation consisted of two parts: a) the northern two-thirds, measuring 8.5 m (28 ft) E–W x 10.7 m (35 ft) N–S,



Figure 14. Early 20th-century view card of the Church Family, facing northeast. The Blacksmith Shop is the white building in the center foreground. (Courtesy of Canterbury Shaker Village Archives.)





Figure 15. The Trustees Office at the Church Family, pre-1906, facing southwest. The northern end of the Blacksmith Shop is just barely visible at the far left. (Courtesy of Canterbury Shaker Village Archives.)

and consisting of thousands of fieldstones bounded by large blocks of quarried granite—this had the appearance of a filled-in cellar hole; and b) the southern one-third, which is a deep, open cellar, capable of being driven into from the south side of the building, and measuring 8.5 m (28 ft) E-W x 4.6 m (15 ft) N-S. At the southeast corner of the cellar, there is a vertical, poured concrete support, which appears to have been a brace against the south wall of the foundation. In fact, a couple of additional poured concrete supports were found lying atop the stone pile (visible in FIGS. 18 and 19), suggesting that during its final years of use, several braces had been employed to keep the foundation, and the

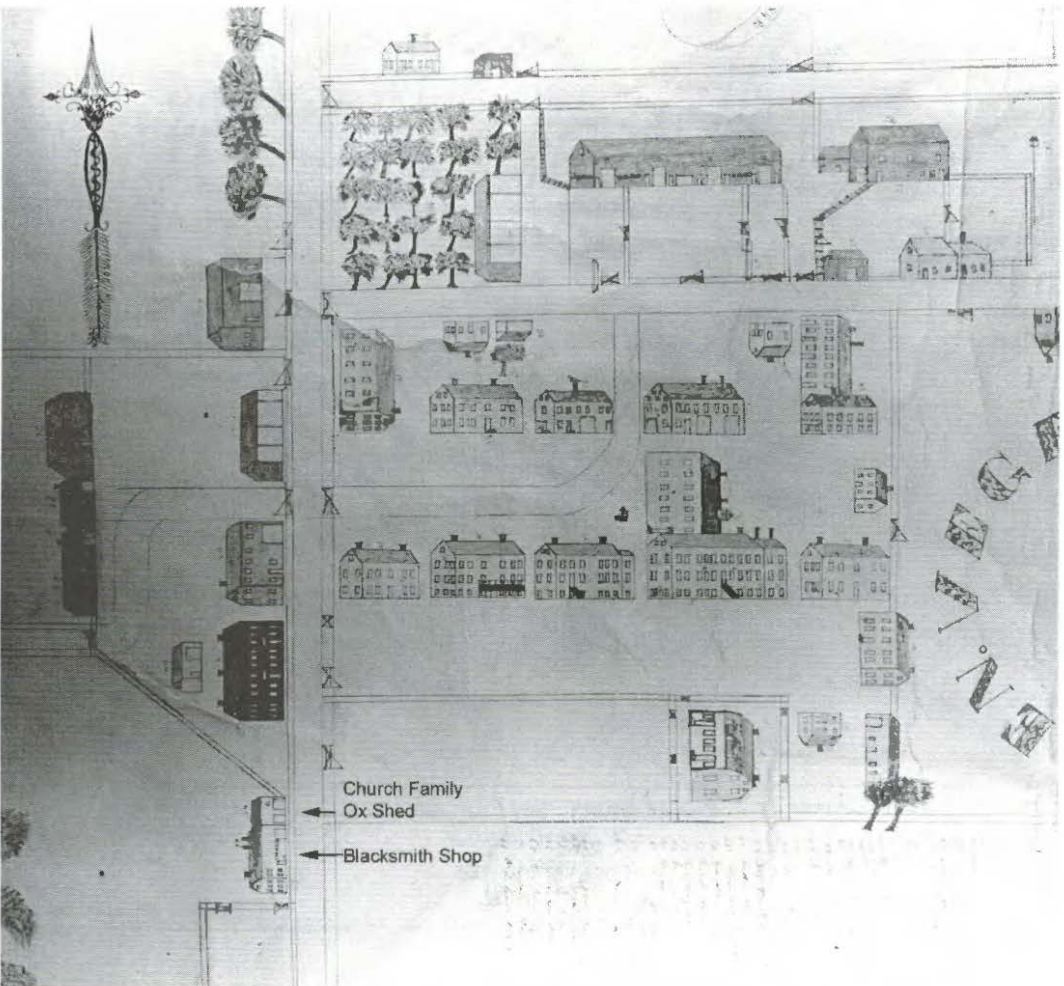


Figure 16. A section of Elder Henry Blinn's 1848 watercolor map of Canterbury Shaker Village, showing Church Family buildings. (Courtesy of Canterbury Shaker Village Archives.)

