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AN ANALYSIS OF TWO EARLY WOODLAND HOUSEHOLDS FROM THE CANE ISLAND SITE, 9Pm209

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Athens

AN ANALYSIS OF TWO EARLY WOODLAND HOUSEHOLDS FROM THE CANE ISLAND SITE, 9Pm209

by

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WALLACE RESERVOIR PROJECT CONTRIBUTION NUMBER 4

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PREFACE

This report was originally written as a thesis in anthropology and submitted to the Graduate Faculty of the University of Georgia in partial fulfillment of the requirements for the degree of Masters of Arts. It is herein reproduced with only minor editorial changes as Contribution Number 4 of the University of Georgia Wallace Reservoir Archaeological Project. It represents the final report on the Cane Island site (9Pm209), the excavation of which was provided for in Appendix 3 of the Archaeological Salvage Agreement between the University of Georgia and the Georgia Power Company.

David J. Hally
Principal Investigator

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Special thanks is due to Gisela Weis who drafted the numerous illustrations in this thesis. Ann Worley is to be acknowledged for the typing of the drafts and for her patience.

My deepest appreciation goes to my parents who encouraged me to pursue my education. Their moral and financial support during the early days of my graduate training allowed me to stick it out.

Finally, without the love and encouragement of my wife, Kay, I would have given up long ago. She deserves more credit than I can possibly acknowledge in words.

Any shortcomings or faults in this thesis are the sole responsibility of the author and should not reflect unfavorably on those individuals who have contributed to it.

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I. INTRODUCTION

This thesis will examine the Woodland period occupation of the Cane Island site, (9Pm209), a stratified, multi-component site located on the Oconee River in Putnam County, Georgia. Two areas of the site (Provenience 3 and 6) produced evidence of intensive occupation during the latter part of the Early Woodland period. Each of these areas yielded structural features and artifactual material. The identification and interpretation of activities represented by these archaeological remains will be the major concern of this thesis. The argument is made that the household is the basic social and economic unit of aboriginal society in the eastern United States during the Woodland period and specifically of the Woodland occupation of the Cane Island site. The analysis and interpretation of the features and artifacts encountered in each provenience unit are premised on the assumption that they represent the material remains of the households.

The Cane Island site is located in the lower Piedmont of Central Georgia at Long Shoals on the Oconee River. The area under study is scheduled to be inundated by Georgia Power Company's Lake Oconee in early 1979. The University of Georgia's Wallace Reservoir Archaeological Project is a multi-disciplinary, regional study of institutionalized human behavior in a riverine environment. Since the Oconee River Valley has been virtually unknown archaeologically, a major goal of the project is the construction of a phase sequence necessary for a basic

understanding of the Valley's culture history. The major and overriding goal of the project, however, has been an examination of the various economic and social institutions that operated here in the past. Institutions are defined as "discernible configurations of social organization which pattern life within human groups and their relationship to the environment" (Hally and Fish 1976:498).

Village life in the southeastern United States probably had its beginnings in the Early Woodland period. By this time, aboriginal populations had successfully adapted to the forest environment through a diversified economy of hunting, gathering, fishing and incipient agriculture (Caldwell 1958; Ford 1974). The cultural and technological innovations that developed during the preceding Archaic period culminate at this time in a high degree of subsistence reliability. The seasonal availability of the flora and fauna in most localities allowed populations to efficiently harvest wild foods throughout most of the year and this in turn allowed a more sedentary life to develop.

Archaeological evidence of Early Woodland villages in the southeastern United States is quite limited. In the Chattahoochee River Valley near Atlanta, Georgia the site 9Ful4 yielded evidence of a relatively large Woodland village. A. R. Kelly (1973:33) reports finding thirty circular and oval houses dating to the third century of the Christian era. In Middle Tennessee's Normandy Reservoir, the Banks III site (40Cf108) produced three Middle Woodland period structures arranged in a semi-circle around what appears to be a plaza (Faulkner and McCollough 1974:280). These two sites suggest that by A. D. 1 in the southeastern United States village life is present. Other Woodland sites in the southeastern United States have yielded large and

diversified artifact inventories suggesting long term occupation (Caldwell n.d.:127; Milanich 1975; Wauchope 1966:450; Lewis and Kneberg 1957; Chapman 1973). These sites, however, have not yielded evidence of numerous houses suggestive of villages or hamlets.

It is generally believed (Sahlins 1968:75; Gough 1971:765) that the household is the elemental unit of village life and as such is the primary unit of economic cooperation and social interaction. Observations of modern horticulturalists, hunters, and gatherers indicate that households invariably engage in at least four basic activities: (1) food getting and preparation, (2) child rearing, (3) maintenance, and (4) protection of the household.

Marshall Sahlins has suggested that "in tribal societies the 'mode of production' . . . should be styled 'domestic' or 'familial' in light of the strategic position assumed by the individual households" (1968: 75). He says that as production is a domestic function, the family is directly engaged in the economic process and is largely in control of it. This is not to say that the household is self-sufficient. Many activities demand cooperation among members of different households for their success.

The concept of the household is useful for archaeologists who wish to examine village life in the past since it can be used to organize those archaeological remains thought to have originated from domestic activities. Marcus Winter, working in the Valley of Oaxaca, Mexico defines the "household cluster" as those archaeological remains consisting of houses, storage pits, ovens, graves and midden deposits belonging to an individual household (1976:25). This concept has been found to be useful "because it provides a context in which pits, burials, house remains

and other features can be understood not simply as isolated cultural features, but as manifestations of a specific segment of society" (Ibid). A smaller component of the household cluster is the activity area. Activity areas are those loci where a "specific task or set of related tasks has been carried on, and they are generally characterized as a scatter of tools, waste products, and/or raw materials . . ." (Flannery and Winter 1976:34).

The analysis of prehistoric households may be attempted on two levels. First the household may be viewed as the primary economic and social unit of a village and as such its internal dimensions and structure may be examined. On a larger level, the household is one of many cooperating units that comprise a village, and relationships between households within a village may be examined.

It is assumed that the archaeological remains of households often reflect a range of activities that were undertaken by its inhabitants. The kinds of activities reflected in the archaeological remains of households are helpful in understanding the social relationships and spatial arrangements existing among household members and their activities. Male versus female activity areas may be discerned as well as areas common to all members of the household. By determining what kinds of activities were involved within the area of the household we may infer the functional nature of each household. The floor area of houses is useful in estimating the number of individuals comprising the household.

On a higher level of analysis households within a village may be compared to one another. Differences in the artifacts recovered from individual households may shed light on functional differences among

village households. Certain "status" items may be present only at certain households suggesting a ranked society. Also, craft specialization in the village may be suggested by the analysis of households. Certain individuals may have been highly skilled in certain craft activities and could have furnished less skilled individuals of other households with their products in exchange for other commodities. The plan of a village can lead to inferences concerning the spatial and perhaps social organization of the village. Such plans may reveal divisions within the village such as those suggested by Flannery (1976:72-75) and Whalen (1976:75-79) from Early Formative sites in Oaxaca, Mexico.

The analysis of two households from the Woodland occupation at Cane Island will be limited in scope. The excavated area of each household unit is small and does not include all of the area used by the inhabitants; therefore many activity areas are undiscovered. Neither structure was totally excavated, so even such basic data as house size is only an estimate. Considering that the Cane Island site is large and may have had many households, our sample of two partial households seems inadequate. We may, however, present our limited data in an effort to examine artifacts and features in the context of how they relate to early village life in the Oconee River Valley. By applying the concept of the household to the Cane Island site material we hope to gain important insights concerning the adaptive value of such settlements

The Environment

A proper understanding of any cultural group whether modern or prehistoric depends to a large extent upon our knowledge of the environment within which it operated. Unfortunately little is known of the

environmental conditions of the Oconee River Valley during the past 8,000 years of human occupation. The following description of environment is drawn from generalized data pertaining to the southeastern United States and is valid only for the period of European settlement and expansion. Prehistoric environmental data for the Georgia Piedmont is sketchy at best.

The area encompassed by the Wallace Reservoir (Fig. 1) lies entirely within the Piedmont physiographic province of the eastern United States (Fenneman 1938). This area may be characterized as having a gently rolling or hilly topography disected by a dendritic drainage pattern. The streams have cut V-shaped valleys and separate broad, gently sloping ridges. In the southern portion of the reservoir the slopes are steeper and the ridges relatively narrow (Long et al. 1922; Payne 1976).

Soil survey maps are available only for the western half of the study area (Payne 1976). The major soil associations are the bottomland chewacla-congaree-Wehadkee series and the upland slope and ridgetop Cecil-Vance series. The former are brownish to grayish loams and sandy loams formed from alluvial sediments washed from the uplands. Trimble (1974) has provided convincing evidence that much of this alluviation is a result of poor soil conservation practices in the early nineteenth century. The soils found on the river bottoms today may not be representative of those which were there before European settlement.

The soils of the upland slopes and ridges belong to the Cecil-Vance association. This soil group originated from weathered parent material such as granite, gneiss, diorite, quartz, mica, and feldspars. Cecil soils have a reddish-brownish sandy loam surface underlain by a red

clay or clay loam. Vance soils are characterized by a brownish yellow sandy loam underlain by yellowish-red clay (Payne 1976:6).

The original forest cover has been described as Oak-Hickory-Pine climax by various authors (Braun 1950; Plummer 1975). The present forest composition differs substantially. Tree farming by the U. S. Forest Service and large paper companies in the study area have created vast pine plantations on the broad upland ridges. These areas are impenetrable for the first five or ten years because of the thick tangle of pine and hardwood saplings, broomsedge, honeysuckle, and brambles. Steep slopes and stream bottoms are often cut-over stands of mixed hardwoods (oak, hickory, dogwood, beech, birch, elm, sweetgum, sycamore and poplar) and evergreens (pine and cedar). Along the major drainages that have developed floodplains, cane, greenbriar, poison ivy, privet, and other understory species are present.

The Oconee River begins in the foothills of North Georgia near Gainesville. The north and middle forks of the river converge in Athens and begin a generally southern flow towards the fall line. This lower piedmont portion of the Oconee River Valley will be affected by Wallace Dam. The upper portion of the river in the reservoir is characterized by an extensive floodplain, at places 1.5 km wide. Meander scars and channel remnants are common features. The floodplain is wet and swampy in places and recent alluvial deposits cover the aboriginal soils.

As one progresses south in the reservoir the river valley is characterized by a narrow and more restricted floodplain rarely more than 600 m wide. Levee ridges and older terraces are well developed and often extend long distances.

In the lower portion of the reservoir several steep upland ridges abut the river from the south and cause it to begin a long and broad bend to the east. Within this broad bend the river passes through the tip of an extensive Precambrian granite formation (Fucron 1968, 1969). Here it is forced into several abrupt changes in direction by steep upland ridges, which abut the floodplain creating shoals or rapids in the river.

Long Shoals (Fig. 2) is situated 4.5 km upstream from the Dam. It is the largest and first in a series of shoals that characterize this portion of the Oconee Valley. The shoals are a series of granite ledges running across the course of the river at intervals of 50 to 30 m. Long Shoals is .9 km in length and drops approximately 2.5 m from beginning to end. The granite shoals force the river to widen, and several substantial islands are located within the channel (Plate 1). These islands appear to be the result of sedimentation behind obstructions to the current such as rock outcrops or log jams (Robert Carver, personal communication). The largest of the islands, Cane Island, is cresent shaped and cut off from the shore by a narrow, fast flowing channel. The island measures approximately 825 m long and ranges from 100 to 200 m wide. The southwest and northeast ends of the island are high and flat, and are separated by a dry channel indicating separation at some time in the past. 9Pm209 is located on the northeast end of the island and occupies a narrow band along the main channel of the river.

Previous Archaeological Research in the Oconee River Valley

Previous archaeological research in the Oconee River Valley prior to the fall of 1974 was restricted to several reconnaissance-level surveys. In the late 1940's and early 1950's surveys and excavations by the

University of Georgia's Department of Anthropology in Putnam County were conducted, with the major emphasis on locating and testing stone mounds. In all, some thirty-six sites were located and tested, including the Rock Eagle Effigy Mound (Petrullo 1954; Kelly 1954).

In 1971 a twelve week archaeological reconnaissance of the proposed Wallace Reservoir (Laurens-Shoals Project) was conducted by the University of Georgia's Department of Anthropology (Smith 1971). This was the first survey to examine the Oconee River Valley's floodplains and terraces. A total of sixty-two sites were investigated, and the potential of the area to provide important information was realized.

In the summers of 1973 and 1974 the Department of Natural Resources, State of Georgia, and the University of Georgia's Department of Anthropology co-sponsored reconnaissance surveys of portions of Greene, Morgan, and Putnam Counties (Wood and Lee 1974). These surveys located a total of 207 additional sites, primarily located on upland ridgetops.

October, 1975 marked the beginning of a ten month intensive survey and testing program within the Wallace Basin sponsored by the Georgia Power Company (DePratter, et al. 1976). This survey located 143 new sites, including the Cane Island site, 9Pm209. Many previously known sites were tested and the information recovered confirmed the opinion that the Wallace basin was an extremely productive archaeological area. For the first time the existence of deep stratified sites on the Oconee's alluvial terraces and levees were demonstrated.

The Cane Island site was one of the deeply stratified sites discovered during the 1974-1975 survey. It was located in Novmeber, 1974, after an intense flood scoured the northeast end of the island. The humus level along the steep bank was washed away, exposing aboriginal

ceramics and lithic debitage. Surface collections indicated a Lamar phase occupation of the site (DePratter 1976:341). A test pit was excavated at a point where a black, Lamar phase midden was exposed on the river bank. The midden contained abundant ceramics and small river pebbles. The only faunal remains recovered were an occasional mollusk or two. Excavations were terminated at the bottom of the black midden and a subsurface testing plan with posthole diggers was implemented to determine the site limits (DePratter 1976:346). Eight of eleven tests excavated contained quartz debitage and fire-cracked rocks, from .5 to 1.8 m deep. In one test a stemmed projectile point was found indicating an Archaic occupation at 80 cm below the surface. DePratter (1976:346) states:

> The area of pre-ceramic occupation undoubtedly extends out in all directions since in no case was the edge of the site reached. Because the thickness and depth of the pre-ceramic occupation zone varied, multiple occupations are undoubtedly present.

As a result of the potential for deeply stratified, multiple components, DePratter recommended extensive excavation prior to inundation by Wallace Reservoir. It is interesting to note, at this time, that the 1974 testing of the site did not identify any Woodland components. These components were discovered during the mitigation phase, which is the topic of this report.

The Woodland Period: An Overview

The Woodland period (1000 B.C. - A.D. 900) in the eastern United States is traditionally characterized as a period of increasingly finer adaptation to the forest environment with the addition of ceramic vessels to the material culture, cultigens to the subsistence base, and ritualized mortuary practices to the socio-religious sphere (Willey 1966:267;

Griffin 1967:180). All but the first have antecedents in the preceding Late Archaic period, especially in the midwestern United States, but it is during the last centuries of the first millenium B.C. that these traits became widespread.

As a result of changes in subsistence strategies Woodland settlements take on a semi-permanent to permanent nature. Houses are more common archaeologically and evidence of storage of mast crops (Caldwell 1958:25) points to an effective technology of wild food harvesting and processing.

One aspect of Woodland culture that has received much attention is the role of plant cultivation. The in situ development of native species and the introduction of Mesoamerican species during the Woodland period is documented in the literature (Griffin 1967:183; Struever and Vickery 1973; Yarnell 1973). The importance of these additions to the aboriginal diet is, however, still in debate. Caldwell (1958:72, 1973:6-8) believed that the cultigens, although introduced rather early, were not fully exploited until much later. He explains this lack of quick acceptance as due partially to " . . . deep seated cultural reasons mitigating against . . . change" (1973:8) and to the abundant native plant and animal life available to the aboriginals in the eastern Woodlands. Willey, on the other hand, suggests that agriculture was necessary for the development of complex ceremonial and mortuary elaboration witnessed in the Woodland period (1966:268). He argues that a subsistence base of hunting, fishing, and gathering is insufficient for supporting such elaborations. The question of whether plan cultivation played a major role in the development of the Woodland period culture is still unanswered.

Far more numerous than cultigens are the wild plant remains recovered from Woodland sites. At the Kellog site Caldwell (1958:25) reported finding large quantities of charred acorns, hickory nuts, and walnuts. These mast crops were recovered from storage pits on the site. Wild grape and honey locust were also present (Caldwell n.d.:166). Unfortunately no animal bone was preserved.

The Camp Creek site in eastern Tennessee yielded no evidence of agriculture (Lewis and Kneberg 1957:32) but preserved animal bone included deer, elk, bear, wild turkey, turtle and birds (1957:5-7). Mussels and fish hooks attest to exploitation of aquatic resources also.

In northwest Georgia, the Garfield site excavated by Milanich (1973) yielded maize in an early Woodland context. The site also had remains of hickory, acorn, walnut, and other plants. Faunal remains included fish, deer, raccoon, beaver, oppossum, squirrel, bear, fox, skunk, bobcat, otter, woodchuck, and domesticated dog (Milanich n.d.).

In the Normandy Reservoir Faulkner (Faulkner, et al. 1976) reports a variety of faunal remains recovered from the Banks III site (Middle Woodland) earth ovens. Included are various species of fish, turtle, snake, birds, deer, woodchuck, cottontail, rice-rat, salamander, and toads (1976:221). Floral remains are more limited in variety and include hickory, acorn, and walnut. No cultigens or herbaceous seeds were recovered, however (1976:236).

In short, Woodland subsistence in the southeastern United States is of a diffuse nature. Many species of mammals, reptiles, and fish are exploited. Mast crops, such as acorns and hickory nuts, are very common. Some evidence of agriculture exists although it does not point toward the extensive use of domesticated plant species. The plant and animal species

exploited by Woodland populations would be readily available to the occupants of Cane Island. The site is located within a riverine environment making access to certain resources such as fish, turtles, water fowl, mollusks and certain riverine plant species relatively easy. The upland hills are within 2 km and offer easy access to varied plant and animal species. It is suggested that both riverine and upland resources could have been exploited without much difficulty using this site as a base.

In order to place the Woodland ceramics from the Cane Island site in proper perspective, it is necessary to review what is known about Woodland pottery from nothern Georgia and the adjacent portions of Alabama, Tennessee, and North Carolina. In general the earliest grit-tempered pottery in the eastern United States is cord-marked or fabric-impressed ware. In the southeastern United States early grit-tempered ceramics may also be decorated by stamping with carved paddles, often resulting in parallel line patterns called simple stamped. Later paddle designs were checked, resulting in a grid or check stamped design.

Fabric-impressed ceramics are found throughout northern Alabama, northern Georgia, and Tennessee. They were first recognized in the Tennessee River Valley in northern Alabama by archaeologists working in the Pickwick Basin (Haag 1942:516-517). Long Branch Fabric-marked pottery is tempered with crushed limestone and occurs on Early Woodland sites in northeastern Alabama, northwestern Georgia, and Middle Tennessee (Webb and Dejarnette 1942; Wauchope 1966:46; Faulkner and Graham 1966). In northern Georgia a grit-tempered, fabric-marked pottery called Dunlap (Jennings and Fairbanks 1940) has been found in the Etowah River Valley (Caldwell 1958:23; Wauchope 1966:46; and Milanich n.d.). Dunlap pottery has also been reported from further south in Georgia (DePratter, et al.

1976:469) but apparently does not reach below the Fall Line. In western North Carolina, Keel (1976:61) reports a fabric-marked grit-tempered pottery named Swannanoa from Early Woodland context.

Another ceramic decoration that appears during later Early Woodland times is check-stamping. Check-stamped pottery occurs in the Piedmont of Georgia, where it is referred to as Cartersville (Caldwell 1958:45, n.d.:296). Check-stamped pottery is also found in areas contiguous to northern Georgia, such as northern Alabama and Middle Tennessee (Wright Check-stamped) and western North Carolina (Pigeon Check-stamped). In these areas it is tempered with crushed limestone. Caldwell sees Cartersville Check-stamped pottery as belonging to the Southern Appalachian Tradition and originating from Piedmont Georgia (1958:45).

Cord-marked pottery is not common in Piedmont Georgia but does show up in the extreme northwest part of the state (Jefferies 1976:32) where it is identified with the Tennessee type, Candy Creek Cord-marked (Lewis and Kneberg 1946:102-103). On the Georgia Coast cord-marked ceramics make their appearance during later Woodland times (Caldwell 1958:34) and are called Wilmington Cord-marked. This type is tempered with ground-up sherds and has been suggested as a hallmark of intrusion from the northern United States (Waring 1955:221).

In summary, we know that in the area of North Georgia and adjacent parts of Alabama, Tennessee, and North Carolina fabric- and cord-marked ceramic types are popular early in the Woodland period and seem to have been replaced by stamped types, especially check-stamped, by about A.D. 1. There is some evidence that the textile-marked and the check-stamped ceramics may have been used simultaneously (Caldwell n.d.:131, 157; Keel 1976:61, 156; Webb and Dejarnette 1942:177). We can be fairly certain

that Early Woodland subsistence throughout most of the Southeast was based on hunting and gathering of a wide variety of native plants and animals and that horticulture was present but probably not very important. We know that large aggregates of population may have been settling together in small villages. We know little of the nature of these larger settlements and nothing of the social or spatial arrangements of individual households, which make up these settlements. Knowledge of ceramic typologies and components of subsistence are important, but if we are ignorant of the context in which this information relates to the household, we know little.

II. RESEARCH DESIGN AND EXCAVATION METHODS

Initial Testing Phase

Investigations of the Cane Island site began in August of 1977. It was known that a Lamar component was present and evidence from previous work in 1974 indicated the strong possibility of earlier components in stratified context. Initial work was directed towards extensive testing of the site to provide data sufficient for the formulation of a sound research design.

The northwest side of Cane Island faces the Long Shoals of the Oconee River (Fig. 3). This side of the bank is quite steep with little or no developed floodplain. The surface of the island is very flat and level. At the point where the bank drops to the river, twelve profile cuts were excavated into the bank over a distance of some 160 m along the edge of the island. These profile cuts were designed to quickly expose segments of the island's stratigraphy and to recover diagnostic artifacts and identify cultural features. The results of this initial testing were rewarding. All tests contained some artifacts, and several areas produced relatively large amounts of lithic debitage, fire-cracked rocks, chipped stone tools, and ceramics.

