

An Archaic Quarry and Stone Knapping Location on Three Hat Mountain, North Carolina

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Article:

INTRODUCTION

North American Indians relied heavily on stone as a basic material from which to shape a wide variety of tools and ceremonial objects. When an archaeologist excavates a prehistoric Indian camp or village it is often apparent that the one or more Indian groups which inhabited the site during various distinctive periods or phases preferred certain kinds of stone for the manufacture of utilitarian or ritual objects. It is not always so obvious, however, whether the selection of a particular kind of stone was determined by its proximity to the habitation site, its excellent quality, its aesthetic properties, its procurement from a special trading partner, or some kinship, religious, or sentimental attachment which the group felt toward the particular stone material. Furthermore, the acquisition of a particular kind of stone may have involved different sorts of technologies and socio-political relations. Appropriate raw material may be picked up on the surface or mined in several different ways. It may be acquired over long distances through intermediaries in a complex trading network, or through direct expeditions to the source. Furthermore, the material obtained may be in various stages of reduction, from rough pieces of raw material up to a finished product, and the control of the source or distribution of the material in raw or finished form may reflect the political system operating in a region. It is for such reasons that archaeologists are interested in locating and studying the sources of raw stone material which were exploited by North American Indians. This is a report on one such source recently investigated in Davidson County, North Carolina, designated site DV-51.*

The area of the prehistoric quarrying and stone knapping activities to be described is along the southwestern flank of the Three Hat Mountain ridge which is located on the eastern central portion of Davidson County, approximately 13 km, south of Thomasville, North Carolina (35° 08'03" latitude, 80° 08' 00" longitude). The ridge trends northwest to southeast, with the highest of the three separate peaks on the southwestern end, rising to an altitude of 360 m above sea level. An extensive system of small streams and gullies drain all sides of the ridge, with several natural springs on the western slope (Fig. 1). A creek called Flat Swamp winds its way through marshy flatlands at the base of the mountain on the northeast side. Marshes and thickets at the base of the mountain give way to climax vegetation up the slope. If this range of variation in ecological microenvironments was the same during Archaic times, the area would have provided several exploitable resources attractive to Archaic Indian groups.

We first inspected Three Hat Mountain on April 20, 1975 and, during subsequent trips, managed to locate six areas where waste flakes from stone knapping are densely concentrated (Fig. 1). There may be other such areas along the southwestern flank of the ridge which were not found in our surveys due to incomplete inspection of the entire area and the heavy vegetational ground cover over most of the mountain.

