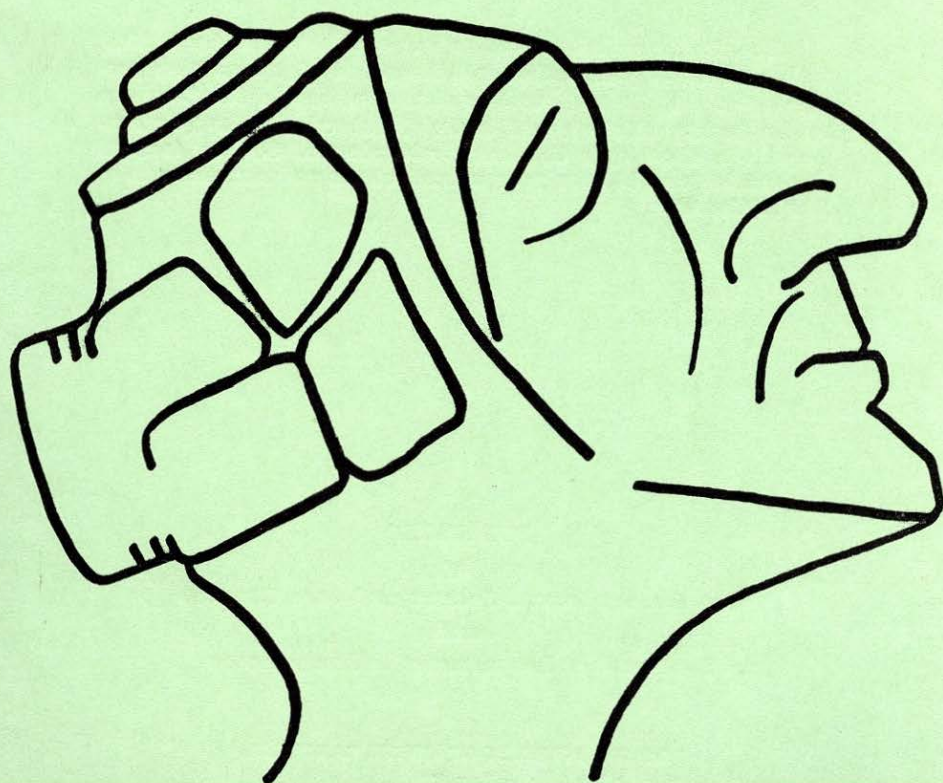


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EXCAVATION OF THE PRESUMPTIVE SITE OF ESTATOE

A. R. KELLY and CLEMENS DE BAILLOU

Estatoe, an important Lower Cherokee settlement, was situated on the Tugalo River about six miles north of the old town of Tugalo (Fig. 1). Ethnohistorical data for Estatoe are not abundant. Part of the difficulty in pinpointing the site comes from the fact that there were two or more historic towns by this name. In the map collection at the University of Georgia, one map entitled "New and Accurate Map of the Province of Georgia in North America," (1780, abridged) shows "Old Estatoe" on the west side of the Tugalo River, while another Estatoe is shown just northeast of Ft. Prince George in South Carolina near the North Carolina border. In another instance, ("Map Showing the United States, Including the Indian Countries of the Spanish Province, published in London by Laurie and Whittle, No. 53 Fleet Street, as the Act Directs, May 12, 1794,") "Old Estatoe" is shown west of the Tugalo River. A third map entitled "A New Map of the United States of America Containing the Carolinas and Georgia, Also the Floridas and Part of the Bahama Islands, etc., from Latest Authorities, by John Cary Engraver, 1806, London" carries the legend, "Estatoe, West of the River." Finally, in *The Travels of William Bartram* (edited by Mark Van Doren, Facsimile Library, p. 301), there occurs a "List of Towns and Villages in the Cherokee Nation Inhabited at This Date." Estatoe occurs in this list.

Archeological exploration of the presumptive site affords clear evidence of the burning of a structure in the final historical occupation. Charred beams and timbers, as well as scattered charcoal and burned daub, are distributed on the lower mound slopes, along with intermixed materials containing numerous objects of the late 18th century. It is known that a number of the Lower Settlement towns were burned and destroyed by General Rutherford and his American militia during the closing years of the Revolution. The map data imply the existence of Estatoe on the west side of the Tugalo River up to the approximate time of the Revolution.

The main concentration of pottery and artifactual material, including historic trade pieces, shows along a distinct ridge of

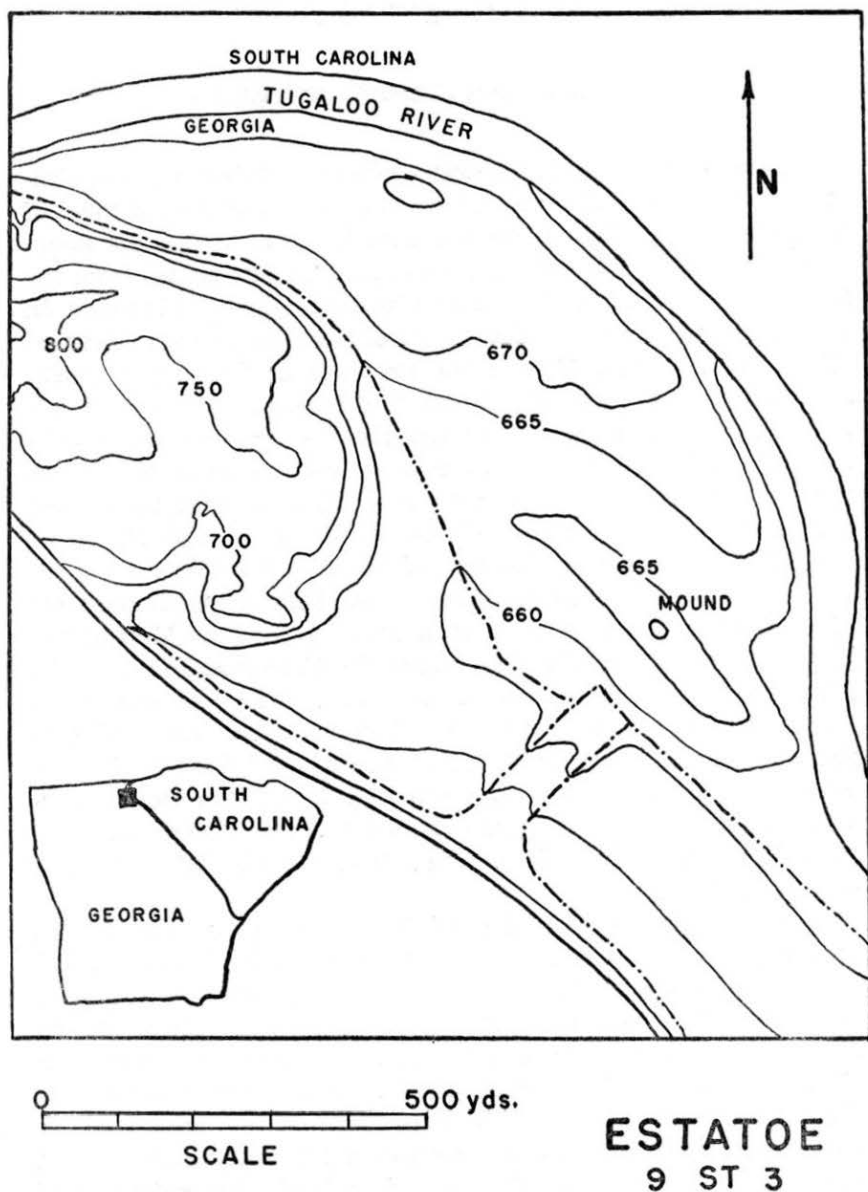


Fig. 1. Map showing the location of the mound which contained the remains of superimposed town houses, at the Cherokee village of Estatoo in northern Georgia.

high ground, separated from the present river banks of the Tugalo several hundred yards away by a depression or swale which may mark a former stream bed (Fig. 1). A small spring branch or creek traverses the river bottom to the west. Surface collections from points removed 200 yards or more in the immediate river bottom indicate multiple-site occupation with earlier Woodland components, and some Etowah-looking materials dominating at one locus. The site has been owned and operated by the same family for a number of generations and has been under intensive cultivation up to the present time. Modern cultivation has redistributed archeological materials and made the definition of original village or occupied limits obscure. Test-pitting in areas of apparent surface concentration might allow for a more precise determination, but excavations to date have centered on the ridge of higher ground and the small eminence about three feet high which marked the site of the mound before excavation.

The main excavation, Unit 1, is located on a ridge which trends roughly north-south in the middle of the floor plain on the west bank of the Tugalo River. The present excavations were begun late in April and continued through June, in order to check on superimposed building levels reported from the Smithsonian survey of a prior season in the *75th Annual Report* of the Bureau of American Ethnology. Carl Miller had spent approximately a month on the site and had made several test excavations, reporting the uncovering of a series of building levels with circular structures on top and a large rectangular building at the base of his excavation. In a recent issue of *Southern Indian Studies*, Miller has described his excavation of the central "mound" elevation, where superimposed fire basins were encountered, along with a heavy mantle of large water-worn boulders. Previous to these excavations Joseph R. Caldwell had made tests into the south slopes of the mound elevation but did not extend his trenches as time and funds were inadequate to deal with the complexity of the site.

A. R. Kelly and student assistants at the University of Georgia visited the site in April, 1959, cleared the backfilled ten-foot central excavation of Miller's pit and restudied the exposed profile. The profile indicated clearly at least four and probably five house floors with central fire basins or hearths superimposed (Fig. 2). The condition of preservation seemed good and offered

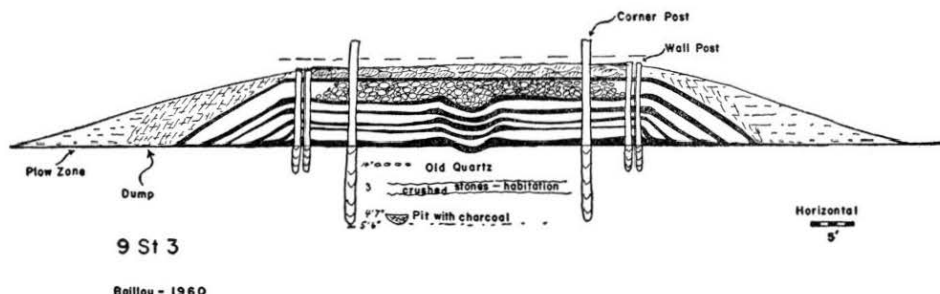


Fig. 2. A schematic presentation of the six occupational levels. (The black lines indicate the clay cover over each level. The hearths were actually telescoped but are shown separated here in the drawing.)

hope of considerable architectural detail if horizontal clearing operations were undertaken.