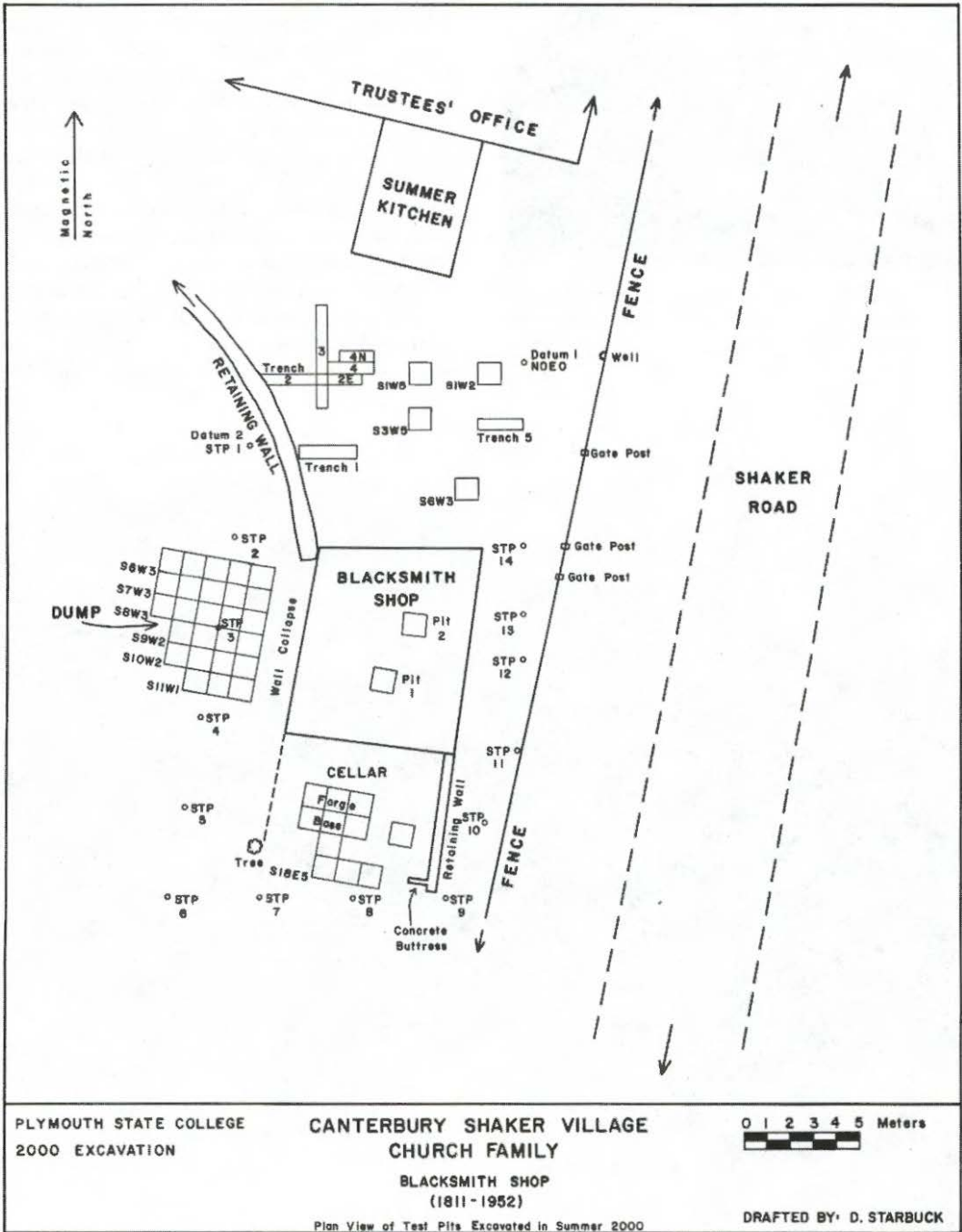


Figure 17. A plan view of the Church Family Blacksmith Shop and its associated dump as mapped and excavated in 2000.