As a general rule the humus was underlain by a compact brown fine-sandy loam zone of 10 - 40 cm thick. Below this was a yellow fine-sandy loam zone which extended to about 180 cm below ground surface. This was underlain by a white sandy zone that was not encountered in other

excavations at the site. Occupation levels represented by horizontal concentrations of quartz debitage and rocks were present in the yellow fine-sandy loam, but no visible strata were present. In two profiles a faint light grey zone was observed at varying depths, but did not appear to be associated with any cultural material. In many tests Lamar Incised and/or Lamar Complicated Stamped pottery was recovered. On the southern end of the site Cartersville Check-Stamped (Caldwell n.d., 1958), Dunlap Fabric-marked (Jennings and Fairbanks 1940), and Stallings Island Plain (Fairbanks 1942) ceramics were found.

As a result of the profile cuts, a 2 x 5 m exploratory trench was placed adjacent to an area on the southern end of the site that exhibited cultural material belonging to the Archaic, Woodland, and Mississippian periods. This trench was oriented east-west approximately 3 m from the edge of the island and was excavated in 1 m squares and 15 cm levels. Lamar ceramics were found in the first two arbitrary levels but no features or large quantities of artifacts were encountered. Ceramics of the types Cartersville Simple Stamped and Check-Stamped, Dunlap Fabric-marked, and Stallings Island Plain, as well as quartz debitage and features were recorded in the fourth and fifth levels, 45 - 75 cm below surface, and indicated occupations during the Woodland and terminal Archaic periods. The next two levels were relatively sterile. In the eighth 15 cm level, 105 - 120 cm below surface, a concentration of fire-cracked rocks was recorded. These, together with a single Savannah River point (Coe 1964) indicated a Late Archaic occupation. The next 15 cm were relatively sterile, but at a depth of 130 cm below the ground's surface another occupation was encountered. A fire-cracked stone hearth (Feature 5) was present along with five quartz bifaces, one

unifacial tool, and abundant quartz debitage. These tools appeared to be diagnostic of the Middle Archaic Morrow Mountain phase (Coe 1964), although no points were found at this time. The exploratory trench was terminated at a depth of 150 cm below ground surface because of the possibility of a cave-in.

Four test pits measuring 1 x 2 m were excavated in locations where the profile cuts indicated potentially rich and multiple occupation levels. These test pits were excavated in 10 cm levels to gain greater vertical control and for better separation of cultural components. Two test pits (1 and 2) were excavated along the island's edge north and south of the exploratory trench and Test Pits 3 and 4 were excavated about 30 m back from the edge of the island, also north and south of the trench. In all cases they produced artifacts representing the same components recognized in the original trench.

Based on the findings of the profile cuts, the exploratory trench, and the four test pits, the following was known of the site:

1) It was large, at least 200 x 25 m. In all tests made we never found its limits horizontally or vertically.
2) It contained multiple components in an undisturbed stratified context, often with sterile zones separating the cultural levels.
3) No clearly visible occupation stains could be observed in the sandy soil, but horizontally distributed concentrations of cultural material were obviously present.
4) Features such as postholes, stone hearths, and pits were numerous and in a sufficient state of preservation so as to make identification possible.

5) The Lamar phase was for the most part thinly scattered across the site with a heavy occupation on the northern end; this is documented by DePratter (1976:346).

6) Cartersville, Dunlap, and Stallings Island pottery types were recognized as being most concentrated in the southern end of the site and appeared to represent a substantial and continuous occupation from the Early to Middle Woodland period.

7) Two Archaic (Savannah River and Morrow Mountain) components were discovered in deep stratigraphic context. Both were characterized by concentrations of fire-cracked rocks, quartz debitage and chipped stone tools.

The Research Design

After one week of testing the Cane Island site a research design was formulated. This called for the examination of a single component from each of the three temporal periods, Mississippian, Woodland, and Archaic, with a goal of investigating man's changing response to the riverine environment. Specific questions posed in the research design were:

1) Does the Middle Archaic component represent a specialized activity area; i.e. fishing, hunting, or food processing?

2) Does the Woodland component represent a more permanent occupation than the preceding Archaic component? Can specialized activity areas be identified which indicate that a diversity of activities are being carried out during the Woodland occupation?

3) Is the Lamar occupation seasonal or permanent? Is intensive agriculture being practiced?

4) What cultural changes, if any, accompany the appearance of

fiber-tempered pottery in the area? What developmental relationships, if any, exist between the Stallings Island phase and the Early Woodland phase that follows it in time?

5) What is the role of plant cultivation in Early and Middle Woodland subsistence?

The research design states that large block excavations on the northern and southern ends of the site were to be utilized to investigate several components of the site. Systematic subsurface testing with a backhoe was to be used to identify the horizontal and vertical limits of the site's components.

Intensive Excavation Phase

In order to implement the proposed research design the area around the exploratory trench was designated Provenience 3 and cleared of all vegetation except very large trees. A 10 x 10 m square was gridded in 1 m segments and vertical datum established. Excavation of this large block was accomplished by opening 2 x 5 m trenches parallel and at right angles to the original trench. The excavation unit then grew in size encompassing most of the 10 x 10 m block. (Areas with extreme tree disturbance were avoided).

Provenience 3 was excavated by arbitrary levels. Level I was from 0 - 20 cm below surface and corresponded to the humus and a dark brown fine-sandy loam zone. The succeeding levels, II through XXV, were 10 cm thick and each corresponded to a segment of the yellow fine-sandy loam zone. Excavation was by 1 m squares using a sharp flat shovel and screening the sand through one-fourth inch hardware cloth. The major occupations at Provenience 3 were during the Early Woodland Long Shoals

phase, the Late Archaic Savannah River phase, the Middle Archaic Morrow Mountain phase, and Early Archaic Kirk phase. An even earlier component was discovered at a depth of 165 - 180 cm below surface resting on sterile clay. It contained numerous dark chert retouch flakes but no tools.

Provenience 6 was located on the north end of the site where DePratter's (1976) test pit and profile cut had indicated a rich Lamar component midden. A 1 x 15 m trench was laid out perpendicular to the west bank of the island and immediately south of DePratter's test pit. The midden was about 80 cm below the surface on the west end of the trench and gently rose to the surface on the east end away from the river. The sterile overburden was removed without screening. The midden was about 30 cm thick and was excavated in three 10 cm arbitrary levels.

The original plans in the research design called for the use of a backhoe to aid in the removal of sterile overburden from portions of the site. The Georgia Power Company was kind enough to loan the project a backhoe and operator. An attempt to get the machine across the narrow river channel failed when the island's bank proved too steep and high to overcome. Heavy rains followed, raising the water to dangerous levels and forcing the backhoe plans to be cancelled. As a result, efforts to investigate the deeply buried Lamar component at Provenience 5 were abandoned.

Just prior to the schedule termination of fieldwork at Cane Island, two test pits (5 and 7) on the northern end of the site discovered more Early Woodland artifacts. Cartersville Check-Stamped and Dunlap Fabric-marked ceramics were recovered from about 50 cm below surface, the same depth that they were found in Provenience 3. Abundant chipped stone debris was also noted. The possibility of another area of Woodland

occupation was exciting but also disappointing as work terminated on October 17, 1977.

Fortunately, arrangements were made for an extension of six weeks to investigate the new area of Woodland occupation. The area adjacent to Test Pits 5 and 7 was designated as Provenience 6. Since the surface elevations of both Provenience 3 and 6 were similar and the Woodland components also lay at about the same depth below surface it was decided to use the same arbitrary 10 cm levels in Provenience 6 as we did in Provenience 3. Excavation procedures were identical to those used in other proveniences except extra soil samples were taken from excavated squares and were subjected to fine-mesh screening in the field. Inclement weather forced premature termination of work at Provenience 6 in January, 1978. At that time Middle and Early Woodland components had been investigated and a terminal Archaic, Stallings Island component was also discovered.

The Woodland components selected for excavation in Provenience Units 3 and 6 were located in Levels IV, V, and VI (40 - 70 cm below surface). Levels I, II, and III in these proveniences were briefly sampled and found to contain little in the way of artifacts or features. The remaining portions of these levels were shoveled away without screening. The levels beneath the Early Woodland occupation were treated similarly. Only portions of these levels (VII, VIII, and IX) were screened and the remainder shoveled away, allowing more time for examining the Late Archaic component in Level X. Maps illustrating the squares excavated in Levels III - VII of each provenience are presented in figures 4 and 5. These levels are the ones that produced artifacts diagnostic of the Woodland period and therefore are of importance to this thesis.

Features were numerous in both provenience units and were recorded by noting their grid reference and elevation at the time of discovery. Initially all features were excavated to determine size, shape and cultural affiliation. Unfortunately the vast majority of postholes and molds excavated contained no culturally diagnostic material. As a result, a 1 inch diameter coring tool was used to test each feature prior to excavation. This instrument proved very reliable in measuring the depth of the feature and allowing us to examine a sample of its contents prior to excavation. Features which were shallow and faint were not excavated; however, if the feature was large or the core sample indicated charred plant remains, the feature was excavated in the following manner. One-half of the feature (usually storage pits or earth ovens) was excavated and its contents screened through one-fourth inch hardware cloth. The profile of the feature was drawn and its fill and content noted. The remaining half was then bagged for fine-mesh screening in the laboratory for the recovery of faunal and floral remains. When large quantities of charcoal were encountered, samples for radiometric dating were taken. Pollen samples were obtained from all pits, ovens, and some postholes.

Investigations of the Cane Island site have demonstrated the existence of stratified archaeological components representing discontinous occupation of the site for at least 9,000 years. Intact occupation floors exist for the two Archaic components (Morrow Mountain and Savannah River) which were intensively sampled in Provenience 3. Earlier Archaic components are known to exist but they were only lightly sampled by deep testing. The Archaic living areas consist of stone hearths and red-stained floors with chipped stone tools and debitage. A Stallings Island phase component in Provenience 6 represents the terminal Archaic

period. Termination of work at the site limited the investigation of this component but several features were excavated and numerous sherds, steatite vessel fragments, and specimens of preserved bone were recovered. The Woodland period on the Cane Island site is represented by two occupations: the Early Woodland Long Shoals phase, and a later unnamed component. The intensive investigation of the Long Shoals component produced evidence of two structures, and some associated features such as earth ovens and storage pits. Artifacts are distributed inside and around the periphery of the structures. The Mississippian Lamar phase was not examined in detail at Cane Island. In Provenience 5, however, our trench did recover samples of ceramics and charred plant remains from the Lamar context.

III. CULTURAL STRATIGRAPHY

The problem of determining which artifacts and features belong to which components is the topic of this chapter. Because the site was excavated in arbitrary 10 cm levels, it is necessary to determine which levels belong to the Early Woodland Long Shoals phase and which belong to earlier or later occupations. Ceramics constitute the most reliable evidence for temporal distinctions and, as such, are useful in determining whether Levels IV, V, and VI are temporally distinct from Levels III and VII. This is accomplished by the examination of vertical and horizontal distributions of ceramic types in Levels III - VII. The observation that sherds from Level V cross-mend with sherds from Levels IV and VI suggests that a single component is present in these levels.

The vertical distribution of ceramics in both proveniences are shown in Tables 1 and 2. In the tables two values are given, the actual number of sherds per level (N) and the number of sherds per square meter of excavation (N/m^2). The latter is a useful index in that the excavated areas of the levels are unequal in size making the value N not comparable between levels.

Tables 1 and 2 demonstrate that the simple stamped and plain ceramics from both provenience units tend to be more numerous in Levels III and IV. Simple-stamped pottery is believed to be chronologically later than check-stamped or fabric-marked ceramics in the Wallace Reservoir and our excavations at Cane Island support this hypothesis. The plain pottery can

TABLE 1. CERAMIC TABULATIONS, PROV. 3.

LEVEL	SIZE (m^2)	PLAIN		SIMPLE STAMP		CHECK STAMP		FABRIC MARKED		UNIDENTIFIED STAMPED		FIBER-TEMPERED		TOTAL SHERDS
		n	n/m^2	n	n/m^2	n	n/m^2	n	n/m^2	n	n/m^2	n	n/m^2	
III	83	119	1.40	27	.33	35	.42	1	.01	16	.19	0	.00	198
IV	85	44	.52	0	.00	75	.88	64	.75	31	.36	5	.06	219
V	85	22	.26	4	.05	111	1.31	69	.81	53	.62	1	.01	260
VI	85	1	.01	2	.02	40	.47	20	.24	18	.21	6	.07	87
VII	21	2	.02	0	.00	2	.10	1	.01	4	.19	17	.81	26
TOTAL SHERDS		188		33		263		155		122		29		790

TABLE 2. CERAMIC TABULATIONS, PROV. 6.

LEVEL	SIZE (m^2)	PLAIN		SIMPLE STAMP		CHECK STAMP		FABRIC MARKED		FIBER-TEMPERED		TOTAL SHERDS
		n	n/m^2	n	n/m^2	n	n/m^2	n	n/m^2	n	n/m^2	
III	32	43	1.34	13	.41	1	.03	7	.22	4	.13	68
IV	58	24	.41	11	.19	17	.29	26	.45	9	.16	87
V	58	11	.19	3	.05	24	.40	66	1.14	9	.16	113
VI	58	0	.00	0	.00	7	.12	23	.40	31	.53	61
VII	36	0	.00	0	.00	0	.00	4	.11	30	.83	34
TOTAL SHERDS		78		27		49		126		83		363

be attributed to several possible occupations. A surface collection made after the site was cleared and artifacts from Levels I and II indicate an extensive Lamar occupation in the first 30 cm below surface. Many of the plain sherds in Level III can be attributed to this later occupation. It is also possible that some, and perhaps most, of the plain sherds in Provenience Units 3 and 6 belong to the Woodland component in Level III that is characterized by simple stamped pottery. Finally, some plain sherds may represent undecorated vessels or check-stamped vessels with plain zones that belong to the Long Shoals component.

Check-stamped and fabric-marked sherds have their highest frequencies in Level V of each provenience unit. There is a decline or tapering off of these types in Levels IV and VI and a near absence of them in Levels III and VII. While fabric-marked pottery is often considered earlier than check-stamped pottery (Caldwell 1958:27) the co-occurrence of the two in Levels IV, V, and VI indicate that they constitute a single assemblage or component at the Cane Island site.

Table 1 shows a sizeable number of check-stamped sherds in Level III. These may represent post occupation mixing or could belong to the later Woodland component with the simple stamped pottery. At the Kellog site, Caldwell (n.d.:158) defined the Cartersville period in North Georgia as being marked by the addition of simple stamped ceramics to the existing check-stamped and fabric-marked types.

Fiber-tempered pottery is found at both provenience units on Cane Island. This type is considered to be diagnostic of the terminal Archaic period in the southeastern United States. Sherds of this type are found primarily in Levels VI and VII of Provenience 6 and in Level VII at

Provenience 3. Its occurrence in higher levels can be attributed in part to disturbance by later Woodland inhabitants.

In summary, the strongest evidence for distinguishing cultural stratigraphy and components in Provenience Units 3 and 6 is gained from the vertical distribution of ceramic types. Level III contains high frequencies of plain and simple stamped pottery and is considered to represent an unnamed Middle Woodland occupation. Very few check-stamped and virtually no fabric-marked sherds are present in this level. These types in turn do occur in relatively high frequencies in Levels IV, V, and VI, especially in Level V. This fact coupled with the lack of many simple stamped or plain sherds suggests that Level V represents a distinct Early Woodland occupation, the Long Shoals phase. Fiber-tempered sherds predominate in the lower levels, especially Level VII. They are believed to represent a distinct terminal Archaic occupation and to have no relationship to the Woodland material.

Additional evidence for separating the components is found in the horizontal distribution of ceramic types in Provenience 3. The highest concentrations of plain and simple stamped ceramics occur in the southwest corner of Provenience 3, near the edge of the island (Figs. 6 and 7). This area is far removed from the concentrations of check-stamped and fabric-marked sherds that predominate in the eastern section of the provenience (Figs. 8 and 9). Unfortunately, the horizontal distribution of fiber-tempered ceramics is of little use in Provenience 3 because of the limited size of Level VII (Fig. 4)

In Provenience 6, the horizontal distribution of ceramic types is of little use in distinguishing components because of the incomplete excavation of Levels III and VII (Fig. 5). Nevertheless two features, 113

and 120, which occur in this unit need to be considered because of the bearing they have on cultural stratigraphy. Feature 113 (Fig. 10) is a pit which began in Level III, is intrusive through Levels IV and V, and contained two simple stamped sherds. Six additional sherds belonging to the same vessel were excavated from Level IV in the square containing Feature 113. Because it was not possible to precisely define the limits of Feature 113 during excavation it is probable that these sherds actually derive from the pit and hence from Level III.

Six other simple stamped sherds are found in the southwest corner of Provenience 6 Level IV (Fig. 10). These mend together to form a portion of a single vessel, which is not considered to belong to the Long Shoals phase becasue the sherds occur a good distance from the concentrations of check-stamped and fabric-marked sherds (Figs. 11 and 12).

Fiber-tempered sherds occur in Provenience 6 in Levels III - VII. The majority occur in the northeast corner of the unit and adjacent to Feature 120 (Fig. 13). Feature 120 is an area of red stained soil extending into the north and east profiles. It yielded 20 fiber-tempered sherds while an adjacent square produced an additional 21 sherds. This seemingly early feature begins at the base of Level IV and extends into Levels V, VI, and VII. Its occurrence this high may be explained by the hypothesis that after the terminal Archaic occupation a portion of the surface of the site was eroded away by the intensive scouring of flood waters. The succeeding Woodland people would have settled on a lower ground surface and closer to the Archaic component. An alternative explanation is that Feature 120 belongs to the Long Shoals component and that the fiber-tempered pottery is part of the Long Shoals ceramic assemblage. At present the former explanation seems more likely.

The existence of ceramic cross-mends between Levels IV, V, and VI may be taken as evidence that these three levels represent a single component. An analysis of ceramics was undertaken to aid in the identification of activity areas in the Long Shoals component. This analysis utilized an estimate of a minimum number of vessels (MNV) to determine where ceramic vessels were used (See Chapter V). Only sherds from Levels IV, V, and VI were examined and the criteria used for determining MNV was based partially on cross-mends. During the analysis it was observed in Provenience 3 that sherds from both check-stamped, fabric-marked and cord-marked vessels found in Level V cross-mended to sherds from Levels IV and VI. Table 3 shows the four vessels which had sherds that cross-mended between levels.

TABLE 3. NUMBER OF SHERDS PER LEVEL

VESSEL NUMBER	IV	V	VI
5	3 ⟷	2 ⟷	1
8		1 ⟷	1
10	1 ⟷	2 ⟷	2
22	7 ⟷	9	

In Provenience 6 no cross-mends were observed between levels, but sherds from two fabric-marked vessels, #4 and #6, are readily identifiable and are derived from Levels IV, V, and VI. Although these sherds do not actually mend with one another there is little doubt that they belong to only two vessels.

The foregoing evidence leads to two conclusions concerning the cultural stratigraphy of the site. First, the co-occurrence of Cartersville

Check-Stamped and Dunlap Fabric-marked ceramics in Levels IV, V and VI suggests that they represent the ceramic assemblage of a component that is distinct from the earlier and later components in Levels III and VII. Second, the sherds appear to have accumulated over a rather short time suggesting that their vertical spread over 30 cm is due to post-occupational disturbances (floods and forest growth, for example) of a single component that originated in Level V.

IV. FEATURES

This chapter will deal with those cultural features found in Levels IV, V, and VI of Provenience Units 3 and 6 that are considered to belong to the Long Shoals phase. These features may be grouped into four broad classes: post holes, earth ovens, pits and clusters of fire-cracked rocks.

Seventy features are classified as post holes from both provenience units. They are small (15 - 20 cm in diameter) gray stains, rarely deeper than 30 cm from point of discovery to bottom. Charcoal is preserved in about one-quarter of all post holes. In Provenience 6 most post holes appear to be paired but in Provenience 3 this is not as common. Whether these paired post holes are part of an actual architectural pattern or are simply fortuitous is debatable.

Five features (#2, 4, 8, 9, and 12) are classified as earth ovens. They were recognized in the field as very dark stains that contrasted with the yellow sand. They are large conical pits about as deep as they are wide and containing relatively large quantities of fire-cracked rocks and charred wood. They resemble features described by Binford for the Hatchery West site (1970:43-55) and by Faulkner and McCollough (1974:276) for the Banks III site. Binford's argument that these features are pits for roasting food is derived from ethnographic information.

Pits are smaller features exhibiting no large quantities of either fire-cracked rocks or charred wood but are larger than post holes. Fire-cracked rock clusters are concentrations of rocks that appear to have

been subjected to intense heat although little or no charred wood is found with them. The horizontal location of all features are illustrated in Figures 14 and 15 and their dimensions and contents tabulated in Tables 4 and 5.

Eighty features were first detected in Levels IV, V, and VI. It is assumed that they originated from occupational surfaces in those levels and therefore date to the Long Shoals component. Three post holes (#49, 50 and 51) originated in the lower portion of Level III in Provenience 3 and are also attributed to the Long Shoals phase. The argument for placing them in the Long Shoals phase is that they seem to belong to a portion of a structure wall attributed to this occupation. It is also possible that more of the upper portions of these posts were preserved allowing us to detect them at a higher level. Since most features were lightly stained and often difficult to see, it is possible that we missed the upper portions of some. The vertical locations of features in both Provenience Units 3 and 6 are illustrated in Figures 16 and 17.