The beginning operation consisted of removing the plowed ground zone and uncovering the rock-strewn area surmounting the superimposed building levels and pancaked hearths. Basket-loaded or lensed clay *in situ* over the rock mantle, partially truncated by recent plowing, indicated in initial study that the rock structure did not represent the final building activity.

A grid of ten foot squares, with Miller's original ten-foot test in the approximate center, was laid out to include a forty-foot, roughly rectangular pile of boulders. It was later expanded to permit clearing of the confining wall continuities and a portion of the upper mound slope. The most important feature or structure revealed was the forty-foot-wide pile of large water-worn boulders, some weighing up to seventy-five pounds. They were mantling a floor of brown loam which contained some evidences of decayed fibrous material tentatively identified by microscopic study as pine bark. Also occurring at irregular intervals were small lumps of unfired tan clay pressed down along the presumed floor margin. It seems definite that these stones were carefully placed or arranged on the brown loam to a depth of three feet or more in places, with the corners of the structure pointing to the four cardinal points and giving a cloverleaf appearance.

Some of the inequalities in the surface of the stone accumulation were due to disruption by plowing and the removal of some stones by the owner, as well as to prior excavations.

Surrounding the rock pile or mantle there appeared initially two rows of confining postmolds, indicative of a wall con-

tinuity, with a narrow opening between the rounded corners of the stone and the wall. These were interpreted initially as walkways around the stone structure. Eventually, further troweling in these sectors disclosed additional boulders buried in the brown loam, and final inspection of the layout indicated that very little traffic would have been possible between the wall and the stones.

Another feature of special interest was the filled-in banks of brown loam, a foot or more in thickness, eight to ten feet long and flush with the border stones as seen particularly on the west and south sides. These were dubbed, initially, "banquettes." This fill of brown loam was not evident on the east side; the north critical area had been obliterated by a prior excavation. The ensemble effect of this remarkable structure can best be appreciated by a study of the planimetric drawing prepared by Lewis H. Larson (Fig. 9).

At this early stage of exploration, with a full view of the stone layout exposed, various hypotheses were expressed to explain the unusual structure, which appeared then and subsequently to have no precise parallels in southeastern archeology.* Initially the theory was favored that we had a very large, communal "sweat house." Difficulties on both ethnological and archeological grounds arose later with review of this functional interpretation.

The National Park Service was invited to inspect the site and to assay its potentialities for additional architectural details. Funds were made available to continue excavations. Exploration could not be resumed, however, until the fall due to heavy rains and the necessity of preparing for a heavy assignment of salvage work at the important Mandeville site in southwest Georgia. C. de Baillou, who had assisted J. R. Caldwell in his preliminary survey in the Hartwell Basin, assisted in continued field operations under the supervision of A. R. Kelly. Unseasonably heavy rains and freezing threatened the site in the winter of 1959-60. The critical structure was covered with vinyl plastic and kept

* *Editor's Note:* There can be little doubt that the last pre-mound structure at the Peachtree Site in western North Carolina was covered with stone in a similar fashion to the one at Estatoe in Georgia (Setzler and Jennings, 1941). This structure was identified as Feature 29 in the Peachtree report and is clearly illustrated in Plates 5 and 6. It was unfortunate that the authors assumed that the stones were used only as a foundation for benches and then excavated in such a way as to illustrate this. The caption to Plate 6A reads as follows: "Showing the reconstructed outline of feature 29. The interior has been removed and the inner stones piled upon the higher periphery." Compare Plate 6B in the Peachtree report, however, with Plate I in this publication.

under wraps after repeated interruptions during the late fall and winter.

In subsequent work, the rocks were removed and the floor underneath was carefully troweled, revealing patched or repaired floor sections, and a suggestion of two floors telescoped together. For some months, pending accurate definition of discrete constructional elements, these two levels were identified simply as 4a and 4b.

It seems best to recapitulate the total building history in terms of the separate floor levels that were finally established after the complete excavation of the site. The lowest or initial structural unit has been identified as Level 1. Levels 2, 3, 4b, and 4a represent subsequent superimposed floor levels up to the time when the last floor was covered with a thick stone mantle. Following this stone layer, a true mound of basketloaded clay was erected and a final structure was built upon its summit. Most of the mound has been subsequently truncated by modern plowing, and only remnants and talus deposits along the lower slopes indicate its presence. For clearer comprehension of each building stage as uncovered, reference should be made to the attached schematic drawing which illustrates the total architectonics of the superimposed building activities as reconstructed at the conclusion of field work (Fig. 2).

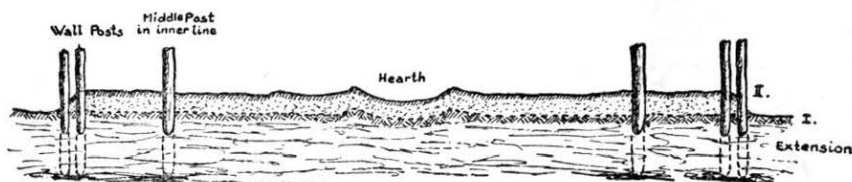
STRUCTURES 1 AND 2: BEGINNING BUILDING ACTIVITY

In addition to the vertical profile (Fig. 3), reference should also be made to the horizontal plat for the exposed building levels (Fig. 5). The extension of the clay floor of Structure 1 is shown by the dotted outer line. The exterior wall is indicated by the double row of posts used for both Structures 1 and 2. This re-use of old post inserts is one of the striking and unusual features of the superimposed building activities at the Estatoe Site, in contrast to the situation at both Tugalo and Chauga where building levels were separated with new mound construction and blue clay capping. There is evidence of a 7-inch raised platform which constitutes Structure 2 (Fig. 3). This platform was of clay and extended three to five feet beyond the wall. It was constructed from local brown river sediments containing some cultural refuse and was covered with a layer of grey clay. The floor was sprinkled with fine sand and showed repaired or patched spots. This extensive repairing or patching made the job of defining definite overall new floor constructions rather difficult.

9 St 3

Prof of Pre-Md St. I
and First Platform St. II

Platform ca. 7" lower to the Center
Hearth 5 ft. - 7 ft. incl. rim
Middle Post in inner line P.H. up to 4'
Wall Post P.H. $\approx 30'$
Extension of clay platform 5' - 6'



A schematic presentation of the first Mound stages


Scale :  5'

Fig. 3. A schematic presentation of the first Mound stages.

The presence of a large hearth with elevated rim built in the center of each structure helped to define the floor levels. Each hearth had an approximate diameter of five feet, or seven feet if the rim is included. The size of this central fire area is indicative of some ceremonial use.

Of special interest is the arrangement of the large interior roof supports. The four layout posts were embedded deeply in the ground at each corner and four other posts were placed in line halfway between them. All of these key postholes remained in use with only the posts being replaced during the successive building constructions up through Level 4a. The four corner posts actually obtruded through the mantle of stones over the pancaked building levels and are shown in Larson's planimetric drawing (Fig. 9).

Evidence of the re-use of key postholes is seen in the presence of stone slabs or seats in the base and on the side shoulders within the very large postholes. A diagram to illustrate the hypothetical mechanics of installing massive central supports in large pits with a stone slab plate at the bottom and with possible wooden stops is provided in the text (Fig. 4). It is believed that in the Level 4 state of building, these corner post pits may have been almost as deep as a man's height and from 24 to 30 inches wide. Substantial posts, 14 to 18 inches in diameter, were used.

