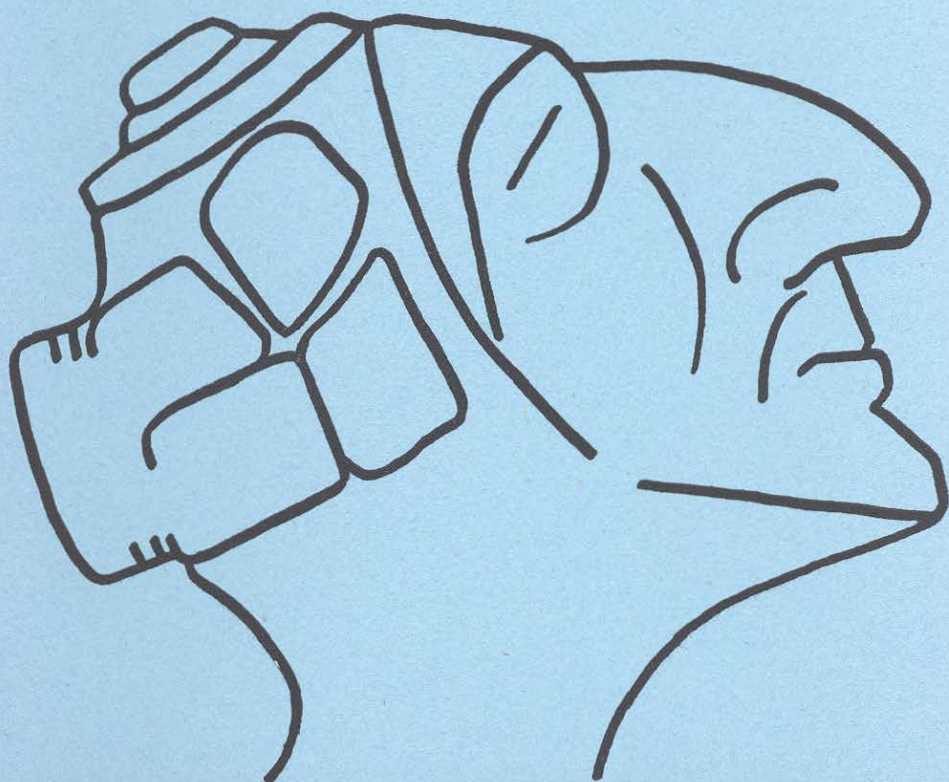


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STUDIES



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Chapel Hill

TENTH SOUTHEASTERN ARCHAEOLOGICAL CONFERENCE

The tenth meeting of the Southeastern Archaeological Conference was held in Chapel Hill, North Carolina on November 20 and 21, 1953. All sessions were held in the Faculty Lounge of the Morehead Planetarium, University of North Carolina, and the following papers were presented:

Friday, November 20, 1953.

Morning Session. *Topic:* Paleo-Indian in the East.

New England: Douglas Byers, R. S. Peabody Foundation.

Pennsylvania: John Witthoft, Penn. Hist and Museum Comm. (read by Coe).

Virginia: B. C. McCary, William and Mary College.

Tennessee: T. M. N. Lewis, University of Tennessee.

Afternoon Session. *Topic:* Archaic Cultures in the East.

New England: Fred Johnson, R. S. Peabody Foundation.

Kentucky: Raymond H. Thompson, University of Kentucky.

Georgia (Savannah Area): Antonio J. Waring, Savannah, Ga.

Georgia (Mid-Coastal Area): A. R. Kelly, Univ. of Ga.

After Dinner Session. *Topic:* The Excavation of Mound D at Kolomoki. A movie in color, narrated by William H. Sears, University of Georgia.

Saturday, November 21, 1953.

Morning Session. *Topic:* Archaic Cultures in the East.

"Old Quartz Industry in the Piedmont." Joe Caldwell, River Basin Survey (read by Mrs. Caldwell).

"The Duration of the Archaic Cultures." Madeline Kneberg, University of Tennessee.

Special Topic: "What the 16th Century Spanish Explorer could have left in the Southeast." John Goggin, University of Florida.

Afternoon Session. *Topic:* Fiber-tempered Pottery Cultures in the Southeast.

"Hinterland Spread of Fiber-tempered pottery in Georgia." A. R. Kelly, University of Georgia.

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"Culture Changes During the Fiber-tempered Period in Florida." Ripley P. Bullen Florida State Museum.

Fiber-tempered Pottery and the Orange Period in Florida." John Groggin, University of Florida.

Attendance

Ripley P. Bullen	Marc Lovelace
Mrs. Ripley P. Bullen	David McBrayer
Douglas Byers	B. C. McCary
Sheila K. Caldwell	Mrs. B. C. McCary
Joffre L. Coe	W. W. McIntyre, Jr.
Mrs. Joffre L. Coe	Carl F. Miller
Charles H. Fairbanks	Mrs. John M. Parker, III
John M. Goggin	Philip Phillips
Mrs. John M. Goggin	G. D. Pope, Jr.
John Gillin	William H. Sears
Mrs. John Gillin	Stanley South
J. C. Harrington	Mrs. Stanley South
Ester Araya Hunter	Albert C. Spaulding
Daniel Jacobson	Raymond H. Thompson
Fred Johnson	Marguerite Van Doorslaer
Tom Keating	A. J. Waring, Jr.
A. R. Kelly	Melvin L. Webster
Madeline Kneberg	Stephen Williams
Alex D. Krieger	William W. Wood, Jr.
T. M. N. Lewis	

Resolutions:

G. D. Pope, Jr. moved that the conference should go on record as favoring the use of calendar dates (A.D. and B.C.) instead of B.P. in Carbon 14 work. John M. Goggin seconded the motion and it was passed unanimously. One point brought out during the discussion was that while archaeologists would prefer this change the laboratory men who date the specimens would not.

John M. Goggin suggested that the Ocmulgee National Monument at Macon, Georgia be considered the permanent home of the conference and that it should meet there on alternate years. This suggestion was received favorably in the discussion that followed, but definite action was postponed until a later date.

Time, Place, and Topic of the Next Conference:

The invitation of David L. DeJarnette to hold the 1954 meeting at Mound State Monument, Moundville, Alabama was unani-

mously accepted. David DeJarnette was elected Chairman and the date was placed at November 19 and 20, 1954 subject to change by the Chairman. The topic selected for discussion was: *The Mississippian Cultures and the Southern Death Cult.*

Abstracts of Papers:

Paleo-Indian in New England. Douglas Byers, R. S. Peabody Foundation.

Fluted points have been reported from every state in New England except Maine, but there is some question about one from Rhode Island and a second one reported isn't a fluted point at all. In addition, one from Nantucket Island in collection of R. S. Peabody Foundation has all the characteristics of fluted points.

One large point from Quaco Head, east of St. John, N. B. in the National Museum of Canada is four and a half inches long and quite heavy, but has rubbed base and sides.

Another large fluted point is found in the U. S. National Museum and is from Intervale, N. H.

The Connecticut valley has yielded a number of points, including old finds such as Amherst, in Amherst College, Mass. Those in Connecticut, listed in Newsletter of Archaeological Society of Connecticut, include one from east Granby and three from South Glastonbury. These three seem to have been found on the high terrace of the Connecticut River and suggest that there may be a site there. Search along the higher land bordering the river all the way from Lancaster, N. H. south might prove rewarding.

The Bull Brook site is on a kame terrace near Ipswich, Mass. This site has been dug by amateurs and there is very little precise data from it.

There is no identifiable old land surface, but points appear to be on a "surface" produced by wind action on the originally uneven surface of the kame, since heavier counts of stones occur at different depths with respect to points, according to collectors, but this is a factor due to the original distribution as well as the wind action.

It is said that the material has been found in groups, that is to say, that often more than one piece has been found in a location, usually three or more. The majority of drills have been found together. There are some reports of pits and signs of fire with these finds, but these cannot be verified and since a Neo-

Indian site is on the same location, they may be the result of such occupation. Furthermore, there is some suggestion that these groupings are themselves grouped, as in a camp circle, but since no accurate survey was made this information cannot be given too much weight.

Implements found resemble the Lindenmeier complex except for rubbing stone, bone tools, expanded base drills, and chisel gravers. Details of execution of some of the implements appear, from hasty examination, to be almost identical.

The form of fluted points seems to vary, but the range at Lindenmeier is great and tendency is to accept the finest Lindenmeier points as "typical." None of the Lindenmeier form with greatest width forward of the midline has been found at the Bull Brook site, nor any with needle-sharp ears and fine sequential retouching.

The technique used in working these implements appears to be that represented by an intermediate stage in manufacture of Lindenmeier points, none representing the bulbar stage, or the finished stage.

One inevitably concludes that the two industries are intimately connected, and that possibly the Lindenmeier is carried to such high level of excellence because of better stone.

The Reagan Site, situated on an old sand deposit apparently related to the Champlain Sea, seems to be different from the Bull Brook site, and from a later period. Some of the following reasons point out these differences:

1) Difference in form and execution of points seems to show a considerable time lapse.

2) Loss of much of the scraper complex, particularly the scraper-gravers so widely spread from Dorset to the Quad site, suggests difference in industrial habits.

3) Presence of tall pendants with imitation of fluting, of pentagonal points and the many "non-fluted point" items in inventory, to me means that we have something different, perhaps a span toward the Archaic.

One may conclude by the distribution of material found that there was a community of industries over a large area at an early stage.

Archaic Cultures in New England. Fred Johnson, R. S. Peabody Foundation.

Recent reclassification of several thousand arrowpoints, a

significant number of which are stratigraphically located, gives rise to a very tentative opinion concerning the presence of an "archaic" in New England. This appears to be comprised of several traditions. The distribution of one of these appears to point toward the southeast, and it may be concentrated on the Atlantic littoral. A second one is generally northern in its distribution. At the moment there appear to be few direct correspondences with New York and northern Pennsylvania. The time when this material appears in New England is not certain. A Radiocarbon date on a clearly defined "archaic" level in one site is 4500 plus or minus 300 years B.P. (Information received since the conference.) Geological studies to date result in an opinion that the material may be considerably older. The above are very tentative ideas based upon analyses which are woefully incomplete.

Archaic Cultures in Kentucky. R. H. Thompson, University of Kentucky.