* Permanent State site number 31Dv52

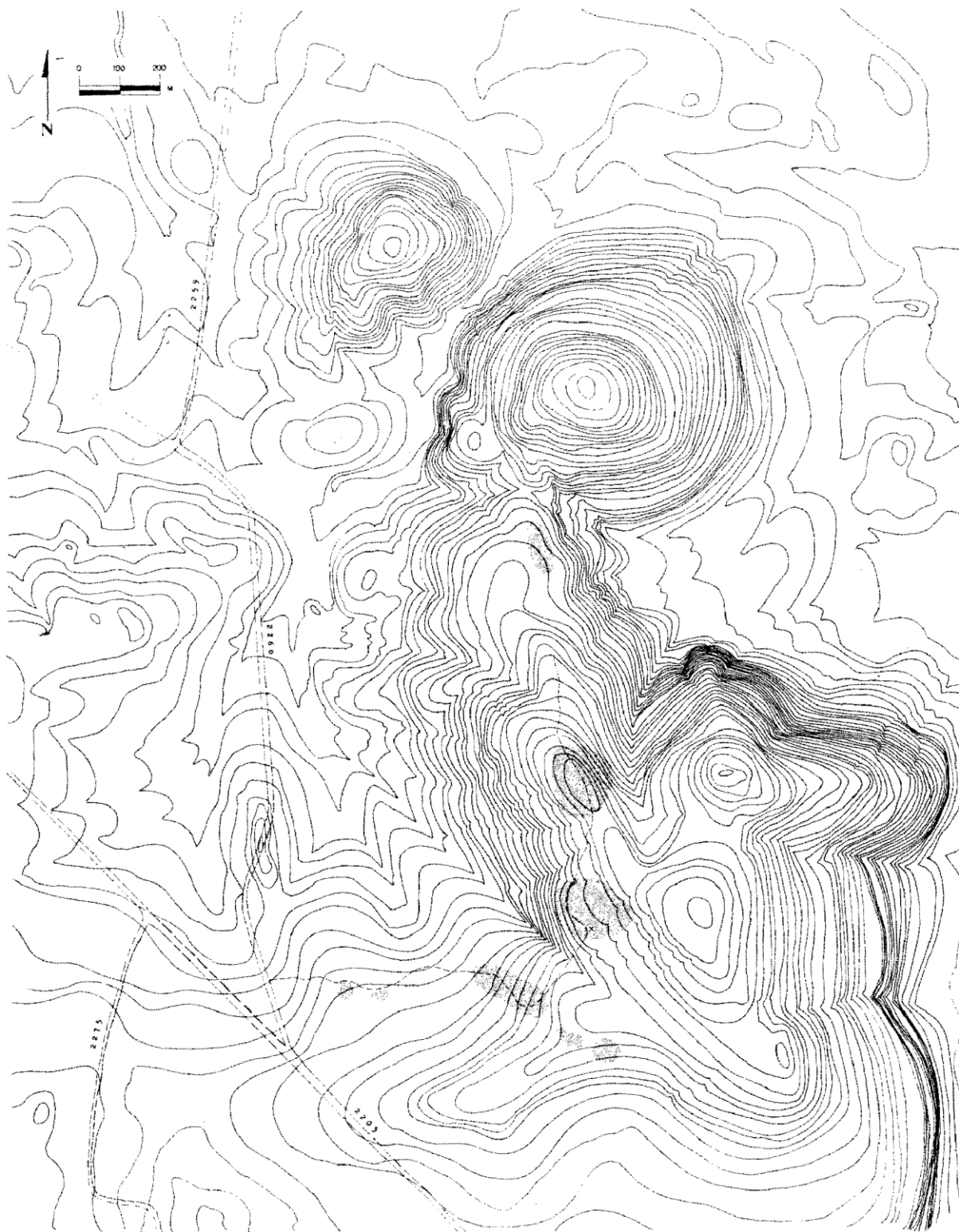


Figure 1. Map of Three Hat Mountain, showing the areas of lithic debris concentration in the DV-51 site, and the location of the test pit excavation marked X. This map was produced through topographic interpretation of an aerial photograph, utilizing a United States Department of the Interior Geological Survey 7.5 minute series topographic map as a guide. The contour interval is approximately 3.05 meters.

THE GEOLOGY OF THREE HAT MOUNTAIN AND THE TEST PIT AREA

In 1978, Jeri Jones, geologist at Catawba College, and Professor Peter Cooper, Catawba College Archaeologist, both visited the site with us and offered helpful observations on the geology of Three Hat Mountain, Mr. Jones provided us with a written report on the geology of the site area; the following discussion relies heavily on Jones' (1979) report.

Three Hat Mountain is located on the Silver Hill Fault which is part of a larger geological unit known as the Carolina Slate Belt or the Uwharrie Volcanic Belt. This belt extends southwest to northeast approximately four hundred miles from central Virginia to central Georgia, with the Silver Hill Fault lying on its western edge. The rocks of this belt are generally metasedimentary and metavolcanic and could have provided an abundance of lithic raw materials for Indian groups (Jones 1977).

According to Jones (1979), the rocks examined consist of crystal and lithic tuffs, basically cryptocrystalline rhyolites and argillites (altered volcanic mud). Based strictly on hand specimens, no volcanic flows were observed; most of the material was deposited as ash. These rocks are light gray to grayish black in color, with much variation from outcrop to outcrop. In addition, some green and very light gray tuffs were observed, but their occurrence is rare for the most part. The rocks weather to form a white to light cream cortex in spheroidal weathering. Some small outcrops exhibiting blocky weathering were also noticed.

The lithic tuffs (vitric, felsic, felsic crystal and breccia) are similar to composition to the crystal tuffs, however, the feldspar fragments tend to be slightly larger in the former. Grain size of the tuffs range from fine grained (less than 0.75 mm in size) to medium fine grained (0.75 mm to 1.0 mm in size). Quartz is the most abundant mineral identified among the crystal tuffs. Orthoclase feldspar with small amounts of albite occurs in many of the rocks as phenocrysts. The crystals are white to light pink in color and are euhedral in shape, measuring up to 1.5 mm in length. Pyrite occurs as small grains and cubic crystals in green tuffs on the southwest slope of the mountain. Iron oxide is also present in most of the rocks as granular masses or stains. Mica occurs as very small shiny plates of green and black.

Several samples of crystal tuffs exhibit slickenslide features and polished surfaces. These features are strong evidence for local faulting; some faults have been mapped to the west and northwest of the site (Stomquist et al. 1971). Rocks bordering the local faults were apparently infiltrated with additional silica producing veins of especially fine-grained rock with homogenous texture. Veins of this type would provide excellent raw materials for tools manufactured by flaking. Numerous quartz veins cut through the tuffs on the mountain supplying the necessary silica for this upgrading process. These veins range in thickness from less than one cm to 10 m, the largest of these being located on the westernmost peak, striking eastward toward the highest peak (Fig. 1). Aboriginal groups seem to have been able to distinguish these geological features and exploited them for high quality raw material. Although nodules of fine grained rock outcrop on the surface of the mountain, it appears to us that stone mining and knapping activities occurred primarily near the head of gully cuts where veins or nodules of this fine material were exposed (Fig. 1).

We now turn to a discussion of our test pit excavation at one of these mining and knapping locations, along with the results of our analysis of the excavated artifacts.

THE TEST PIT EXCAVATION

In the Fall of 1975, one of the waste flake areas was selected for subsurface testing. We chose a spot on the eastern edge of a logging road which exposed approximately 1 m of soil profile which showed four distinct artifact-bearing strata. At this spot (Fig. 1), we plotted a two-meter square and, with the aid of UNC-G students, excavated the deposit from the square over the course of six Saturdays.