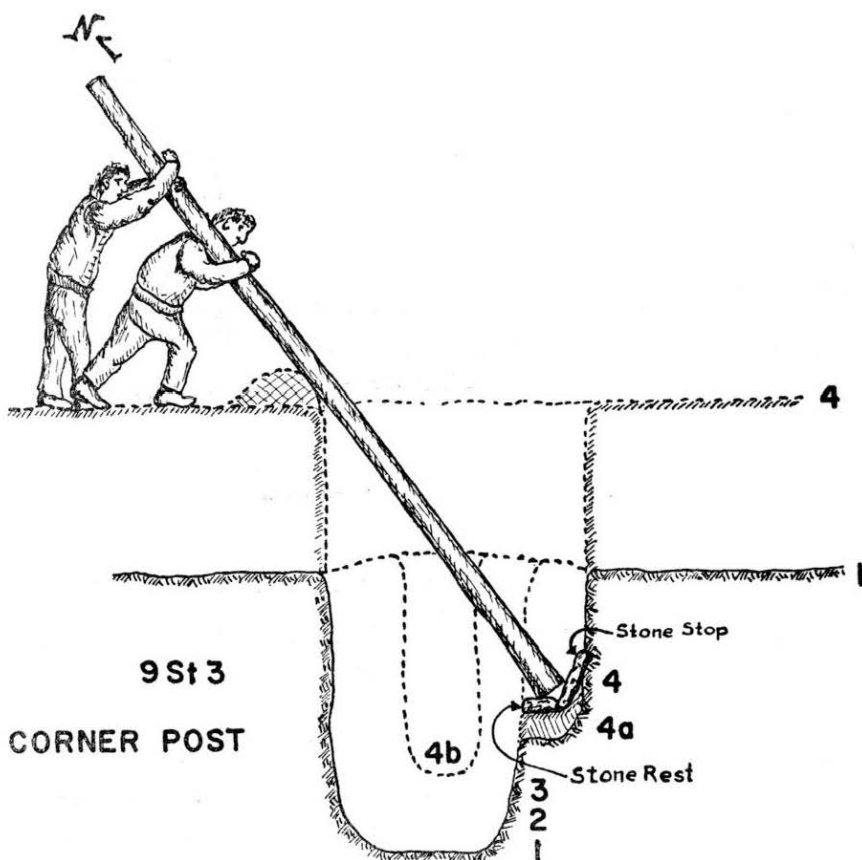
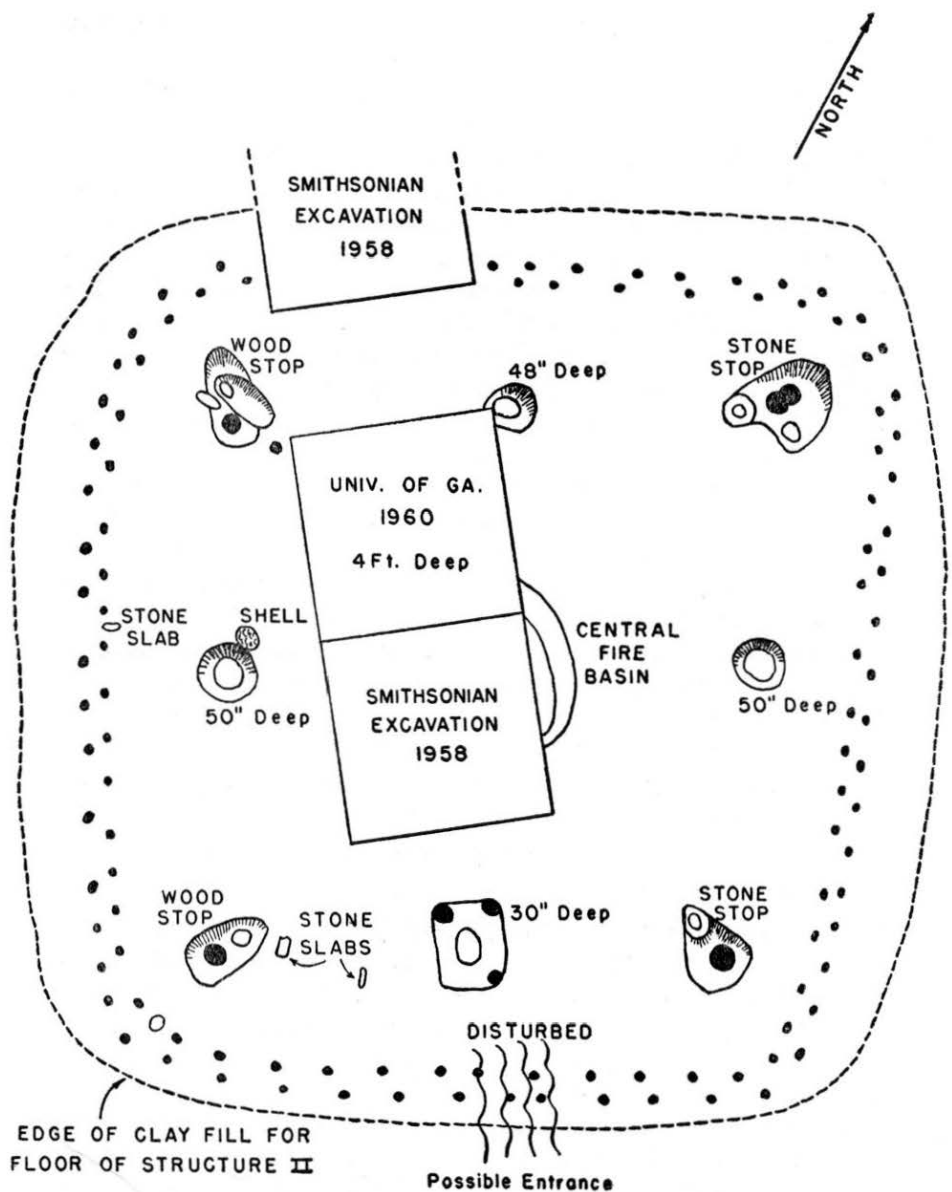


Fig. 4. Drawing reconstructing the probable method of erecting massive corner posts.

The dimensions of corner post supports suggested for the first four buildings at Estatoe approach the size of those in the restored council house at the ceremonial earthlodge, Ocmulgee National Monument. Neitzel uncovered evidence of large stone slabs, horizontally placed as plates, at the base of large key corner posts in the segments of summit structures at Chauga. The four intermediate interior posts were perhaps smaller but still substantial; these posts did not extend beyond the fourth building stage but show re-use as do the corner posts and many of the regular terminal wall posts.

Only segments, part of the arc to the northwest, of the large central hearths remained as shown in the profile drawings. The hearths were filled with lensed ash. There is indication of repair



9 St 3

Structures 1 & 2

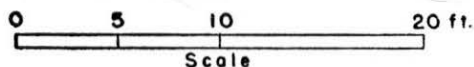


Fig. 5. Floor plan of Structures 1 and 2.

to the hearths by patching the rims and subsequent new lensing of ash; this correlates with the perceived repair to floor sections. Heat from the fires in the central hearths oxidized and colored the baked clay but did not fuse or vitreify as might have occurred had the hearths been used with fierce heat as in "crematory basins."

It is important to note that the four large corner posts are set in relation to the four cardinal points. In the center is a fire basin approximately five feet in diameter. The floor, covered with clay and strewn with sand, slopes toward the center. The middle posts are also of major significance; they are in inserts four feet deep, whereas the average depth for the wall posts is between one and one-half to two and one-half feet.

The question of an entrance is obscured by the apparent unbroken continuity of post inserts in the double line of posts which go with a wattle and daub construction. Some disturbance in the wall section in the middle of the southwest wall may indicate an entrance here. Inasmuch as new buildings or levels are indicated by the construction of a new floor and a new hearth, and the old walls are continued in use with replacement of rotten or termite-infested timbers, some difficulty was experienced in troweling to disclose all essential features in clear outline. This is particularly true since large floor sections were filled in or patched where traffic had eroded the floor.

STRUCTURE 3: LEVEL 3

Structure 3 (Fig. 6) on close inspection reveals the landmark features prominent in the beginning house patterns but is obscured to some extent by the presence of supernumerary postmolds, some of which are recorded but are intrusive from subsequent structures. The four corner posts are present, as are the intermediate interior posts, masked somewhat by midden patches and disturbances. Note the hardpacked clay area on the southwest wall which suggests a corridor between the outer wall and the inner row of posts. A very small segment of the hearth of Structure 3 is shown in the horizontal plat, but this feature can be made out in the vertical profile drawing of Miller's testpit.* A part of the row of posts on the west side is broken at both ends—discontinuous; but it appears in the remaining portion as a possible wall trench with inclusive postmolds. This is confluent with the inner line of posts, but the others do not appear to be in a wall trench. Several vertical, in-place stones, on the south

* Miller, 1959, p. 18.

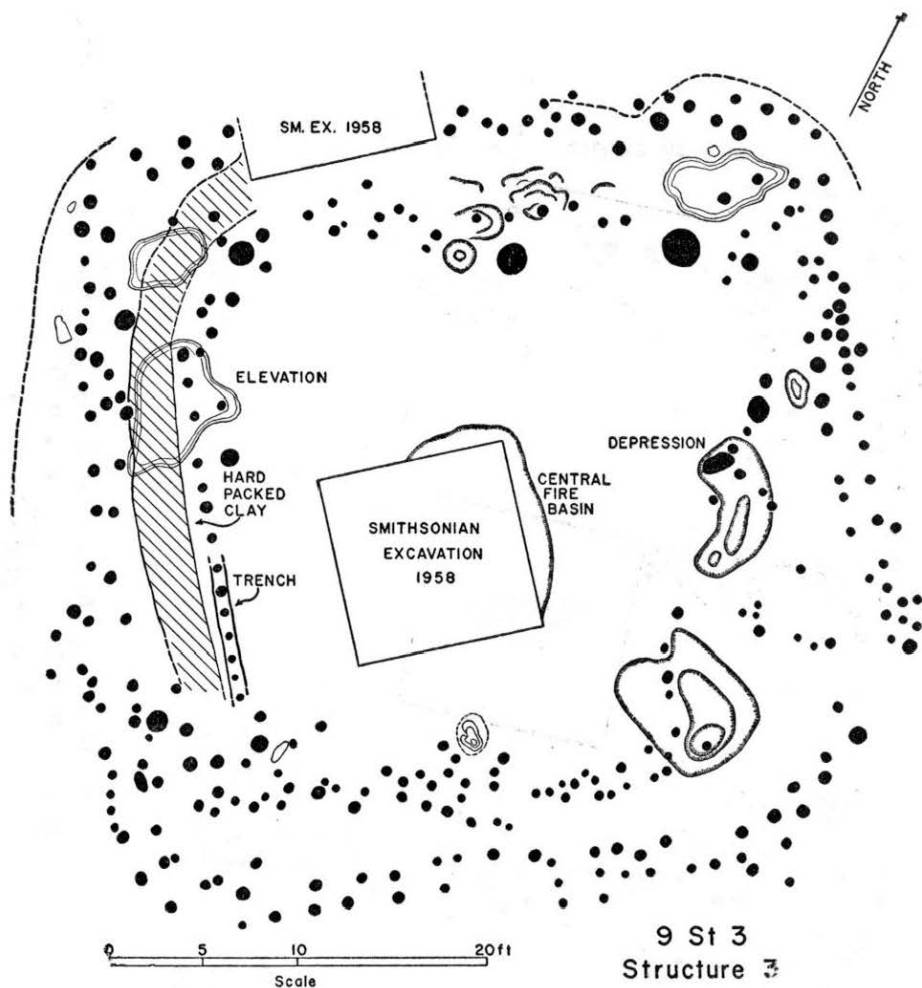


Fig. 6. Floor plan of Structure 3.

corner and on the west, may be markers to outline or orient the structure. A disturbed area on the northwest side, with a break in the outer wall sequence, may mark a possible entrance-way merging with the hardpan corridor-like extension aforementioned.