Figure 18. The surface of the Church Family Blacksmith Shop foundation prior to excavation in the summer of 2000, facing southwest. (Each scale board is marked in 10 cm units.)



Figure 19. The surface of the Church Family Blacksmith Shop foundation prior to excavation in the summer of 2000, facing southeast.



building that sat atop it, from shifting and ultimately collapsing. Upon closer inspection, it was observed that the large, quarried foundation sill stones had been laid up only 1–2 courses high, and these “floated” atop the pile of smaller fieldstones. While this may have been adequate to support the weight of a building that was originally only one story high (with an attic), by the time it had been expanded to its final three-story height (still with an attic) the weight of the Blacksmith Shop must have far exceeded the capacity of its unstable foundation.

Initially, it was assumed that the pile of fieldstones represented a cellar that had been filled in after the Blacksmith Shop was removed. However, after a Caterpillar “excavator” was used to completely hollow out the interior of the foundation, no artifacts were found below the surface of the stone pile. The excavator convincingly demonstrated that the quarried stones merely sat atop the pile and were not a “shell” or “form” into which the field stones had been thrown. Therefore the foundation of the Blacksmith Shop was essentially a giant man-made platform of field stones, with a single layer of sill stones positioned at ground level around the perimeter. Retaining walls made from extremely large granite blocks were stacked up on the south and west to hold in all of the loose field stones, but the retaining walls shifted greatly over the years, and most slumped into the interior of the foundation. Everything was dry-laid, and the fieldstones became progressively deeper (higher) toward the south, which was necessary to keep the surface of the foundation level since it had been constructed on a steep downhill slope.

At the south end of the Blacksmith Shop foundation, great quantities of brick covered the surface of the cellar area, including many that were slagged, from facing inside the firebox. As test pits were excavated there, the substantial stone base of a fireplace was exposed, overlain with a tremendous scatter of bricks (FIG. 20). Because the later 1849 forges inside the Blacksmith Shop were made of cast iron (and purchased from the outside world), this discovery in the cellar was no doubt the original 1811 forge base, perhaps the one that lay underneath the southernmost chimney

that is depicted in Henry Blinn’s 1848 watercolor (FIG. 16). The forge base measures 1.35 m (4.4 ft) E–W x 1.07 m (3.5 ft) N–S, is in excellent condition, and appears to be the only surviving feature from the early period of this building. Scattered throughout the cellar there were nails, sherds of whiteware and redware, tin cans, bits of sheet metal, a hinge, a chisel, a file, glass bottle fragments, one tobacco pipe bowl of ball clay, and chunks of charcoal, rotted wood, and plaster. Most of these are artifact categories that would be found within any 19th- and early 20th-century building foundation at Shaker Village.

As the excavator scooped out the interior of the Shop foundation, its treads cut several centimeters into the charcoal-stained sod on the west side of the building, kicking out pieces of worked soapstone, ceramic sherds, tobacco pipes, bottles, metal fragments, small pieces of tin, butchered animal bones, and small quantities of slag and charcoal. This proved to be the main dump for the Blacksmith Shop, and a total of 26 m<sup>2</sup> (280 ft<sup>2</sup>) of the dump was excavated. The matrix consisted of coal ash, burnt coal, slag, cinders, and chunks of burnt wood, and virtually all of the dump was underlain by a single layer of field stones (FIG. 21). The dump grew progressively thicker as the foundation was approached, and the artifacts also became richer. Wherever there were pockets of brown soil underneath the coal and charcoal layer, domestic artifacts tended to be more common, whereas industrial artifacts were usually found mixed in with the charcoal and cinders.

The Blacksmith Shop dump contained an immense quantity of domestic and industrial artifacts, and among the more distinctive findings were many fragments of tin, lead, and brass (including 1 brass ruler: see FIG. 22), occasional pockets of butchered bones, 97 leather harness or shoe fragments, 2 grinding stone fragments, 9 whetstone fragments (one is depicted in FIG. 23), 6 window weight fragments, 72 cast iron stove fragments, 24 cast iron pot fragments, 17 pintle-type hinges, 1 axe head, 2 hoe blades, 25 fragments of iron files, 1 bull nose ring, 6 knives, 1 watch chain swivel, 20 buttons, 15 buckles, 1 porcelain drawer pull, 1 grapefruit spoon, many hunks of barbed wire, 1 pair of sugar tongs, a split-





Figure 20. The excavated 1811 forge base in the cellar of the Church Family Blacksmith Shop, facing south.