The test pit excavation was intended to answer three questions: 1) were the strata formed during distinctly different phases of occupation on the site; 2) could any of the strata be dated through the presence of chronologically diagnostic artifact types; 3) what pre-historic activities could be inferred from the study of a controlled, excavated collection of artifacts?

The first step in the test pit excavation was to shave the road cut profile back to the east and down to 1.25 m depth, to expose the western face of the two meter square (Fig. 2). Then a profile was drawn of the strata (Fig. 3) before proceeding to strip off the natural layers moving eastward. The layering of the deposit, which had seemed so clearly defined at that spot along the road cut, blurred somewhat by the time we had cleaned back to the 1.25 m flat profile. Excavating each natural layer in turn from the western face of the square back to the eastern face, the stratigraphic layering became disturbingly vague in some areas, although layer #2 was rather clearly defined throughout the cut (Fig. 4).

Layer #1 ranged in color from light tan to reddish clayey soil, with lots of charcoal flecks and roots, plus some waste flakes and large rough rocks. The layer extended down to an average depth of about 20 cm from the surface.



Figure 2. Photograph of the western face of the two-meter test pit square after the profile had been shaved back from the road cut and prior to the excavation of the test pit square.

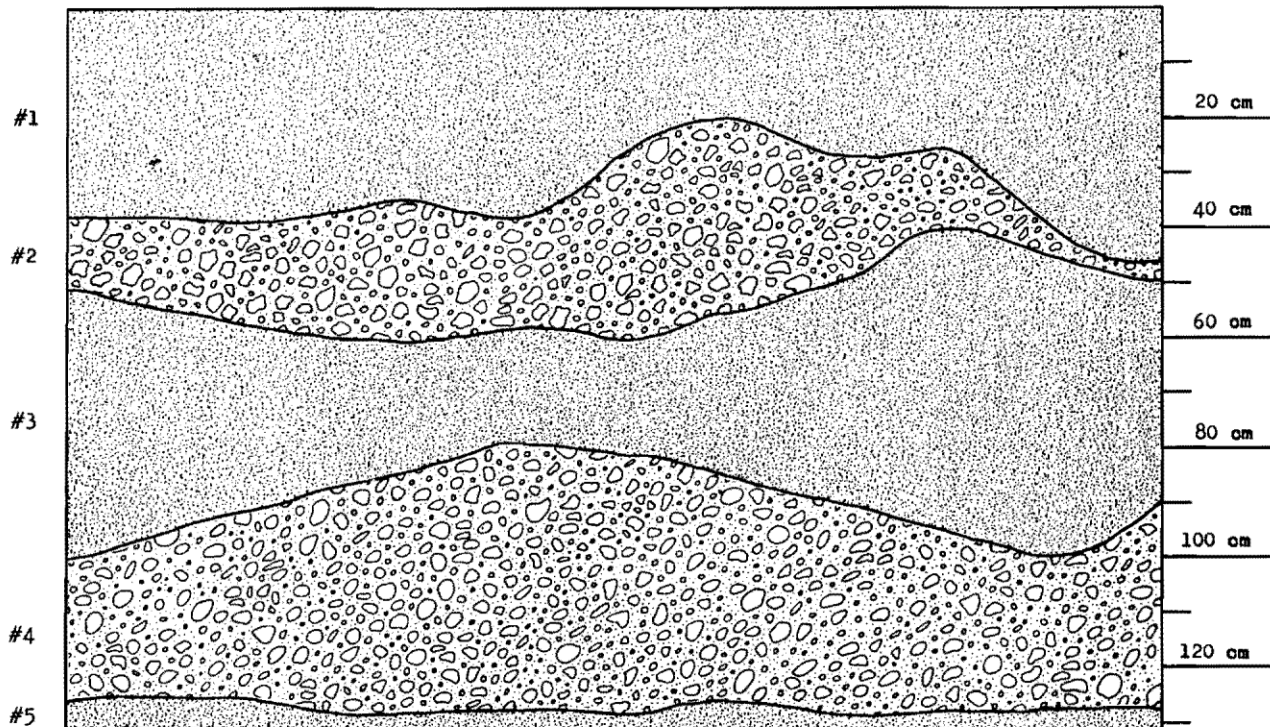


Figure 3. Drawing of the strata visible in the western face of the two-meter test pit square prior to the excavation of that square.

Layer #2 was a lighter colored yellowish mottled soil, with abundant waste flakes and rough rock. The larger waste flakes appeared to be concentrated on a well defined line at the bottom of the level, at 63 cm to 64 cm depth, with the small flakes, often found in tight- packed lenses, bedded horizontally on top of them in the upper portion of the level. There were also pockets of conglomerated pebble gravel within this layer. The base of one projectile point (Fig. 5a) was found in the southeast corner of the square at a level of 35 cm from the surface of the ground; a second projectile point (Fig. 5b) came from the northeastern quadrant of the square at a depth of 50 cm; a third and a fourth projectile point (Fig. 5c, d) were found at a depth of 55 cm in the northwestern quadrant separated by only 9 cm, and 23 cm northeast of a concentration of charcoal fragments. A fifth projectile point (Fig. 5e) was found immediately upon beginning the excavation of layer #3, at a depth of about 55 cm from the surface of the ground in the southeastern quadrant of the square, and should probably be considered to pertain to layer #2.