STRUCTURE 4. LEVELS 4B AND 4A

At Structure 4 the corner postholes are measured south to east, 25 feet apart; west to north, 25 feet; and north to east, 26 feet (Figs. 7 and 8). The plane table recording was made before the stone layer was fully exposed. There were ovalish bald spots

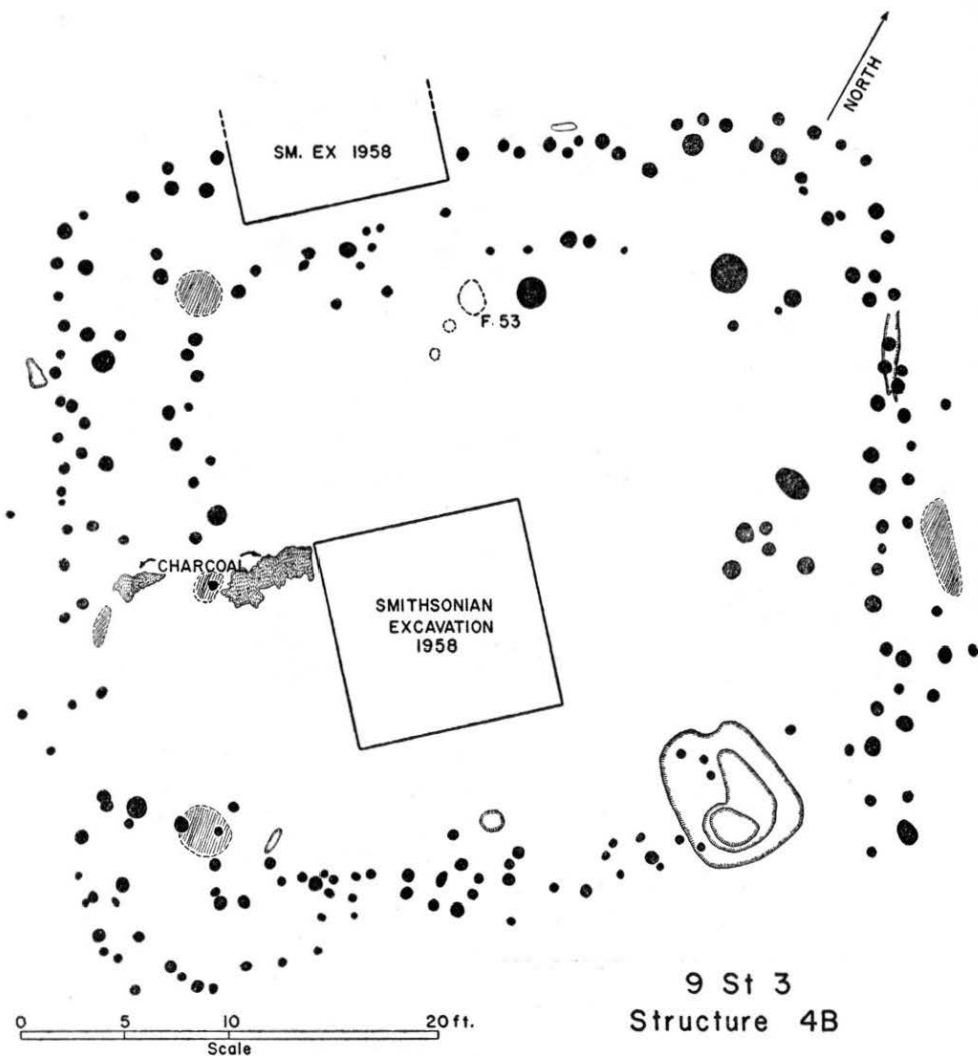


Fig. 7. Floor plan of Structure 4b.

where the stones were not present, which were labelled as "potential features" at this stage. Subsequent work and information revealed that the farmer had removed considerable stone in spots for his own purposes in recent years. Carl Miller (personal communication) of the Smithsonian Institution indicated that at the time the central 10-by-10-foot test pit was dug, a three-foot layer of heavy quartz waterworn boulders was removed.

The outer double row of postholes is best exposed in the

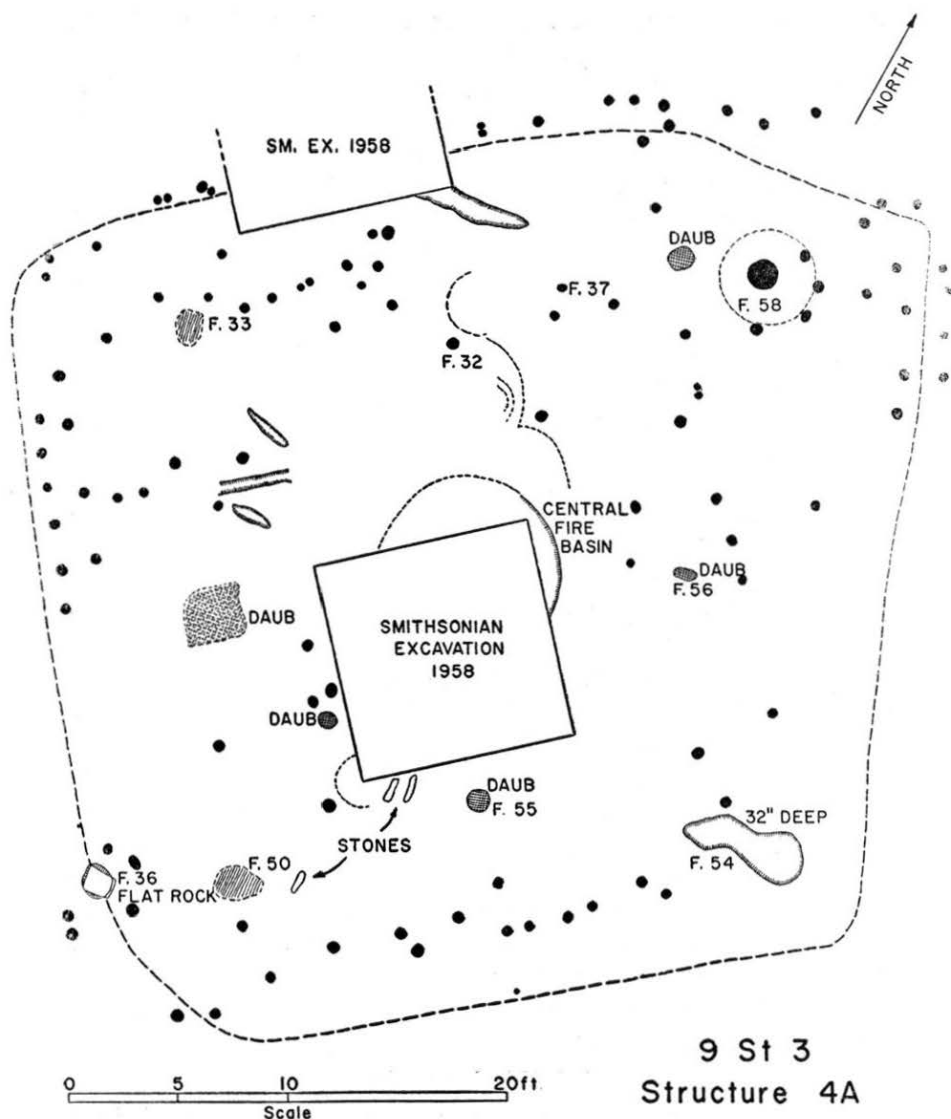


Fig. 8. Floor plan of Structure 4a.

south to west sides. This row had been exposed by earlier excavation. It was disturbed and filled with grey clay belonging to the upper structure, and appeared at first to be a disturbed wall trench. Later, as 4b emerged, it became evident that this was a double row of posts forming a wall. The disturbed areas in the west and south corners were later recognized as over-sized corner

postholes (Features 33 and 50). The distribution of postholes in the center of the structure might indicate some sort of compartmentalization or chambering; if so, a new architectural feature has appeared. In the horizontal map of Structure 4b (Fig. 7), the four corner posts are seen in Features 54 and 58 and also in the disturbed areas on the south and west corners. Feature 53 represents a posthole located in the center of the north to west line. This posthole was filled with lumps of burned daub at Level 4a after the evident extraction of a heavy post. Incident to preparation of the floor section of Structure 4 on 4a level (Fig. 8), the key middle interior posts were abandoned or discontinued.

Another feature brought out in relation to Structure 4 and the 4b level was an apparent stockade or fence-like enclosure, made of upright sapling pine interlaced with reed wattle. It was troweled out on the mound perimeter, intermediate flank, on the west to northwest, but had been disrupted by prior excavations (Miller's) on the north and south peripheries. This row of saplings one to two inches in diameter appeared, in part, to be doubled in its west-northwest extension. A two-foot break in its west-central portion may have been an entrance-way. At the same location, some evidence of a ramp leading west showed in the west excavation profile. An indication of this ramp was detected when excavation began; however, it was not stressed then as the slight rise, only a few inches, might have been an old fence row (modern). A stone plate, Feature 36, in the gap of the wall to 4b, might have served as a threshold or entrance feature. A small stockade, or lattice-like screen of saplings enclosing mound peripheries, has been noted as an architectural detail at Chauga (only segments were uncovered by Neitzel) and at Etowah, Mound C. Caldwell also found such a feature, but with larger post inserts set wider apart, at Tugalo in one of the exposed quadrants.

THE STONE MANTLE

We come now to the remarkable structure of stones piled up on Levels 4a and 4b (Fig. 9). It seems definite that these stones were carefully placed or arranged, to a depth of three feet in some places, with the corners of the feature pointing to the four cardinal points and giving a clover-leaf configuration. Some of the inequalities and rough contour of the stone mantle, as uncovered, are undoubtedly due to the dislocation of stones by the overburden of lensed clay and modern plowing. Outcropping