Figure 21. The excavated dump on the west side of the Church Family Blacksmith Shop, facing northeast.

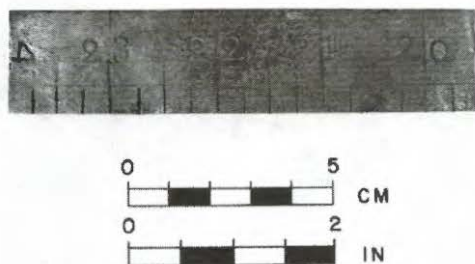


Figure 22. A fragment of brass ruler excavated from the dump west of the Church Family Blacksmith Shop (found in pit S8W1). (Note how the graduations read from right to left.)

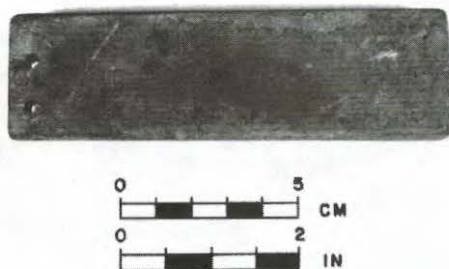


Figure 23. A whetstone with two holes for hanging from the dump west of the Church Family Blacksmith Shop (found in pit S7E1).

ting wedge, a mason's cross peen hammer (FIG. 24), 2 candle snuffers (one is depicted in FIG. 25), and many large pieces of mica.

Unquestionably the largest artifact category in the Shop's dump was nails, including thousands of cut (5536) and wire (2258) nails, moderate numbers of T-headed (139), L-headed (303) and rosehead (68) nails, some 447 roofing nails, and 2534 horseshoe or oxshoe nails. There was no physical evidence that the Shakers were making their own wrought nails or spikes, and it appears that the many cut and wire nails were being purchased from outside the village. The shoeing of animals was unquestionably one of the most important activities carried on within this shop, and while no horseshoes were recovered, there nevertheless were 27 complete ox shoes found in the dump and in the Ox Shed area to the north (see FIG. 17). There also were 234 fragments of iron bar stock in the dump.

There were over 8000 pottery sherds in the dump, suggesting that the Shop was also used as a dwelling, and these included large quantities of plain and transfer-printed whiteware, some creamware and pearlware, vessels with annular decoration, much unrefined gray stoneware, sherds of stoneware beer (or ginger beer) bottles, and much redware. Many of the sherds were from plates, but nearly every other vessel form was represented here as well, including several stoneware jugs. The dating of this assemblage ranges from early through late 19th century, but most of the sherds fall between about 1820 and 1860.

Among the most distinctive parts of this assemblage were the artifacts that pertained to smoking. Whereas few of the tobacco pipes found at the Second Family Blacksmith Shop showed signs of having been used (charcoal stains inside the bowl), here the interiors of the bowls were heavily encrusted with carbon. We found nine white ball clay bowls with the letters "TD" impressed on the side of the bowl facing the smoker. These were manufactured by the McDougall Company of Glasgow, Scotland, and some of the stem fragments were marked with either "McDougall" or "Glasgow." There were dozens of other pipe bowl and stem fragments, including some made of white ball clay, many of plain redware (FIG. 26), and some of burnished redware (FIG. 27). The plain redware pipes were virtually identical in size and form to those that had been found as wasters at the Second Family Blacksmith Shop. Since most of the tobacco pipes were mixed in with the cinders in the dump's fill—and also showed signs of burning on the outside—it appears that when they broke, the blacksmith(s) simply threw the pipes into the fire. A few of the pipes were highly decorative, including an excellent example of an effigy pipe that depicted a band member (FIG. 28). No pipe wasters were found in this dump, so there is virtually no evidence for tobacco pipes having been manufactured there. This suggests that the Second Family did have a monopoly upon pipe production. There of course remains the question of whether the blacksmith(s) were smoking tobacco here in the Church Family Blacksmith Shop before or after tobacco was banned in the 1840s. The dump spans a long enough period,