Raymond H. Thompson, of the University of Kentucky, displayed a series of artifacts from the Parrish Site (Hk-45) in Hopkins County, Kentucky and a series of fluted points from various other Kentucky sites. He suggested that a reexamination of the artifacts from the Parrish Site point up a basic homogeneity for the collection, the only exceptions being the fluted points which were found on the surface. He called attention to the fact that in the published analysis of the site, the differentiation of a Paleo-Indian and an Archaic occupation was based on typological evidence only. Alternative interpretations include the following. The collection represents an Archaic occupation only with the fluted points considered as out of context; or despite the typologically late Archaic features in the polished stone artifacts, particularly atlatl weights, the presence of chipped stone suggestions of Paleo-Indian materials may indicate that the Parrish Site reflects the transition from the Paleo-Indian to the Archaic.

The reinterpretation of the Parrish Site served as the basis for a review of the relationships between the so-called Paleo-Indian tradition and that of the Archaic. Thompson suggested that the use of the term Paleo-Indian, coupled with the long standing belief that there is a chronological gap between the late post glacial occupancy and the Archaic, unnecessarily makes the recognition of a potential continuity between the two. Rather than invoke chronological discontinuity, migration, etc., to explain the

present evidence, he prefers to view the early cultures to the East in terms of a long, gradual adaptation to the deterioration of the glacial climate. This view makes it possible to consider the Paleo-Indian and the Archaic remains in terms of a single continuum characterized by a gradual change from a hunting and gathering economy based on a terminal Pleistocene environment to a hunting and gathering economy based on a forest environment.

Joffre L. Coe
Conference Chairman

A PALEO-INDIAN WORKSHOP SITE IN DINWIDDIE COUNTY, VIRGINIA

Ben C. McCary

A survey of the occurrence of fluted points in Virginia, begun by the writer in 1947, led to the discovery of a Paleo-Indian workshop site in Dinwiddie County, Virginia, on the farm of J. S. and J. E. Williamson. The site lies on a broad flat ridge and covers approximately fifty acres.

The surface of the area is covered with many cores, 5 to 10 inches thick, and thousands of unutilized flakes. The rock materials consist almost entirely of variegated chert, and chert is comparatively rare in this section. Some quartzite and a small quantity of white quartz and quartz crystal complete the list of materials. The source of the chert has not been determined.

Flakes of various shapes and sizes were struck from the cores, but the most characteristic—and these are in the minority—are parallel sided and faceted as the result of previous flaking.

The assemblage of implements consists of: 60 fluted points of which 6 are made of quartzite, 4 of quartz crystal, 2 of white quartz, and the remaining 48 are of chert. The unbroken points average about $2\frac{1}{4}$ inches in length, but the broken basal portions of others indicate that some attained a length of between 4 to 5 inches. The bases of at least three-fourths of the points reveal smoothing. The flutes are usually short and shallow; 250 snub-nosed scrapers, some of which have at one or both sides of the nose a small spur or graver; 75 side scrapers made from medium to large flakes retouched along one edge; 30-odd apparently unfinished points, many of which are broken but reveal fluting without the crescent-shaped base; 5 spoke-shave scrapers; 6 bar form side scrapers; 5 implements which might be classified as small twist-drills or reamers; 1 expanding drill; 10 small knives or spear points as nicely flaked as many of the fluted points, but which have straight or slightly oval bases, with or without flutes; 2 very questionable sharp pointed gravers made on flat flakes; many broad blades worked on both faces which might represent unfinished products but which could have served as very useful tools; numerous hand choppers with sharp working edges; 5 unpitted hammer stones of which four are made of quartzite and one of chert; 12 implements which might be classified as chisel gravers. All the above implements, with the exception of 12 fluted points and 4 hammer stones are made of chert.

The survey of Virginia fluted points, as well as the Williamson site, prove that the Paleo-Indian preferred finer materials such as chert or flint to quartzite, as contrasted with the preference of the Neo-Indian for the latter material. For example, a Neo-Indian site which touches on the eastern periphery of the Williamson Paleo-Indian site, has produced over 200 projectile points and, with the exception of six of chert, all are made of white quartz, and gray or brown quartzite. It is very rare that an arrowhead is picked up on the Paleo-Indian site, and no pottery fragments of any kind have been found. Therefore, the Williamson site is just as pure as one can hope to find in Virginia.

William and Mary College.
Williamsburg, Virginia

A SUGGESTED BASIS FOR PALEO-INDIAN CHRONOLOGY IN TENNESSEE AND THE EASTERN UNITED STATES

T. M. N. Lewis

To date Tennessee has been unable to produce a Paleo-Indian site. However, a considerable number of fluted points have been found and we are trying to record their locations in the hope that some day a concentration of finds will lead to an actual camp site. At present we have spotted about fifty points in fifteen counties of central Tennessee. Several concentrations have been noted but they remain unexplored for lack of funds.

Tennessee fluted points occur in two forms:

1. The Clovis type, partly fluted, and ranging from one and one-half to four and a half inches in length.

2. A narrower and thicker type with outward flaring and more pronounced "ears". Most examples are fully fluted, some partially fluted, and a very minor number unfluted. Because it occurs rather frequently in the Cumberland River drainage, we have proposed the name Cumberland Paleo (Plate 1) for this type in our correspondence with Robert E. Bell. Thirty per cent of the recorded fluted specimens from Tennessee are of this type.

But the main purpose of this paper is to present an hypothesis regarding the time period of the Paleo-Indian culture in the eastern United States, and a suggestion that the use of certain data may provide a basis for a relative chronology.

In the course of mapping the finds of fluted points in Tennessee we noted that the highest concentrations were found in or adjacent to a specific ecological province, the Highland Rim. During the past two years we have occasionally discussed the problem with the Botany Department staff of the University of Tennessee and have gradually arrived at a tentative hypothesis.

The ecological province of the Highland Rim area encircles a shallow depression known as the Central Basin of Tennessee, a fertile, well-watered area, drained by the Cumberland and Harpeth rivers, and numerous creeks. The Highland Rim area, in contrast, is elevated, poorly watered, and has thin soil. It is continuous on the north with the barrens of western Kentucky.

What is significant about this area is its distinctive prairie flora, such as: the prairie cone flower, blazing stars, Indian grass, prairie dock, etc. In addition to the actual prairie flora, the Highland Rim area is characterized by blackjack oak, post oak and

cedar, trees which are able to maintain themselves on dry uplands and therefore able to penetrate former prairie areas.

Certain botanists are inclined to regard this combination of prairie flora and scrub oak forest as detached remnants of former connected prairies that extended as far east as the Atlantic coast and south into Alabama and Mississippi. Even today isolated remnants of prairie plant communities have been identified as far east as northwestern Pennsylvania, while blackjack oak and post oak extend to the Atlantic coast. Recent botanical studies at a bog in extreme northeastern Tennessee have produced pollen grains of prairie flora. Such pollen analyses are probably being made by botany departments of other southeastern and eastern institutions, and may eventually prove to be very helpful.

The present day prairies form a belt of about 160,000 square miles which extends from Manitoba to Arkansas, as far west as eastern Nebraska and Oklahoma, and as far east as western Indiana. This is the so-called Prairie Peninsula¹. It is penetrated and partly encircled by forests to the north and east, and it gradually merges into the dryer plains on the west. The evidence from pollen studies and the present prairie remnants indicates that the Prairie Peninsula has contracted very considerably.

We turn now to the significance of this situation with respect to the Paleo-Indian cultures. It is quite clear that in early Post Glacial times the western plains region was typical, tall grass prairie where bison, horses, camels, mammoths and other grazing animals abounded. At that time the Prairie Peninsula with its outliers was a spruce-pine-fir forest with a different faunal association. As far as the evidence goes, Paleo-Indian economy was based upon the hunting of prairie-dwelling animals and not upon animals of the evergreen forest.

With the rise of the Altithermal Period and the drying up of the western plains, the prairies gradually shifted eastward and northward, partly as a result of forest decline due to decreasing precipitation, and partly by exclusion of forest seedlings by tall grasses². It is to be assumed that many of the prairie animals gradually migrated with the vegetation, and that the hunters followed them.

-
1. Transeau, Edgar Nelson. "The Prairie Peninsula." In *Ecology*, Vol. XVI, No. 1, 1935. Papers from the Department of Botany, Ohio State University, No. 355.
 2. Sears, Paul B. "Postglacial Climate in Eastern North America." In *Ecology*. Contribution Botanical Laboratory, University of Oklahoma, No. 9.

Since the Altithermal must have been a period of shrunken rivers, such streams as the Missouri, Mississippi and Ohio, especially their upper portions, would have been narrower and shallower and therefore not much of a barrier to animals or men.

The fact that Tennessee fluted points are found principally in or adjacent to former prairie areas of the State suggests that the Paleo-Indians were in Tennessee during the Altithermal Period, considerably later than they were in the western plains. It is possible that this applies also to most of the eastern Paleo Indian cultures.

If this could be demonstrated conclusively, it would raise another problem, namely, the relationship of the Paleo-Indian cultures to the Archaic. The Carbon 14 dates for the Kentucky and New York Archaic cultures would indicate that the early Archaic peoples must have been almost contemporaneous with some of the Paleo-Indians. The Archaic, however, is basically a forest economy of a somewhat Maglemosean type (adapted to the Post Glacial forest), and Archaic settlements were principally along the water courses where forests maintained themselves even during the Altithermal.

It is unlikely that there would have been any competition or conflict between the two groups because of the difference in their economies. The occasional finds of Paleo-Indian points on Archaic sites may therefore be evidence of this contemporaneity.

University of Tennessee
Knoxville, Tennessee

MID-COASTAL ARCHAIC IN GEORGIA

A. R. Kelly

The coastal area in Georgia is defined geographically by the fall line which runs from Augusta to Milledgeville to Macon to Columbus. Topographically and physiographically the transition from typical Piedmont to coastal conditions is very gradual as the relief maps of the state will show. Geologically, in terms of parent rock formations, the contrast tends to be more immediately defined. The sources of outcrop stone material, available for prehistoric quarrying are of more significance in defining sub-areal patterning of culture in the Georgia Archaic than are any other natural factor.

Fifteen years of scattered archaeological reconnaissance of the country below the fall line in Georgia has served to bring out some interesting indications regarding the nature and distribution of sites that might be attributed to an Archaic horizon. It should be noted that except for Gordon Willey's CCC survey of the 50 mile zone along the upper Ocmulgee river, and the University of Georgia-National Park Service survey of the Jim Woodruff reservoir in southwest Georgia, there have been no really adequate or complete areal surveys in the broad expanse of the territory stretching south of the Fall Line. Many private collections exist for comparative study, however, and several hundred sites have been visited. It is evident that several thousand sites must exist which show surface indications of flint workshop activity and campsite occupation, sometimes associated with pottery, but very frequently exhibiting only flint tools, assimilated on typological grounds to an Archaic tradition. Chance factors have led in the historical development of Georgia archaeology around centers in north, northeastern and central Georgia, with a recent survey of the southwest. It is evident now that the wide inland coastal strip is in urgent need of systematic survey to provide an adequate picture of archaeological cultures developing in age-area concepts within a broad sub-region.