Layer #3 was composed of light yellowish mottled gray clayey soil, with relatively few rocks, most of which were large and few of which were waste flakes. Small concentrations of waste flakes were noted in the south central and northeast corner of the square. This level ended about 72 cm below the surface.

Layer #4 was stiff yellow clay with areas of gray clay, especially in the southeast corner of the square at a depth of 73 cm or more. What might be part of a hearth, with 5 large rough rocks and abundant tiny specks of what appeared to be charcoal, was found in the central part of the southwest corner of the square at a depth of 85 cm. The level terminated at about 90 cm depth from the surface.

Layer #5 was a very stiff yellow clay with many large angular rocks. Excavation below the level of 100 cm was extremely difficult, and could only be accomplished by using picks down to a level of 130 cm.

The 16,552 artifacts excavated from the test square were taken to the UNC-G Archaeology Laboratory where they were washed, labeled, and sorted by students under the direction of Professor Joseph B. Mountjoy. The final sorting and classification of the artifacts was accomplished by Professor Joseph B. Mountjoy and Lawrence E. Abbott, Jr. in 1980 and 1981, aided by comments from Professor Joffre Coe, UNC-CH, and Professor Peter Cooper, Catawba College, who both inspected some of the material.



Figure 4. Photograph of the eastern profile of the two-meter test pit at the completion of the excavation

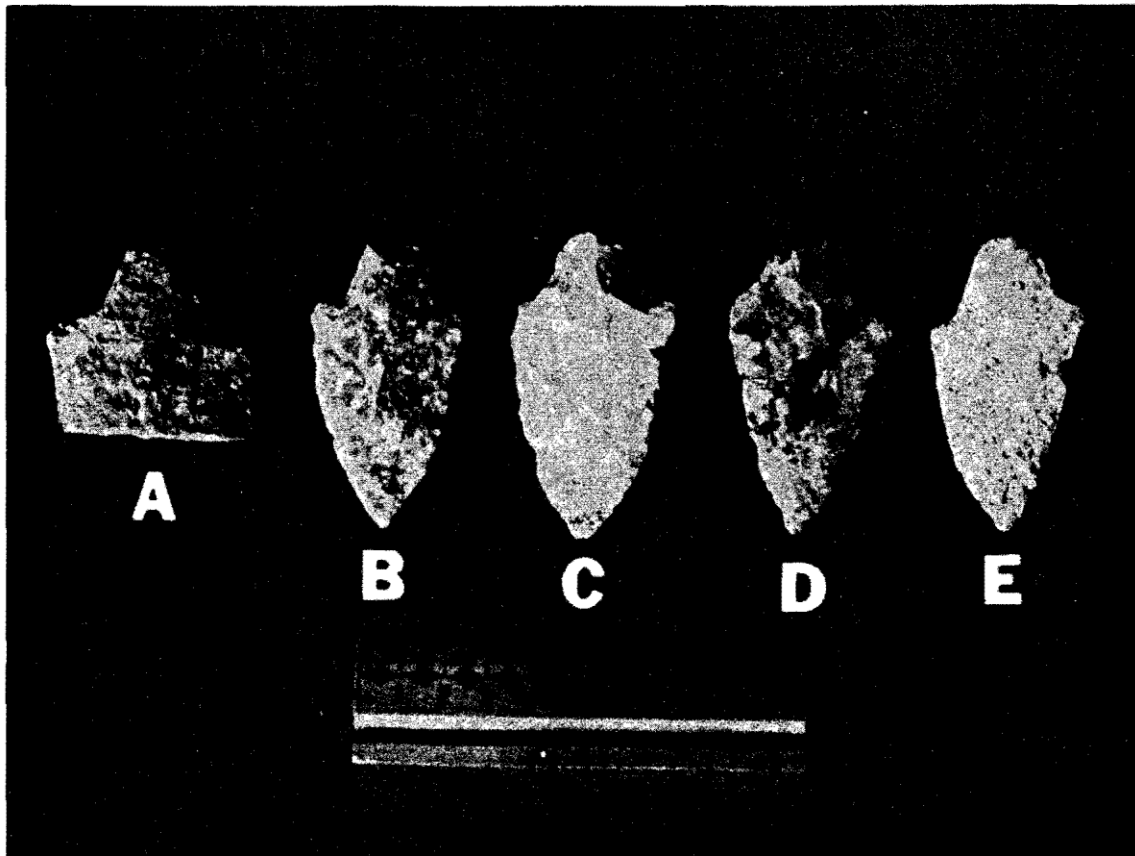


Figure 5. Projectile Points recovered from the test pit deposit.

ANALYSIS OF THE TEST PIT MATERIAL

Although the size and extent of this excavation unit was small, the amount of cultural material recovered from this pit was quite high. A total of 16,552 separate pieces of material were excavated from the test square (Table 1). Of these, 1,537 pieces were found in layer #1, 10,534 in layer #2, 1,402 in layer #3, 2,427 in layer #4, and 652 in layer #5.