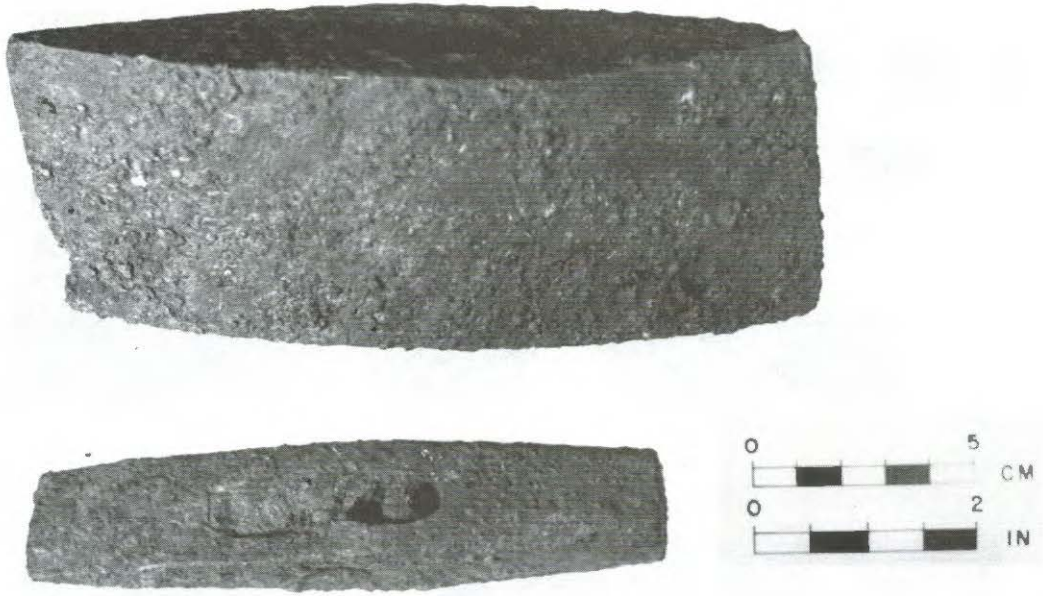


Figure 24. A splitting wedge and a mason's cross peen hammer excavated from the dump west of the Church Family Blacksmith Shop (found in pits S11E1 and S9E0).

however, that it really cannot be determined stratigraphically.

Glass artifacts found in the dump included a "Shaker No. 1 bottle," the base of a large candlestick, much window glass, quite a few fragments of wine or cider bottles, many fragments of medicine bottles, and a few glass vials. But perhaps the most surprising discovery came in the form of 12 gunflints (some are depicted in FIG. 29) and the cock from a musket, suggesting that firearms were being

repaired here in the Blacksmith Shop. The historical literature for the Canterbury Shakers simply does not deal with the subject of firearms, and while they were unquestionably used by the Shakers, it was nonetheless satisfying to have finally found direct evidence for the presence of flintlocks. The gunflints did not come from a stratum that can be dated closely, but given the speed with which the Shakers usually accepted new technology, it is probable that the flints were thrown here no later than the mid-1800s.

Another surprise came in the form of hundreds of cut and shaped fragments of soapstone that were scattered throughout the dump (FIG. 30). Most are approximately 2.5 cm (1 in) in thickness, and some are curved corner pieces that bear a very strong resemblance to the soapstone gravestones that were commonly used by the Shakers. (There is no evidence that the Canterbury Shakers made either soapstone stoves or sinks.) It thus appears that the Church Family Blacksmith Shop was the primary location where the Shakers cut their gravestones to shape, certainly a significant industry given the village's population of 200–300 at any given time, many

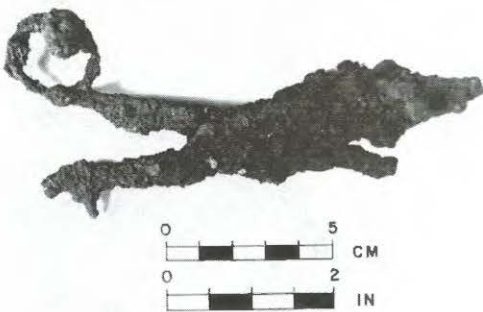


Figure 25. A candle snuffer excavated from the dump west of the Church Family Blacksmith Shop (found in pit S7W3).