Historically, the first site that should be mentioned is Stalling's Island. The earlier work by Claflin for Peabody Museum of Harvard was followed in WPA days by the joint excavations of the University of Georgia-Ocmulgee National Monument, reported by Fairbanks, with Fairbanks appraising the taxonomic position of this important focus in the eastern Archaic horizon. Recent river basin surveys in the Savannah drainage by J. R.

Caldwell and Carl Miller have shown extensions of the Savannah River focus well up into the Piedmont beyond Augusta. In his Allatoona basin report, now in concluding stages of preparation, Caldwell sets forth his description of a widespread cultural manifestation in the Georgia Piedmont, defined by the predominant use of quartz and quartzite stone in tool preparation, as contrasted with the utilization of nodular marine flint and metamorphosed sedimentaries in the coastal zone to the south. This Old Quartz figures heavily in Caldwell's work in the Buford reservoir and Clark Hill. A preliminary statement on the Old Quartz Culture has been prepared by Caldwell for this conference, with particular reference to a stratigraphic sequence at the Lake Springs Site (Clark Hill reservoir). This is pertinent in connection with Stalling's Island since that site shows a blend of materials derived in part from quartz categories of tools along with a preponderating specialized material variously referred to as aplite, siltstone, argillite, sandstone, in different contexts along the Atlantic coastal extension from New Jersey to the south Atlantic of Georgia.

Next in historical order of study should come the large assemblage of flint tools found in the protracted excavations in the Ocmulgee river, Macon, Georgia, which I tentatively called the Macon Plateau Flint Industry. Five years of continuous excavations in a mile square area of the east Macon Ocmulgee bluffs yielded a huge collection of flint artifacts, altered or weathered flints found in weathered soils down to a depth of nearly four feet in some portions of the area. A number of problems still suspend judgment as to the chronological position of this Macon flint industry. The presence of a large number of projectile classifications, end and side scrapers, large bladed knives, heavily decomposed or altered in cortex, with some exhibiting a tendency to multiple fluting or channeling, reminiscent of techniques employed in the Folsom tradition of the High Plains sections of the western United States, has been tentatively considered by a number of observers as piecemeal regional distribution of a widespread "eastern Folsom" or "folsomoid tradition". Present along side these specialized forms, however, are other specimens, including the beveled, side or corner notched projectiles, locally denominated "the spinner type projectile." Some investigators have pointed out that the trajectory would never demonstrate a "spin", and the position might be maintained that the whole class are not projectiles at all, but some sort of drill or planing tool.

However, for present purposes, we acknowledge the projectile classification and merely remark the characteristic wide occurrence of this class in Georgia and the general Southeast. Claflin denied that it occurred in the Stalling's Island site. There are indications that occasional "spinners" occur in quartz form in the piedmont sites, although rarely or sporadically. Another strong representation in the Macon Plateau Complex is the development of several types of specialized scraper classes; the small, neat "end scraper", large plano-convex keeled end scrapers, elongated double-ended scraper blades reminiscent of types found in terminal paleolithic or mesolithic of north Africa, heavy cumbrous, nearly round scrapers with almost complete circuit of secondary pressure flaking on the planing edges, a curious jack-plane type of end scraper with projecting haft which I have seen only at the Macon Plateau.

We have not gone any further in efforts to appraise the age conditions of soil elutriation in the truncated soil profile developments exhibited at Macon Plateau and other mid-coastal Georgia sites or with the matter of the alteration or decomposition of worked and artifactual flints in the same horizons. Some investigators have even thought that the Macon tools were made from "rotten" or already altered flint. I can only say that anyone carefully examining hundreds, even thousands, of pertinent flints from contexts similar to those at Macon Plateau, or the weathered soil profiles exposed in Highway No. 19, Lee County approach to Kinchafoonee river bridge, or the materials picked up from the quarry and storm-water eroded sand ridge of Lane Springs, northern Decatur county, Georgia, must conclude that too many specimens show enough of the original rhine or cortex of geologically modified flint, never removed in the cultural working of the material, with subsequent reworking of old flints at later times on many sites. Dean Leon Smith at Wesleyan College, Macon, Georgia, attempted to crack and measure several series of worked flint from different archaeological contexts, magnifying 6-10 times, and using a small micrometer scale in tenths of a centimeter. He found that some thick heavy cumbrous tools or spalls of reject material from Macon Plateau, as much as 5 cm. thick, had been completely modified throughout. The average measured degree of decomposition was over 1 cm. on Macon specimens taken from deeper levels. Flint materials from the most carefully studied sealed in contexts of the historic Trading Post site exhibited no modification, with only a few showing what Dean

Smith indicated as "trace". Some end scrapers from Trading Post site, almost exact copies of others that were attributed to the much Older Macon flint industry, had been made from the glass of brandy or gin bottles. The mere fact that some historic Creek artisans living around the Trading Post in 1700 circa saw and copied some of the ancient tools lying about in itself helps to show the pitfalls in appraising the flint industry on Macon Plateau—if these later Indians were led to emulate the older flint workers, why not others in intermediate positions chronologically, during Woodland or early Mississippian times?

Dean Smith's experiments with archaeological flint from Lamar type sites in Middle Georgia yielded varying results. Some showed only a few tenths of a centimeter of measured alteration or decomposition, others with a tendency to more, approximating the negative results of the Trading Post sample. It will be understood that all site samples were taken rigorously to obtain a random sample of 100 or more flints. Some median curves tended to show bimodality indicating a modal distribution in the series around high degree of decomposition and another barely above trace. Well-favored site locations of aboriginal occupation tend to show successive habitations, each group leaving a deposit or occupational vestige. In the severely eroded or denuded uplands of the piedmont, and much of the mid-coastal sections, all occupational debris is left high and dry on the raw red clay or sandstone, as if sluiced out by hydraulic mining operations. There can be no assured random sampling in such conditions. The residual collection shows a mixture of ceramic types, early to middle Woodland to a late Lamar or Old Ocmulgee Fields, but an element of extrapolation is involved in trying to separate out "archaic" dart points from materials that could be associated with Woodland or the pottery series of Stalling's Island complex.

The Wesleyan College studies brought out another difficulty. Swift Creek, for example, definitely older than Lamar site materials, showed a curve with most of Swift Creek flints showing no modification whatever. In the submound weathered profile hammocks beneath Mound A at Swift Creek did occur some "rotten flint" equivalent to that found on Macon Plateau a mile away. Swift Creek series from the surface village area exhibited little difference from a proto-historic flint association. Dean Leon Smith noted in his mineralogical identifications that the bulk of the flints from Swift Creek village represented metamorphosed flint varieties, not characteristic of the nodular flint

extracted from limestone matrix in many mid-coastal quarries. These metamorphosed flints and sedimentary metamorphosed specimens would come logically from the area beyond the piedmont. Many brightly coloured jaspers, blue to gray-black cherts and chalcedonys and onyx or sardonyx occurred. Dean Smith offered the hypothesis that metamorphised flint had been subjected to heat and pressure which radically altered the contained water of hydration. These specimens were harder and more unified mineralogically. The coastal materials tended to represent all sorts of occluded parent materials cemented in silica, but theoretically a weak combination that might be expected to break down more quickly under the semi-tropical impact of chemico-thermal natural elements. Quartz or quartzite in the Piedmont is observed to modify hardly any. The blue or black flint or chert from around Calhoun-Dalton, Georgia, in north Georgia, found in good Archaic context, but continuing in use into Woodland and Mississippian times, seems to be almost equally impregnable. On the other hand, the siltstone or aplite specimens, found in Stalling's Island prepottery, do alter appreciably.

It must be conceded that the situation at Macon Plateau was not too good for the extraction of archaic materials from good sealed-in stratigraphic contexts. It seems evident that the square mile area on the east Macon Ocmulgee bluffs was occupied almost continuously from Archaic times, throughout Woodland into Early Mississippian, down to the time of Creek Indian Removal. A hundred years of continuous plantation cultivation did not help matters, and the evidences of aboriginal agriculture under Mound D shows that the Indians themselves disturbed older contexts in the same way. There probably are contexts at Macon Plateau, however, which on careful statistical working might reveal information of a more specific or reliable nature.

A brief recapitulation of the situation at the Kinchafoonee site near Albany, Georgia, is now made. This site found in the road cut of Highway No. 19 approach to Kinchafoonee river by George Carter, A. R. Kelly, and V. P. Sokoloff en route to visit the Lane Springs Site in 1950, was surveyed on the east profile by Kelly who took out six strat squares to a depth of more than 3 feet, removing all materials in 8 inch levels, with a top 8-10 inch humus layer. Most of the material is scrap or reject material, typical work shop litter, with many blades and long flakes spalled out by showing little evidence of reworking along the cutting edges. Some real blades with well exhibited pressure flaking

along the edges did occur, and these were as decomposed as the other material. The blades in many instances would have been perfect for cutting or scraping without any additional working; they constitute what in other archaeological contexts have been called "use tools". Some few show indentations and a ragged tiny saw tooth indentation as if they had been "used". Many of the original cutting facets had been worn by attrition of the "rotten" flint. The strongest concentration of the workshop materials and putative tool types occurred at a depth of around 18-24 inches but enough of the rotten flint showed in the exposed profile of the road cut that three archaeologists who found the site were led to stop and investigate because the exposure attracted our attention while travelling 60 miles an hour down the highway.

The strat pits at Kinchafoonee yielded no specimens that could be classed as projectiles. Only large blades, scrapers, flakes, and a few choppers. Sokoloff and George Carter did find two typical Archaic big stemmed projectiles at a depth of 18 inches while scraping down the west road profile for soil samples. The surface of the ground, a large dairy pasture, has yielded many stemmed projectiles to local collectors and the farmer who owns the site. The first view of Sokoloff and Carter and the writer was to consider that the profile showed a midden decomposed level down to more than 2 feet. Sokoloff's chemical tests of trace metals, copper and zinc, showed a chemical condition here approximating that found in a "blank profile", a geological A and B profile without any signs of human interception found on the opposite bank of the Kinchafoonee. One may question whether a true "midden soil" is represented. But, in any case, all agreed that the soils had undergone partial eleutriation in place over the main workshop concentration, with a lot of flint scrap showing at intervals all the way to surface. Implicit is the assumption that the flint decomposition and soil eleutriation have gone on at the same time and are parallel age conditions. I sought to escape this impasse at Macon Plateau by playing with the notion of differential migration of worked flints and potsherds. This hypothesis has been greeted with derision, particularly by investigators who have seen the original profiles or others like them in mid-coastal Georgia. One is left with the fact here as at Macon Plateau that there seems to be a definite concentration of the weathered or "rotten flint" at lower depths in the sand, although at Macon more truncation had occurred than at Kinchafoonee.