Of the artifacts collected, 6,168 pieces were discarded and not used in the formal analysis of the material. These discarded pieces consisted of spalls and pieces less than 1 cm in diameter that visibly lacked a hertzian cone and bulb of percussion. The remainder of the material was classified in terms of 1) the logical sequence of lithic reduction; 2) evidence of utilization; and 3) diagnostic points and tools (Table 1). The cores were analyzed using a model developed by Bradley (1973) and the lithic reduction sequence, along with diagnostic pieces were described primarily following Coe (1964).

Flakes

The major activity on the site appears to have been the reduction of raw materials into portable forms; therefore, most artifacts recovered were debris from the reduction process. The debris was classified into two categories: (1) decortification flakes and (2) second stage flakes.

The decortification flakes were defined as those flakes having visible amounts of cortex on the side opposite the bulb of percussion. These flakes were removed from the original nodule of raw material through direct percussion using a hard hammer in the initial step of core preparation (Speth 1972). These flakes are most often large and blocky, but a few are fairly thin. Of the thin pieces, most retain a wedge-like shape contracting down from the platform (Fig. 6 a-f).

The second stage flakes were those pieces of debris that show no cortex opposite the bulb of percussion side. These flakes are more thin and less blocky than the decortification material and probably result from platform building and general thinning (Fig. 6 g-n). These flakes were also produced by direct percussion using a hard hammer (Speth 1972).

A relationship can be inferred between the total amounts of decortification and second stage flakes and the amount of reductive activities being carried out on the site at a particular time. The quantities of debris represented in layers #2 and #4 (Table 1) far exceed the total debris within the remaining layers: therefore, it is probable that the area of the test pit was utilized most intensively by the prehistoric group/groups represented by those two levels. In addition, it can also be inferred that the major utilization in the area of the test pit occurred during the deposition of layer #2, because 64% of the total pit material came from that level.

Tabulation of the quantity of each artifact type from each level of the two-meter test

	CORES	DECORTIFICATION FLAKES	SECOND STAGE FLAKES	UTILIZED DECORTIFICATION FLAKES	UTILIZED SECOND STAGE FLAKES	PREFORMS	QUARRY BLADES	HAMMERSTONES	PROJECTILE POINTS	SCRAPERS	QUARRY BLADE PIECES	UNIFACE KNIVES	DIGGING IMPLEMENTS	DISCARDED PIECES	TOTALS
LEVEL #1	6	438	368			11	1	1						712	1,537
LEVEL #2	30	1982	5458		2	27	8	1	5	2	3	1		3015	10,534
LEVEL #3	11	205	283		1	8					1			893	1,402
LEVEL #4	7	587	702	1	1	14	2							1113	2,427
LEVEL #5	9	76	118	1	1	10					1		1	435	652