In both provenience units, the great majority of post holes appear to be arranged in oval or circular alignments suggestive of structures (Figures 18 and 19). In Provenience 3 it is possible the alignment of posts in the eastern half of the excavation represents a structure of some permanence, however, its exact configuration is subject to debate. The most likely arrangement is that of a circular or oval structure including the following post holes: 65, 64, 59, 58, 70, 56, 57, 54, 50, 49, 37, 39, and 101. Features 100, 103, 104, 105, 102, 74, 36, 35, and 51 may represent an addition to structure or a portico at the entrance. Other posts around the periphery of the structure (67, 69, 52, 7, and 38) may represent rebuilding or re-enforcing efforts. The posts inside

TABLE 4. FEATURE INVENTORY, PROV. 3.

NO.	DESCRIPTION	NATURE OF FILL	CONTENTS OF FILL	DIMENSIONS (CM) NS	EW	VERTICAL
2	Small earth ovens	Black sand	218 g of rock 5 pieces quartz debitage	33	34	33
4	Large earth ovens	Black sand	4 plain grit tempered sherds 139 pieces of quartz debitage 489 g of rock	110	100	97
7	Post hole	Gray sand	Not excavated	25	25	?
8	Large earth ovens	Black sand	4 Cartersville check stamped 1 Dunlap fabric marked 1 Stallings Island plain 9 pieces quartz debitage 589 g of rock	93	71	112
9	Small earth ovens	Black sand	3 plain grit tempered sherds 175 pieces quartz debitage 13 pieces chert debitage 645 g of rock	49	52	38
12	Small earth ovens	Black sand	5 Stallings Island plain 76 pieces quartz debitage 257 g of rock	69	65	53
16	Shallow pits	Dark gray sand	Sterile	34	30	19
17	Post hole	Brown sand	1 check stamped	24	23	83
28	Pit	Gray sand	4 pieces of quartz debitage 2 pieces of chert debitage 3 g of rock	29	44	20
31	Post hole	Gray sand	Not excavated	20	18	--

TABLE 4. FEATURE INVENTORY, PROV. 3 (CONT.).

NO.	DESCRIPTION	NATURE OF FILL	CONTENTS OF FILL	DIMENSIONS (CM) NS	EW	VERTICAL
33	Possible pit	Dark brown sand	1 Stallings Island plain 35 pieces quartz debitage 1 piece chert debitage 9 g of rocks	49	22	20
34	Post hole	Gray sand	Not excavated	14	15	11
35	Post hole	Gray sand	Not excavated	20	18	18
36	Post hole	Dark gray sand	Not excavated	44	35	17
37	Post hole	Dark gray sand	Not excavated	12	18	14
38	Post hole	Gray sand	Not excavated	14	13	10
39	Post hole	Gray sand	Not excavated	14	23	48
49	Post hole	Dark gray sand	Not excavated	21	22	20
50	Post hole	Dark gray sand	Not excavated	24	25	--
51	Post hole	Dark gray sand	Not excavated	35	48	39
52	Post hole	Dark gray sand	Not excavated	12	18	20
53	Rock hearth	Fire cracked rocks and pebbles	3 check stamped 1 plain grit tempered 2.8 kg of rock	35	23	21
54	Post hole	Dark gray sand	Not excavated	12	12	45
56	Post hole	Gray sand	Not excavated	17	18	29
57	Post hole	Gray sand	Not excavated	16	15	18
58	Post hole	Gray sand	Not excavated	21	14	17
59	Post hole	Gray sand	Not excavated	17	14	15

TABLE 4. FEATURE INVENTORY, PROV. 3 (CONT).

NO.	DESCRIPTION	NATURE OF FILL	CONTENTS OF FILL	DIMENSIONS (CM) NS	EW	VERTICAL
60	Post hole	Gray sand	Not excavated	15	16	14
61	Post hole	Gray sand	Not excavated	12	15	22
62	Shallow pit	Gray sand	Not excavated	50	45	20
63	Post hole	Gray sand	Not excavated	18	15	35
64	Post hole	Red sand with charcoal	Not excavated	24	18	38
65	Post hole	Dark gray sand	Not excavated	20	22	38
66	Post hole	Red sand	Not excavated	9	7	11
67	Post hole	Red sand	Not excavated	22	17	20
68	Rock hearth	Fire cracked rocks & pebbles	1 check stamped 1 piece quartz debitage 3 kg of rocks	36	41	17
69	Post hole	Gray sand	Not excavated	18	21	22
70	Post hole	Gray sand	Not excavated	16	16	10
71	Post hole	Gray sand	Not excavated	15	18	39
74	Post hole	Light gray sand	Not excavated	24	28	22
100	Post hole	Gray sand	Not excavated	21	18	38
101	Post hole	Gray sand	Not excavated	23	18	44
102	Post hole	Gray sand	Not excavated	11	10	16
103	Post hole	Gray sand	Not excavated	33	33	62
104	Post hole	Gray sand	Not excavated	12	11	17
105	Post hole	Gray sand	Not excavated	23	22	18

TABLE 5. FEATURE INVENTORY, PROV. 6.

NO.	DESCRIPTION	NATURE OF FILL	CONTENTS OF FILL	DIMENSIONS (CM) NS	EW	VERTICAL
107	Post hole	Gray stain	Not excavated	23	30	10
108	Post hole	Gray stain	Not excavated	23	23	30
116	Post hole	Dark gray sand	Not excavated	25	37	44
117	Post hole	Gray sand	Not excavated	16	23	36
119	Rock hearth	Fire cracked rocks	1 quartz projectile point haft 1 chert projectile point haft 28 pieces of quartz debitage 7 pieces of chert debitage 61 kg of rock	70	131	20
121	Post hole	Black sand	Not excavated	25	28	41
123	Post hole	Gray sand	Not excavated	25	16	17
124	Post hole	Gray sand	Not excavated	18	14	17
125	Post hole	Gray sand with charcoal	Not excavated	20	19	33
126	Post hole	Black sand	Not excavated	16	19	28
127	Post hole	Gray sand	Not excavated	14	14	--
128	Post hole	Gray sand	Not excavated	27	20	33
130	Post hole	Gray sand	Not excavated	16	14	18
131	Post hole	Gray sand	Not excavated	18	14	10
132	Post hole	Gray sand with charcoal	Not excavated	70	65	44
133	Post hole	Gray sand with charcoal	Not excavated	38	60	38

TABLE 5. FEATURE INVENTORY, PROV. 6 (CONT).

NO.	DESCRIPTION	NATURE OF FILL	CONTENTS OF FILL	DIMENSIONS (CM) NS	EW	VERTICAL
134	Post hole	Gray sand	Not excavated	17	21	10
135	Post hole	Gray sand	Not excavated	19	13	17
136	Post hole	Gray sand	Not excavated	13	11	15
137	Post hole	Gray sand	Not excavated	13	14	14
138	Post hole	Gray sand	Not excavated	22	20	17
139	Double post hole	Black sand	2 check stamp 2 plain grit tempered 3 Stallings Island plain 40 pieces of quartz debitage 4 pieces of chert debitage 1 dirt daubber nest 561 g of rock	87	60	48
140	Post hole	Gray sand	Not excavated	18	20	11
142	Post hole	Gray sand	Not excavated	18	23	22
143	Post hole	Gray sand	Not excavated	12	14	9
144	Post hole	Gray sand	Not excavated	23	25	14
145	Post hole	Gray sand	Not excavated	18	17	17
146	Possible post hole bell shaped	Black sand	3 Stallings Island Punctate 3.8 kg of rock	56	41	20
147	Stone hearth	fire-cracked rocks	1 check stamped sherd 1 large metate 8 pieces of quartz debitage 3 pieces of chert debitage 66 kg of rock	90	70	22

TABLE 5. FEATURE INVENTORY, PROV. 6 (CONT).

NO.	DESCRIPTION	NATURE OF FILL	CONTENTS OF FILL	DIMENSIONS (CM) NS	EW	VERTICAL
148	Post hole	Gray sand	Not excavated	19	15	17
149	Post hole	Gray sand	Not excavated	24	13	8
161	Large post hole	Black sand	1 check stamped 4 pieces of quartz debitage 545 g of rocks	50	50	77
162	Post hole	Gray sand	Not excavated	32	into profile	
163	Post hole	Gray sand	Not excavated	30	20	--
164	Post hole	Black sand	Not excavated	32	32	39
165	Possible post	Black sand	Not excavated	20	20	20

the structure (60, 61, 63, 71) may have been central support members or served as portions of room partitions.

The post holes from Provenience 6 are somewhat clearer in their alighment. Figure 19 illustrates an arrangement of post holes that is suggestive of an oval structure and includes features 161, 164, 77, 107, 108, 145, 144, 135, 138, 149, 140, 146, 134, 116, 117, 123, 132, 133, and 128. The post holes located in the southeast corner (136, 137, 143, 142, and 139) may belong to another structure or may be a part of a portico on the oval structure. Four post holes (125, 126, 127, and 148) inside the structure probably served as internal support posts.

Evidence of structures dating to the Early Woodland period in the southeastern United States is limited. In the Allatoona Reservoir (Caldwell n.d.:151), the Kellog site yielded evidence of a Cartersville phase house. This house was circular and about 3.35 meters in diameter with small posts set 30 cm into the ground. A small rock lined fire pit was found in the center of the house. A. R. Kelly (1973:32-37) discovered 30 round to broadly oval Cartersville phase structures each with a central rock hearth, at 9Ful4 on the Chattahoochee River near Atlanta, Georgia. They averaged about 5 m in diameter and have been dated by radio-carbon determination to A.D. 214. In extreme northwest Georgia Jefferies (1976:19) recorded one complete and one partial structure at the Tunacunnhee site village area. Both are circular and about 3 m in diameter. Jefferies believes that the complete structure may represent a sweathouse because of the large rock-filled feature located inside. A radio-carbon determination of A.D. 280 and the recovery of simple stamped and cord-marked ceramics places the site in early Middle Woodland context (Jefferies 1976:20 and 32).

In the Normandy Reservoir in Tennessee the Banks III site (Faulkner and McCollough 1974) has some striking similarities to the Cane Island site. There the investigators discovered three Middle Woodland structures and associated features including earth ovens, pits, and burials located in a bend of the Duck River. The houses were oval (ranging from 7 to 12 m long and from 6 to 10 m wide) with two exhibiting midden stains outside the apparent doors and near the large ovens (Faulkner and McCollough 1974:276 and 283; also see their Fig. 21). Structure I at the Banks III site has two porticos, one on each end (1974:263). These are quite similar to the plan of the structure at Provenience Unit 3. Structure I at the Banks III site has been dated by a radio-carbon determination to A. D. 360 $\pm$ 315 (1974:272).

On Cumberland Island, off the Georgia Coast, Milanich excavated a house and work area attributed to the Early Woodland Deptford phase (1973). The structure was oval and about 10 m long by 7 m wide with a central fire pit inside. The posts were apparently set in wall trenches and the floor of the house was slightly depressed below the ground's surface.

In the Ohio Valley, Adena houses are circular and about 11 m in diameter and are characterized by paired-post construction (Webb and Snow 1945). The posts are inclined outward slightly resulting in eaves that protrude out. Interior support posts are also present.

In summary, the shape of known Early Woodland houses are generally circular or oval. The circular structures are between 3 and 5 m in diameter while those that are oval tend to be larger, ranging from 7 to 12 m long and 6 to 10 m wide. The usual form of wall construction was singular posts set into the ground; however, one case of wall trench

construction has been noted. No instances of paired post construction were noted for the southeastern United States although this form is common in the Ohio Valley. Centrally located rock hearths or fire pits are usually present.

Returning to Cane Island let us look at the possible structure in Provenience Unit 6 as it is more complete than the one in Provenience 3. Figure 19 illustrates several possible alignments of post holes suggestive of a structure. The alignment illustrated with a solid line is believed to represent a domestic structure. The alternatives are shown with dotted lines. Additional evidence suggesting that the solid line alignment is correct is derived from the fire-cracked rock Features 119 and 147 and the paired posts. The rock features are centrally located within the structure and are suggestive of a central hearth. The size of the proposed house outline, 7.5 m long by 5 m wide, conforms closely with other Woodland structures. While the alternative alignments illustrated in Figure 19 cannot be totally dismissed the evidence strongly suggests that the alighment of posts shown by the solid line represents a structure.

In Provenience 3, the picture is not as clear. The Excavation Unit did not expose enough area to reconstruct the shape of the structure. The major differences between the possible structure in Provenience 3 and that of Provenience 6 is that the former has no central hearth and fewer clear examples of paired posts. While the shape of the Provenience 3 house is uncertain there is a suggestion that the arrangement may have been roughly circular or oval.

For the purposes of this thesis, the posthole alignments discussed for Provenience Units 3 and 6 are assumed to represent the remains of

domestic structues. The structure at Provenience Unit 6 is more complete and a reconstruciton of its shape indicates that it was probably 7 m long by 5 m wide and contained about 30 m^2 of inside floor space. In Provenience 3 the exact shape and size of the dwelling cannot be ascertained because of the incomplete nature of the excavation. Although the suggested alignment of posts in the eastern half of the excavation (Figure 18) is tentative, it is probable that some form of structure is present in this area of the excavation.

If the post holes in both provenience units do represent the remains of domestic structures and if the associated features such as rock hearths, earth ovens and pits are contemporaneous with the structues, we may infer that each provenience unit represents the archaeological remains of an Early Woodland household. The weakness of this inference is that we cannot be certain that the features discovered constitute discrete areas representative of a single household.

In Provenience 6 it seems fairly certain that we have uncovered the major portion of an oval structure. Unfortunately there were no features such as earth ovens, storage pits or exterior hearths associated with this structure. In Provenience 3 while we do have features such as earth ovens, pits and possible exterior hearths, we do not have as clear a picture of the dwelling's size or configuration. Ideally, we would like to have had larger areas excavated around the periphery of each structure so that the complete plan of a household would be available. Unfortunately time and the excavation strategy prohibited this.

The features other than post holes discovered in Provenience Unit 3 are large and small earth ovens, pits, and clusters of fire-cracked rocks. Features 4 and 8 are large conical pits about 1 m deep. Both

contained large amounts of charred wood and about one-half a kilogram of fire-cracked rocks. Both features are located close to the possible structure with number 4 being associated with a very dark midden stain (Figure 14). This stain may reflect the repeated emptying of the oven resulting in a heavier concentration of carbonized wood. Features 2, 9 and 12 are similar to Features 4 and 8 in that they all contain relatively large amounts of fire-cracked rocks and charred wood but are smaller in size and shallower (their depth is less then their width or length). They are interpreted as smaller ovens but may actually have served another function. Feature 16 is quite shallow containing some charred wood and no rocks or cultural material. It resembles features described by Binford (1967, 1972) as smudge pits used in the curing of animal hides. As the physical properties of Feature 16 are similar to Binford's features, it is possible that they may have served the same function.

Features 28, 33, and 62 are all relatively shallow (20 cm), contain no charred wood or fire-cracked rocks and appear to be too large for post holes (ca. 40 cm in diameter). Their function is not fully understood; however, preserved pollen from Feature 33 suggests that plants of economic importance may have been stored there (See Chapter VI).

Fire-cracked rock was common at Provenience Unit 3 and in two instances tight clusters of rocks were encountered. Features 53 and 68 are groups or clusters of rock that are concentrated in a small area (less than 40 cm in diameter) and in some cases touch one another. Each yielded about 3 kg of rock. It is unlikely that these two features served as hearths as no large quantities of charred wood was found with them. Feature 68 yielded relatively large quantities of preserved pollen

(including Zea mays) a fact that would seem to negate the possibility of it being a hearth as pollen is destroyed by fire. The most reasonable functional interpretation is that those rock clusters represent stockpiled rocks used in hot rock boiling.

Unfortunately the excavations at Provenience 6 produced no earth ovens or other pits. Two large rock clusters, Features 119 and 147, were found inside the structure and probably served as a single hearth. Although little charcoal was present with these features their position in the center of the structure and their large size (over 60 kg each) set them apart from the rock clusters in Provenience 3. It is felt that other features similar to those discovered in Provenience 3 would have also been discovered in Provenience 6 if more area around the house had been excavated.

The excavations at Provenience Units 3 and 6 have led to the following tentative reconstruction of the plan of an Early Woodland household:

1) The houses are oval measuring 7 m long by 5 m wide and containing about 30 m^2 of interior floor space.
2) Construction was by both paired post and by single post methods. A small portico may be attached to some structures.
3) A centrally located rock hearth is present in some households, while possible exterior hearths are present in other households.
4) Features associated with households are deep earth ovens containing relatively large quantities of fire-cracked rocks and charred wood, shallow pits containing charred wood only and other pits containing neither fire-cracked rocks or charred wood.

5) No burials were discovered at either household suggesting that interment of the dead may have taken place in areas away from the household.

V. ANALYSIS OF ARTIFACTS

In January 1978 inclement weather forced a temporary termination of fieldwork throughout most of the Wallace Reservoir. During this period of time the Cane Island fieldcrew began an initial sorting and preliminary identification of artifacts at the project's fieldhouse in Greensboro, Georgia. It was hoped that arrangements would be made to return to Cane Island and expand our work on the very productive Woodland component. Therefore, the initial lab work concentrated on a preliminary analysis of Levels IV, V, and VI from Proveniences 3 and 6.

The procedures followed for the analysis of artifacts in the Greensboro field laboratory were consistant with the procedures used at the Wallace Project, Riverbend Laboratory in Athens, Georgia. A single exception was that the artifacts were not washed. Washing was not necessary as the sand from which they were excavated did not adhere and any cleaning would possibly have severely abraded faint impressions on ceramics or created additional wear patterns on chipped stone tools. Artifacts were separated on the basis of general classes initially. These included ceramics, chipped stone tools, ground stone tools, chipped stone debitage, miscellaneous rocks (including those generally referred to as fire-cracked), bone, and charred plant remains. Ceramics were in turn identified as to cultural affinity by placing them in categories of widely recognized types based on attributes such as tempering agent, surface treatment, decorative motif. Stone tools and debitage were

classified as to material (quartz, chert, or diabase) and form (bifacial or unifacial). Floral and faunal remains and palynological samples were sent to appropriate laboratories for identification and analysis and miscellaneous rocks were weighed. Subsequent to the preliminary identification and sorting, the artifacts were incorporated into the Wallace Project Riverbend Laboratory in Athens where they are presently stored.

The Ceramic Analysis

The analysis of ceramics from the Cane Island site was directed toward the following questions:

1. What constitutes the ceramic assemblage of the Long Shoals phase?
2. What is the minimum number of vessels present at each provenience?
3. What, if any, are the differences between the ceramic assemblages of the households at Provenience 3 and 6?
4. What activities can be inferred from the distribution of vessels at each household? Where are these activities occurring?
5. What is the duration of occupation for each household based on the estimate of minimum number of vessels (MNV) present?

Question #1 has been dealt with in Chapter III. The reader is advised to consult that chapter for discussions concerning the Long Shoals phase ceramic assemblage and its chronological considerations.

Methods

To answer the above questions all grit-tempered sherds from Levels IV, V, and VI of Provenience 3 and 6 were examined. The sample numbered 567 sherds from Provenience 3 and 250 from Provenience 6 for a total of

817. The first task of the analysis was to estimate the minimum number of vessels (MNV) for each household cluster.

A determination of MNV is usually made by an examination of rim sherds only. In our case, however, rims were not frequent enough to comprise an adequate sample. It was decided, therefore, to use the attributes of surface decoration, motif execution, surface texture, rim/lip form (when present) and color of paste in determining the MNV of each household cluster. It should be noted that this procedure is subject to greater error than one employing rim sherds only. In order to reduce the error as much as possible the attributes of surface decoration, motif execution and rim/lip form were weighted heavily. Paste color and surface texture were used to support the contention that two sherds belong to the same vessel. Cross-mends were of course positive evidence of two sherds belonging to the same vessel. Cross-mends were observed from sherds in squares separated by as much as four meters. These cross-mends give us confidence in making inferences concerning the method of refuse treatment by observing the degree of "spread" attributable to a broken vessel.

The procedure for determining MNV was as follows. First the sherds were segregated into the following classes: plain, fabric-marked, check-stamped, cord-marked, and unidentified stamped (a distinct motif, not a residual category). Very small sherds were rejected if they could not be placed in one of the above classes with confidence. During this procedure special attention was also given to distinct motif patterns. During this subjective examination it was possible to identify distinctions in the decoration of a sherd due to nuances in paddle design. For instance, on check-stamped and fabric-marked sherds the size of the check

or weave and their application were the basis for determining individual vessels. Plain sherds presented somewhat of a problem due to their lack of decoration and low frequency. MNV estimates for plain vessels were made almost solely on the basis of rim and lip form. Another problem with plain sherds is that they may represent plain zones on otherwise decorated vessels. Such a vessel, #10, with a plain zone extending from lip to shoulder and check-stamped below, was in fact observed. For these reasons little confidence is placed on the MNV estimate for plain vessels.

The initial examination of sherds enabled the identification of distinct vessels from the collection of sherds. The next step was to assign as many sherds as possible to the different vessels recognized so that the frequencies of sherds belonging to each vessel would be known. This was necessary in determining which vessels are represented by many sherds and therefore probably broke while in use during day-to-day tasks in the household. Vessels that are represented by only a few sherds can be explained by considering two alternatives. They may represent vessels that were used by nearby households and have no connection with the households in Proveniences 3 or 6. Alternatively, they may belong to the households at Proveniences 3 and 6 but are all that remain of the vessel, the majority being discarded elsewhere.

The task of assigning all sherds to a specific vessel has some problems. The check-stamped sherds present in Provenience 3 presented the most difficulty. This was true because of the large number of sherds that could not, with any confidence, be assigned to a vessel. Most check-stamps are similar in size and generally look alike. Only when a distinct check, rim, or past color appeared was it possible to place the sherd with a specific vessel. This was not much of a problem with the

fabric and cord-marked sherds because of the range and variation in the weave size. The unidentified stamped sherds were little problem as their decoration "stood out" and was easily recognizable.

The last step in the ceramic analysis was to plot the distribution of each vessel on maps of the two proveniences. When sherds of any specific vessel were located in adjacent squares the "validity" of the vessel was strengthened. Fortunately most sherds of any one vessel were located in contiguous squares and on several occasions sherds could be cross-mended to other located several meters away.