Typologically the picture is obscured because more digging

is required to get an adequate sample of definitive tool specimens. The tentatively observed tendency for projectile classes, large stemmed "dart points", archaic types of end and side scrapers, to occur on surface or upper truncated soil levels needs to be confirmed at other sites and in good stratigraphic sequences in untruncated profiles. There have been other implications in southwest or south Georgia of a possible "big blade industry" without the presence of types found in so-called Paleo-Indian or Archaic contexts. The presence of rather primitive types of hand-axes or choppers points up the ambiguities. These are found on both typed Archaic sites and in other situations where there is a suggestion that a blade industry might be represented. We are largely dependent on private collections and these are not satisfactory because the collectors only pick up the "arrowheads" or dart points and are not interested, or do not recognize, the cruder tool categories. Also, they neglect pottery, and steatite fragments. A high school student, Tommy Beutel of Atlanta, Georgia, brought to the Laboratory of Archaeology, University of Georgia, a fine collection of ovate blades, beautifully chipped all over, which abound on a site on which he found no projectile or other easily recognizable scraper forms. Yet, even here, if the facts are proven on careful site examination to be as stated, some southeastern investigators would regard these "big blades" as simple blanks or convenient cored out pieces prepared at the original quarry site and in process of transport to favored workshop for further working into tool types which on completion would belong to more conventional archaic tool categories. I found several caches of such specimens at depths of 18 inches or more on the Macon Plateau at Macon, Georgia, one cache of 33 pieces, beautiful ovate blades of varying sizes, the largest as big as a man's hand. These had been cached or buried in the original subsoil. But caches of flint blades can occur in many archaeological horizons, from Archaic to Hopewell. And one cannot overlook the reasonable hypothesis or possibility of a prehistoric assembly line in production with graded series of quarry activity, preparation of blanks or convenient coring of parent flint, with later workshop activity on a different site. A. J. Waring, Jr. of Savannah, Georgia, reports such a situation on extensive quarry and workshop sites on upper terraces of the Savannah river (Brier Creek), below Augusta, Georgia.

Lane Springs, in northern Decatur county, Georgia, was studied in 1948 when a heavy rain storm, precipitation of some

15 inches in 24 hours, swelled the run-offs of many of the characteristic deep limestone springs, distended underground rivers, and generally played havoc with the normal drainage. A long sand ridge adjoining the run-off to Lane Springs was ripped away down to clay hardpan and in ponded waters, I was enabled to pick up large assemblages of flint tools that had been hydraulically mined from the sand. Again the profile is reminiscent of the truncated weathered profiles so typical of the wide coastal country of Georgia. The A horizon here in spots must have a depth of nearly four feet. Scattered flint scrap and some finished tools can be recovered from the weathered top zone to a depth of at least 3 feet, although no well defined level of greatest concentration has been located as at the Kinchafoonee site.

The assembled tools from this site exhibited a number of heavy unifacial fist-axes or chopper tools, with neatly cropped working ends but with incompletely worked butt-ends, in many cases a portion of the brown or creamy cortex of the original geological specimen was not removed. Also, many knives, scrapers, and projectiles of the usual Archaic site occurrence in south and southwest Georgia, were found in the storm pond at Lane Springs. The keeled scrapers were mostly heavy cumbrous types somewhat cruder and more primitive than the Macon Plateau specimens, although a few small neatly worked end scrapers occurred. A small bun shaped type of mano or rubbing stone was another peculiarity of the Lane Springs site. A school boy had recovered a slightly worn, concave, "mortar" stone. There was general absence of the lanceolate, "fish-tail" fluted or channel flaked projectiles, found at Macon Plateau, although one "un-flute" specimen was found. It may be worthy of a note that a very fine specimen of fluted Clovis-type "Folsom", with the usual "southeastern" regional modifications, was found near Vada, Georgia, in eastern Decatur county. This on a site which also yielded a slender keeled blade with distal secondary working on both ends to give a double tool character functionally, possibly an awl and an end scraper. Both specimens were heavily altered with a creamy cortex, reminiscent of Macon Plateau materials.

The heavy choppers, or chopper-choppers, at Lane Springs, have a distinct primitive, crude techniques in core tool preparation, rather different from anything found at Macon Plateau or the Ellenton site, South Carolina, by J. R. Caldwell. They have an early palaeolithic-like fist-axe appearance, which I have seen only in certain specimens found on the Brazos river, near Waco,

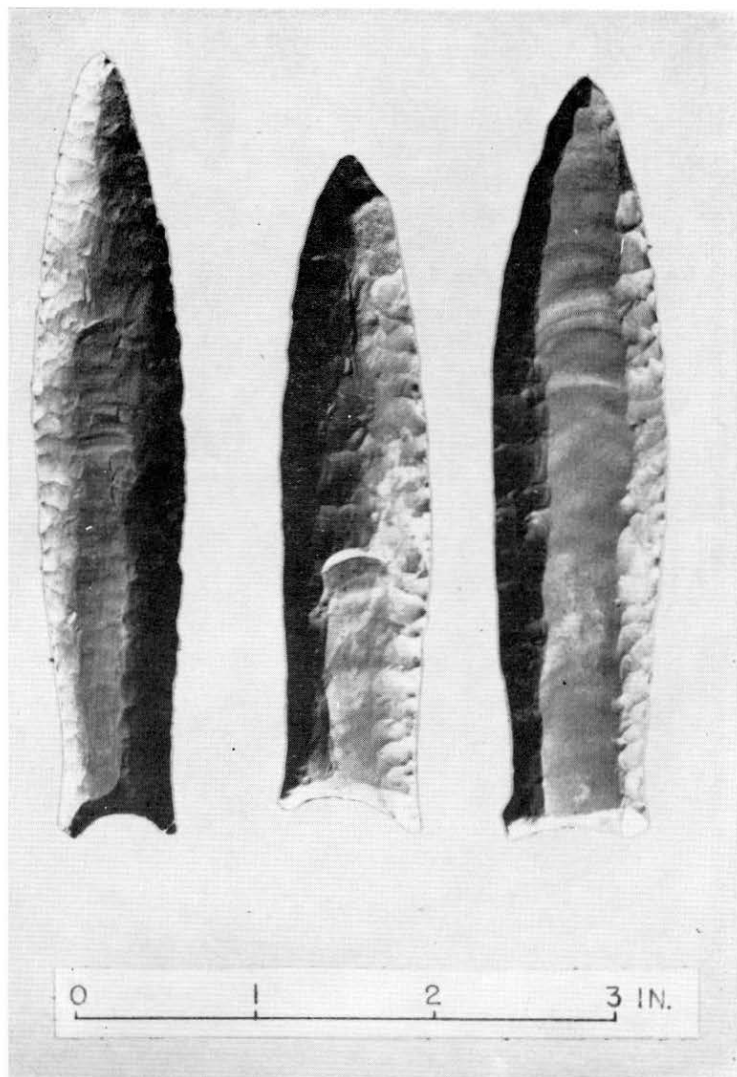
Texas, a quarter of a century ago and displayed at a Harvard seminar.

The large stemmed dart forms in nearly every instance showed only "trace" or incipient surface modification. This in contrast to the alteration of the choppers, crude scrapers, and cutting tools at Lane Springs. All specimens had been made from the same fossil flint, containing fossilized shell imbedded in the flint or chert matrix. One is confronted again with a site situation in which typical Archaic big stemmed dart points and complex scraper types occur in conjunction with a series of definitely cruder and more "primitive" tools which latter tend to show a much more advanced decomposition. Systematic excavation by levels might reveal stratigraphy. A few days of such activity by the Summer Field School in Archaeology in 1949 did not recover enough material to indicate anything. Natural hydraulic mining was much more prolific, but also more ambiguous in the outcome.

The quarry site at Lane Springs, a couple of hundred yards away, overlooking the deep limestone spring, consisted of several acres of outcropped fossil limestone. At intervals were areas of spalled limestone and flint, all the litter indicative of extensive quarry activity. The litter occurred in patches and extended down several feet in some places. The flint was heavily altered and similar to that found in the campsite described above. The only pottery found at Lane Springs consisted of a few sherds picked up in the humus level, one broken pottery vessel lodged in the root of a tree after the 1948 flood. All the pottery belonged either to a late check-stamped horizon, terminal at Fairchild's Landing stratified site on the lower Chattahoochee and elsewhere in the Jim Woodruff basin, except for the historic horizons containing Chattahoochee Brushed or Scratched ware with 18th century trade materials.