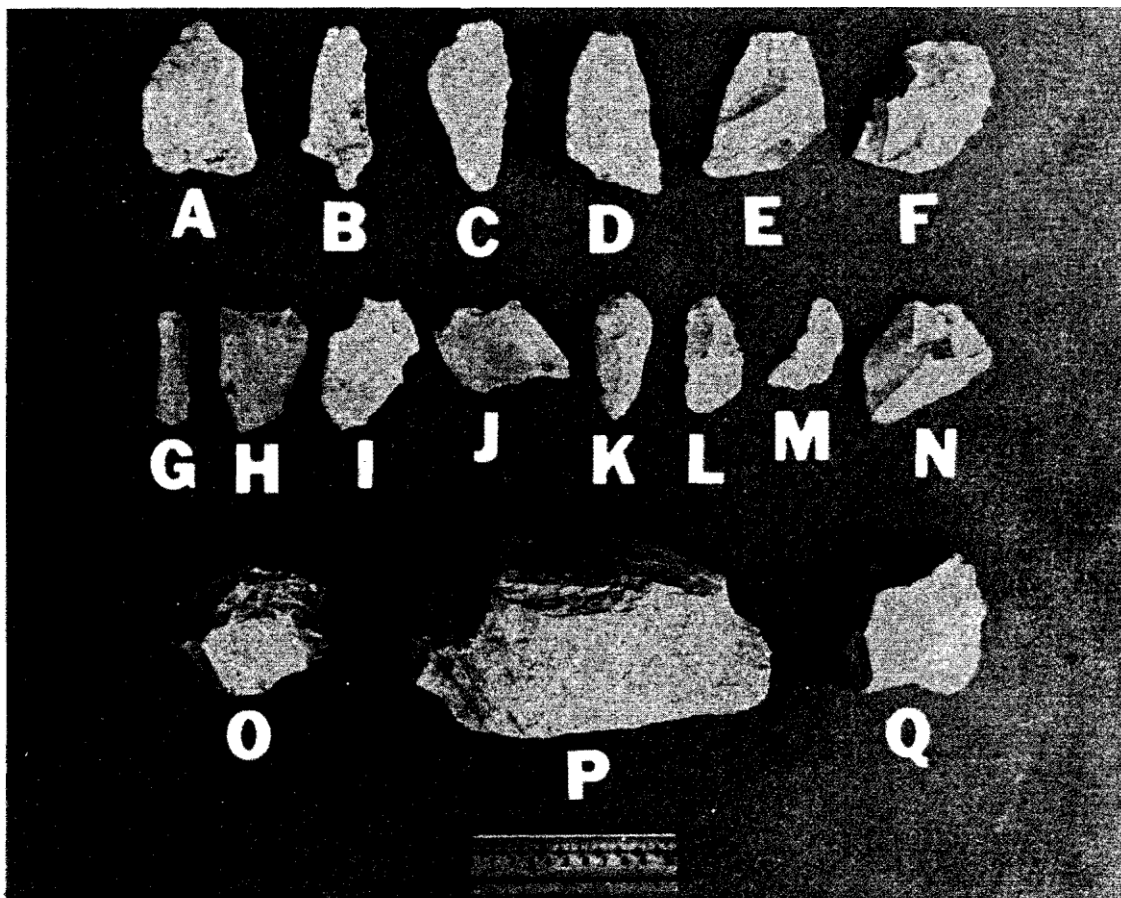


Figure 6. Sample of flakes and cores recovered from layer #2 of the test pit deposit: a-f, decortification flakes (a&b exterior); g-n, second stage flakes (g-j, interior, k-n, exterior); o-q, cores (o&q, secondary cores, p, primary core). All flakes are photographed with the platform and Hertzian cone at the top.

Within the debris a total of seven pieces showed possible utilization. These flakes were not modified by retouch in any way after being detached from the core or quarry blade; however, they all show possible signs of wear in the form of secondary chipping (Fig. 7a,b). The edges are acute with angles that range between 30° and 60° and would not have been too delicate to use with significant pressure. An observation by Wilmsen (1968) may be relevant:

"It is probably that most utilized flakes were employed in cutting meat and skins, and it is possible that most cutting of this kind was accomplished only with unmodified flakes and not with formal tools. Apparently any suitable flake that was available was used for a specific task and then discarded, perhaps to be used again for some later task or perhaps to be left where it fell."

When inspected under 20X magnification no evidence of striations was noted in the flakes we classified as utilized; however, such evidence may only be observable under magnification as high as 200X (Keeley 1977).

Cores

The cores (Fig. 6o-q) were classified into two groups: (1) primary cores and (2) secondary cores (Bradley 1973). The primary cores (Fig. 6p) were initially prepared from rough nodules by removal of decortification

flakes to expose a platform surface. From the primary cores large flakes were removed to produce smaller cores. Once flakes were removed from these detached pieces of the primary core they become secondary cores (Fig. 6 o&q). The flakes removed from the secondary core could then be further reduced and modified into quarry blade preforms, from these on to quarry blades and finally into finished implements.

The majority of the cores from the test pit are exhausted secondary cores, with two primary cores from layer #2 and one each from layers #4 and #5 (Table 1). As might be expected, the largest percentage of cores was recovered from layer #2. The dominance of exhausted secondary cores indicates that further reduction of the raw material beyond the primary core stage was being carried out on the site over the entire span of its occupation and utilization of resources.

Preforms

The preforms represent an intermediate stage between flakes from secondary cores and quarry blades. Within the surface collections, the preforms were one of the most abundant artifacts recovered; in the excavation, preforms are second in quantity only to waste debris. Flaked from secondary cores, some preforms were worked bifacially, although most are unifacial and still retain the platform and bulb of percussion. Most of the flaking on the preforms is broad and deep, leaving the piece thick in the middle (Fig. 7c,d,e).



Figure 7. Sample of several different types of artifacts recovered from the test pit deposit and discussed in the text: a-b, utilized flakes (level #5, #5); c-e preforms (level #5, #2, #5); f-h quarry blades (level #1, #2, #4); i-j, side scrapers (level #2, #2); k, uniface knife (level #2); l-m, hammerstones (level #2, #1); n, digging implement (level #5).

It is believed that these preforms recovered in the excavation were discarded because of technical problems which prevented further reduction. Many of them have very thick midsections and frequently a pronounced hump on one side.

Quarry Blades

A total of 11 diagnostic quarry blades were recovered from the test square: 8 were recovered from layer #2, 2 from layer #4, and 1 from layer #1 (Table 1A).

In layer #1 a type I blade was recovered (Fig. 70). Seven of the blades in layer #2 were type II (Fig. 7g&h) (Coe 1964) with the remaining piece belonging to the type I category. In layer #4 one each of type I and II were found.

All of the quarry blades exhibited lateral snap or other breakage. Therefore, it appears that their presence in the strata results from breakage during reduction, and subsequent discard. The final step in reduction on Three Hat Mountain appears to have resulted in quarry blades which were carried from the mountain and reduced to final tool forms elsewhere.

Scrapers

Two type I side scrapers (Fig. 7i,j) Coe (1964) were recovered from layer #2. One piece (Fig. 7i) is 9 cm in width, 6 cm in length, and 3.4 cm at the platform. The smaller piece, (Fig. 6j), measures 7 cm in width, 3.4 cm in length, and 1.7 on at the platform. These along with the few utilized flakes seem to indicate activities other than quarrying and knapping at the site.