The Results of the Ceramic Analysis

The Minimum Number of Vessels Analysis. In Provenience 3 at least 23 vessels were identified (Representative sherds are illustrated in Plates 2 and 3). Brief descriptions of these vessels are presented in Table 6. Table 7 shows the relative frequency of sherds belonging to the 23 individual vessels from the following ceramic types: fabric-marked, check-stamped, plain, cord-marked, and unidentified stamped. As can be seen, some vessels are represented by small numbers of sherds. A more conservative estimate of 9 vessels is made by considering only those vessels whose sherds comprise 5% or more of the total number of sherds from each type. These vessels, termed "major" vessels, were probably the ones actually in use at this household. Figure 20 illustrates the distribution of all vessels in Provenience 3 while Figures 21 and 22 illustrate the location of vessels represented by relatively large numbers of sherds.

Provenience 6 yielded portions of at least 16 vessels (Representative sherds are illusted in Plate 4). Descriptions of these are found

TABLE 6. DESCRIPTION OF VESSELS, PROV. 3.

VESSEL NUMBER	SURFACE DECORATION	SURFACE TEXTURE	PASTE COLOR	RIM FORM	LIP FORM
1	plain	sandy	dark brown	straight	slightly rolled
2	plain	smooth	black	straight	rounded
3	plain	sandy	orange	ND	ND
4	plain	smooth	orange	ND	ND
5	medium fabric	smooth	black	ND	ND
6	fine fabric	sandy	dark brown	flared	rounded
7	coarse fabric	smooth	black	ND	ND
8	very coarse fabric	smooth	black	ND	ND
9	medium fabric	sandy	orange	ND	ND
10	medium check with punctations	smooth	black	flared	rolled
11	medium check	sandy	black	flared	rolled
12	fine check	sandy	red/black	ND	ND
13	medium check	smooth	red/black	flared	rolled
14	bold check	smooth	black	flared	rolled
15	indistinct check	smooth	dark brown	flared	flattened
16	linear check	sandy	black	ND	ND
17	medium check	smooth	dark brown	ND	ND
18	medium check	sandy	black	flared	rolled
19	linear check	smooth	black	ND	ND
20	linear check	smooth	dark brown	ND	ND
21	cord-marked	smooth	dark brown	straight	thinned
22	unidentified stamped	sandy	red/brown	flared	rolled
23	unidentified stamped	smooth	black	ND	ND

ND -- rims not present

TABLE 7. SHERD FREQUENCY FOR EACH VESSEL, PROV. 3.

	VESSEL #	SHERDS	% OF TOTAL
Plain Vessels	1	2	3.7
	2	3	5.7
	3	2	3.7
	4	1	1.9
	Other plain	45	85.0
	TOTAL	53	100.0
Dunlap Fabric-marked Vessels	5	30	18.7*
	6	103	64.4*
	7	2	1.3
	8	6	3.7
	9	1	0.6
	Other fabric	18	11.3
	TOTAL	160	100.0
Cartersville Check Stamped Vessels	10	12	5.2*
	11	4	1.7
	12	42	18.1*
	13	7	3.0
	14	2	0.8
	15	1	0.4
	16	23	9.9*
	17	2	0.8
	18	25	11.0*
	19	1	0.4
	20	4	1.7
	Other check	109	47.0
	TOTAL	232	100.0
Cord Marked Vessel	21	15	100.0*
Unidentified Stamped Vessels	22	62	57.9*
	23	14	13.1*
	Other Unidentified	31	29.0
	TOTAL	107	100.0

* Indicates that this vessel is represented by more than 5% of the sherds from all sherds of that type.

TABLE 8. DESCRIPTION OF VESSELS, PROV. 6.

VESSEL NUMBER	SURFACE DECORATION	SURFACE TEXTURE	PASTE COLOR	RIM FORM	LIP FORM
1	plain	smooth	black	flared	rounded
2	plain	sandy	dark brown	flared	rounded
3	plain	smooth	light brown	straight	flat
4	coarse fabric	smooth	black	straight	thinned
5	coarse fabric	smooth	red/brown	ND	ND
6	fine fabric	smooth	red/black	ND	ND
7	fine fabric	smooth	red/black	ND	ND
8	fine check	smooth	dark brown	flared	rolled
9	medium check	smooth	light orange	ND	ND
10	medium check	smooth	light tan	ND	ND
11	medium check	smooth	black	ND	ND
12	linear check	smooth	red/black	ND	ND
13	indistinct check	smooth	black	ND	ND
14	linear check	smooth	black	ND	ND
15	linear check	smooth	dark brown	ND	ND
16	linear check tetrapod	smooth	black	ND	ND

ND -- rims not present

TABLE 9. SHERD FREQUENCY FOR EACH VESSEL, PROV. 6.

	VESSEL #	SHERDS	% OF TOTAL
Plain Vessels	1	2	5.9
	2	2	5.9
	3	7	20.6
	Other plain	23	67.6
	TOTAL	34	100.0
Dunlap Fabric-marked Vessels	4	145	87.3*
	5	2	1.2
	6	4	2.4
	7	8	4.9*
	Other fabric	7	4.2
	TOTAL	166	100.0
Cartersville Check Stamped Vessels	8	7	14.0*
	9	21	42.0*
	10	6	12.0*
	11	1	2.0
	12	2	4.0
	13	1	2.0
	14	6	12.0*
	15	2	4.0
	16	1	2.0
	Other check	3	6.0
	TOTAL	50	100.0

* Indicates that this vessel is represented by more than 5% of the sherds from all sherds of that type.

in Table 8. As in Provenience 3, some vessels are represented by small percentages of sherds while others are more abundantly represented. Table 9 shows the relative frequencies of sherds from each vessel. Six vessels whose sherds compromise 5% or more of the total number of sherds from each type are considered to be major vessels. The exception to this is that the plain vessels are not considered as major vessels because they may be rims to check-stamped or fabric-marked vessels or they may belong to the later Woodland component in Level III. Figure 23 illustrates the location of all vessels in Provenience 6 while Figures 24 and 25 illustrate the location of only major vessels.

A Comparison of Ceramic Assemblages Between Provenience Units. An interesting point of comparison is the ratio of check-stamped vessels to fabric-marked vessels between provenience units. Regardless of whether you choose the upper or lower estimate of MNV the ratio in both households approximates 2:1 (Table 10).

TABLE 10. MINIMUM NUMBER OF VESSELS ESTIMATED

	PROVENIENCE 3				PROVENIENCE 6			
	Upper MNV		Lower MNV		Upper MNV		Lower MNV	
	N	%	N	%	N	%	N	%
Check	12	79	4	67	9	69	4	67
Fabric	5	29	2	33	4	31	2	33
Total	17	100	6	100	13	100	6	100

This strong similarity suggests contemporanity of the households represented at both proveniences.

If one looks at the ratio of check-stamped to fabric-marked sherds instead of vessels an entirely different picture is seen (Table 11).

TABLE 11. RATIO OF CHECK-STAMPED TO FABRIC-MARKED SHERDS

	Provenience 3		Provenience 6	
	N	%	N	%
Check	232	59	166	77
Fabric	160	41	50	23
Total	392	100	216	100

If only sherd counts were used in the ceramic analysis a distorted view of the differences between provenience units would have resulted.

A final point of comparison exists for the two ceramic assemblages. The Provenience 3 assemblage consists of four decorated types: check-stamped, fabric-marked, cord-marked and a complicated stamped variety of unusual nature. The assemblage from Provenience 6 is represented by only check-stamped and fabric-marked types. This difference in assemblage composition may be a result of the smaller size of Provenience 6; that is we failed to discover the cord-marked or complicated stamped types. It is possible, however, that these types are not present at Provenience 6.

Ceramic Distribution

This section will examine the distributions of the remains of major vessels in both proveniences with the goal of interpreting these distributions with reference to the household activities they may represent. In Provenience 3, 9 vessels are represented by relatively large numbers of sherds. Their distribution across the provenience unit are illustrated in Figures 21 and 22. Vessel #5 is located west of the structure around the area of the midden stain and possible entrance. Other portions of this vessel are found a meter away near the southwest corner of the

provenience. Vessel #6 is, for the most part, inside the structure, but portions are also found in an area south of the structure. Vessels 5 and 6 are both fabric-marked.

Vessels #10, 12, 16, and 18 are check-stamped. Portions of #10 occur both inside the structure and outside to the west of it. Two sherds of this vessel, separated by 4 m, exhibit cross-mends. Vessel #16 is located in three separate areas. Most of this vessel occurs inside the structure on the north end, however, other portions are located near the probable entrance of the portico. The portions are separated by at least a meter. Vessel #12 is found primarily in an area south of the structure's portico. Other portions are found inside the structure and 3 m south of the structure. Portions of Vessel 18 are found several meters west of the structure in Provenience 3. Number 21 is represented by fifteen sherds that cross-mend and are all located at the edge of the island. Vessel #22 is located west of the structure and exhibits little horizontal spread. Portions of Vessel #23 are found near the edge of the island.

In Provenience 6, there are 6 vessels that are represented by relatively large numbers of sherds. Their distribution across the provenience unit is illustrated in Figures 24 and 25. Vessels #4 and #7 are fabric-marked. Vessel #4 is located primarily inside the structure, however, portions of it are found to the west of the probable entrance. Vessel #7 is located outside of the structure in the southeast corner of the provenience.

Vessels #8, 9, 10, and 14 are all check-stamped. Vessels #8 and 9 have the same distribution inside the structure. Portions of #8 and 9 are also found outside of the structure to the west of the possible

entrance. Vessel #10 is located primarily west of the structure, however, portions may have originated inside from along the western wall. Vessel #14 is located north of the central rock hearth in the interior of the structure.

The ceramic distributions in both provenience units exhibit some interesting patterns. No complete or reconstructable vessels were encountered. Only small fragments were recovered, large sherds being noticeably absent. The implication is that these vessels were not abandoned but represent vessels that broke during the day-to-day activities of household life. When the site was finally abandoned whole vessels were probably carried away leaving behind only useless broken vessels. Therefore the ceramic remains discussed in this thesis constitute refuse from household activities.

The distribution of vessels in each provenience allows certain insights into the treatment of refuse. In Provenience 3, Vessels #5, 10, and 16 are located both inside and outside of the structure. A possible explanation of why only small sherds are represented is that they would easily become lost while large portions that were in the way may have been discarded in the nearby river.

In Provenience 3 there is evidence that a specific area outside of the structure may have been used as a refuse dump. The area immediately west of the portico contains the remains of at least 5 vessels (5, 10, 16, 18, and 23). Three of these vessels have portions located inside the structure. Additional evidence supportive of the dump area comes from the concentrations of lithic refuse in the same area. This is discussed in detail in the section on lithic analysis that follows.

Certain vessels are found outside of the structure in both provenience units. In Provenience 3, Vessels 12, 21, 22, and 23 are located primarily outside of the structure. In Provenience 6, Vessel #7 is located outside of the structure. The implication is that certain activities involving ceramic vessels are conducted outside of the house.

In summarizing the distribution of ceramic vessels in the Woodland households at Cane Island we can make the following statements:

1. The vessel remains are attributed to both primary and secondary refuse (Schiffer 1972, 1976). That is, we have located areas that appear to reflect the location of vessels when they were last used and the areas where broken vessels were discarded.
2. Vessels were used inside the house and on the exterior. This implies that the activities concerning food preparation, cooking, and storage were conducted in various locations in the household.
3. Larger portions of vessels were probably thrown into the river because they cluttered the area or were a hazard. This would account for the small size of sherds left behind for us to recover.

The Duration of Occupation

The MNV estimates for each provenience unit are 9 vessels for Provenience 3 and 6 vessels for Provenience 6. The values for vessels per square meter of excavation are similar (Provenience 3: .095 vessels/m^2 and Provenience 6: .100 vessels/m^2). These values can be converted into vessels per household if we can estimate the size in m^2 of each household unit. To do this we need to examine other archaeological households.

The areas of the Woodland households at Binford's Hatchery West site are calculated from data in his table XXXVI (1970:86). The settlement area attributed to the LaMotte I component is 804 m^2 with 2 houses or 402 m^2 per house. The area for the LaMotte II component also with 2 houses is 1001 m^2 or 500.5 m^2 per house. Winter (1976:25) reports that formative households at the Tierras Largas site in the Valley of Oaxaca may be scattered over 300 square meters. Although this data is somewhat scant we could estimate that the households during the Woodland period should range from 500 to 300 square meters. For the purposes of this analysis we will use the median figure of 400 m^2 for the size of a household at Cane Island. From these figures the estimated total area of each household would have yielded about 39 vessels (Table 12).

Information derived from ethnoarchaeological sources (Foster 1960; David 1972; Pastron 1974; and DeBoer 1974) allow some "ball park" estimates of the duration of occupation and/or population responsible for the estimate of 39 vessels for the Proveniences 3 and 6 households at Cane Island. Foster's ceramic census at Tzintzuntzan, Mexico (1960) suggests that individual households may possess 60 - 75 vessels at any one time. DeBoer reports that 5 households in Upper Ucayali region of Peru had 120 vessels among them or an average of 24 vessels for each household (1974:335). Pastron working with the Tarahumara Indians of Northern Mexico reports that "the total number of pots that my informants claimed to own ranged from a low of 7 to a high of 19" (1974:108). All of the above authors except David (1972) report the median life expectancy of any pot as 1 to 2 years. David indicates that pots may last as long as 12.5 years.

TABLE 12. ESTIMATE OF VESSELS PER HOUSEHOLD.

	MNV*	EXCAVATION SIZE (M^2)	VESSELS/M^2	ESTIMATED AREA OF HOUSEHOLD (M^2)	VESSELS/HOUSEHOLD
Prov. 3	9	95	.095	400	38
Prov. 6	6	60	.100	400	40

* Conservative Estimate

The figures that represent vessels in daily use and are not comparable to those from the archaeological context of Cane Island because the rate at which vessels enter the archaeological context is a result of several factors which determine the life expectancy of a pot. Foster (1960:608) has suggested 5 factors that effect the life expectancy of pottery vessels.

1. The basic strength of the pot. The stronger the vessel the longer it may last.
2. The use or function of the pot. Pots in daily use are liable to break more often than those used only on special occasions.
3. The mode of use. Where and how the vessel is used determines its likelihood of being broken.
4. The cause of breakage. The most common cause of breakage results from carelessness by the housewife, her children and possibly pets.
5. The cost of pottery. The more expensive or hard to get pottery is the more likely it is protected.

Although we have little control over these variables at Cane Island, the figures from ethnoarchaeological pottery censuses are helpful in that they allow outside limits concerning the duration of household occupation. Table 13 gives several estimates for the duration of occupation of Woodland households based on different values for the key variables. The formula in Table 13 is derived from David (1972:142). N_T represents the number of vessels that would accumulate on an archaeological site after T years. N_o represents the number of vessels in use at any given time, M is the median life expectancy of all vessels and T is the time necessary for N_T vessels to accumulate. The estimates of T are useful in

TABLE 13. DURATION OF OCCUPATION BASED ON VESSEL PER HOUSEHOLD

N_T	39		39		39		39		39		39	
N_o	5		10		15		20		25		30	
M	1	2	1	2	1	2	1	2	1	2	1	2
T	13.6	27.2	5.8	11.6	3.2	6.4	1.9	3.8	1.12	2.24	.6	1.2

$$N_T = N_o + \frac{N_o}{2}\left(\frac{T}{M}\right)$$

N_T = Number of vessels at time T

N_o = Number of vessels in use at household

M = Median life expectancy of vessels

T = Time necessary for N_T vessels to accumulate

that they allow us to say that the households probably lasted at least half a year and no longer than twenty-seven years. They suggest that a reasonable estimate of household occupancy is 2 - 4 years based on 20 vessels in use and 1 - 2 years median life expectancy.

Lithic Analysis

The analysis of lithic artifacts from the Cane Island site was directed toward the following:

1. The examination of variability within assemblages from each provenience unit and the examination of variability between assemblages from Provenience Units 3 and 6.
2. The identification of activities involving lithic artifacts that occurred at each provenience unit.

The lithic artifacts may be divided into two major classes: debitage and finished tools. The debitage category consists of small pieces of stone, called flakes, that are waste products of tool manufacture. In the analysis of debitage from the site, only complete flakes were considered. Variation in the debitage relates to stages of tool manufacture. In the analysis of debitage from the site, only complete flakes were considered. Variation in the debitage relates to stages of tool manufacture while variation in finished tools relates to functional differences in activities that took place.

The debitage recovered at each provenience unit is considered to belong to the primary refuse category explicitly defined by Schiffer (1972, 1976). Flakes are generally undisturbed by the inhabitants and may be thought of as having an in situ quality, when found in an archaeological context. The debitage from Cane Island is small in size and

easily lost in the loose sand that must have existed during the occupation of each household. It is felt that the areas where debitage is concentrated on the site reflect activities concerned with stone tool manufacture.

Complete and broken tools found in the archaeological context may be attributed to loss or discard. It cannot be determined with certainty that the tools were used exactly where they were left but it seems probable that they were used near where we found them. For the purposes of this thesis chipped stone tools will be assumed to belong to the category of primary refuse.

The identification of activity areas and inferences as to their function depends on the recognition of key attributes. Following a model similar to the one developed by Michael Collins (1976:2-11) we will examine the various stages in the manufacturing process by which raw stones become tools. Each stage produces a product group of chipped stone artifacts and distinctive waste material. Through the recognition of these product groups or rather their attributes we may suggest the stage of manufacture that is represented. After procurement of the raw material through quarrying or selective collection, the first stage becomes core preparation and initial reduction. Usually the unwanted portions of the stone, such as the cortex are removed by direct percussion with a hard hammer. The products resulting from this stage are cores, large flakes, and non-descript waste material. Either the cores or the flakes may be modified into tools or they may be used as is. The location of this activity may take place in close proximity to the quarry or source and the unmodified flakes and/or cores may be carried elsewhere for further reduction.

The next stage in stone tool manufacturing is the optional primary trimming in which the cores and/or flakes acquire their primary shape. This shaping involves retouch flaking and thinning to obtain the proper outline and edge configuration. For simple tools this is the last stage of manufacture. Other tools with more complex shapes require additional retouch. The products created by this primary trimming include some finished implements, rejects, preforms, and debitage.

An optional stage is secondary trimming and shaping. Preforms from the previous stage are refined into finished implements by retouch flaking. "The products of this activity set are usually the most variable in any assemblage and their forms probably include the greatest amount of 'stylistic' expression among chipped stone tools" (Collins 1973:10). Products include the finished implements, rejects, and debitage.

An additional stage is the modification of worn-out tools. These tools may be resharpened for continued use or may be modified into different tools for a different use.

These stages result from different activities and methods. Therefore we should be able to recognize them based on the different products that are recovered from archaeological context. This is especially true of the debitage. One would expect the waste flakes from the initial reduction stage to exhibit certain attributes that are consistent with percussion flaking. The same is true of the optional trimming stages; that is the debitage should exhibit attributes attributable to retouch flaking. Baker (1976:5-6) in an experiment using quartz from a Putnam County Georgia quarry has demonstrated that several significant attributes may be used to distinquish quartz flakes produced by hard hammer percussion from soft hammer percussion or retouching. These attributes

are flake curvature, point of impact characteristics, and inner surface configuration. The latter includes the presence or absence of a lip below the striking platform and a bulb of percussion. Percussion flakes struck with a hard hammer tend to be straight, exhibit a detectable point of impact and bulb of percussion, and lack any pronounced lip at the striking platform. Soft hammer techniques generally yielded flakes with concave curvatures, no detectable point of impact crushing, a detectable lip at the striking platform, and a small bulb of percussion. The separation of percussion and retouch flakes based upon the above attributes was standard operating procedure in the laboratory. Dr. Paul R. Fish, whose specialty is lithic technology, examined a sample of flakes used in the following analysis and concurred with our identification.

Debitage

All complete flakes from Levels IV, V, and VI were used in the analysis. In order to infer what activities are represented by the quartz and chert debitage, two variables were examined. These are the ratio of percussion flakes to retouch flakes, P/R, and the ratio of cortex flakes to non-cortex flakes, C/N. Values for P/R and C/N should be high (approaching 1.0) in flakes that represent initial reduction of stone and they should be low (approaching zero) in those that represent primary and secondary trimming.

There are major differences in the densities of quartz and chert flakes in both provenience units. The distributions of flakes are illustrated in Figures 26 - 29. The tendency for flakes to concentrate in certain areas is portrayed by shading. The flakes in these shaded squares are the ones used in the following analysis.

In Provenience 3, four areas that yielded concentrations of quartz flakes were examined. These areas represent all of the high density areas that yielded eighty or more flakes per square meter. In Area A (Fig. 26) which is located on the edge of the island away from the structure, 634 quartz flakes were examined. Area B is in the center of the excavation and contains 919 quartz flakes and a quartzite hammerstone. Area C is inside the structure with 252 quartz flakes. Area D is near the south wall of the structure and contains 109 quartz flakes. Table 14 shows the P/R values and confidence limits for these clusters. In general these values are low and indicate primary or secondary trimming rather than initial reduction. Area C which is associated with the structure has a slightly higher P/R value than those areas further away.