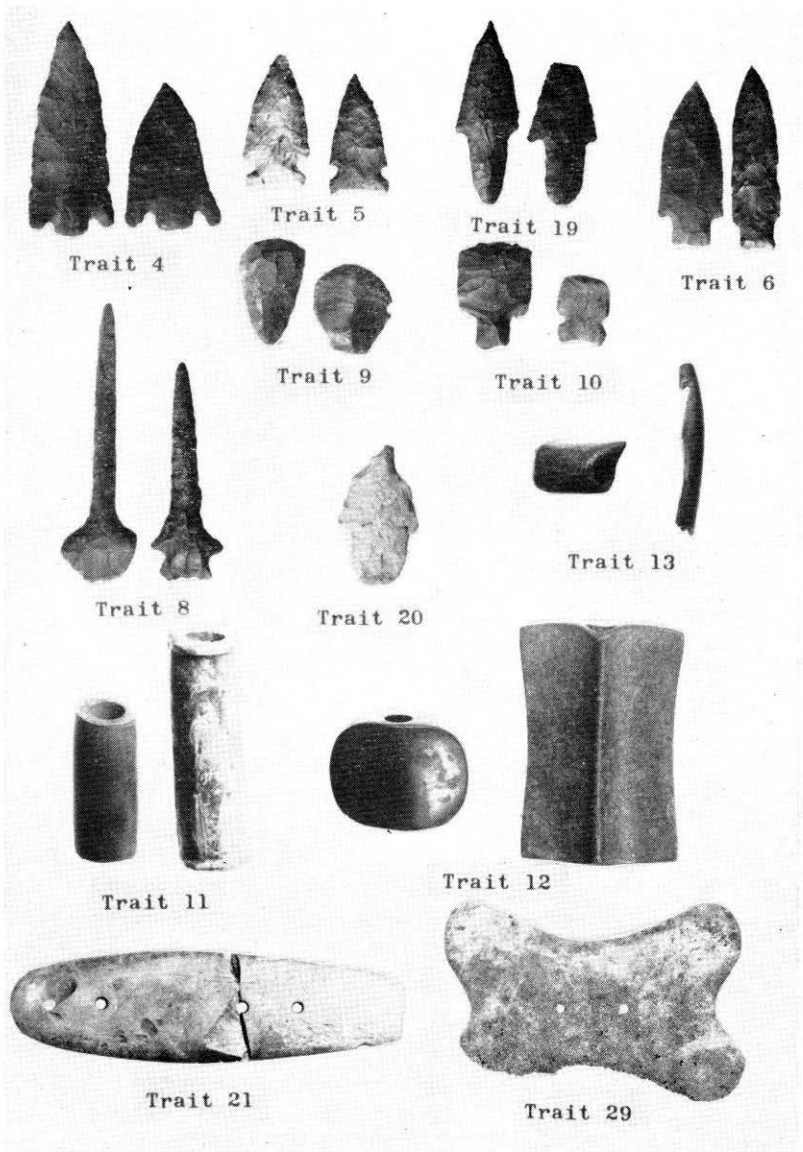
Brief mention is made of three excellent surface collections from private collections in widely scattered parts of Georgia. C. C. Gregory, Secretary of the Georgia Historical Commission, Atlanta, Georgia, has a fine collection of projectile points made over a long period of time on a farm in south Georgia, near Moultrie, Georgia. Undoubtedly other classes of tools could be picked up on this site, but the farmer was only interested in "arrow heads". He was not a wide-ranging collector, however, and does provide a good site collection for the limited class of materials. All the projectiles, typical large stemmed dart points, with many side

Plate I



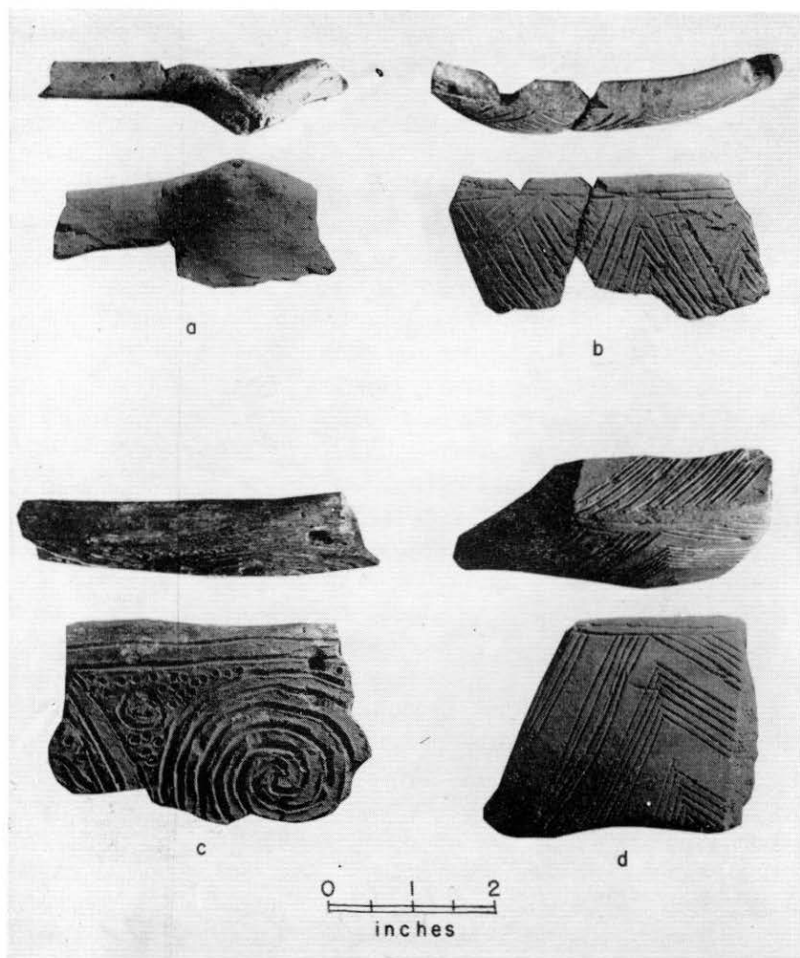
Fluted points of the Cumberland Type.

Plate II



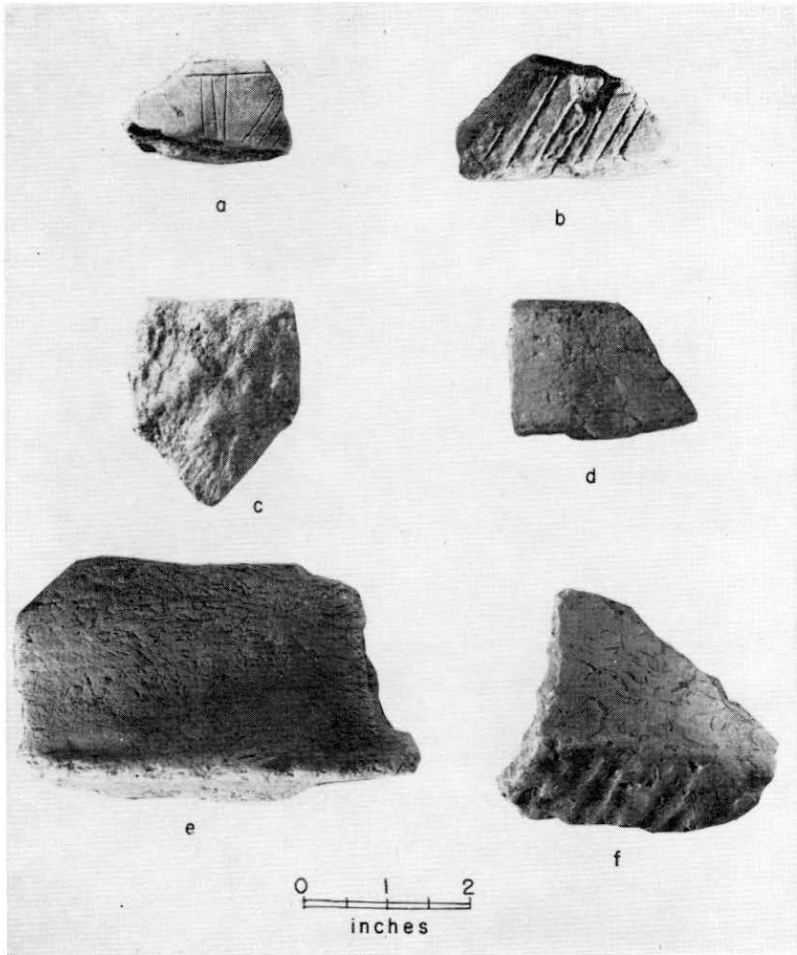
Traits characteristic of the Archaic tradition in the Lower Tennessee Valley.

Plate III



Fiber-tempered pottery, lips illustrated above rim sherds. a. Orange Plain; b. Orange Incised; c. Tick Island Incised; d. Orange Incised with wide incised lip. a-c. from Bluffton; d. from the Cotton site.

Plate IV



Miscellaneous sherds from fiber-tempered zone at Site J-5, near the Chattahoochee River. a-b. St. Johns Incised; c. Steatite; d-f. Orange Plain.

and corner notched beveled or "spinner" specimens, are heavily decomposed or altered. It will be interesting to check this site and see if it would yield the companion classes of end scrapers and fluted fishtail forms found at Macon, or if there is evidence of the big bladed forms.

J. O. Harrison, graduate student instructor in Biology at the University of Georgia, and a candidate for a Ph.D. in Biology, has a collection picked up over a fifteen year period on his father's farm on the Ohoopsee river below Wrightsville, Georgia, some forty miles below the "fall line." It is a purely personal collection and comes only from one upland field on the farm. Harrison has picked up everything and his collection exhibits scrapers, knives, projectiles. Only five pieces of quartz tools occur, the balance consists of the usual large stemmed projectile forms, with knives and scrapers in some instances assimilated to the Macon Plateau flint industry. There is the ubiquitous mixing of flints showing contrasting degrees of cortical alteration. The site on Harrison Farm is upland plateau with long continued cultivation and loss of top soil. No original context could be found here; the collection is residual to every occupation that might have occurred. But there has never been found a single piece of pottery.

John Whatley, long time collector of "relics", resident at Bowdon, Georgia, in western Georgia abutting the Alabama line above Columbus Falls, hence above the fall line on the Little Tallapoosa river, has a fine collection showing a mingling of materials typed on general Georgia site distribution to Archaic and early Woodland. One distinctive new note: the Whatley collection from the Little Tallapoosa indicates that flint congeries in most tools types shows a predominance of flint over quartz, contrary to the nearly uniform precedence of quartz over flint north of the fall-line to the East. Various northeastern Alabama collections show an equally strong occurrence of Archaic flint. This may indicate a western terminus of the Old Quartz found in the Georgia Piedmont.

The Harrison and Gregory collections offer hope that comparative analysis of good site collections can be made in many parts of the mid-coastal province due to the habit of individuals to keep family collections of materials gleaned from one farm. A survey of private collections might be a good opening wedge into the widespread territory of Georgia below the fall-line.

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A LATE ARCHAIC HORIZON ON THE ATLANTIC COASTAL PLAIN

William H. Sears

Discussions of the archaic horizon in eastern United States have tended toward description and treatment of it as monotonously uniform. A number of students however, including MacNeish¹ have pointed out that this position is invalid.

Given the limitations of a hunting-gathering economy in terms of kinds of artifacts potentially useful, limitations on time for manufacture, and limitations on preservation, there is a rather surprising amount of diversity. As examples of two extremes in the total cultural range, we might select the Stallings Island complex in the Southeast² and the Lamoka Focus in New York.³ In these extreme examples, one with an economy heavily dependant on shellfish, the other predominantly on hunting, every class of artifacts from projectile points to heavy cutting tools in one manifestation differs from the functionally equivalent class in the other. To phrase things somewhat differently, Stallings Island and Lamoka were as different hunting-gathering cultures as were Spiro and Etowah at the level of advanced agriculture.