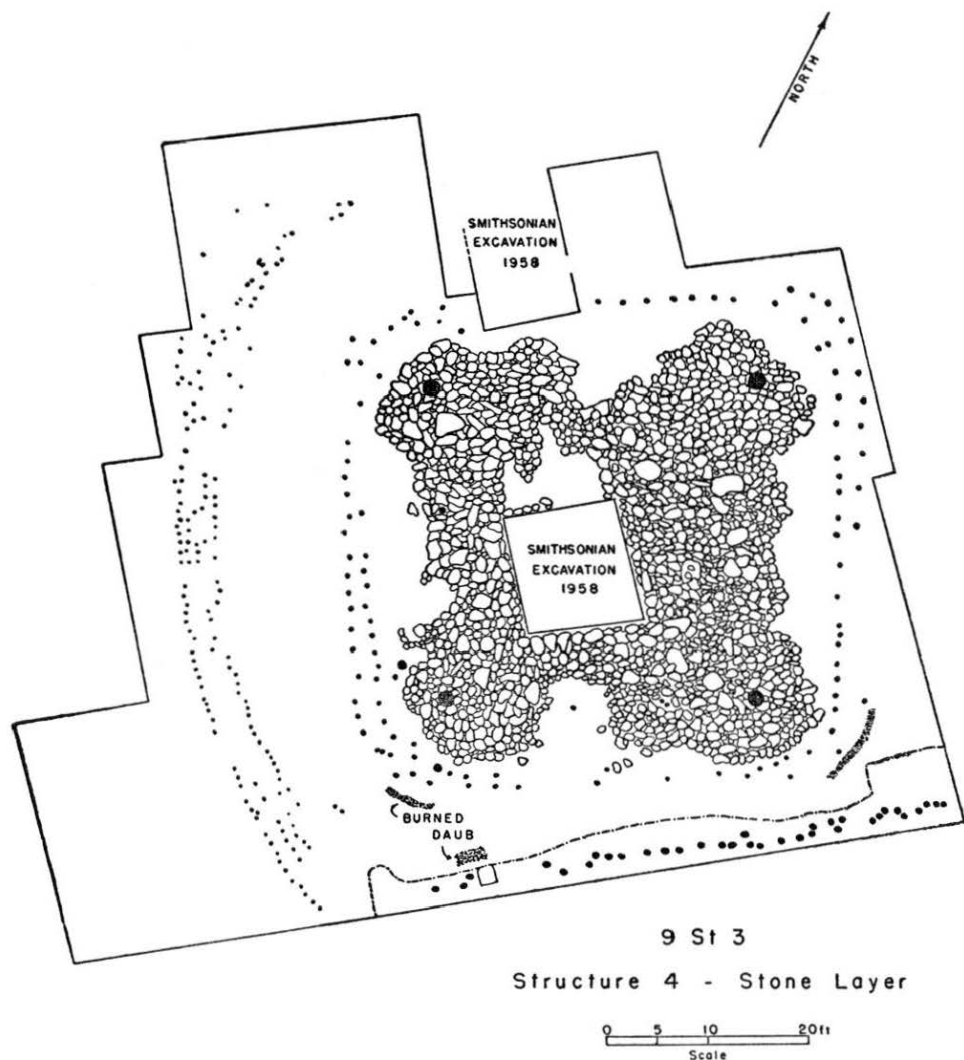


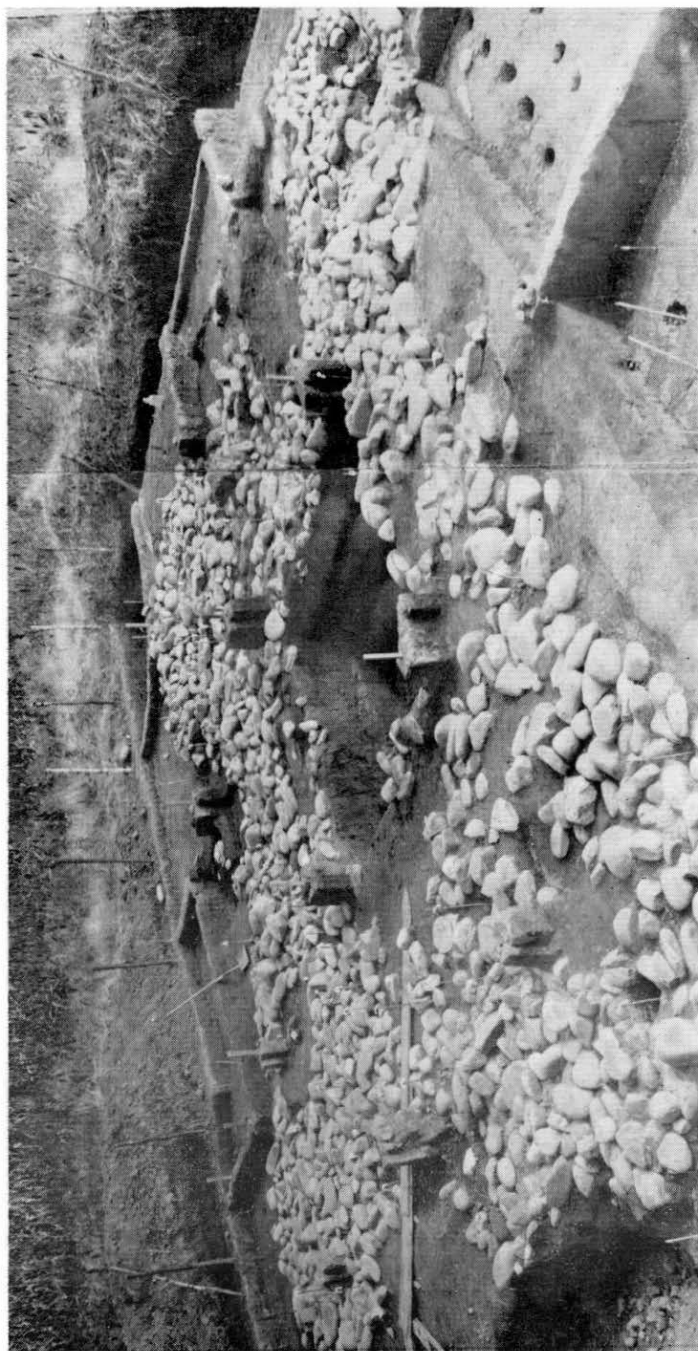
Fig. 9. Plan of the mantle of stone boulders overlying the floor of Structure 4.

stones were also removed by the farmer for construction purposes. Enough of the basket-loaded or lensed clay was still undisturbed, however, (a foot or more in some of the profiles) to indicate surely that a mound fill had been made over the stone mantle. Upon this mound, another structure—possibly more than one—had been built, as indicated by partial segments of lensed debris at the mound periphery to the northeast. From the “dump” deposits in the northeast sector where the final exten-

sion of mound grid was made, it is apparent that this final structure, on the summit of the clay mound built over the stone mantle, must have belonged to the historic (Cherokee) interval. Historic materials were found: glass beads, bottles, crockery, part of the firing mechanism of a flint-lock rifle, gun flints, trade pipes, carved soapstone pipe fragments, and copper and brass niblets are ascertained to belong to the 18th century.

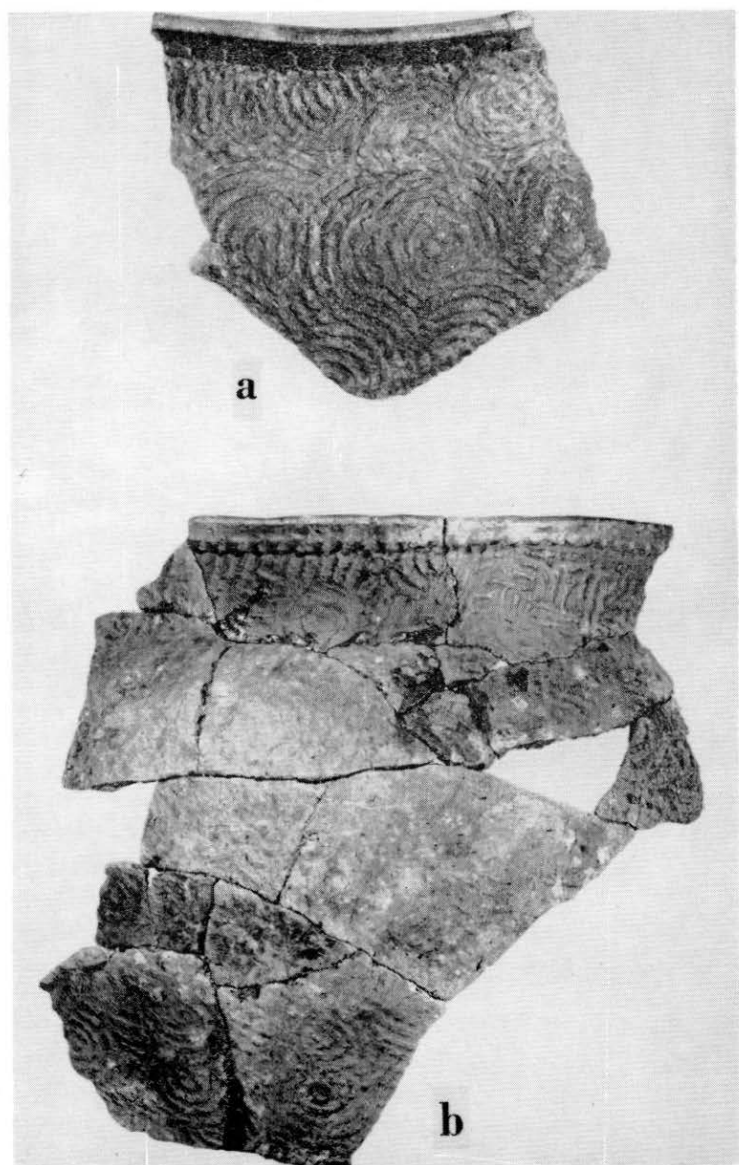
A number of theories have been entertained at different times to account functionally for the remarkable accumulation of stones mantling five superimposed building levels. Each of these is briefly summarized, with some enumeration of the difficulties encountered in their acceptance. Soon after the initial clearing of the stone mound or mantle and its planimetric recording by Lewis Larson, the site was visited by several southeastern archeologists and the pros and cons of a "sweat house" theory were discussed. Madeline Kneberg was definitely opposed to this notion since the Estatoe stone structure was much too large for the kind of sweat houses described on Cherokee sites by eyewitness accounts of the 18th century. It was also different from presumptive sweat houses uncovered in archeological survey on Cherokee sites in Tennessee. The ethnographic data implied smaller structures for individual family use. Kelly had considered that the proto-historic Estatoe structure might be earlier or might hearken back to larger, more communal models. Other difficulties for the sweat house theory exist: there is little or no evidence in examining the hundreds of stones removed from the pile that these were burned, or had suffered intense heating and the subsequent breakage on cooling; experiments conducted by de Baillou indicated that the stones would have broken had they been exposed to ordinary fires. There was the practical difficulty of heating the stones outside the building and bringing them in for sweat house use; water would have been used at that stage to create steam and this should have produced breakage. Finally, in the literature, one gathers that the sweat houses were located directly on streams and that the Indians plunged into the water after a seige of sweating. Today the Tugalo River is at least 200 yards away. This particular difficulty might not be real, however, as we have observed a low-lying area or swale which begins fifty feet away from the west slope of the building area. This might have been the river bed within the last 200 years. Again, we must record, however, there was no evidence of fire or locally burned areas within the perimeter of the stone mantle.