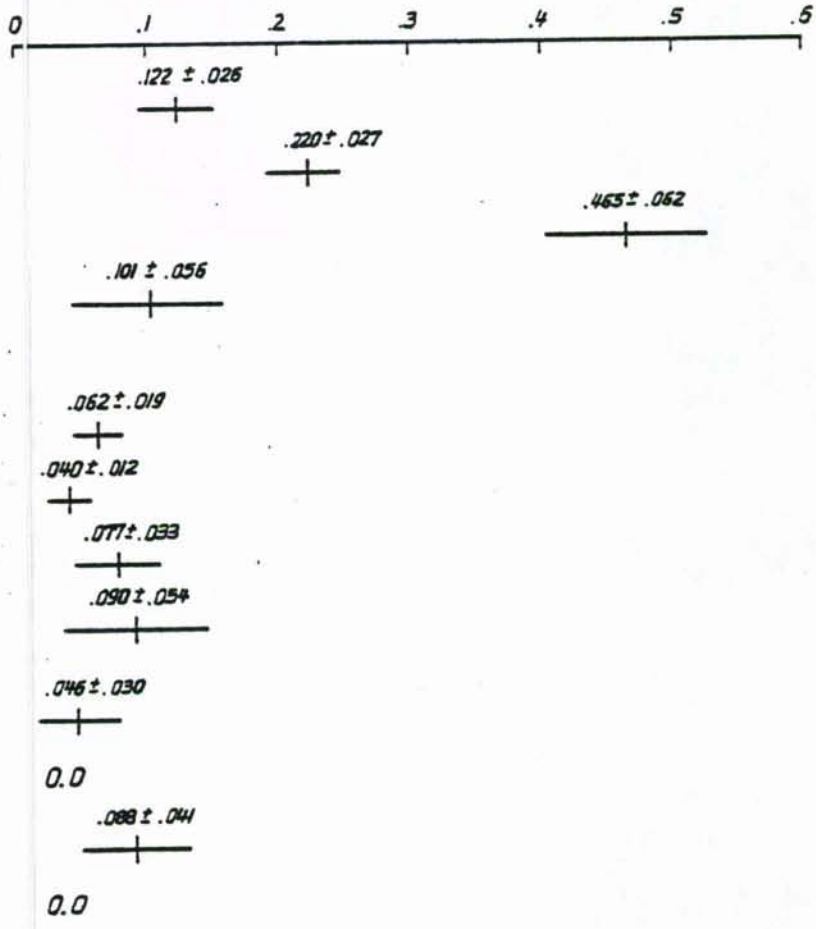
The C/N values for Areas A-D are very low (Table 14) and strengthen the argument for secondary trimming activities. There are no appreciable differences in the C/N values between clusters.

The areas of chert debitage E and F are comprised of squares that produced ten or more flakes. Area E (Figure 27) is located on the edge of the island and consists of 183 chert flakes. Cluster F is located just outside of the structure along the north wall with 36 flakes. P/R and C/N values (Table 14) are very low and point toward activities involving secondary trimming of finished implements. The quartz concentration A overlaps the chert concentration E. This indicates that the area along the riverbank served as the location of activities directed toward chipped stone tool manufacture.

The debitage clusters at the Provenience 3 household are generally composed of retouch flakes with little cortex present. By inference we may state that they represent the final stages in the process of chipped

9 Pm 209 Prov. 3 Flake Analysis

Table 14



stone tool manufacture. The initial reduction of cores probably took place elsewhere on the site, if naturally occurring river cobbles were utilized as raw material. There is no evidence that the initial reduction activity occurred within the immediate area of the household.

In Provenience 6, three areas of debitage were examined. Inside the structure an area of chert debitage was located next to the hearth. An area of quartz debitage was also located inside the structure. Outside the structure at the south end of the provenience was a relatively large amount of quartz debitage. Chert debitage was also found outside the structure but in such low quantities that it was not included in the analysis. The units of analysis therefore were a chert and quartz debitage area from inside the structure and a quartz debitage area south of the structure.

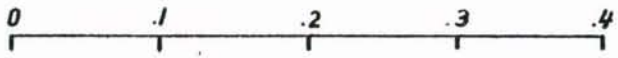
Area A of quartz debitage was defined as all those squares that produced twenty or more flakes per square meter. The flakes from this sample number 342 and are primarily located along the wall of the structure but most of the flakes probably originated from outside the wall. Area B is a quartz debitage area inside of the structure and is comprised of 3 squares that produced twenty or more flakes per square (Fig. 28).

The P/R and C/N values are presented in Table 15. The two quartz debitage areas have overlapping P/R and C/N values which are relatively low. These values are similar to those from the Provenience 3 quartz debitage areas and the debitage probably represents activities related to primary and secondary trimming rather than core reduction.

The chert debitage sample consists of 79 flakes drawn from those squares inside the structure that produced twenty or more flakes per

9 Pm 209 Prov. 6 Flake Analysis

Table 15



Quartz Area A P/R .267 ± .047

Quartz Area B P/R .217 ± .095

Chert Area C P/R .162 ± .081

Quartz Area A C/N .089 ± .030

Quartz Area B C/N .043 ± .047

Chert Area C C/N .234 ± .093

square meter. (Area C in Figure 29). The concentration of chert flakes located to the east of the structure was not included because of the possibility that they may belong to the Stallings Island component associated with Feature 120 in the same area.

The P/R and C/N values for the chert debitage in Provenience 6 are presented in Table 15. These values are relatively low and indicate either secondary trimming or the modification of worn-out tools. The values from the chert debitage in Provenience 6 are slightly higher than the chert debitage in Provenience 3. This is especially true of the C/N value. The sample from Provenience 6 consists of more flakes with cortical surfaces than either sample from Provenience 3. As in Provenience 3, the locations of activities directed toward tool manufacture overlap to some degree.

In summary, the debitage from both Woodland households represent activities involving the final stages in the process of manufacturing chipped stone tools. The flakes are generally retouch flakes generated by the reduction of preforms into finished implements. The stage of initial core preparation and reduction is not represented at either household. This activity was probably performed closer to the source of the stone. When one considers that each household had several areas where stone tools were fashioned, it is apparent that this activity was quite important and widespread. The debitage from both households is quite similar in respect to the variables examined in this analysis (P/R and C/N). This points to the general similarity of activities conducted on the site by members of different households. This similarity is also evident in the composition of the chipped stone tool assemblage from each household that is described next.

Chipped Stone Tools

During the excavation of the two Woodland households a total of 136 chipped stone tools were recovered from Levels IV, V, and VI, 97 from Provenience 3 and 39 from Provenience 6. The implements display a wide range of variation in size, shape, and material (Plates 5 - 7). Quartz and quartzite from local sources, and chert from the coastal plain were utilized in fashioning these tools, with the former two being most popular. In Provenience 3 quartz and quartzite comprise 77% of the total chipped stone tools while in Provenience 6 these materials account for over 74%. In addition to quartz, quartzite and coastal plain chert, there is evidence of flint from the Ridge and Valley Province, and locally available diabase being used as chipped stone tool sources. No tools made of these materials were found but a few retouch flakes of dark flint and several of diabase were recovered, suggesting that tools manufactured from these sources were also utilized.

The tools have been assigned to broad categories based on form and method of manufacture. The cateogries are projectile points, bifaces, rejects, flake tools, and unifacial tools. The frequencies of each category are present in Table 16. The projectile point category is comprised of complete and fragmentary specimens of chert and quartz. The projectile points resemble the Greenville, Nolichucky, and Camp Creek points from the Camp Creek site in eastern Tennessee (Lewis and Kneberg 1957:17). They are generally triangular in shape with straight or incurvate bases. There is one stemmed and two side-notched points. The biface category is comprised of all bifacially retouched tools that are not projectile points. These are also generally triangular in shape but are often thicker and lack fine retouching. Rejects appear to be

unfinished projectile points that broke during the manufacturing stage or could not be successfully trimmed. Some of these rejects may have been used as tools but others probably were simply discarded. The category of flake tools consists only of chert flakes that exhibit limited retouch on one or both faces. There are, no doubt, quartz flake tools present but their recognition is difficult at best so they are excluded for the present time. Unifacial tools are those quartz and chert examples that have received limited retouch on one face. They are larger than the flake tools and are somewhat crude in execution.

These categories are admittedly biased toward certain preconceived notions of the writer. A better classification would be based on patterns of edge wear observed on the tools. Several attempts to undertake edge wear studies have been reported (Semenov 1964; Keeley 1974; Tringham, et al. 1974; Brose, 1975). Unfortunately these studies have not used quartz in their experiments. The chipped quartz from Cane Island is coarse grained and light in color, making recognition of microscopic wear patterns difficult or impossible. Until much more time is spent examining quartz tools and replicating them for experimental use, wear pattern analysis of tools of this material will be unproductive. Because we cannot demonstrate with any certainty what use a certain tool was put to, we must limit ourselves to speculations concerning their functions.

The major goal of this analysis of chipped stone tools will be the identification of discrete areas in both households where a restricted range of activities involving tool manufacturing and tool use occurred. The tools in Proveniences 3 and 6 are not randomly distributed. Figures 30 through 42 illustrate the distribution of all chipped stone tools in both proveniences.

In Provenience 3, three areas of the site appear to have high concentrations of tools present. Area A, on the edge of the island in the Western part of the excavation, produced a high number of projectile point fragments. Area B is north of the structure in a corner of the excavation and produced a high number of tools, especially chert bifaces and chert flake tools. The third area, C, is inside the structure where tools appear to be more concentrated than in areas immediately outside. Other chipped stone tools are scattered about in a seemingly random distribution around the periphery of the structure.

The concentration of tools on the western edge of the site (Area A) overlaps with two debitage concentrations. Quartz and chert flakes were quite numerous in this area (Figures 26 and 27). It is suggested that the debitage and many of the broken points located here are the result of activities relating to the manufacture of tools. Two quartz rejects found in this area tend to support this idea. It should be noted, however, that many more rejects are found in other tool concentrations than in this area.

Area B, in contrast to A, does not overlap any high densities of debitage. The preponderance of chert artifacts and the almost complete lack of any chert debitage implies that the activity of tool manufacturing did not occur here. The tools found here probably result from their being used or cached at this location. In addition to the chert bifaces and flake tools, several kinds of quartz artifacts were recovered from Area B. The four quartz rejects recovered from here are some distance away from any major concentration of quartz debitage. This argues for the possibility that this class of artifact was actually utilized and not just rejected as unsuitable during manufacture. Given the fact that

Area B yielded a wide range of chipped stone artifacts in a relatively small area and that no appreciable amounts of debitage are found in association with them we can argue that this area was not an area where the activity of tool manufacturing occurred.

Area C is not as clearly delineated as A and B, nevertheless, broken quartz projectile points and quartz rejects are quite numerous in squares located inside the structure as compared to squares located immediately outside. A wide variety of tool types occur in this area, implying perhaps a variety of activities. It is possible that the broken quartz points and the quartz rejects located here along with the quartz debitage discussed in the previous section, all relate to another tool manufacturing area. Some of the other tools located inside the structure may have been used in other activities.

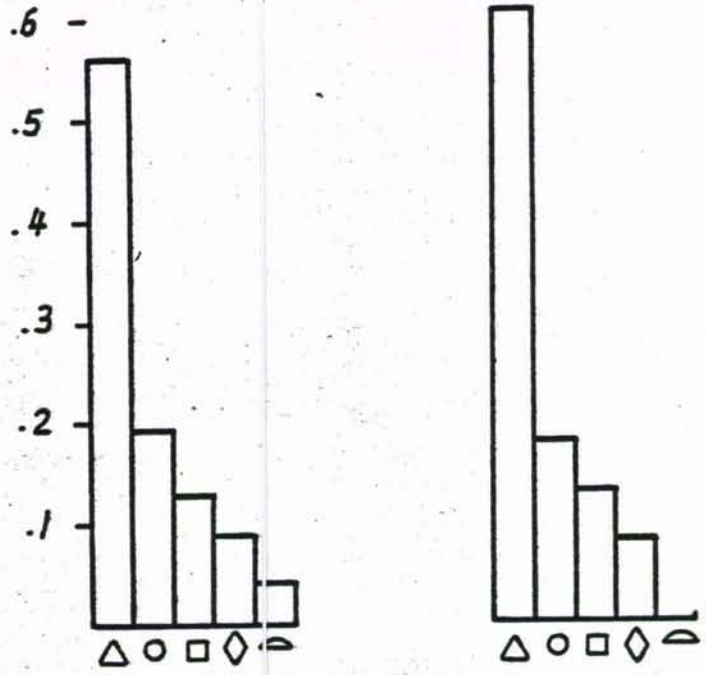
In Provenience 6, the area excavated is much smaller than in Provenience 3. This limits our ability to delineate concentrations of chipped stone tools. There are, however, at least two areas that appear to have relatively high densities of tools. The area inside the structure (Area A) produced numerous complete and broken tools especially east of the hearth. This same location yielded a chert debitage concentration. Perhaps the chert artifacts and debitage concentrations represent a lithic workshop area inside the house. Since other chipped stone artifacts are also found inside the structure, we can infer that other activities may also have occurred there as well.

A second possible tool concentration, B, is found south and west of the structure. Several classes of tools were recovered from this area especially projectile points and quartz rejects. This is also the same area where a high density of quartz debitage was discovered. It is

quite possible that the broken quartz projectile points and rejects together with the debitage from this area represent a lithic workshop outside the structure where the manufacture of quartz tools took place.

The concentrations of chipped stone tools from Provenience 3 and 6 are considered representative of certain activities which occurred at the site in the past. Since most of these areas are represented by several of the categories of tools, two possible explanations are possible. The first is that each activity or task required several different tools for completion. Walker has suggested that certain tools with "optimal cutting characteristics for skinning one species . . . may be ill suited for another. Similar inter-specific differences also exist in the functional demands placed on tools used to cut joints" (1978:713). He also suggests that flake tools with unworked edges are more effective for most butchering tasks. However, for tasks requiring a tool to cut effectively along the path of least resistance a bifacially worked implement is most effective (Ibid). A possible alternate explanation is that these areas represent two or more unrelated tasks that were conducted at the same place resulting in two or more tool kits present.

When the tool assemblages from households are compared to each other an interesting similarity is noted (Table 16). In both households the relative percentages of each tool category are quite similar. The only major difference is that no unifaces are present in Provenience 6. This basic similarity suggests that the similar activities were conducted at both households involving the use of chipped stone tools.



△ Projectile Point
○ Biface
□ Reject
◇ Flake Tool
⌓ Uniface

9 Pm 209
Chipped Stone Tools
Prov. 3 and 6
Table 16

Ground and Polished Stone Artifacts

Only a few ground or polished stone artifacts were recovered from the Woodland levels of Provenience 3 and 6. Figure 43 illustrates the location of these from Provenience 3. Provenience 6 yielded a single grinding stone from within Feature 147, a rock hearth.

In Provenience 3 a quartzite pebble with evidence of battering was found in association with a concentration of quartz debitage. This artifact is interpreted as a hammerstone and probably was utilized in the manufacture of chipped stone tools.

Two ground stone artifacts were found that have been tentatively identified as hoes (Plate 8). Although these could be axes, their polished edges probably indicate wear from digging activities. Both were found outside the structure to the north. Two fragments of slate gorgets were recovered from Provenience 3. Both are small and are believed to be of the bar type rather than the reel type. One was found near the edge of the island west of the structure, while the other was recovered from inside the structure.

A polished stone sphere about the size of a chicken egg was found in the area of the structure's portico. Its shape is close to being perfectly round and it exhibits a high degree of polishing. Its function is unknown.

A stone object that has been polished on one face only was also recovered. Its function is unknown although it could have served as a digging implement.

In Provenience 6 the only ground stone artifact recovered was a large grinding stone. It was found within the rock hearth (Feature 147) inside the structure. Its location may imply that it was worn out and

therefore relegated to the hearth, or it may have been placed there for future use if the site was abandoned for a short time with a return expected. The concave surface is badly worn and the grinding stone appears to have been burned suggesting the former explanation. The general lack of other ground of polished stone artifacts at Provenience 6 is probably a result of the limited size of our excavations rather than difference in activities that occurred there.

Miscellaneous Rock

Relatively large quantities of unmodified rocks were recovered from the Woodland levels at Cane Island. Most of this rock has been classified as fire-cracked because of its burned and fractured appearance. We cannot be absolutely certain that all of these rocks were used in fires. It is a reasonable assumption, however, that most were subjected to abrupt changes in temperature through direct contact with fire and water. Included in the miscellaneous rock category are small river pebbles. They are not as numerous as the larger fire-cracked rocks and their function is as yet undetermined. Quartz and quartzite account for most of the rock while schist is also present. All of these are locally available from the nearby river bed.

The distributions of miscellaneous rocks in Provenience 3 and 6 are illustrated in Figures 44 and 45. In Provenience 3 there are several concentrations (1 kg or more) of rock scattered about in a seemingly random fashion. In addition to the rock clusters described in Chapter IV (Features 53 and 68) there appears to be smaller, more dispersed clusters of rock surrounding the structure. One particularly heavy concentration occurs in the southwest corner of the excavation along the

island's edge. This may be a result of the cleaning or maintenance of Feature 9. This feature was interpreted as a small earth oven and contained over a half a kilogram of rock. The areas around the other earth ovens also produced relatively large quantities of rock.

In Provenience 6 large amounts of rock are found in areas around the central hearths (Features 119 and 147). A particularly high density area is located immediately west of the structure. Some of these rocks could have originated from within the structure and have been dispersed by activities of the occupants or through post-occupational disturbance. It is also conceivable that this concentration may belong to an earth oven or hearth that lies undiscovered to the west of our excavations.

The rock from both Woodland households is for the most part widely dispersed. It is felt that these rocks represent activities related to food preparation by means of roasting, steaming, or hot rock boiling.

VI. THE ANALYSIS OF FLORAL, FAUNAL AND POLLEN REMAINS

The analysis of floral, faunal, and pollen specimens from the Early Woodland component at the Cane Island site was undertaken in order to answer the following questions.

1. What are some of the various components of Early Woodland diet? What native plant and animal species were exploited? Are domesticated species present?
2. What season(s) of the year can the occupation of the site be attributed to?
3. What environmental conditions were present at the time of the site's occupation?

Charred plant remains were recovered from both provenience units. Two techniques were used in the recovery of this material. During the 1/4" screening of the 1 m squares charred plant remains recovered were separated from the sherds and stone. Soil samples from features such as pits, hearths, earth ovens and some post holes were processed through fine-mesh screens (window screen size). Charred plant remains recovered from the fine-mesh screening were separated from other material in the laboratory. All charred plant remains from the site were submitted to Auburn University where Elizabeth Sheldon directed the analysis.

Preserved faunal remains were recovered from Provenience 6 only. They were obtained from both 1/4 inch and fine-mesh screening. The faunal remains were submitted to the University of Georgia's Department of Anthropology, Faunal Laboratory where Barbara Ruff conducted the analysis.

Soil samples designated for pollen extraction were taken from selected features in Proveniences 3 and 6 and from a stratigraphic column sample along the west profile of Provenience 3. These samples were submitted to the University of Georgia's Department of Anthropology, Palynological Laboratory where Suzanne K. Fish directed the analysis.

Floral Analysis

The majority of plant remains recovered from the Early Woodland occupation of Cane Island consisted of unidentified charred wood. The distribution of unidentified charred wood in Provenience 3 is illustrated in Figure 46. There are three areas of relatively high concentrations of charred wood, in the northwest and northeast corners of the provenience and in the area around the structure and its portico. The area around the structure produced more charred wood than elsewhere on the site and may indicate activities related to cooking or heating.

Identified floral remains from Provenience 3 include 2 corn cupules (Zea mays), 3 fragments of squash rind (Cucurbita sp.), and numerous hickory (Carya sp.), acorn (Quercus sp.), and black walnut shells (Juglans nigra). The location of these floral remains are illustrated in Figure 47. With the exception of the corn all were recovered by screening 1 m squares with 1/4 inch mesh. The corn cupules were recovered from a fine-mesh screened soil sample taken from Feature 17, a post hole. In looking at Figure 47 one is able to suggest a slight tendency for plant remains to concentrate in the northwestern quarter of the provenience. There are definitely no high density concentrations of any species.

In Provenience 6 the heaviest concentrations of unidentified charred wood are located inside the structure (Figure 48). Rather than being

next to the central hearth these concentrations are located around the southern end of the structure. In contrast to Provenience 3, Provenience 6 yielded only 1 identifiable plant species, hickory nut shells (Carya sp.). The distribution and frequency of hickory nut shells are illustrated in Figure 49. As can be seen there appears to be a slight tendency for hickory to concentrate inside the structure although it is also found on the outside. The identified plant species distribution does not correspond well with the distribution of unidentified charred wood.

Faunal Analysis

The Provenience 6 excavation produced the only preserved bone from the site. Unfortunately, the small size of the fragments precluded any useful identification. The only remains to be identified at the genus level was soft shell turtle (Trionyx sp.). Mammals are also present but cannot be identified as to genus or species. This is unfortunate as questions concerning diet and seasonality based on faunal remains will have to go unanswered. These fragmented faunal remains are useful however if one examines their distribution (Figure 50). The majority of bone is located in the southwestern portion of the excavation in an area next to the possible entrance of the structure. In fact, one-half of all bone (by volume) is located in four 1 m squares next to the structure. This concentration may be explained by two alternatives. The first suggests that the bone here is a primary refuse deposit and represents activities related to food preparation and/or eating. This implies that these activities took place outside the structure. The second alternative explanation is that the concentration of bone is a secondary refuse deposit.

This implies that the activities of food preparation and/or eating took place elsewhere (probably inside the structure) and that the bone was discarded here.

In addition to the bone, two different nests from pipe organ mud daubers (Trypoxylon politum say) were recovered, one from each provenience unit. The specimen from Provenience 3 was found 2.5 m west of the structure. In Provenience 6 a next in fragmentary condition was recovered from Feature 139. Dr. Robert Matthews, a University of Georgia entomologist, examined the nests and indicated that they could have been attached to trees near the site. The occurrence of a fragmented nest in Feature 139 suggests that the larvae may have been eaten.

Palynological Analysis

The results of the pollen analysis are exciting even though the analysis is incomplete at this time. Suzanne K. Fish (personal communication) reports that pollen of corn (Zea mays) is present in the sample from Feature 68, Provenience 3. This feature is a tight cluster of fire-cracked rocks against the inside wall of the structure. Fish says, "Out of 73 grains tabulated, three are of this type (Zea mays). . . . The presence of this percentage indicates the immediate presence of plant materials in an early stage of processing . . . . Handling of corn in the husk is probable, with a reasonable inference being that the fields producing corn were nearby" (personal communication).

Pollen of yellow pond lily (Nuphar), cattail (Typha), and yucca (Yucca) have also been identified at the Provenience 3 household from features. Feature 16, a shallow pit, yielded clumps of cattail and yucca pollen and a single grain of yellow pond lily. Feature 33, another shallow pit

yielded masses of yucca pollen. "While these plants might well grow on the site, they produce relatively little pollen, and it is infrequently encountered without artificial concentration. Use by the inhabitants seems indicated" (Suzanne K. Fish, personal communication).