However, this is not the place to document the differences between the various archaic manifestations. The matter is mentioned here only to indicate that it is possible to isolate a specific preceramic complex and to trace its distribution in space and time, a procedure accepted as matter of course even by the proponents of monotonous uniformity.

MacNeish has pointed to the existence of a major problem in the archaeology of eastern United States.⁴ That is, when pottery appeared through the area as an addition to the artifact inventory of Archaic cultures, it appeared in a number of quite different forms. In the Southeast, fiber-tempered pottery appeared in three quite different series, the Orange, Wheeler, and Stallings. To the North and East, the earliest pottery is grit-tempered, including both hard minerals and steatite, and may be fabric-marked, cord-marked, or plain. There is reason to believe that the appearance of these various early potteries is, in eastern

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1. *MacNeish*, 1948, p. 241
 2. *Clafin*, 1931; *Fairbanks*, 1942.
 3. *Ritchie*, 1944.
 4. *MacNeish*, 1948, p. 241.

United States, more or less contemporaneous, although the fiber-tempered types may be the result of stimulus diffusion from the Fabric-marked which has origins well back into Old World prehistory.⁵

This was quite a problem as posed by MacNeish. Why should a number of different kinds of pottery, significantly different in most respects, appear more or less at the same time, all of them without recognizable ancestors in the study area? A partial answer of course might be found in the cultural diversity already mentioned, the traditions of diverse cultures affecting the basic idea in various ways to produce a number of distinct variants. Thus soapstone vessel forms may have produced the flat bottomed "heeled" vessel form of many of the fabric-marked types, a frequently stated theory. Another type of container, perhaps of basketry, may have been translated into fired clay and the shallow open bowl which is the basic form in the Stallings Island series.

The major concern here is with a specific preceramic complex best known in its Stallings Island or Savannah River manifestations. This is not on the Atlantic Coast obviously but from this level on through much of its prehistory, the valley of the Savannah river seems to have been treated by the various cultures who lived in it like an extension of the South Atlantic Coastal Plain. Ceramic additions to the wide spread culture complex point up the problem noted above even more, since in this case we have, in different locations, several different kinds of pottery added to a basic complex which was otherwise uniform over an extremely wide area for a long period of time.

The Stallings Island complex is best known from the type site on the Savannah river just above Augusta, Georgia. Adequate descriptions and discussion of the artifacts have been provided by Claflin and Fairbanks. Recently Carl Miller described the Lake Springs site, closely related to the type site.⁶ A great many other sites of the culture are represented in collections at the University of Georgia. At both the Stallings Island and Lake Springs sites there was a pre-ceramic level which is our first concern. However, since it is reasonably clear that there were few, if any, changes in the stone artifact inventory after pottery was added, the discussion below is based on the total catalogue.

5. *Sears and Griffin, 1950*

6. *Miller, 1949.*

Bone and shell artifacts will not be recoverable in this discussion since they were not recoverable in some of the sites to which the Stallings complex will be compared.

The Stallings Island projectile points are distinctive both in style and in the raw materials selected for their manufacture. Stylistically, their most readily recognizable characteristic is the use of very broad stems. Side notched points, while present, are very rare in the complex. Blades are predominantly slightly excurvate in outline, leaf-shaped rather than triangular. Shoulders are distinct, and the base of the blade usually slopes down into the stem on both sides. Stems may be either parallel sided, or converge slightly toward the base of the point with bases which are either straight or concave, rarely convex. Bullen's term "corner removed"⁷ is probably an apt label for this point class. A decided majority of these large points from Stallings Island, Lake Springs, and other sites are made from non-flinty materials, ranging from the tougher igneous rocks through the shales and slates to sandstone. Occasionally quartzite, almost as difficult to work as the non-siliceous materials, was used.

The limited series of projectile point forms which characterizes the Stallings Island complex readily distinguishes it from other pre-ceramic complexes in the southeast, even without consideration of the unique assortment of raw materials. To mention only a few of the better known manifestations in the immediate area, the Lauderdale complex points are long and slender with stems which are usually wider at the base than they are at the juncture with the blade.⁸ Indian Knoll or Green River points are wider in comparison to their length and are predominantly side-notched and corner notched.⁹ Points in both complexes are made from flint.

Other chipped stone items in the Stallings Island assemblage are stemmed scrapers and drills, both expanded base and cruciform. Under ground stone we have two forms of special significance. The first is the three-quarter grooved ax, which seems to appear in eastern United States consistently association with the Stallings Island projectile point complex, only sporadically in other associations. The full grooved ax is also present but is common in other complexes, most notably the Green River.¹⁰

7. Bullen, 1949, pp. 12-13.

8. Webb and DeJarnette, 1942, p. 316.

9. Webb, 1946, p. 237.

10. Webb, 1946, p. 237.

The other important item is the "winged" atlatl weight or "bannerstone", a form which does have, however, a rather wide distribution in the Southeast and mid-west.

To this basic inventory, distinctive as a complex although specific elements are shared with other complexes, a distinctive style of fiber-tempered pottery was added sometime during the last millenium B.C. The two types in this ceramic complex, *Stallings Plain* and *Stallings Punctate*, have been described several times.¹¹ The important point here, documented at Stallings Island and at the Lake Springs site, is that these shallow bowls, plain or decorated through a number of punctating techniques, were added to the artifact inventory of the Stallings Island complex without other changes becoming apparent. At the Bilbo site on the coast, considered to be generally representative of developments in the cultural tradition, plain ware appears before that decorated with punctation.¹²

Moving northeast up the Atlantic coast, we find the same lithic complex strongly represented in the Maryland-Virginia tidewater region. The Marcy Creek site described by Manson¹³ yielded a projectile point series in shapes nearly identical to those from the Stallings Island and other Savannah River sites. Not only are shapes represented nearly identical, materials are also very similar, with Quartzite the commonest material at Marcy Creek, seventy percent of the total, with seventeen percent rhyolite and the remainder quartz. Only one crude ax, fully grooved, was found, and a fragment of a winged bannerstone. This site, too, added pottery part way through its life span, with the only obvious change in the lithic complex being, a reduction in the size of the projectile points. Point shapes and materials remained constant.

The pottery however is very different from that introduced in the Savannah river valley and adjacent coast. Two types were found by Manson.¹⁴ The majority ware, sixty percent of the pottery found, is *Marcy Creek Plain*. Manson points out that the oval flat bottomed vessels with heavy lugs are probably direct copies, with the addition of fabric-marked bases, of somewhat earlier steatite vessel forms. The thick ware is heavily tempered with crushed steatite, which may also reflect the relationship to the

11. Griffin, 1943, pp. 155-168; Sears and Griffin, 1950

12. Waring, A. J., r., Person Communication.

13. Manson, 1948.

14. Manson, 1948, pp. 225-226.

earlier steatite vessels.¹⁵ The minority type, *Marcy Creek Cord Marked*, is grit-tempered and is apparently the local variant of the widespread Woodland cordmarked wares.

The complex is also represented in the quarries around Washington D. C. Holmes, in his 1894 report illustrates large numbers of projectile points in this shape series and made from non-flinty materials.¹⁶ Three-quarter grooved axes also seem to be relatively common,¹⁷ which helps to fill out the rather scanty picture provided by the Marcy Creek site. Also present are numbers of bannerstones and steatite vessels of the form presumably ancestral to *Marcy Creek Plain*.

The Selden Island site in this same area¹⁸ is closely related, and seems to present the same general picture.

The basic point, ax, and bannerstone complex is well represented in New Jersey, as reported by Cross¹⁹ The Trenton Argillite complex as originally defined²⁰ and as represented in its preceramic or early ceramic levels at Koens-Crispin, Red Valley, Salisbury, Goose Island, and at other sites to a lesser extent, is the complex involved. Projectile points follow the Stallings Island series of shapes rather faithfully although there is a tendency, apparently stronger at some sites than at others, to reduce the base of the stem to a rounded point, producing a near lozenge shaped point. Points are made of argillite predominantly, with sandstone next in importance. Flinty materials are hardly mentioned in the descriptions. Grooved axes are of some importance, including the three-quarter grooved variant, and winged bannerstones are quite common. Celts and gouges are New Jersey additions to the basic complex.

The general trend of the evidence indicates that the cord-marked grit-tempered pottery, and the plain steatite-tempered ware, complete with fabric or "mat" impressed bases, heeled bases, and lugs enters here as at Marcy Creek.

A single preceramic culture complex, with only minor variations seems then characteristic of the Atlantic Coast from Georgia and the Valley of the Savannah River to New Jersey at a time just prior to the introduction of pottery. The most distinctive arti-

15. *Hawkes and Linton*, 1916, p. 77.

16. *Holmes*, 1894. Pl. XLIII, XLV, XLVI.

17. *Holmes*, 1894. Pl. LXVII, LIX.

18. *Slattery*, 1946.

19. *Cross*, 1941.

20. *Hawkes and Linton*, 1916.

fact of the complex is the projectile point occurring in a limited series of forms generally classifiable as "corner-removed" and more often than not made from stone other than flint. Non-flinty stones seem to be always present if not predominant. This selection of unusual raw materials is as definite a culture trait as the point forms, particularly over this wide area where many sorts of flint, better adapted for projectile point manufacture from a functional point of view, are available and were used by earlier and later groups.

The three-quarter grooved ax appears consistently, in Eastern United States, in association with this projectile point series. Bannerstones of the winged variety are also a part of the pattern. Although common in other manifestations, they are of some importance here when viewed as part of a pattern, an importance they might lose in a straight one-to-one trait list approach.

The total culture complex composed of the point series, three quarter grooved axes, and bannerstones is definitely important in at least three regions, the Savannah river valley, the area around Washington, D. C., and New Jersey. There seems little reason to doubt that it is equally characteristic of the intervening areas, thus making it an important Atlantic coast manifestation.

I should perhaps emphasize the point that although repetition of this basic complex indicates close cultural relationships of units through this area, the various units are not identical in all respects even at the fully pre-ceramic level. Each seems to have some emphases and specializations, some of which may be local inventions, others of which appear to have been borrowed from various cultures whose centers are inland. We might mention the engraved bone pins of the Savannah river area, shared with the Green River or Indian Knoll focus; the doughnut shaped steatite "net-sinkers" only known in the Savannah drainage; the gouges of the New Jersey sites, presumably indicative of contact with the inland Laurentian culture. The point is one of minor regional variation, produced by both local conditions and different contacts, on a common theme.