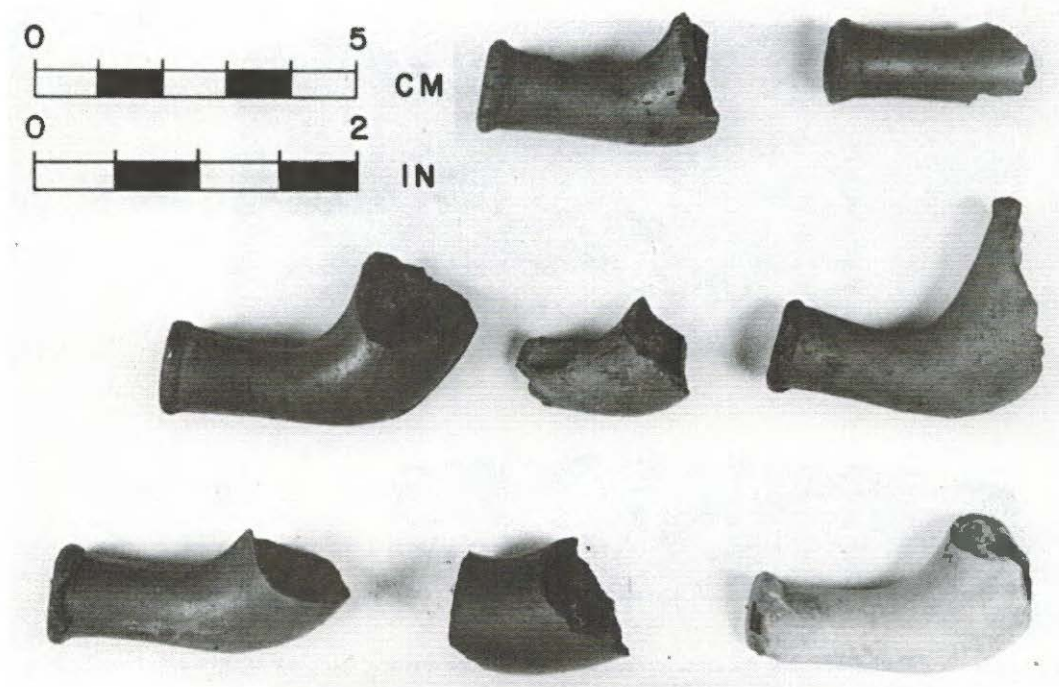


Figure 26. Examples of red earthenware pipes, probably manufactured by the Shakers, excavated from the dump west of the Church Family Blacksmith Shop (found in pits S10W1, S10W2, S11E1, and S7E1).

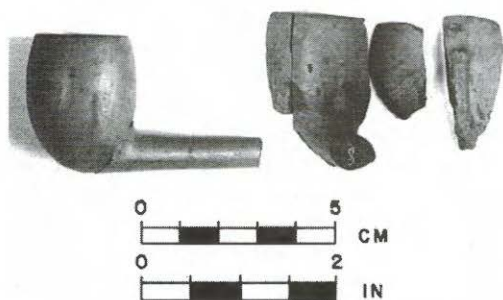


Figure 27 (above). Examples of burnished, non-Shaker redware pipes excavated from the dump west of the Church Family Blacksmith Shop (found in pit S6E0).



Figure 28 (right). An effigy pipe bowl excavated from the dump west of the Church Family Blacksmith Shop (found in pit S7W1).



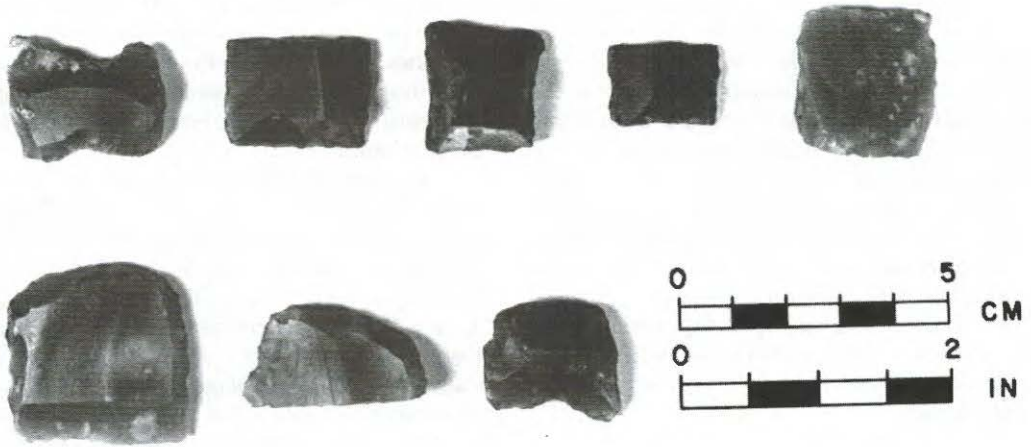


Figure 29. Eight of the gunflints excavated from the dump west of the Church Family Blacksmith Shop (found in pits S7E0, S8W1 and S9E0).