Several broad statements concerning the environment of Cane Island during the Long Shoals phase may be made based on the limited palynological analysis. There is evidence of a mixed hardwood forest with some pines. Trees favoring damp habitats such as cypress (Taxodium) are heavily represented. The analysis of pollen from the Woodland levels of Cane Island is incomplete and more data will likely compliment these statements rather than refute them.

Results of the Analysis -- Subsistence

Perhaps the most exciting discovery from the Early Woodland occupation of the Cane Island site is evidence of the cultivation of squash (Cucurbita) and corn (Zea mays). Corn makes its appearance in the midwestern United States by 150 B.C. with squash coming somewhat earlier (Struever and Vickery 1973). In the southeastern United States, reports of corn in Early Woodland context are rare. Milanich (1973, 1975) briefly reports finding corn at the Garfield site in northwest Georgia dating to the Kellog phase (ca. 100 B.C.). The Williams site, also in northwest Georgia, is reported to have produced corn in Early Woodland context (Morse and Morse 1960), however, the corn itself has been radiocarbon dated to A.D. 1480 (Crane and Griffin 1963).

The discovery of tropical cultigens in Early Woodland context at Cane Island is important for two reasons. First, only 1 other site in the southeastern United States has yielded undisputed evidence of early

agriculture. If the Long Shoals component at the Cane Island site dates to the last centuries of the first millinium B.C., then this would push back the beginnings of agriculture in the southeastern United States. Second, it is believed that by Early Woodland times, the adaptive value of Primary Forest Efficiency (Caldwell 1958) allowed settlements to become multi-seasonal in duration. There is no reason to doubt that the Long Shoals area of the Oconee Valley could have supported a limited number of people during the seasons when wild foods were plentiful (i.e. summer and fall). This subsistence security and residential stability is regarded as a necessary precondition for the development of incipient agriculture (Struever 1964:101).

It is doubtful that the introduction and acceptance of tropical cultigens such as corn and squash resulted in any sudden or drastic changes in the life style or subsistence pattern of the Early Woodland people. The cultigens from the Early Woodland component at Cane Island are greatly outnumbered by wild plant species suggesting that the old hunting and gathering ways of life were still very important and probably account for the bulk of the diet.

The most dramatic changes resulting from the adoption of agriculture would probably have been seen in the environment. It is probable that the fields necessary for growing corn and squash were located on portions of Cane Island or adjacent islands. The soils on these islands are relatively fertile expanses of fine sandy loams that are easy to till. Agriculturalists with their cleared garden spots make demands upon the environment not experienced by hunters and gatherers. For the first time man has begun to actively modify his environment to meet his needs.

The subsistence information concerning wild plant species is unfortunately rather meager. No identifiable floral remains were recovered from the ovens or pits despite our efforts at carefully screening their contents through fine-mesh. Charred fragments of oak (Quercus), hickory (Carya), and black walnut (Juglans nigra) were recovered from the 1/4 inch screens. In Provenience 3 all three species were recovered while in Provenience 6 only hickory nut shells were found. The exploitation of mast crops seems to be common among almost all societies whose subsistence is derived in some part from gathering and who reside in a temperate forest. The significance of the oak, hickory, and walnuts is not that they are present but that they are present in such few numbers. The Kellog site (Caldwell 1958) was reported to have had very few nut crops preserved. It is possible, as Caldwell suggested (n.d.:174), that a new economy, modified perhaps by cultigens, has reduced the need for large quantities of nuts as a source of protein.

The pollen analysis has revealed that the flowering portions of yucca (Yucca sp.), cattail (Typha sp.), and yellow pond lily (Nuphar sp.) were present in 2 features (16 and 33). All three of these plants are potential food resources. The flower and fruit of the yucca plant and the roots and seeds of the cattail along with the tubers of the yellow pond lily are all edible and their use well documented (Hedrick 1972: 582,606; Medsger 1972:254,263; Yarnell 1964:51). It is entirely possible that the fiberous leaves of the yucca and the stems of the cattail were also used in basket making activities.

The faunal remains from Provenience 6 are unfortunately of little value in reconstructing the major components of the diet. The only

identifiable genus was soft shell turtle (Trionyx sp.). Mammals are present but cannot be identified as to genus or species.

Seasonality

Preserved floral remains are often useful indicators of what season(s) a particular site may have been inhabited. The yucca plant (Yucca filamentosa) pollenates between May and June according to Bloomquist and Oosting (1959:50) and from March through July according to Duncan and Foote (1975:252). Cattails (Typha latifolia) bloom in June according to Bloomquist and Oosting (Ibid:7) while Duncan and Foote (Ibid:230) report them blooming from April to June. Yellow pond lily (Nuphar luteum) may bloom from June to August (Bloomquist and Oosting 1959:73). Duncan and Foote (Ibid:38) claim that yellow pond lily blooms from April through October. The occurrence of pollen from plants in Features 16 and 33 suggests that Provenience 3 was occupied in the spring and early summer.

Pollen from corn (Zea mays) was found in soil sample from Feature 68, a cluster of fire-cracked rocks in Provenience 3. Squash rind (Cucurbita sp.) was found in an area just outside of the structure in Provenience 3. These two cultigens indicate a summer occupation.

The hickory (Carya sp.), acorn (Quercus sp.), and the black walnut (Juglans nigra) trees produce their crops in late summer through fall. The hickory produces usually between September and November, the oaks and walnuts between September and December (Yarnell 1964:67-70; Medsger 1972:264). We may conclude therefore that the site was also occupied in the late summer and/or fall of the year.

The floral remains and pollen analysis demonstrate that the Woodland occupation at Cane Island was probably occupied from at least spring through the fall. There is no evidence to suggest that the site was or was not occupied during the winter.

Environment

The preserved pollen from Features 16, 33 and 68 allow a few broad statements concerning the environmental conditions that existed some two-thousand years ago at Long Shoals. There is evidence that the forest was composed of mixed hardwoods with some pine. The presence of Yucca pollen in two features suggests that sandy, well drained soils were nearby. Yucca is still common in many areas around Long Shoals and it grew on Cane Island until the area was innundated. Trees that favor specialized damp environments are well represented in the pollen record. Pollen from cypress (Taxodium sp.), yellow pond lily (Nuphar sp.), and cattail (Typha sp.) is also represented suggesting that year-round swamps may have existed near the site. It is possible that the eastern half of the island, which is considerably lower than the western half where the occupation is, may have been much lower and wetter in prehistoric times. If this were the case, the site would be located on a high dry sand ridge, surrounded on the east by a wet or swampy area and on the west by fast flowing water and shoals. The resulting diversity in environmental conditions over such a short distance would surely produce a wide range of plant and animal populations which could effectively be exploited by hunters and gatherers practicing incipient agriculture.

VII. SUMMARY AND CONCLUSIONS

Excavations at the Cane Island site (9Pm209) have produced evidence of an intensive occupation during the latter part of the Early Woodland period termed the Long Shoals phase. Two areas of the site yielded artifacts in association with possible structures and features. Each of these locales are considered, for the purposed of this analysis, to represent the physical remains of households perhaps belonging to a small village. The patterned distribution of artifacts is viewed as indicators of past activities that were conducted at each household and as such are helpful in interpreting the nature of this Early Woodland site.

On the basis of our investigations of this site we may make the following statements: The Long Shoals phase ceramic assemblage is composed of at least two distinct "types," Cartersville check-stamped and Dunlap fabric-marked. Other types that may be present are plain, cord-marked and an unusual complicated stamped variety. An estimate of the minimum number of vessels for each household is useful for comparing the ceramic assemblages between households in terms of the distribution of vessels, and for providing an estimate of how long the site could have been occupied. In the Provenience 3 and 6 households as many as 39 vessels may be present. Using ethnoarchaeological data on ceramic inventories we can suggest that if each household made use of twenty vessels at any given time then the houses would have been occupied for 2 to 4 years. The distributional patterns of vessels suggest that some

were used and broken inside the houses while others were utilized outside of the house. Vessels broken inside were discarded, perhaps through entrances. This is suggested by cross-mending portions of vessels recovered from within the house with portions found several meters away from the structures. The activities that are represented by ceramic vessels are probably related to domestic tasks. These would include the preparation of food, its comsumption, and storage.

The analysis of debitage was designed to distinguish different stages in the manufacture of chipped stone tools from the concentrations of quartz and chert flakes present in each household location. The ratios of percussion to retouch flakes and that of cortex to noncortex flakes suggest that the secondary thinning of bifaces and not core or preform preparation is responsible for the debitage of both households. In the Provenience 3 household there are four areas where the secondary thinning of quartz artifacts occurred and two where chert was similarly worked. In the Provenience 6 household, chert artifacts were manufactured inside the house and quartz artifacts produced outside. It is possible that certain chert tools were not manufactured at either household and that the debitage present resulted from maintenance of complete tools. This is suggested by the fact that there are few flakes and no finished tools of chert in either household. The presence of diabase and black flint retouch flakes in Provenience 6 indicates the maintenance of artifacts of this material even though no finished implements were discovered.

The chipped stone tools from both households were grouped into five broad categories: projectile points, other bifaces, rejected projectile points, flake tools, and unifaces. These categories represent general differences in form and are not necessarily functional classes.

A determination of function must be made by microscopic examination of wear patterns on the tools. This was not feasible with the quartz tools from Cane Island because they were too grainy to permit the detection of wear patterns on them. For the analysis of chipped stone tools, areas of tool concentrations were identified at each household. These areas were subjectively determined by grouping tools which appeared to be spacially segregated.

When the relative frequencies of classes of tools from both households are compared it is interesting to note that the two assemblages are quite similar. The inference is that in both households the same activities are taking place. The activities are related to hunting (projectile points), butchering (projectile points and bifaces), hide preparation (flake tools and unifaces) and tool manufacture (rejects or unfinished tools).

Ground stone tools are somewhat scarce, expecially at the Provenience 6 household. In Provenience 6 the only ground stone tool was a grinding stone which was found in the hearth at the house. It suggests activities related to food preparation such as grinding or crushing of hickory nut meal. In Provenience 3 two ground stone axes or hoes were recovered. Their exact function is unknown but considering the evidence of incipient agriculture they may well be hoes. Two fragments of slate gorgets were recovered from the Provenience 3 household. Their presence may indicate ceremonial use but more than likely they were objects of personal adornment.

Subsistence information from the Cane Island site suggests a diffuse hunting and gathering economy with some dependence on plant cultivation. Palynological analysis of samples from Feature 68 in Provenience 3

indicate that corn (Zea mays) is present in the diet. This is complimented by the macro-botanical analysis from the same household where two cupules of corn were identified from Feature 17. Three small fragments of squash rind (Cucurbita sp.) were also identified in the macro-botanical analysis from this household. They were recovered from outside the structure in Provenience 3. Additional food remains from this household include hickory nuts (Carya sp.), acorns (Quercus sp.), and black walnuts (Juglans nigra). Pollen analysis from two pits, Feature 16 and 33, yielded evidence for the use of yucca (Yucca), cattail (Typha), and yellow pond lily (Nuphar). Pollen grains from the first two species were found in clumps suggesting economic importance rather than fortuitous inclusion. Nuphar is represented by only one grain.

In Provenience 6 no cultigens were found but hickory nuts and acorns were present. Small fragments of bone from Provenience 6 were present and indicated that turtle was exploited. Unfortunately, the bone preservation was poor and most fragments are unidentifiable. There is a substantial concentration of bone outside of the structure indicating food preparation and consumption may have been an outdoor activity. No faunal remains were recovered from the household at Provenience 3.

The preserved floral remains coupled with the pollen analysis allows us to state that the site was occupied in the spring, summer and fall. The pollen analysis also suggests a rather diversified environment around the site characterized by dry and well drained habitats as well as year round swamps. The vegetation was mixed hardwood with some pine.

The range of activities at both households suggest that they were not extractive sites as defined by Binford (1966). Is is suggested that the households are of relatively lengthy duration and represent permanent

or at least multi-seasonal habitations. It is not known if the two households are contemporary but it is a reasonable possibility.

The activities that took place at the Woodland households on Cane Island appear to be quite varied. Evidence of structures indicates that the inhabitants lived on the site. Cooking facilities such as earth ovens and numerous ceramic vessels suggest that food preparation and eating took place. Food remains such as animal bone, pollen and charred nut fragments also indicate food preparation. The abundance of lithic debris strongly suggests that chipped stone tools were manufactured at both households. A concentration of stone tools in Provenience 3 is believed to indicate tool use as well. The varied nature of the tool assemblages suggest that a variety of tasks involving stone tools occurred at each household. Ground stone hoes and evidence of tropical cultigens (Zea mays and Cucurbita sp) is solid evidence that activities concerning agriculture (clearing fields, tending crops, and harvesting) took place in the vicinity of the site. Undoubtedly other activities of which we have no evidence also occurred at the site.

What patterns are evident in the plan of these two Early Woodland households? Figures 51 and 52 illustrate an abstraction of the plan of both households. Shown are areas that presumably are the locations where specific activities such as chipped stone tool manufacture, and food preparation were carried out. Also shown are areas that might have been used as refuse disposal areas. As one can see a great many activities occurred around the periphery of the structure in Provenience 3. The area immediately west of the structure appears to be a multiple activity area where tool manufacturing, plant preparation, cooking and refuse disposal occurred. The area to the northwest appears to have

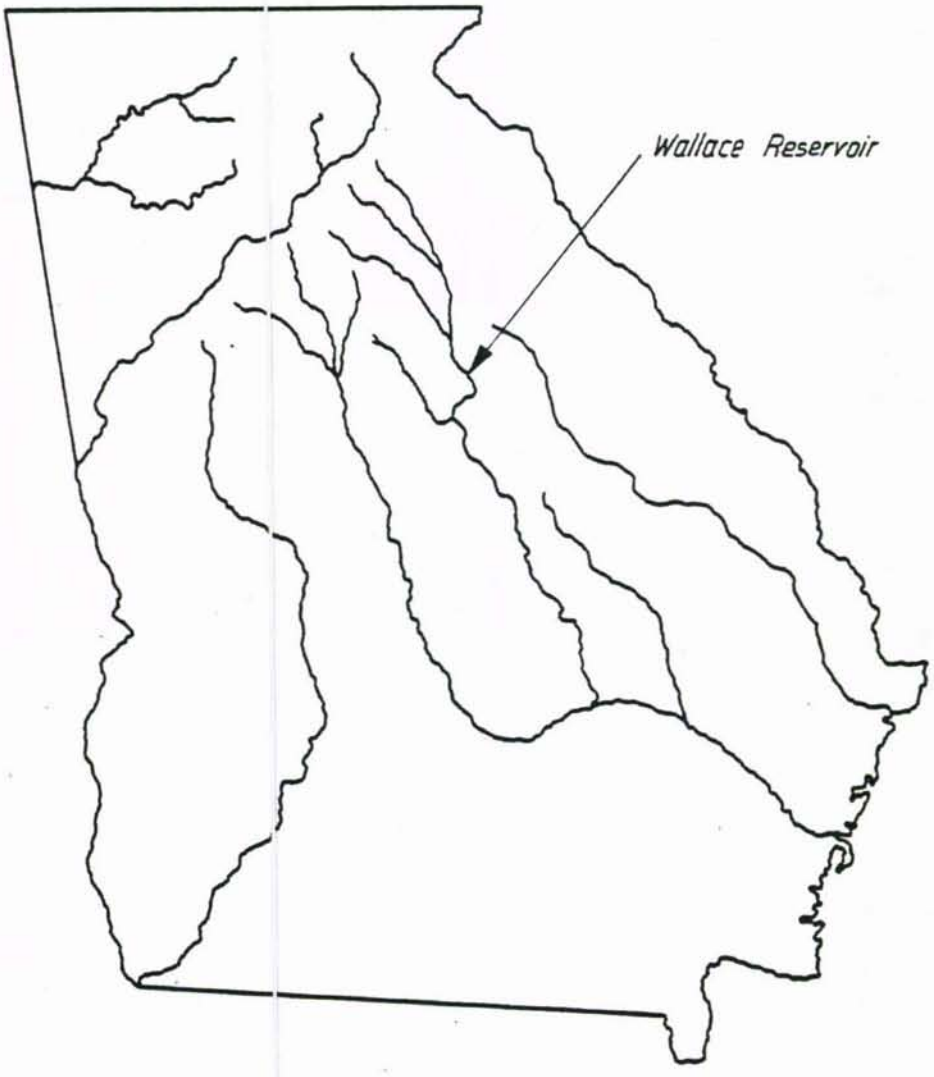
served as a place where chipped stone tools were used. No other activity seems to have taken place there. Cooking in earth ovens seems to have been localized to the southern half of the household.

The household at Provenience 6 yields a somewhat more limited view of the activities that occurred. There is very little area around the structure's periphery that was excavated. Nevertheless it is apparent that several activity areas can be identified. Inside the structure there are areas where chert tool manufacture, tool use, and food preparation occurred. The large stone hearth associated with this structure obviously is an indication of the importance of heat for cooking or for comfort from the weather. Along the southwestern edge of the structure there is evidence of two additional activities. The manufacture of quartz tools is indicated by the relatively large quantities of debitage and rejected bifaces. It is certainly conceivable that some of the chipped stone tools recovered from this area were used here also. A concentration of animal bone was discovered just outside the possible entrance to the structure, an indication that food preparation and/or eating may have occurred here.

What do these patterns tell us about the spatial organization of an Early Woodland household? First, there are areas that seemed to have served as generalized work areas where different activities occurred. These areas probably "belong" to all of the members of the household. An example of a generalized activity area is found in Provenience 3 in the area immediately west of the structure. In this area there is evidence that tool manufacturing, food preparation, and disposal of refuse all were localized here. On the other hand there are areas that seem to have served only one activity. For example the area to the northwest of the structure in Provenience 3 contains evidence of tool use only. This

location may be reserved for specific tasks and may "belong" to a particular individual who is responsible for carrying out those tasks.

It is hoped that this thesis has presented much needed information on the nature of Early Woodland households in Piedmont Georgia. There are shortcomings in this report especially in the brevity of the analysis of chipped stone tools. There remains much work to be done concerning the functional analysis of tools manufactured from quartz and quartzite. It is hoped that the presentation of this data might stimulate interest in pursuing this problem. Hopefully, the analysis of households and their associated activity areas will ultimately reveal a great deal more information concerning those activities prehistoric people conducted in and around their homes.



Location of Wallace Reservoir

Fig. 1

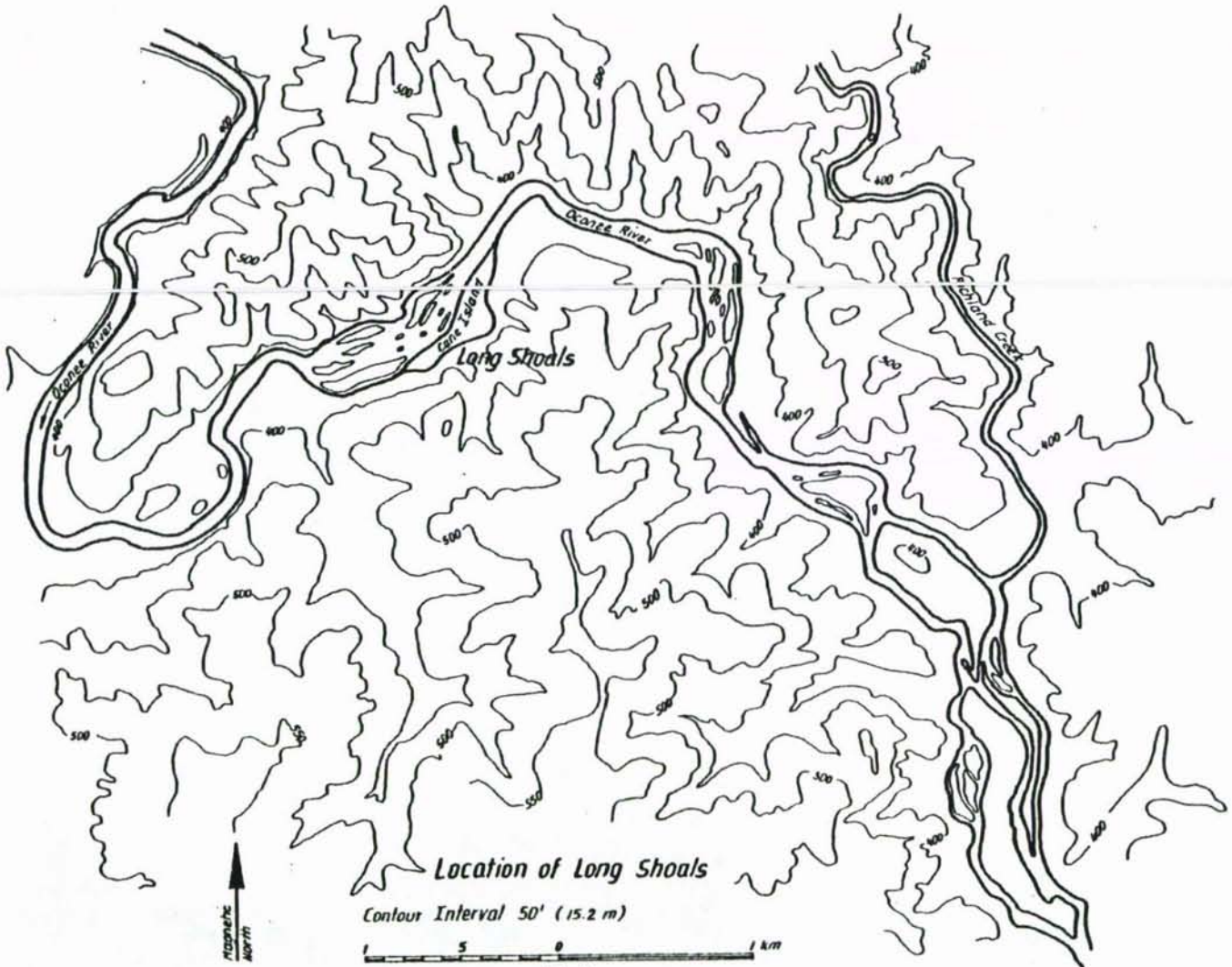

Oconee River
Oconee River
Cane Island
Long Shoals
Richland Creek
Location of Long Shoals
Contour Interval 50' (15.2 m)
magnetic north
1 0 1 km