A more important point for the student of cultural dynamics is the divergent development initiated at the introduction of pottery. At the southern end of the range of this complex, the first pottery is the fiber-tempered ware. It is generally felt that this ware is the first step in a development which goes through into the Deptford complex of check and simple stamped types, and then into the complicated stamped ware, beginning with *Early*

Swift Creek Complicated Stamp. This in turn develops through a number of steady changes over a long time period into pottery which is, in several types, the ceramic diagnostic of historic Muskogean speaking and Cherokee groups. At the northern end of the area, Washington, D. C., to New Jersey, steatite-tempered and grit-tempered cord and fabric-marked pottery becomes a part of a closely related culture complex, probably about simultaneously with the appearance of the southern fiber-tempered types. These types follow a line of development in the Woodland tradition, a line entirely different from that taken by the Stallings Island material in its development into complicated stamped pottery. The ceramic development to the north seems to culminate in the cord and net-marked ceramics associated with Algonkin speaking groups in historic times, with quite possibly a few Siouan²¹ and Iroquoian speaking peoples joining the party.

This picture of a single cultural complex dividing into two main streams is not a particularly new one, although it does seem somewhat sharper in this case than in others. This may be taken to indicate that most of our later cultures at least, and no doubt the earlier ones too, are the products of a number of cultural streams which possessed their own individuality before merging. The early culture represented by the Stallings Island projectile point-ax-bannerstone complex seems to indicate a much higher degree of cultural unity for the Atlantic Coastal Plain in very early times than was true later. The later developments and greater diversity then, in all probability, are produced by differing contacts, influence, and movement.

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21. Coe, 1952.

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THE OLD QUARTZ INDUSTRY OF PIEDMONT GEORGIA AND SOUTH CAROLINA

Joseph R. Caldwell

The stratigraphic position of a distinctive, relatively early, chipped stone assemblage—the Old Quartz Industry—was determined in 1951 at the Lake Springs site in Clark Hill Reservoir on upper Savannah River. At the base of the site, well below a Stallings Island type shell midden containing both ceramic and pre-ceramic phases, was a sterile zone of from 3 to 4 feet of pure river sand. Below the sand deposit at a surface depth ranging from 5.9 to 6.4 feet was a visible midden stripe containing numerous broken pebbles, quartz chips, and a relatively homogeneous group of 34 quartz artifacts. There was, in addition, one specimen made of aplite and one of white flint. The shapes of these tools showed little in common with the Archaic varieties of chipped stone from the shell heap above (see fig. 1).

The Old Quartz assemblage at Lake Springs, though contrasting strongly with the shell heap stonework, does appear to be sufficiently similar to presumed "pure site" surface collections from at least 50 stations already known in northeastern Piedmont Georgia and western South Carolina to suggest that all such sites are somehow related. The usual surface collections comprise a handful or more of quartz artifacts, chips, and infrequent specimens of marine flint. Most frequent artifact types are ovate blades, not core tools, but often small, well made, and finished with secondary chipping. Diminutive oppositely beveled, so called "spinner points", together with side and end scrapers form consistent minorities. At a significant number of sites stemmed points are rare, and this was particularly true of the lower levels at Lake Springs.

Sites in the upper Savannah River portion of the Old Quartz Range occasionally show a few heavy square stemmed Stallings Island or Archaic varieties of projectile points, usually of aplite, but whether these are even partly contemporary with the Old Quartz varieties is at present uncertain. Sites in the upper Chatahoochee and Oconee valleys often yield small stemmed points which may indicate a temporal or geographical phase of the Industry.

At the present time the Old Quartz Industry seems to be localized to a portion of the southeastern Appalachian Piedmont, but the boundaries are not fully determined. Sites may well

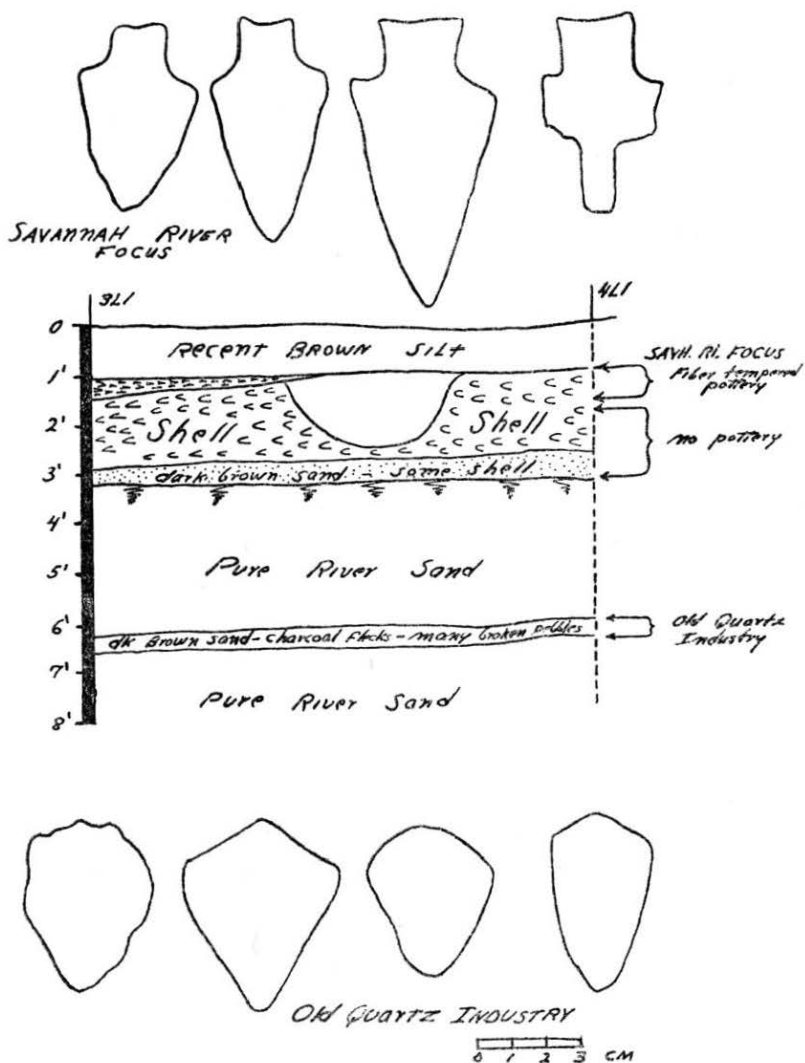


Fig. 1 Vertical section of the Lake Springs Site, Columbia County, Georgia. Also shown are implements typical of the Savannah River Focus and the Old Quartz Industry.

appear in eastern Tennessee or southwestern North Carolina. In point of time this manifestation evidently occupied part of the rapidly dwindling hiatus between the Eastern Archaic and the presumptively Paleo-Indian remains in this area.

River Basin Survey

Smithsonian Institution

Washington, D. C.

THE DURATION OF THE ARCHAIC TRADITION IN THE LOWER TENNESSEE VALLEY

Madeline Kneberg

The Archaic tradition in western Tennessee has impressed us as having had a long duration, but we have found considerable difficulty in verifying this more or less subjective impression, and still more difficulty in convincing any other archaeologists that there might be some factual basis for it. The following is another attempt to discover some objective factors to make the theory of this long duration more plausible.

A study and comparison of the nature of the deposits on ten Archaic sites has suggested that there were climatic, topographical and ecological variations during the time period covered by this culture. Such variations appear to correlate with certain differences in culture traits so that three chronological phases of the Archaic tradition can be recognized; the earliest of these is the one partly described by us in 1947 as the *Eva Focus*.

At the *Eva* site itself, the first occupation was on an old natural levee formed by the Tennessee River during an aggrading phase. This old levee lay about a mile west of the present river bed, and had been the river bank at the time the *Eva* people settled there. Test pits dug eleven feet down into the subsoil showed flood plain soil and quartz sand throughout the entire depth. The cultural deposit, about six feet thick, lay on the top of this levee which appeared as the highest elevation in a series of swells and swales between the recent river bed and an ancient river terrace (locally called the "second bottom.") The levee was probably formed sometime during the late Wisconsin glaciation or at the end of period. The river was apparently carrying a heavy load, and the aggradation of the levee took place by the settling of the load in shallow water forming a ridge along the bank. Since rivers aggrade during times when hills and slopes are bare, or sparsely covered with vegetation, the time of the levee formation was probably during a cold period with considerable solifluction.

When the site was first occupied, the climatic conditions were probably somewhat warmer than the present. The river was no longer choked with an excessive load, and was temporarily stabilized in its bed with the levee forming the bank. Mussels were abundant and the people used great quantities of them.

The time period was probably during the Altithermal—from about 3500 B.C. to 2000 B.C. (This dating is based upon the hypothesis that the first Archaic in Tennessee is approximately coeval with that of Kentucky for which Carbon 14 dates have been determined.)

The habitation was interrupted by a flood that left a thick layer of sandy alluvium blanketing the site. This varied from three to ten inches thick at the time the site was excavated. Considering the fact that the site was on an elevated levee, the flood must have been quite extensive in the valley. However, it did not affect the course of the river, since the site was reoccupied and the mussels were still available. The following period of occupation resulted in the accumulation of some three feet of mussel shell debris. The period of the flood might be interpreted as the onset of cooler, moister weather sometime around 2000 B.C., and the subsequent occupation represented a period of temperate climate somewhat like the present. This seems to equate with the early part of the Medithermal period from about 2000 B.C. to 1000 B.C.

The next and final period of Eva occupation witnessed a climatic and/or ecological change that resulted in the elimination of the mussels as a dietary staple. The subsequent cultural deposit was a heavy black humus and clay with no mussel shell contained in it. Two factors might have been responsible, either a rise in the river which made the mussels inaccessible or a shifting of the river bed eastward. I am inclined to favor the interpretation of a rise in the river with extensive flooding of the bottom lands, since the same conditions are suggested by the evidence from other sites. Such conditions would have been likely between 850 B.C. and 350 A.D. with the onslaught of cold, stormy weather during the Sub-Atlantic or Peat-Bog period.

The site was abandoned either during or at the end of this period, probably because the Tennessee River shifted about a mile eastward to its present bed. That shift is likely to have happened during the warm, dry period of the Second Climatic Optimum between 350 A.D. and 1000 A.D.

The foregoing interpretation of the Eva site postulates an extraordinarily long occupation of a single habitation spot—more than three thousand years.

No other site shows evidence of such long habitation, through nine others can be fitted into a series which spans the entire

habitation of the Eva site, and extends the duration of the Archaic tradition up to about 1000 A.D. or later. Culturally, the Archaic tradition can be divided into three cultural phases which correlate with three climatic cycles.