Figure 30. Examples of worked soapstone from the surface of the dump west of the Church Family Blacksmith Shop.

of whom were elderly. The dump also contained one fragment of a soapstone pipe and two fragments of soapstone molds.

Enough of the dump was excavated that it seems likely our assemblage must have

included traces of nearly all of the activities ever performed inside the Church Family Blacksmith Shop. The dating of a majority of the artifacts suggests that this dump may not have seen much use in the 20th century, how-

ever. Since dumps tend to reflect best the final years of their use, it may be that the later Shaker blacksmiths decided that it was not hygienic, or sightly, to dump refuse so close to the building and started carrying their trash farther away. The dump is also distinctive in that many of the artifacts suggest maintenance activities such as repairing pipes and hand tools, replacing handles, sharpening with files and whetstones, and shoeing oxen, while there is somewhat less evidence for actual craft manufacture. For example, there were very few scraps of tin in the dump, even though history suggests that some tin was being worked here.

## Conclusions

The Second Family Blacksmith Shop in Canterbury has revealed unexpected information about the tobacco pipe industry in Canterbury, while also producing many excellent examples of blacksmith shop tools and evidence for the maintenance of farm equipment. Many of the redware pipes contained bits of white clay, and aesthetically this created a most unusual effect. Neither documentary research, nor previous excavations, had ever suggested the local manufacture of pipes in Canterbury, although a few fragments of redware pipes had been discovered at the West Family in the late 1970s. The foundation outline of the Shop was complete, and the interior suggested that all of the contents had been left *in situ* when the building was removed, probably between 1910 and 1915.

The archaeological evidence was rather different at the Church Family Blacksmith Shop, where the building had been sold and removed from the site in 1952. It was possible to determine the outline of the Blacksmith Shop, to establish that the large rock pile there was a base under the Shop (rather than a filled-in cellar hole), and to excavate the original forge base inside a cellar at the south end of the foundation. The dump on the western side of the Shop was extremely informative, with its evidence for shoeing oxen, for working soapstone into gravestones, for smoking tobacco, and for repairing firearms. The Church Family Shop appears to have housed a broader range of activities than the

shop at the Second Family, and at least half of the artifacts in the dump pertained to domestic activities. Clearly the smith(s) actually lived in this Shop, while there simply is not enough evidence to make that determination at the Second Family.

This is admittedly a first look at the blacksmith shops at a Shaker village, and certainly more in-depth analysis is needed. Still, this preliminary effort to examine selected aspects of Shaker smithies, crafts, and tobacco use suggests considerable variability in activities from Family to Family and building to building at Canterbury Shaker Village. While this was a communal society with tightly prescribed behavior, it appears that digging just one example of a particular building category—in this case, blacksmith shops—is not going to predict the activities or contents of other buildings of the same type. While this is partially because of the multi-functional nature of Shaker buildings, whereby multiple tasks might be encompassed within a single building, it may also reflect the Shakers' desire to reduce competition and duplication of efforts between Families. Every Shaker site thus has the potential to be different, and each needs to be explored as a possible source of very new information.

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The author began to direct archaeological research at Canterbury Shaker Village in 1978, and since 1993, much of this work has been conducted under the auspices of Plymouth State College (Plymouth, New Hampshire). The staff of Canterbury Shaker Village have been extremely helpful in assisting this research, and I am indebted to Scott T. Swank, Director and President, Shery Hack, Chief Curator, Darryl Thompson, and the other staff of the Village. The work of processing and analyzing artifacts from the two blacksmith shops has been ongoing since 1996 and is being directed by Elizabeth Hall, also of Plymouth State College. Hall is to be credited for preparing all of the data that appear here in Tables 1 and 2. Assistance in identifying artifacts from the Second Family Blacksmith Shop was also given by William C. Ketchum, an expert in American material culture, and by



Merle and Robert Parsons. I wish to thank Canterbury Shaker Village for giving us the opportunity to conduct this research, and I also wish to thank David Curtis, owner of the site of the Second Family Blacksmith Shop, for kindly allowing us to excavate on his property. Both property owners have done much to make this a very pleasant experience. I also wish to thank the two anonymous reviewers of this article, who correctly pointed out that a second paper still needs to be written, specifically addressing the evidence these shops contain for blacksmithing techniques and technology.

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