Projectile Points

Five projectile points were recovered, all probably attributable to layer #2 (Fig. 5). Two of the points (Fig. 5a,b) are made of felsic material unlike the stone native to the test pit area. The remaining 3 points (Fig. 5c,d,e) appear to have been produced from the rhyolite native to the test pit area, but have surface decomposition on at least one side, not generally characteristic of the secondary flake knapping debris. Morphologically, 4 of these points (Fig. 5a,b,c,d) are similar to the Koens-Crispin type (Cross 1941 and Kraft 1970). Coe has associated the Koens-Crispin with the Savannah River Stemmed which is radiocarbon dated at 1944 B.C. + 250 years (Coe 1964:44, 118). The fifth point is more similar to the Savannah River type common in the North Carolina piedmont (Coe 1964).

Uniface Knife

One unifacially flaked knife (Fig. 7k) was found in layer #2. It is made of a medium-grained, dark grey banded rhyolite-- a type of stone unique in the collection from the test pit excavation. The tool measures approximately 10.2 cm in length. Produced from a slender flake, the knife retains the platform and bulb or percussion at the base and is utilized along both edges and at the point. The sides appear to be retouched slightly creating curvature at the ends.

Hammerstones

Two hammerstones were recovered, one each from layers #1 and #2, in the test pit. Both stones are dense, basaltic material. The hammerstone from layer #2 (Fig. 7l) is a type V (Coe 1964), while the hammerstone from layer #1 (Fig. 7m) is a type VI. These presumably were used in at least the first steps of the knapping process to reduce cores and rough out the preforms. However, bone or antler hammers may have been used for the fine shallow flaking on the quarry blades.

Digging Implement

One very rough, crude implement was found in layer #5, (Fig. 7n). It is a long blocky piece approximately 20 cm in length, made of native Three Hat material, and apparently use-damaged at one end. This tool may have been used as a digging implement to extract lithic raw materials from the ground.

ANALYSIS OF SURFACE COLLECTIONS

In addition to the excavated material, two separate surface collections were obtained from the site. One collection was obtained around the area of the test pit and along the western slope of the ridge following the logging road cut (Fig. 1) (Table 2). This collection includes a total of 102 separate pieces of material (Table 1b). The projectile points gathered include 2 unfinished Savannah River, and 1 Badin. Quarry blades found consist of 1 type I blade, 4 type II, 3 type III, and 2 type VII blades (Coe 1964). One type II scraper and a high-backed scraper were also collected. One type VI and one type III hammerstone (Coe 1964) are also present in this collection.

The second surface collection, totaling 109 pieces of material, was obtained from the northeastern slope of the mountain following the course of a powerline right-of-way toward Flat Swamp Creek (Fig. 1). Projectile points in this collection include 1 Savannah River, 1 Guilford, and 1 Badin. The majority of quarry blades recovered fit into the type II and type VII range (Coe 1964), with quantities of 5 and 6 respectively. The one scraper in this collection is type I. Also, four sherds of Yadkin Series pottery were found.

In addition, two private collections of artifacts from the Three Hat Mountain area were studied and classified. One collection belongs to Mr. Oliver Dongell of Greensboro, North Carolina. His collection was made in an area ranging from New Cut Road, northeast and east of the mountain, back to Flat Swamp Creek (Fig. 1). Nearly the entire early and middle Archaic sequence of projectile points found in the piedmont North Carolina as described by Coe (1964), are represented in his collection. However, many of the points (14), are Savannah River. Of the 95 quarry blades present, 77% are type II, while 19% are type III. The balance of the quarry blades are made up of one each of types I, V, and VII (Coe 1964).

The second private collection belongs to Mr. Gary J. Curry of Thomasville, North Carolina. His collection was obtained from the northeastern slope of the mountain in the same area as the second surface collection, totalling 109 pieces, obtained by the UNC-G field crew. Mr. Curry's collection includes projectile points representing a major portion of the Archaic sequence common to the North Carolina piedmont: 1% Hardaway-Dalton; 3% Palmer; 11% Kirk; 9% Stanley; 17% Morrow Mountain; 2% Halifax; 5% Guilford; and 50% Savannah River. In addition to the points common to the North Carolina piedmont, the Curry collection also includes the following relatively uncommon types: 1 Benton; 6 Big Sandy; 4 Eva; and 3 Le Croy (Lewis and Kneberg 1961). A total of 115 diagnostic quarry blades in the Curry collection were classified according to Coe (1964) as follows: 8% Type I, 55% Type II; 21% Type III; and 16% Type VII.

Mr. Curry's collection includes a total of 208 Savannah River projectile points. All of these (100%) exhibit lateral snap breaks, with the broken surface uniformly decomposed to the color of the unbroken surface. In addition, 93% of the Type II quarry blades and 100% of the Type III quarry blades are in the same lateral-snapped broken condition. These data may indicate that much of the lithic reduction of quarry blades into finished tools, at least during the Savannah River phase, was being performed at the base of Three Hat Mountain. Furthermore, most of the projectile points and quarry blades in the Curry collection which are not attributable to the Savannah River phase do not have the same lateral snap breakage.