The earliest, or Eva phase, corresponds to the Altithermal or warm, dry climatic period from about 3500 B.C. to perhaps 1000 B.C. Mussels were abundant and formed the dietary staple. The middle, or Big Sandy phase, corresponds to the portion of the Medithermal period from about 1000 B.C. to 300 A.D. when the climate was colder and precipitation heavy. No mussels were used, probably because they were scarce. The latest or Ledbetter phase began with the so-called Second Climatic Optimum about 400 A.D. and lasted up to the final disappearance of the Archaic tradition. In this last phase, mussels again became abundant enough to serve as the staple article of diet. The Eva phase is represented by the lower strata on the Eva site and the Big Sandy site. The Big Sandy Phase is represented by the top strata at the Eva and Big Sandy sites, by the Frazier, Cherry, McDaniel and Thomas sites, and the lowest strata of the Ledbetter and Kays Landing sites. The Ledbetter phase is represented by the upper strata at the Ledbetter and Kays Landing sites, and the West Cuba Landing and Oak View Landing sites.

The following is a rather incomplete list of the culture traits which characterize the three phases. However, the differences in types and the frequencies seem to justify the hypothesis that the Archaic tradition in the lower Tennessee Valley can be divided into three phases which reflect environmental adaptations and contacts with other cultural traditions. Certain traits of the Ledbetter phase suggest contact with the Hopewellian tradition, while traits of the Big Sandy phase indicate contact with early Woodland tradition (see Plate II).

(In preparing this paper for the News Letter I have incorporated the concept of cultural "tradition" as suggested by Philip Phillips during the discussion which followed my paper at Chapel Hill. I also wish to acknowledge my use of the term "phase" for which I am indebted to the article by Phillips and Willey in the current issue of the *American Anthropologist*.)

Eva	Big Sandy	Ledbetter
1. Mussels as dietary staple	No use of mussels	Mussels as dietary staple
2. Fully flexed burials	Same	Fully flexed, partly flexed and seated burials Cremation in situ
3. Dog burials, frequent	Same	Rare
4. Eva basal-notched projectile points, numerous	Decrease in frequency	Absent or very rare
5. Big Sandy side-notched projectile points, rare	Frequent	Absent
6. Diagonal - notched (slightly flared stem) projectile points, rare	Minor type	Minor type
7. Corner - notched projectile points, numerous	Major type	Major type
8. Long drills, numerous	Same	Same
9. Flake end scrapers, numerous	Rare	Rare
10. Stemmed end scrapers, rare	Numerous	Numerous
11. Stone atlatl weights (cylindrical), major type	Present	Absent
12. Stone atlatl weights (flat), rare	More frequent	Rare or absent
13. Antler atlatl hooks, spur type	Same	Absent or crochet hook type, rare
14. Antler projectile points, frequent	Rare	Rare
15. Antler scrapers	Rare	Rare or absent
16. Antler shaft wrenches	Rare	Rare or absent
17. Flat bone needles	Rare	Absent
18. Red and/or yellow ochre, frequent	Same	Same

Eva	Big Sandy	Ledbetter
19.	Adena ("beaver tail" type) projectile points, minor type	Increase in frequency
20.	Drills with beaver tail stem, present	Present
21.	Flat, two-hole stone gorgets, rare	Same
22.	Conoidal pestles, frequent	Rare
23.	Tubular stone pipes, rare	Absent
24.	Copper objects present	Same
25.	Shell ornaments present	Same
26.	Baumer Fabric Marked pottery present	Frequent
		27. Clay ironstone blades (possibly hoes).
		28. Copena points, rare
		29. Reel shaped stone gorgets, rare
		30. Cut animal jaws, rare
		31. Fiber-tempered pottery, rare
		32. Long Branch Fabric Marked pottery, frequent
		33. Alexander type pottery, present
		34. Mulberry Creek Cord-marked, frequent
		35. Shell tempered, rare

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CULTURE CHANGES DURING THE FIBER-TEMPERED PERIOD IN FLORIDA

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Several fiber-tempered sites in Florida have been tested by various workers. Of these only two, the Palmer-Taylor Mound and South Indian Fields, appear as reports in the literature. Work at other sites, such as Cotton, Bluffton, Jones Creek, and Zone 9 at Site J-5 beside the Chattahoochee River, gives us much needed comparative data. The last will be referred to here as the Chattahoochee site.

Comparisons between these sites give us ideas regarding changes in material culture during fiber-tempered times in Florida. These ideas I am presenting as working hypotheses. Some of them have previously been included by John W. Griffin in his "Prehistoric Florida: A Review" in James B. Griffin's *Archaeology of Eastern United States*.

While Waring has given us information of a plain, fiber-tempered period for coastal Georgia, the first documentation for such a period in Florida was uncovered by a 50 by 20 foot test at Bluffton on the St. Johns River by a joint Florida Park Service-Florida Geological Survey expedition in the fall of 1951. At Bluffton, fiber-tempered pottery was found in the upper 4 to 6 feet of a 16 foot midden. Five vertical layers or zones, of varying thickness, were delineated in the midden. Plain fiber-tempered pottery first appeared in the upper part of layer 3. These sherds had fairly thin walls with well compacted, nearly burnished, surfaces. Vessels had flat bottoms, squarish and circular shapes, and were sometimes supplied with small lugs or pitted ears on two sides (Pl. III, a).

In 2 to 3 feet higher zones, this same plain ware was found plus Orange Incised and Tick Island Incised (Pl. III, b-c). This incised pottery, while medium thick in cross-section, did not have the extremely thick walls and flat, decorated rims as has been found at other sites. It should also be noted that steatite sherds were not found in this test.

As the plain fiber-tempered pottery appeared at Bluffton in the upper part of layer 3 without any stratigraphic break or suggestion of an hiatus, it is believed this zone represents the first pottery period of Florida and that it was followed by one during which the pottery was decorated by incision but did not have the thick walls and flat decorated lips frequently thought of as

typical of Orange Incised. The highest zone at Bluffton was considerably disturbed by the construction of a house, hence we must look elsewhere for data relative to more recent fiber-tempered times.

Three sites seem to be typical of the next or more recent "half" of the decorated fiber-tempered period of Florida, and may be considered together. These are South Indian Fields, ably reported and discussed by Masius and Rouse, and the Cotton and Jones Creek site.

The Cotton site in Volusia County was excavated by John W. Griffin for the Florida Park Service and I am indebted to him for permission to use his unpublished data. The site at Jones Creek near Jacksonville was excavated by Dr. John M. Goggin of the University of Florida and I am indebted to him also for permission to refer to his unpublished data. Dr. Goggin has data on other stratigraphic tests involving fiber-tempered pottery but, as most of them pertain to the transition to post fiber-tempered times, they will not be referred to here.

At all three of these sites there was little if any indication of a plain fiber-tempered period. Except for Tick Island Incised at Jones Creek, decorated pottery from the lower or fiber-tempered zones was Orange Incised. In contrast to Bluffton, this pottery tended to have thick walls and wide, flattened, decorated lips (Pl. III, d). Higher zones at these sites produced pottery of post-fiber-tempered times.

At South Indian Fields there was a strong suggestion of an intermediate transitional period between the Orange and the following St. Johns periods. Evidence of a transitional period was also found at Jones Creek. As these sites had no suggestion of an early plain period, they did have indications of a terminal phase and contained slightly different pottery from the decorated fiber-tempered zones at Bluffton, I believe they may be considered as later in time than the fiber-tempered zones tested at Bluffton.

These three sites had one other characteristic in common. At all of them, steatite sherds were limited to higher elevations. At South Indian Fields and at the Cotton site, steatite sherds were limited to the upper half of the fiber-tempered deposits. At Jones Creek, a steatite sherd was found in the 12-18 inch level while Orange Incised was found as deep as 42-48 inches. Thus the appearance of steatite vessels in Florida seems to have occurred quite late in fiber-tempered times.

One more site needs to be mentioned, the one at Chatta-

hoochee. This was a closed site with substantial sterile deposits both above and below. Here was found a relatively large number of steatite sherds associated with fiber-tempered pottery. While undecorated, some of the excavated sample was thick like some of the pottery from South Indian Fields and the Cotton site. Further and conclusive indication of the relative lateness of the Chattahoochee site was the presence of several chalky sherds including two of St. Johns Incised (Pl. IV, a-b).

Summarizing, it would appear the fiber-tempered period of Florida might be subdivided into four or five sub-periods. The earliest would be an undecorated period with pottery like that from the lower fiber-tempered zone at Bluffton. The next would be similar except for the introduction of Orange and Tick Island Incised without, however, the wide, decorated lips.

At present Tick Island Incised seems to be very limited in geographical distribution. At Jones Creek, Goggin's data suggests Orange Incised to have originated first as it was found in three 6-inch levels below and the lowest Tick Island Incised. At Bluffton, nearer the type site of Tick Island itself, we did not secure any definite evidence for the priority of Orange Incised.

If the earlier sub-periods were called Orange 1 and Orange 2, Orange 3 would be similar to Orange 2 except for the presence of thicker bodies and wide, flat, decorated lips. Orange 4 would then be the same as Orange 3 except for the introduction of steatite vessel sherds. Logically, Orange 5 could then be used to designate a very late period, such as the one found at Chattahoochee, when St. Johns Incised or other non-fiber-tempered sherds were found in a predominantly fiber-tempered context.

Two interesting points, other than subdivisions of the Orange period are brought up by this discussion.

The presence of St. Johns Incised at Chattahoochee in a closed fiber-tempered site is noteworthy. The nearest St. Johns Incised of which we have knowledge today came from the Cedar Keys area. It is hard to believe this pottery type originated other than in the St. Johns River region.

The Chattahoochee find implies that people were living in the lower Chattahoochee River valley, making fiber-tempered pottery and using steatite vessels, after chalky ceramics had been developed in the St. Johns River valley. How long it took for this influence to travel from one area to the other is unknown. Certainly, the late fiber-tempered period was not one of com-

pletely isolated local communities. It is also worthy of note that influences from the St. Johns River area reached the Forks before Deptford influences from Georgia appeared.

The other question is much broader. There is abundant evidence in the northern piedmont for the priority of steatite over clay vessels. In the south the general similarity in the shape of fiber-tempered vessels and those made of steatite has been noted. I am not conversant with current views but believe there is a school of thought which feels the first makers of fiber-tempered vessels secured their inspiration for vessel shape from existing steatite containers.

The Florida evidence, if I interpret it correctly, would not seem to support this theory.

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