PLATE I



Stone mantle overlying Structure 4 at the Estatoe Site. The mound fill was placed directly over these rocks.

PLATE II

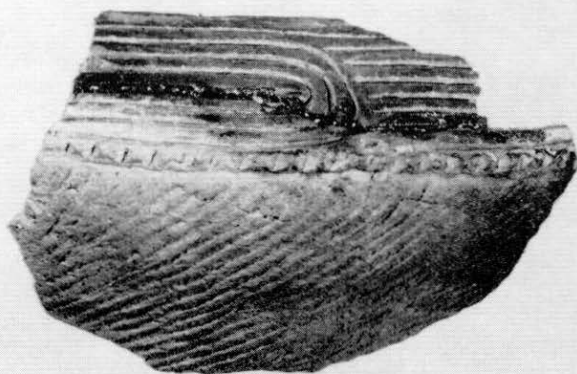


Lamar pottery types (Savannah influence). *a.* Mound dump.
b. Corner posthole, Level 4 (Feature 55).

PLATE III



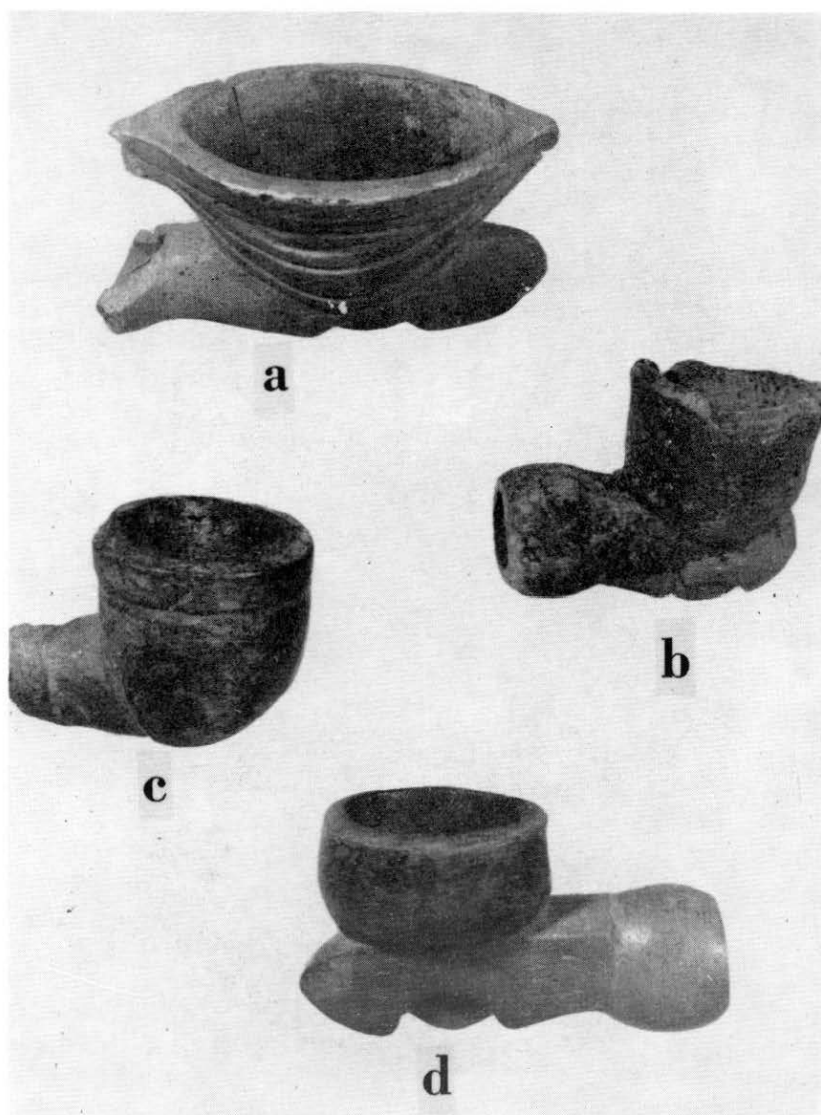
a



b

Lamar pottery types (Savannah influence). *a.* and *b.* Level 4B.

PLATE IV



Clay pipes from the Estatoe Site. *a*, *b*, and *d*. Axe motif, Structure 4.
c. Mound dump.

The notion that the stones might have been on the roof to hold down bark roofing is not practical, as the weight would have been too excessive even for modern roof constructions.

An idea has been entertained persistently that the stone mantle was a deliberate sealing-up or monumentalization of a sacred spot. The evidence does seem clear that the corners, rather than the sides of the buildings, were oriented to the four cardinal points. It is evident that whatever the function or nature of this rock-strewn floor and associated building, this stone mantle interlude marks a distinct departure from the preceding structures which were homogeneous and regular in their ground plan and essential architectural features, with only the construction of new floors and central hearths to indicate the successive building phases.

It seems reasonably clear, from a comparative study of the mound plans of the successive buildings at Estatoe with the layout of council houses uncovered in three well-defined house plans at Tugalo uncovered by J. R. Caldwell for the Smithsonian Institution, that there is close agreement in essential architectural plan and presumably congruent extrapolations as to function (*i.e.* council houses used for combined ceremonial and politico-social purposes by clan leaders in Cherokee society). Tugalo offered more definite suggestions of compartments or segmentation of seats surrounding the central fire.

Cherokee ethnology to the 18th century reveals that the central hearth and continuous ceremonial fire were significant and compelling features in Cherokee religion. That these successive ceremonial seats had a cumulative traditional meaning which would lead to their permanent sealing and memorialization is entirely consistent with what we know of Cherokee religion. It is stratigraphically definite that the last central hearth, attributed to Structure 4, was covered with stone to a depth of approximately three feet; it is also definite that the stones were not utilized for any usual function. The difficulty here is that we have no archeological evidence that the Cherokees ever made stone mounds. The nearest approach to memorialization with stone is Mooney's statement that they sometimes buried warriors on the path, covered them with stone, and subsequently added stones to the pile now regarded as a shrine. But no burials were encountered in the mound of pancaked houses at Estatoe. The central hearths were not used for cremation but had a more

familiar function as known from related council house construction in the immediate Southeast.

Moreover, the search for possible parallels in southeastern archeology has not been particularly rewarding. J. R. Caldwell found some waterworn boulders mantling the lower slope of one quadrant of the Tugalo Mound. But by far the most noteworthy covering of mound slope there was the remarkable cribbing of logs, and the superimposed council house sites on the summit of the Tugalo mound certainly had no stone pile or mound. Neitzel found scattered and sizeable boulders underneath the blue clay caps on the slope of Mound 3 stage of construction at Chauga. Unfortunately, in this case most of the central or core section comprising the building area had been eviscerated before the excavations of the University of Georgia were begun. But enough segments, corner sections, were preserved to indicate that no large accumulation of stone over the house floors had taken place. Explanations of the stones on the slopes of Chauga were that these might have served as "grade markers" during construction, or that they might have stabilized the blue clay capping over the basketloaded layers. Larson found local stone accumulations in apparent prehistoric erosional scars at Mound C, Etowah. At the Peachtree Mound in North Carolina, Jennings found a considerable mass of stone boulders mixed in with the debris of internal house construction but has advised Kelly that the circumstances do not parallel the specific description of the stone mantle at Estatoe (See Editor's Note). A stone layer was observed in a mound in Alabama, the Bessemer Mound, excavated and reported by David L. DeJarnette. This mound is described as a late, prehistoric Mississippian mound. Here the stone layer, uncovered at the premound or mound base surface, follows no discernible pattern and does not reveal its function.

From the foregoing, certain tentative conclusions seem to emerge. It seems fairly definite that the successive building stages at Estatoe mark so many council chambers, structures primarily of socio-religious significance. After five intervals of continuous building and use, a new departure was marked by the construction of an imposing pile of stone with a definite configuration over the precise site of the underlying ceremonial structures. In its construction there is a definite patterning, with alignment of the four corners to cardinal points; this same pattern is found widespread elsewhere in buildings of the approxi-

mate period in immediate Southeastern archeology. The ideas exemplified fit fairly well the cosmogonical beliefs of the Cherokee as set forth in Mooney's *Myths of the Cherokee*.

EVIDENCES OF CULTURAL CONTINUITY

Purely constructional history, as seen in the analysis of successive building activity at Estatoe, points conclusively to an unbroken occupation of the site with no hiatus indicated at any point. Some climatic development may mark the mantling of the superimposed building levels by the stone mound, whose functional explanation has occupied us in the preceding pages. But even here, posthumously, the four corner posts obtrude through the stone and may well have anchored the structure which was built on top of lensed or basketloaded clay over the stone mantle. Modern cultivation has rudely truncated and erased this part of the archeological record.

Of equal, if not greater, diagnostic value in determining the extent of cultural change at Estatoe from the first to the final historic occupation is the analysis of pottery and other artifactual material from the respective chronological levels.

The pottery sample comprises material catalogued from five occupation zones attributed to the building levels, the mound "dump" and the plowed zone (Table 1). In addition, we have given the results of analysis of the pottery by recognized types in the immediate north and northeast Georgia archeological sub-areas where these occur in the midden accumulated on the lower slopes of the mound.

No large collections of sherds were obtainable from the floor levels because the council houses were kept fairly clean; they were not so clean, however, that a respectable statistical sampling could not be obtained. It is possible, even probable, that some of this pottery, troweled out meticulously from the few inches of soil brought in to construct new floors or to patch worn-out floors, accidentally included material from the village area where the soil was excavated. It is impossible, of course, to separate culturally deposited from accidentally included material under these circumstances. Human traffic for a generation or so would have compacted everything contained in these contexts. They are still the best contexts available.

With regard, then, to building levels, or occupation zones 1, 2, 3, 4b, 4a, and plowed zone, the distribution of diagnostic pottery types is taken up consecutively.