Unbroken preforms from the upper part of the mountain (UNC-G collections) and from the base of the mountain (Curry and UNC-G collections), were compared to determine if any significant difference exists in the amount of reduction. The preforms were grouped in three units for analysis: preforms recovered in the test pit excavation (21 preforms); preforms in the UNC-G surface collection from around the test pit area and along the southwestern slope of the mountain (25 preforms); and preforms in the Curry and UNC-G surface collections from the northeastern base of the mountain (124 preforms).

Table 2. Tabulation of the quantity of different artifact types present in four different surface collections from the Three Hat Mountain area.

TOTALS	102	109	208	1130
CERAMICS		4		11
NON-DESCRIPT. PIECES		8		4
NON-DESCRIPT. POINTS	11	1	13	307
DIGGING IMPLEMENTS				1
SCRAPER BLANKS			1	
QUARRY BLADE PIECES		15	55	22
KNIFE BLADES				26
SCRAPERS	2	1		51
AXES		3	1	3
DRILLS			1	8
PROJECTILE POINTS	4	4	41	416
HAMMERSTONES	2	2		24
QUARRY BLADES	10	14	95	115
PREFORMS	41	48		114
UTILIZED FLAKES				6
SECOND STAGE FLAKES	13	7		15
DECORTIFICATION FLAKES	7			1
CORES	12	2	1	6
	Surface Collection Test Pit Area	Surface Collection Base of Mountain	Dongell Collection	Curry Collection

Two sample t tests ($t=2.39$, $p<.01$) and analysis of variance $F(2,131)=4.92$, $p<.01$) were calculated on the preforms in order to statistically quantify the variation among the units. The results of the analysis indicate that the surface collections are different from the excavated material in terms of thickness ($t(111)=3.25$, $p<.01$). In addition, both surface collections are different from the excavated material in terms of width and thickness ($t(44)=3.31$ and $t(44)=2.78$, $p<.01$ for the surface collection around the test pit, and $t(107)=2.81$ and $t(107)=2.48$, $p<.01$ for the surface collection from the area at the northeastern base of the mountain,

respectively). The calculation of analysis of variance produced significance only in terms of width ($F(2,131)=5.02$, $p.<.01$).

From the above calculations it can be inferred that the surface collections are different from the excavated material. However, the surface collection from the northeastern base of the mountain appears to have the same statistical relationship to the excavated material as does the surface collection around the test pit. This indicates that the surface collected preforms are basically the same in the two areas of the mountain which have been compared. Also, the degree to which the preforms were reduced appears to be the same both on the mountain and at the northeastern base of the mountain.

CONCLUSIONS

As stated at the beginning of this report, excavation of the test pit was intended to answer three questions about activities at this location on Three Hat Mountain: 1) were the strata formed during different phases of occupation on the site; 2) could any of the strata be dated through the presence of chronologically diagnostic artifact types; 3) what prehistoric activities could be inferred from the study of a controlled excavated collection of artifacts. From the concentrations of artifacts in the five strata, two major phases of use can be inferred. The first occurs in layer #4 and may possibly date to Stanley times, although the only diagnostic artifact occurring in this layer which supports this assumption is one type I (Coe 1964) quarry blade. Indeed this layer may pertain to the Savannah River phase occupation and represent only a minor temporal difference within that phase. The next phase of utilization is represented by layer #2, and presumably dates to Savannah River times. Three of the projectile points from layer #2 and 1 from layer #3 (Fig. 5b-e) are morphologically similar to the points of the Koens-Crispin Culture in New Jersey, described by Cross (1941) and Kraft (1970). The other point (Fig. 5a) is morphologically more similar to the typical Savannah River type found in North Carolina.

The prehistoric activities on Three Hat Mountain were primarily quarrying and stone knapping of pieces of argillite and rhyolite collected as nodules on the surface or quarried from the heads of gully cuts, following veins of the high quality materials. The raw materials were prepared as cores using direct percussion with hard hammers and then further reduced into secondary cores using the same technique. Flakes from secondary cores were chipped into quarry blade preforms, some of which were discarded because of technical difficulties arising in the reduction process. It appears that both preforms and quarry blades were taken from the site to be processed into finished tools at the base of the mountain or elsewhere. It is also believed that although prehistoric groups visited the site primarily to obtain quarry blades they probably also camped and hunted there occasionally. The occurrence of scrapers, points, and utilized flakes in the excavated collection, in our surface collections, and in the Dongell and Curry collections indicate some Archaic period hunting activities on and around Three Hat Mountain.

SUGGESTIONS FOR FURTHER STUDY

Further study at Three Hat Mountain would contribute to a better understanding of prehistoric lithic resource collection and distribution patterns in this area of the Southeast. More work is needed to better document the spatial and temporal extent of the site and to provide additional information concerning the stone quarrying and knapping technologies of prehistoric groups. Additional work is also needed to establish the relationship of the Three Hat Mountain lithic source to others in the piedmont region. Furthermore, a study of the settlement patterns on and around the mountain might help reveal the economic value of the site to aboriginal groups.

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