Fig. 2

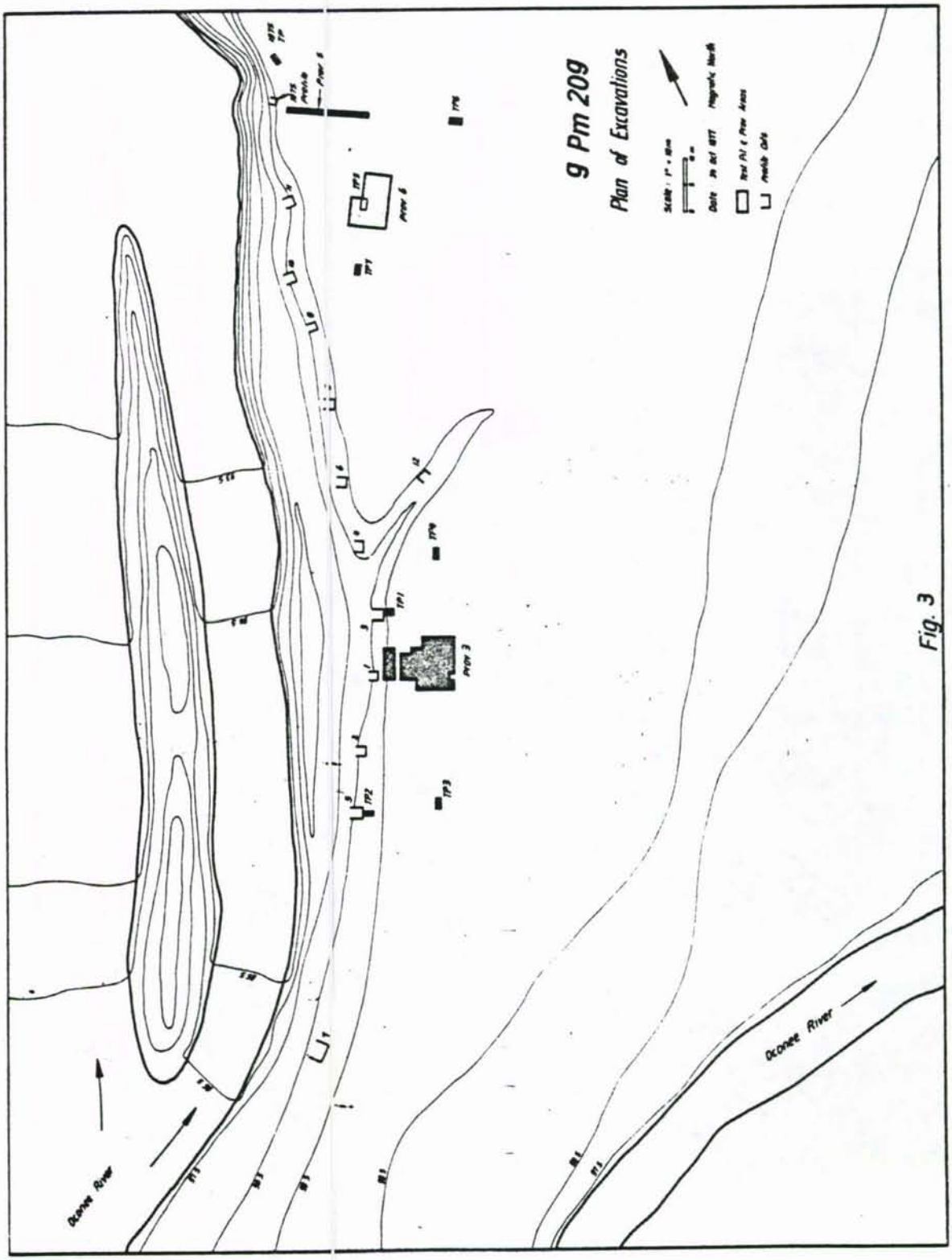
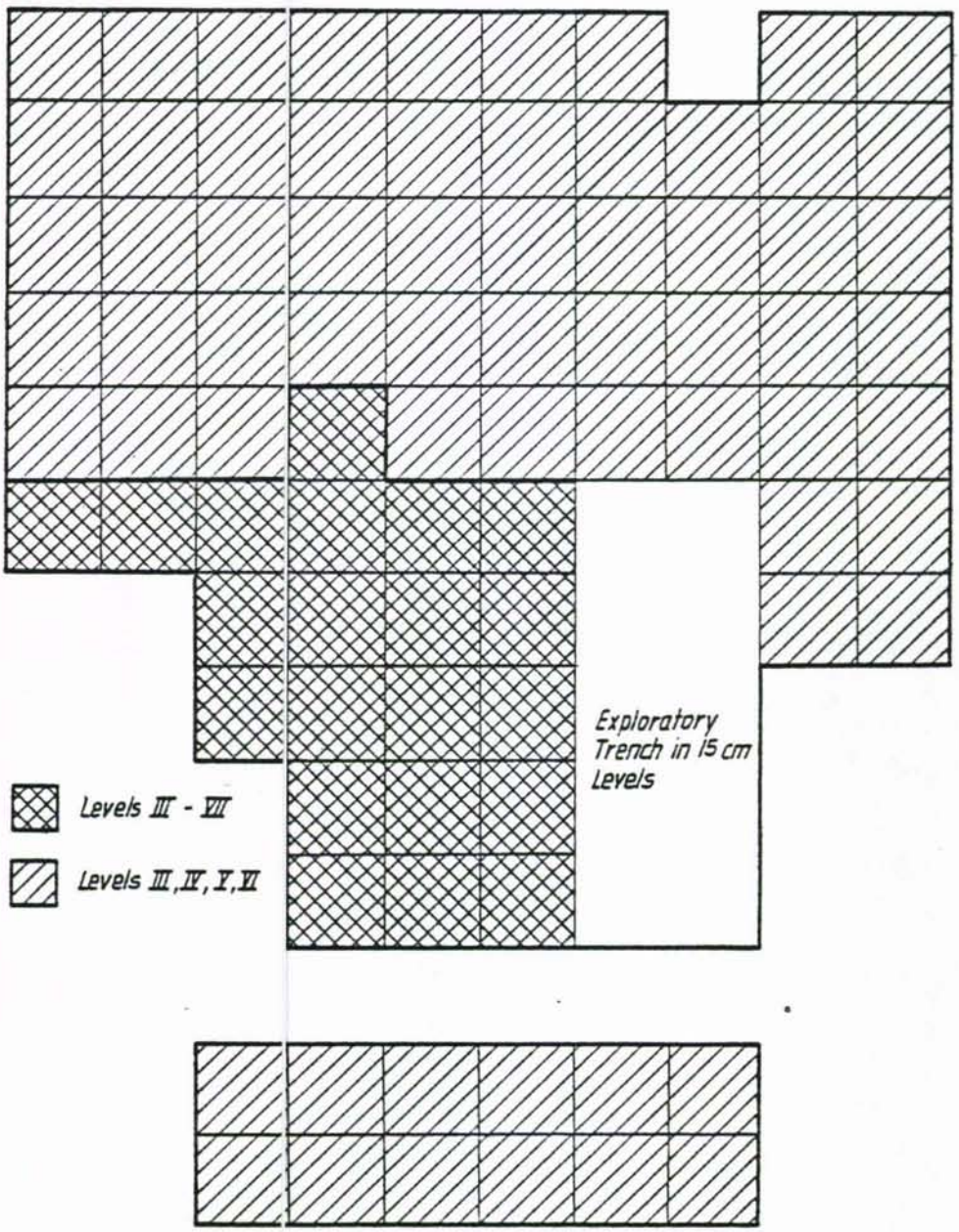
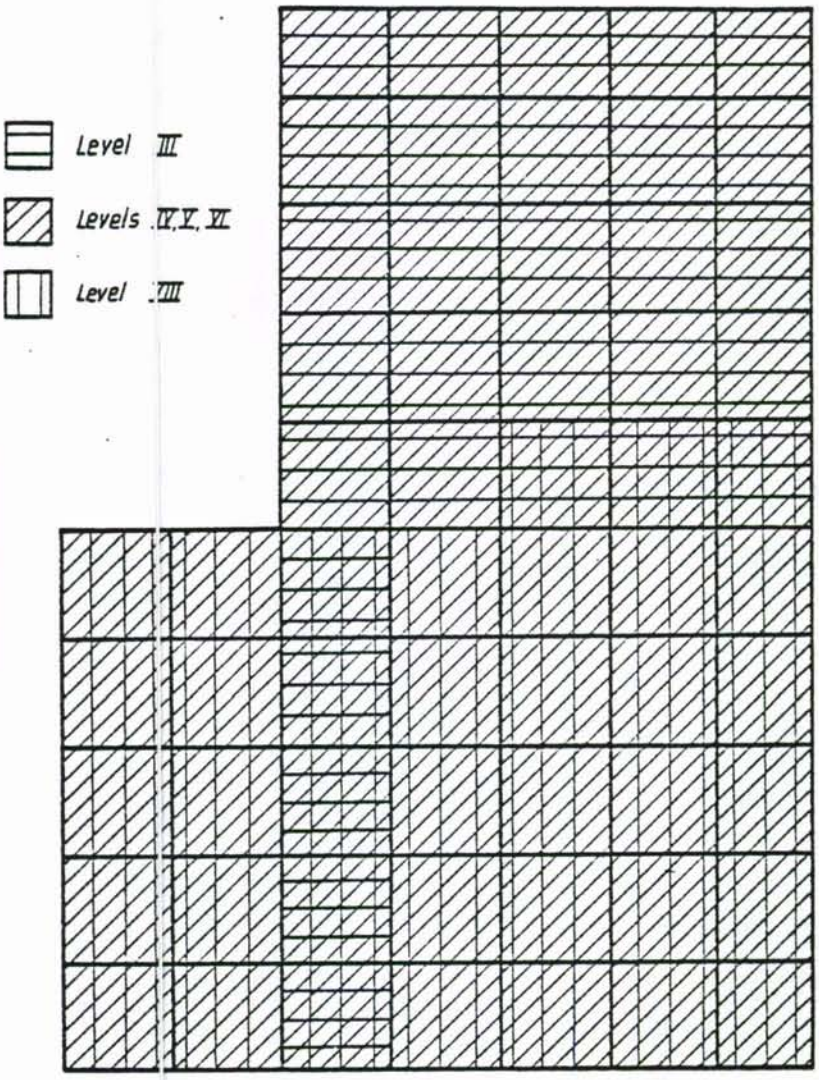


Fig. 3



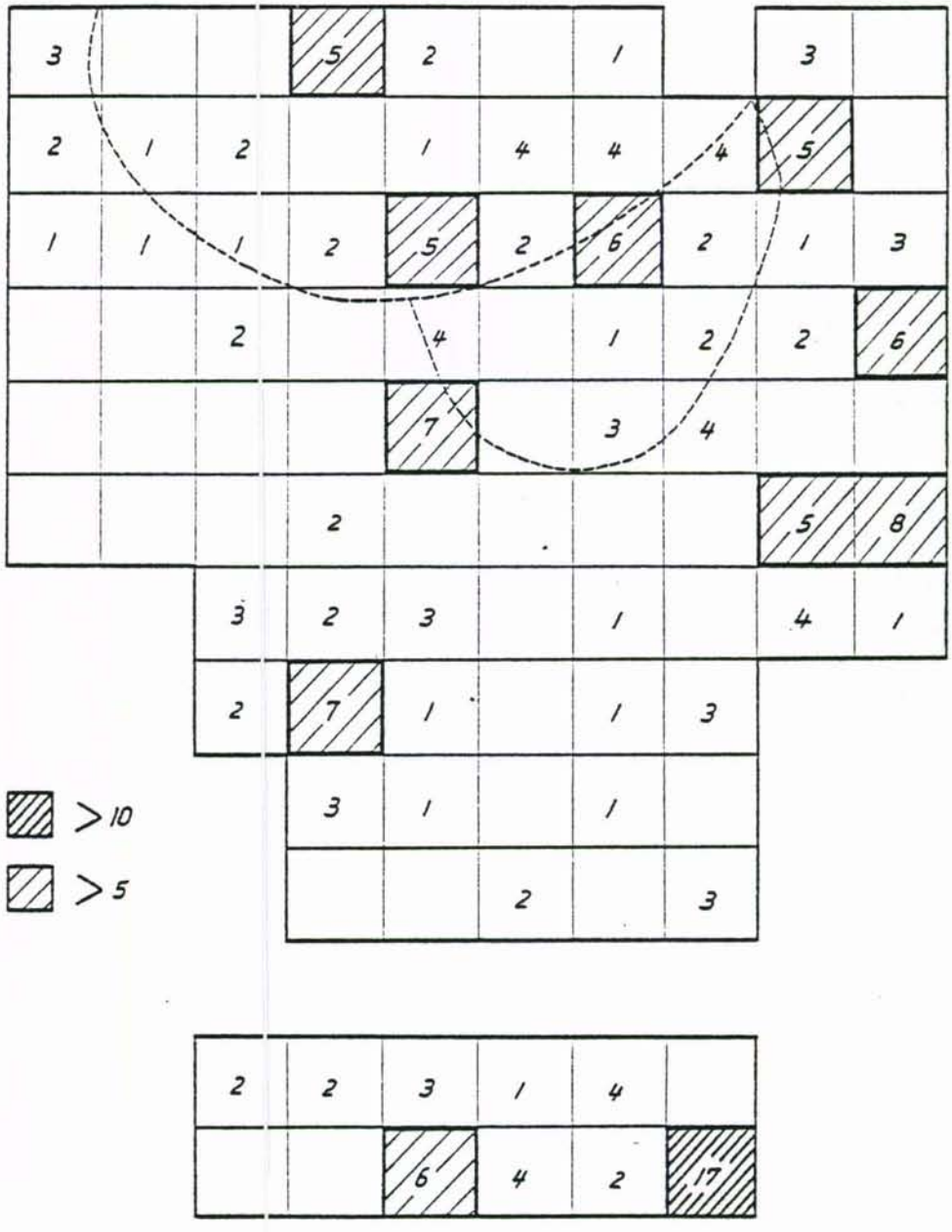
9Pm 209
Prov. 3 Levels III - VII
Area Excavated For Each Level