Table 1

PERCENTAGE DISTRIBUTION OF POTTERY TYPES FROM THE
MOUND EXCAVATION AT THE ESTATOE SITE—9 St 3

TYPE	Level 1	Level 2	Level 3	Level 4b	Level 4a	Plowed Zone	Mound Dump	Total Specimens
Plain	33.8%	39.5%	54.8%	49.0%	47.7%	36.8%	34.9%	4233
Plain Roughened	15.5	2.3	1.0	3.9	.6	1.1	.3	143
Plain Burnished	2.7	2.3		6.8	.1	.6		73
Lamar Complicated	23.6	26.0	22.3	14.5	33.4	35.4	12.6	2113
Lamar Incised	.3	3.1	2.4	5.0	3.6	2.7	3.2	345
Lamar Compound						.3	.1	6
Roughened Stamped		.8	.7	1.4			.4	45
Flat Bottom	.8	.8	.1					
(Concave & Convex)					.2	.2	.2	22
Simple Stamp	3.2	1.5	3.7	2.8	2.5	4.2		150
Simple Stamp Overstamped	2.4	.4	1.0	1.7	1.1	.8	42.6	2689
Check Stamp	3.5	3.1	3.1	1.8	.2	.3	4.4	337
Brushed or Scored	5.6	3.8	3.0	1.9	3.3	.4	.6	174
Cordmarked & Wrapped Stick	1.9	4.6	1.3	3.7	2.1	.3	.2	103
Etowah Complicated	4.8	3.8	3.9	4.6	4.4	1.2	.4	188
Line Block		6.8	2.6	1.7	.4	.9	.1	67
Savannah								
Complicated		.8	.1	1.2	.2			15
Painted					.1			1
Woodstock	1.9							7
Var. of Irene Fillet		1.4						1
Unidentified						15.9		204
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
Total Specimens	373	261	700	722	1382	1278	6200	10916

Plain grit-tempered pottery, as distinct from smoothed, burnished, or roughened which go into separate categories, is about one-third of the sherd population in the first two building levels, increasing to approximately 50 per cent in Levels 3, 4b, and 4a. In the plowed zone, superficially disturbed and relatively out of context, the percentage drops to 36.8 per cent.

Plain roughened, which admittedly must be subjectively determined as distinguished from the residual plain considered above, shows 15.5 per cent in Level 1 with only minor or negligible showing in upper levels. This may be taken to mean that the roughening tendency is more marked at the time when building activity begins at Estatoe. In the Chauga report, Kelly and Neitzel defined a type of Etowah Rough which was a significant component in the early-to-intermediate mound series there.

Burnished or smooth plain is a minor type with around 2 per cent showing in each of the first two levels.

Lamar Complicated Stamped, an important diagnostic on all historic and protohistoric Cherokee sites in north and northeast Georgia, shows relative consistency. About one-fifth of this sample was found in the first four building levels. Lamar Complicated Stamped represented 33.4% of the pottery found in

Level 4a, and 35.4% of the pottery recovered from the plowed level.

Interesting enough, Lamar Incised is somewhat more in the minority at Estatoe than at other Lower Settlement sites. The highest occurrence is at 4b and 4a with 5 and 3.6 per cent respectively, less than 1 per cent in Level 1. It should be remarked that the type labeled "Wild Incising," which tends at Chauga and Tugalo to occur on deep cazuela bowls with stamped body and flamboyant incising on the rim, is relatively absent at Estatoe. The incising is thinner and scrawly, more on the old Ocmulgee Fields order.

Flat bottoms occur sparingly, a few on each level, and were thought at one time to be possibly an anomaly at Estatoe, but this view does not stand up on analysis.

Simple stamping, with or without marked overstampng combined, would not give more than 5 per cent on any level, and seems fairly well distributed on all levels. The presence of an old Woodland decorative feature on historic and protohistoric Cherokee sites, such as Chauga, has been previously noted.

Check stamping, a terminal expression on some Cherokee sites, and which Caldwell called the Boyd Stamped in the Allatoona Series, occurs in small percentage, the average being around 3 per cent, but within narrow limits declines to less than 1 per cent in the final occupations.

Brushed or scored sherds are strongest in Level 1 with 5.6 per cent and give a consistent showing of slightly over 3 per cent in all but one succeeding levels (4b with 1.9 per cent); however, these represent less than 1 per cent in the plowed ground.

Cordmarking is also a minor technique, with the strongest percentage at Level 2 with 4.6 per cent.

Etowah Complicated Stamped, a late variety correlating with the findings at Chauga, averages around 4 per cent throughout the successive occupations. The stamps are poorly executed, have departed widely from the incisive ladder-based diamonds at Etowah, and simply define a persisting but deteriorating tradition in the protohistoric levels at Estatoe.

Line block, with a tendency to alternate contrasting vertical and horizontal blocks of linear pattern, occurs strongest in Level 2 with 6.8 per cent but declines rapidly thereafter. At Chauga this occurred along with simple stamped on Lamaroid rims as a resurgence of old decorative schemes in the late mound occupations.

Curvilinear elements of complicated stamping which might be allocated to Savannah Complicated Stamped occurred somewhat more sparingly at Estatoe than at Chauga, with less than 1 per cent on the average. This is surprising until one considers that the ceramic complex unfolding at Estatoe obviously relates to only the terminal mounds and historic village area at Chauga, Mounds 8, 9 and 10. The decline of Etowah or Savannah types, or their occurrence only in the initial building levels at Estatoe would seem to confirm this interpretation.

A small percentage showing, about 2 per cent, of rectilinear decorated sherds not clearly recognizable as either Etowah or line block, seems more related to a late Woodstock. These show only in Level 1.

An "unidentified" complement of rather badly eroded and chipped sherds was found in the plowed ground, as might have been expected.

The total sherd population in the comparative study by levels at Estatoe amounts to 4,716; of this amount 1,278 were found in the plowed zone. This is not a large sample according to southeastern standards, but was cataloged from the successive building levels in good context and is calculated to give the best indication possible of perceived changes as indicated from ceramic indices. It is evident that there is very little stylistic or pattern change in the materials gleaned from Level 1 through 4b and 4a. The total assemblage fits closest to the picture unfolded at the Chauga Mound in final mound stages 8, 9 and 10, and the upper levels of the village. The pottery from the village at Chauga had evidently been churned up considerably in prehistoric times, and the village area at Estatoe has not been systematically tested. There is a suggestion of more Etowah of a late type, more check stamped, slightly more Savannah-like complicated stamped although this is so light as to be negligible, and more cordmarking (possibly related to the Savannah Series) in Levels 1 and 2. This might tend to support the view that Estatoe represents in its homogeneous showing only the terminal portion of the continuum at Chauga, which shows a stronger Etowah-Savannah assimilated component in the earlier mounds at that site.

A check on the distributions by occupation levels, related to the total ceramic population at the site, is afforded by results of the analysis of 6200 study sherds cataloged from the midden "dump" located on the northeast quadrant of the mound at Estatoe. This midden pile accumulated at the lower flank or periphery

of the mound to a depth of several feet and serves as a "pool" of material gleaned from the continuous occupation of the mounds; this total was run from lowest to historic levels since individual lenses or occupation zones are confluent and compressed in the midden accumulation and are not referable to discrete zones of building activity. The analysis of this material shows close correspondence to the results of studies already made on collections from Levels 1 through 4a, with a few significant exceptions.

Plain grit is 34.9 per cent of the total. Lamar Complicated Stamped is 12.6 per cent, whereas the linear over stamped series (simple stamped as it appears in individual sherds) is rather large, *i.e.* 42.6 per cent. This bespeaks the tendency of Cherokee sites to exhibit a marked degree of linear-type complicated stamping. Where large sherds or whole vessels are present (rare at Estatoe), the specific identification of "simple stamped" can be more assured. Cordmarked, Etowah Complicated Stamped, and line block occur only very sparingly in the "dump." Check stamped is about the same as from the occupation or building levels.

A special study of 645 rims from Estatoe shows 237 to exhibit some incising. A few large associated body sherds having cazuela forms were also incised. The frequent association of incised rims and stamped bodies is indicated. Otherwise decorated in characteristic Lamaroid rim treatment are 330 sherds variously notched, pinched, noded, or with appliqued rim strips. The folding of rims is very rare, with indications of only six. Rim specialization shows some interesting trends in the late protohistoric to historic occupation at Estatoe. These features can best be brought out with a larger body of comparative material when the nearby village of Tugalo is compared with increased catalogued material from the village at Estatoe.

ATTENUATED "CULT" AT ESTATOE

Objects which may be attributed to the "Southern Cult" manifestation, seen in the most representative forms at Etowah mounds in Bartow County, Georgia, are rare at Estatoe. This may be due to the fact that no burials were encountered at Estatoe, and further exploration around mound peripheries may be needed to uncover these. Of special interest, however, are the examples of monolithic axe pottery pipes which came from house levels in the Estatoe mound. The finding of three of these in council house context may suggest some ceremonial associations

on the part of participants in the councils. These pipes are known to occur late in protohistoric or historic context in the immediate Southeast. (Personal communication, Lewis H. Larson.)

ABSENCE OF "PROTO-IROQUOIAN" POTTERY

At the site of Chauga in nearby Oconee County, South Carolina, the University of Georgia field party cataloged a number of rims and body sherds with pronounced carinated rims and castellations, with incising, punctate, and modeled features reminiscent of the so-called "Iroquoian pottery" of the upper Atlantic region. Joffre Coe (personal communication) had found similar pottery in some of his North Carolina work, as had Joseph R. Caldwell in the Allatoona survey. At Chauga these "pseudo-Iroquoian" examples, as they were tentatively dubbed in the Chauga Report, tended to occur in the trough at the foot of Mound 3 and immediately subsequent structures. Coe was of the opinion that their provenance was rather early in contexts he had observed, at least the equivalent of "Early Mississippian." It may be that the absence at Estatoe of such distinctive carinated and castellated forms, with the characteristic decorative features, is indicative that the building activity there was too late to incorporate these features found at Chauga and elsewhere in Georgia.

THE HISTORIC OCCUPATION AT ESTATOE

Despite the indications that Estatoe spans only the equivalent of the terminal protohistoric and historic periods at Tugalo and Chauga, (i.e. the 8th, 9th, 10th and village levels at Chauga) actually most of the historic context at Estatoe has been truncated and disrupted in the superficial layers due to modern cultivation. The final council house construction, on top of the basket-loaded or lensed fill over the stone mantle, had been cut away with the midden and redistributed downslope. A considerable catalog of historic trade material came from the top 20 to 30 inches of the dump or midden on lower mound slope in the northeast sector of the mound. Also, a good collection of materials came from surface finds made after plowing in the surrounding field.

Recent plowing along the ridge on which the superimposed building levels at Estatoe were excavated has uncovered two or three places where charred timbers and rich midden seem to indicate burned structures in the top or humus level. There is a local story to the effect that some years ago, after a strong

freshet in the Tugalo, the river washed out several burials at the end of the ridge to the south, and that a local resident picked up several rusted flintlock guns. We were unable to verify this story or to locate the collection.

It seems probable that the ridge portion of the Estatoe Site will not be inundated in the completed reservoir pool. Further archeological work to uncover additional house sites and more in-place historic material might be rewarding.

Also, the colonial records in the South Carolina State Archives in Charleston may well disclose further key information on the fate of Estatoe during the period of conflict with American settlers and during the American Revolution.

An inventory of artifacts taken from the Estatoe Site, excluding pottery, is given in Tables 2 and 3.

Table 2
INVENTORY OF INDIAN MATERIALS FROM THE ESTATOE
SITE—9 St 3

Indian Material	Mound Dump	Village (de Baillou)	Village (Neitzel)
Beads	20		
Bone Awl	1		
Bone Peg			1
Bones (animal)	699		
Celt (miniature)		1	
Copper Strip			1
Copper Tube	1		
Daub	507		
Discs	13	3	
Knobs (pottery decoration)	3		
Needle Sharpener	1		
Pipes	52	22	
Pipe, Toy	1		
Pot Leg	1		
Pot Handle	1		
Pottery Stamp	1		
Projectile Points, Mississippian	3	4	
Projectile Points, Old Quartz	2		12
Projectile Points, (miscellaneous)	4	6	
Quartz Crystal		1	
Quartz Fragments		76	
Shells	16	1	
Steatite	1	5	
Stone Axe	1		
Stone Bar (prismatic)		1	
Stone Hammers		2	
Stone Ornament	1		
Stone Plate	1		1
Stone Tools (miscellaneous)	3		
Stones	1717		

Table 3
INVENTORY OF HISTORIC MATERIALS FROM THE ESTATOE
SITE—9 St 3

Historic Material	Mound Dump	Village (de Baillou)	Village (Neitzel)
Antler Handle with Iron Blade	1		
Bottle Glass		51	
Brass Fragment		1	
Brass Trigger Guard		1	
Bronze Bridle			1
China		17	
China, Featheredged		1	
Crockery		2	
Crockery, Sodium glazed		2	
Egg Shell			1
Flint Lock	1		
Flint Pieces		5	
Glass	45		4
Glass Plate		1	
Gun Flints	6	3	1
Iron	10	1	
Iron (new)		2	
Knife (iron)			1
Lead Bullets	7	1	
Nails			3
Peach Stones	6		
Silver Pendant			1
Silver Uniform Buttons	2		
Trade Pipes	55		

SUMMARY AND CONCLUSIONS

In summary, then, the excavations on the stratified house building site at Estatoe indicate a continuous development of culture *in situ*, as shown both from the architectonics of mound building or house construction and occupancy and the unbroken series of key pottery and artifact types.

There is some stylistic variation in decorative elements on the pottery, but the series is remarkably homogeneous throughout and argues for relatively little cultural change. The one suggestion of a perceived terminal phase or closing out of a sequential development is the unusual stone construction which mantles Levels 1, 2, 3, 4b and 4a. The stabilization and continued use of pre-existing post supports and wall entities, the absence of the usual basketloaded or lensed fill or capping as found at both companion sites of Tugalo and Chauga is remarked, except in the historic interval coming after the construction of the stone mantle over the pancaked building levels. Several theories developed to provide a functional interpretation of the stone mantle are examined. The earliest and most seriously entertained hypothesis of a large, communal sweat house is found to meet with a

number of difficulties. Some sort of ceremonial or religious usage, involving special construction and memorialization of a sacred area in keeping with Cherokee cosmogony, is projected tentatively although such usage is not recorded in Cherokee ethnology.

Estatoe covers only the terminal segments of Cherokee archeology in protohistoric and historic times. It corresponds approximately to Levels 7, 8, 9, 10 and the surrounding village at Chauga; and to the midden lenses on mound slopes at Tugalo uncovered by J. R. Caldwell, attributed to the early-to-late Lamaroid elements following his "epigonal Etowah" and Savannah-like mound period. In thus dove-tailing with the protohistoric to historic sequence at the other landmark Cherokee sites in northeast Georgia and neighboring South Carolina, Estatoe provides significant documentation on a direct historical approach to Cherokee archeology.

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THE USE OF *CHENOPODIUM* SEEDS AS A SOURCE OF FOOD BY THE EARLY PEOPLES IN RUSSELL CAVE, ALABAMA¹

CARL F. MILLER

In several instances in the past, references have been made to the use of *Chenopodium* seeds as a source of food by native groups of North America. This plant family is known locally as "pigweed," "goosefoot," or "lamb's quarters." Smith² has shown that the Adena people cultivated and used the seeds of this plant as one of its food sources. Jones and Fonner³ indicated that the Navajo Indians of our Southwest reaped the wild seeds, then roasted and ground them into *pinole*. Morris⁴ suggested that the people who had occupied Site 22, near Durango, Colorado, during Basket Maker II times also used this same food source. Fernal and Kinsey⁵ stated that: "The seeds of the Pigweeds can be gathered in great quantities and were largely used by the American Indians (of the eastern United States) as a source of bread or in gruel." Characteristically, the small, black in color, hard and slippery seeds have the tendency to jump and bounce while being ground, making the job rather difficult. Once the seeds are reduced to a meal, the resulting flour is dark colored due to the black seed coat.

Modern experiments have shown that the *Chenopodium* flour is good-flavored and highly nutritious, "tasting somewhat like buckwheat but with the characteristic 'mousey' flavor distinctive of this group of plants."⁶

Chenopodium ambrosioides has been used for quite some time as an intestinal worm killer, and in certain sections of our Southeast its oil is still used to rid victims of hookworms.

During the first season's work in Russell Cave,⁷ the charred remains of a small hemispherically-shaped basket were found filled with equally charred *Chenopodium* seeds. The seeds were

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²1959, p. 67

³1954, p. 95.

⁴1939, p. 118.

⁵1943, p. 178.

⁶*Ibid*, p. 179.

⁷Miller, 1956, p. 555.

later identified by experts in the United States Department of Agriculture as belonging to this plant family. Their presence on the Early Woodland horizon, about 5,000 years ago, indicate that these people knew the potential of these wild uncultivated seeds as a staple food source, harvested them by means of seedbeaters and baskets, and converted them into food. We have no positive evidence that wooden seed-beaters were made and utilized; by their very nature these would have decayed and disappeared from the scene long ago, due to the moist nature of the deeper deposits. It was the charring of the basket and its contents that has given us positive information that these prehistoric people utilized, for certain, the seeds of *Chenopodium* and probably the seeds of the Amaranth plants as well as other wild grass seeds.

Bureau of American Ethnology

Smithsonian Institution

Washington, D. C.

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COMMENTS ON "CONCEPTIONS OF TIME IN EASTERN UNITED STATES ARCHAEOLOGY"

Mr. Williams's article, "Conceptions of Time," has provided interesting reading, but contains at least one glaring error which needs correction. In his table on page 20, *Southern Indian Studies*, Volume X, 1958, he states:

Paleo-Indian 15000 to 3000 B.C.	The earliest dates for this period come from sites in the High Plains area . . . about 10,000 years ago. The Paleo-Indian culture at Boylston Street Fishweir Site has been dated at 5,700 years ago . . . etc.
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When Mr. Williams wrote, the Fishweir was bracketed by two dates, but the weir itself was not dated. These dates (*Radio-carbon Dating*, W. F. Libby, Second Edition, Chicago University Press, 1955) are as follows:

C-417 5717 \pm 500	<i>Boylston Street Fishweir (Fishweir I)</i> : Peat from Boylston Street Fishweir site. Lower peat underlying the fishweir. Presumably the fishweir should be younger (cf. <i>The Boylston Street Fishweir II</i> , ["Papers of the Peabody Foundation," Vol. 4, No. 1] pp. 60, 65, 68). Submitted by E. S. Barghoorn, Biological Laboratories, Harvard University.
C-418 3851 \pm 390	<i>Boylston Street Fishweir (Fishweir II)</i> : Fragment of coniferous wood from marine silt overlying the lower peat and the fishweir (cf. No. C-417). Submitted by E. S. Barghoorn.

The data for C-417 make it clear that the sample dates peat which is below the weir. Furthermore, Johnson (*The Boylston Street Fishweir*, Papers of the Peabody Foundation, Vol. 2) states explicitly that the lower peat was laid down in fresh water, and that the stakes were not driven into the lower peat until sea level had changed with respect to the land, so that the lower peat was inundated by salt water. At the time Mr. Williams wrote, it was apparent that the weir lay somewhere between 5700 and 3800, or, at a guess between 4500 and 4000 years ago.

A sample from another portion of the weir dates the structure itself. This has not been published, but it places the weir at approximately 4500 years ago.

The second error in Mr. Williams's statement has to do with identification of the weir as Paleo-Indian. Inasmuch as no cultural material whatever was found with the weir, it is difficult to see how Mr. Williams equates this structure with the Paleo-Indian unless he be following the lead of Griffin ("Change and Continuity in Eastern United States," in *Man in Northeastern North America*, edited by F. Johnson, Papers of the R. S. Peabody Foundation, Vol. 3:37-95). Griffin's Fig. 3 purports to locate Paleo-Indian groups in the United States, such as Folsom, Yuma, Signal Butte I, Indian Knoll, Parrish, Lauderdale, Savannah River, Lamoka, Laurentian, and Boylston Street (which we presume indicates the Fishweir). I've already said enough about this on page 231 of my "An Introduction to Five Papers on The Archaic Stage," *American Antiquity* 24:229-232.

We have two sites in New England which have some claim to being considered Paleo-Indian: one is Ritchie's Reagan Site; the other, the Bull Brook Site. Radiocarbon dates show that Bull Brook was occupied between 8000 and 9000 years ago. By the time of the Fishweir, Archaic peoples had spread through New England. Since the stakes from the Fishweir appear to have been cut with stone axes, and since the date for the weir falls well within the range of Archaic occupation of New England, it seems much more likely that the Fishweir belongs with the Archaic, rather than with the Paleo-Indian.

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