Fig. 4

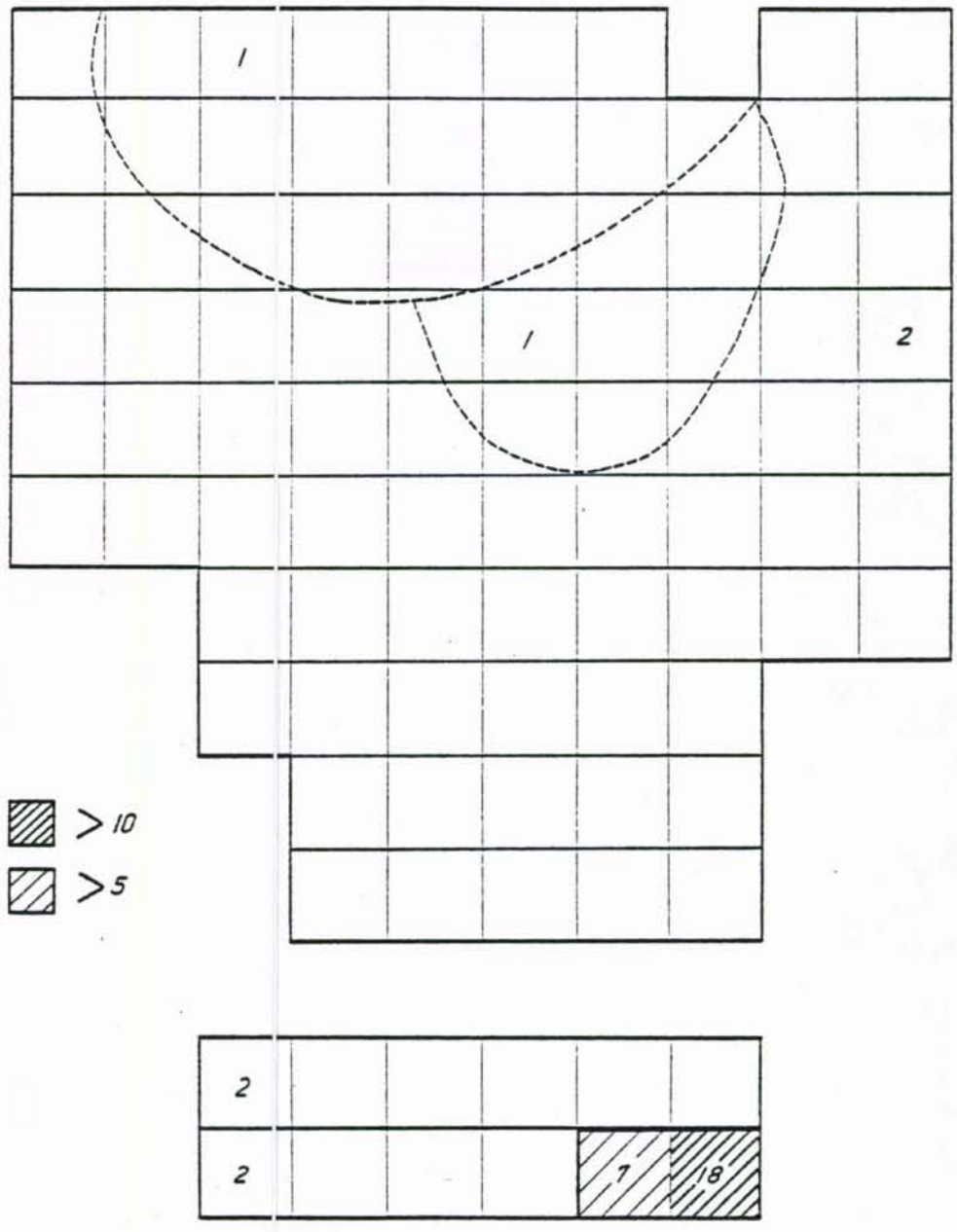


9 Pm 209
Prov. 6 Levels III - VII
Area Excavated For Each Level

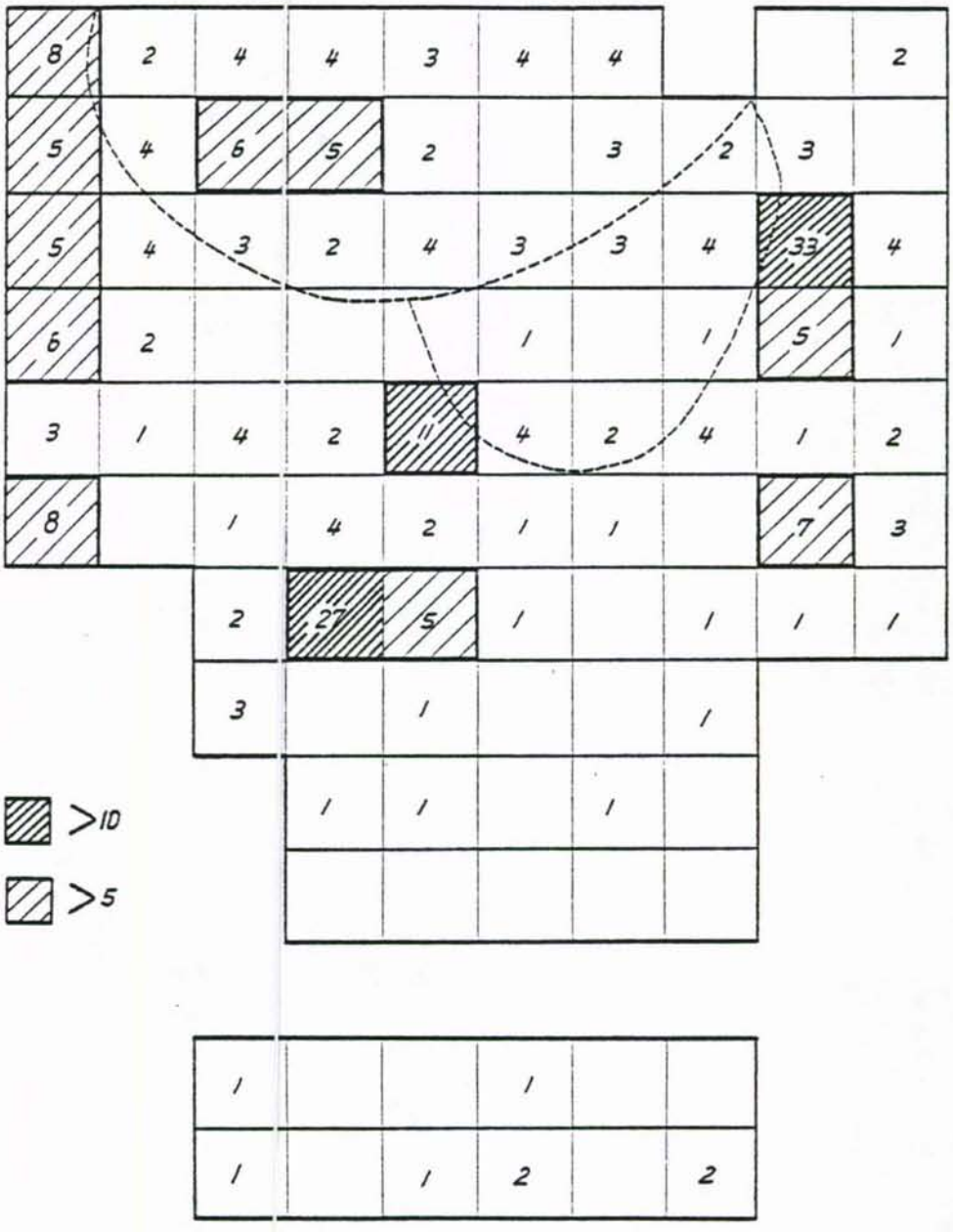
Fig. 5



9Pm 209
Prov. 3 Level III & VII
Distribution of Plain Sherds
Fig. 6



9Pm 209
Prov. 3 Level III. V, VI
Distribution of Simple Stamped Sherds
Fig. 7



Scale: 0 1m

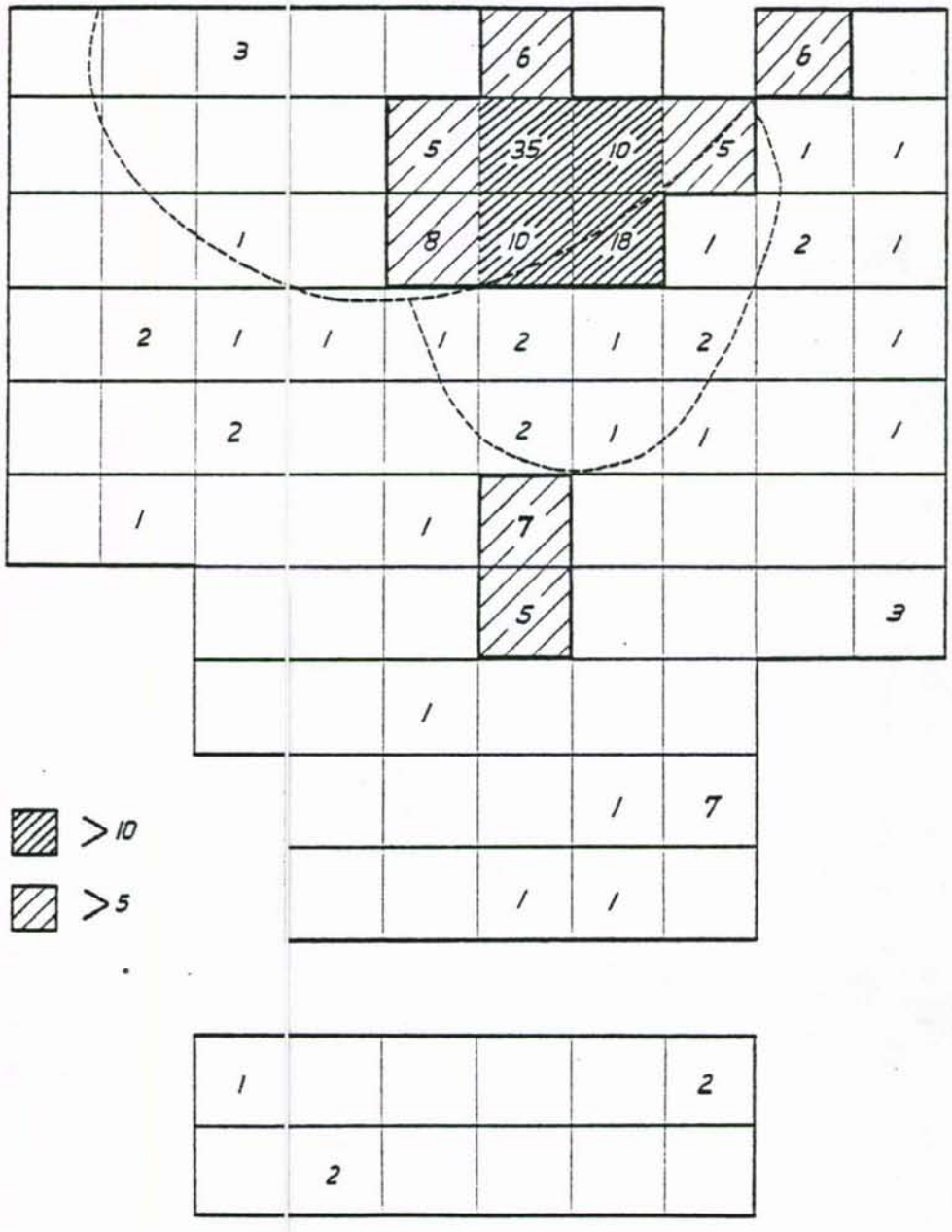
G.N. M.N.

9Pm 209

Prov. 3 Level III IV V VI & VII

Distribution of Check Stamped Sherds

Fig. 8

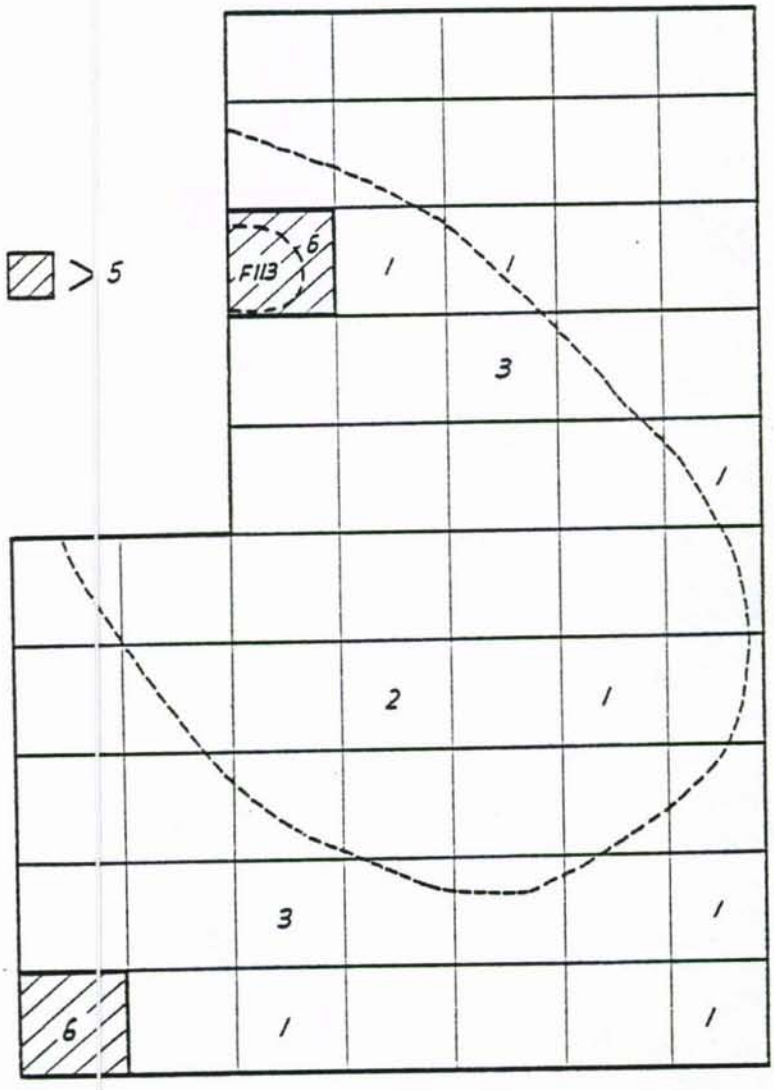


9Pm 209

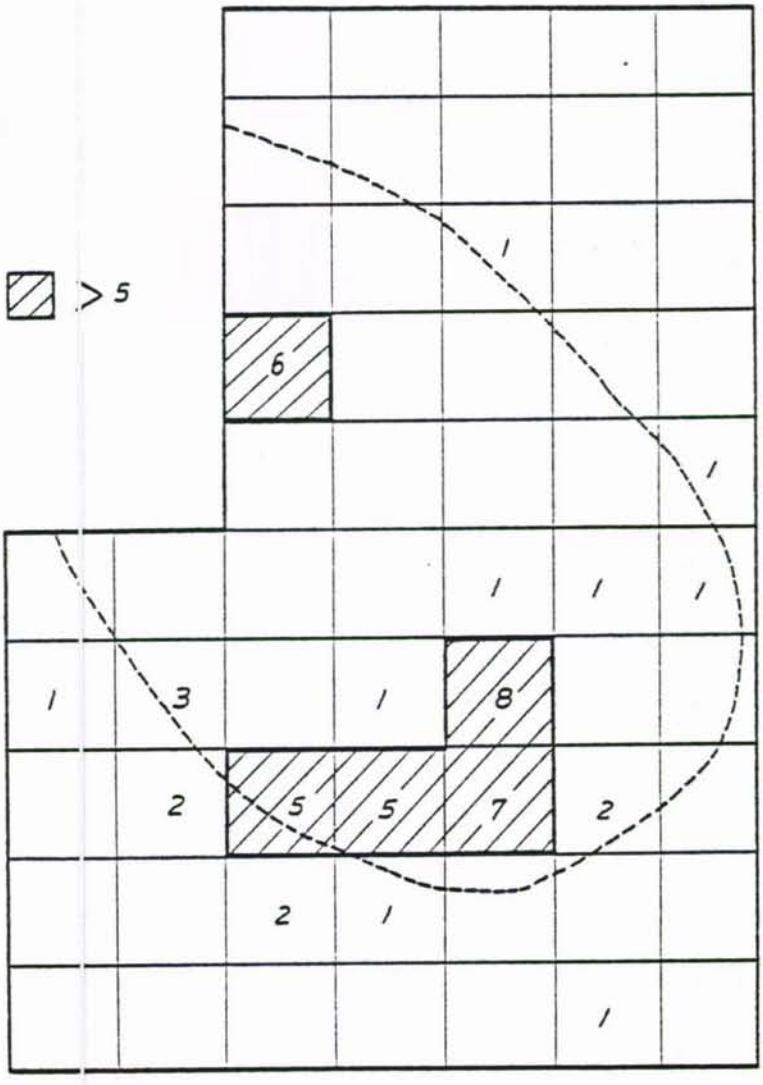
Prov. 3 Level III, IV, V, VI & VII

Distribution of Fabric Marked Sherds

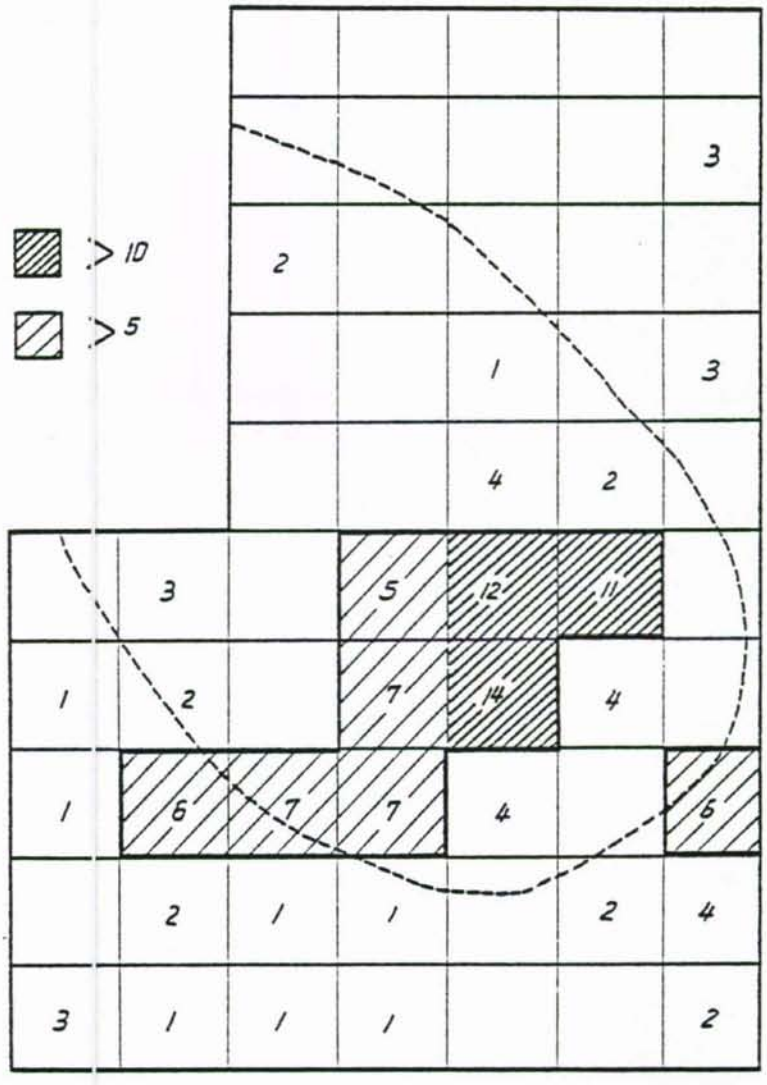
Fig. 9



9Pm 209
Prov. 6 Level III IV & V
Distribution of Simple Stamped Sherds
Fig. 10



9Pm 209
Prov. 6 Level III, IV, V, VI
Distribution of Check Stamped Sherds
Fig. 11

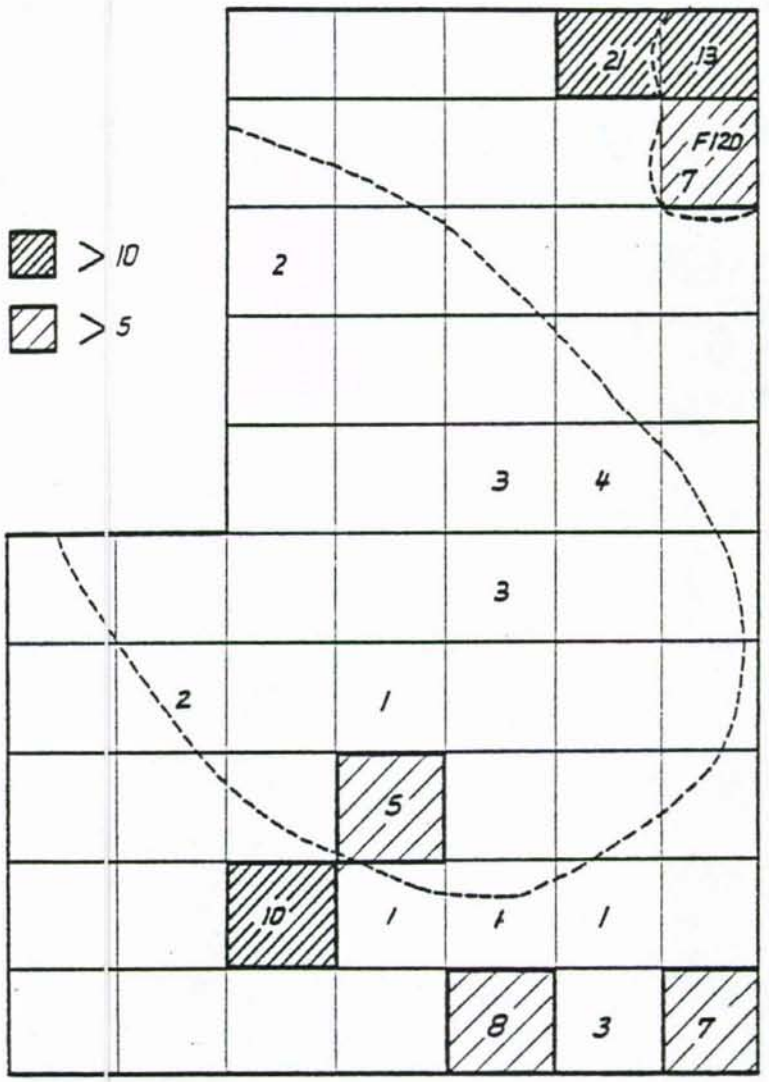


9Pm 209

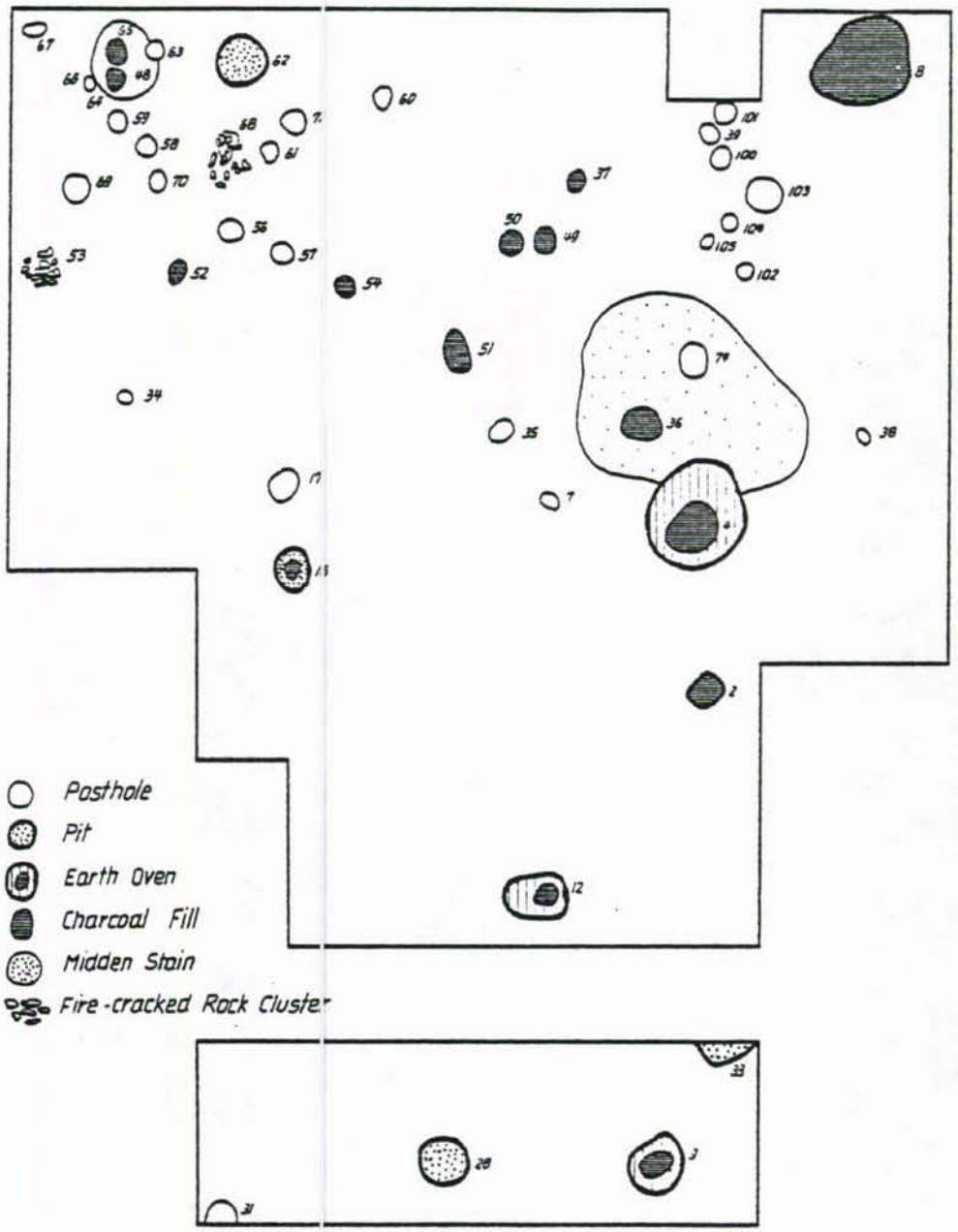
Prov. 6 Level III, IV, V, VI & VII

Distribution of Fabric Marked Sherds

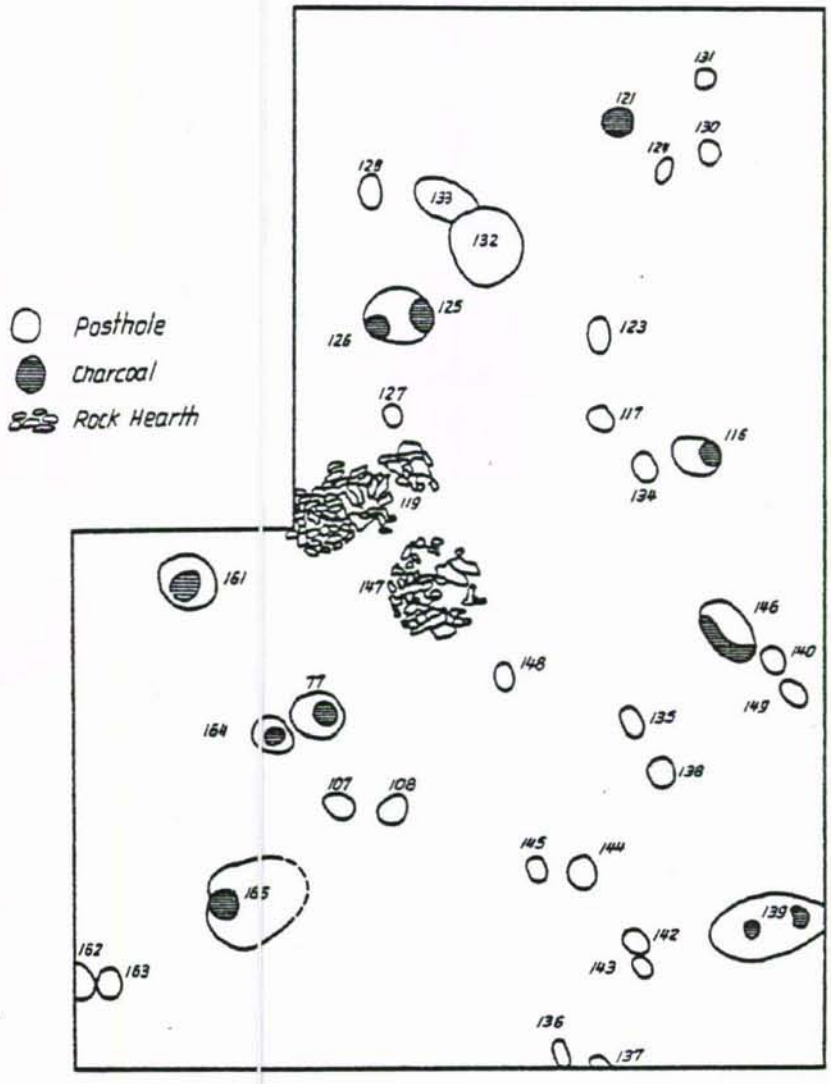
Fig. 12



9Pm 209
Prov. 6 Level III, IV, V, VI, VII
Distribution of Fiber Tempered Sherds
Fig. 13



gPm 209
Prov. 3 Level IV V VI
Location of Features
Fig. 14



gPm 209
Prov. 6 Level IV V VI
Location of Features
Fig. 15

9Pm 209
Prov. 3

Schematic Representation
of Features
Belonging to the Long Shoals Phase

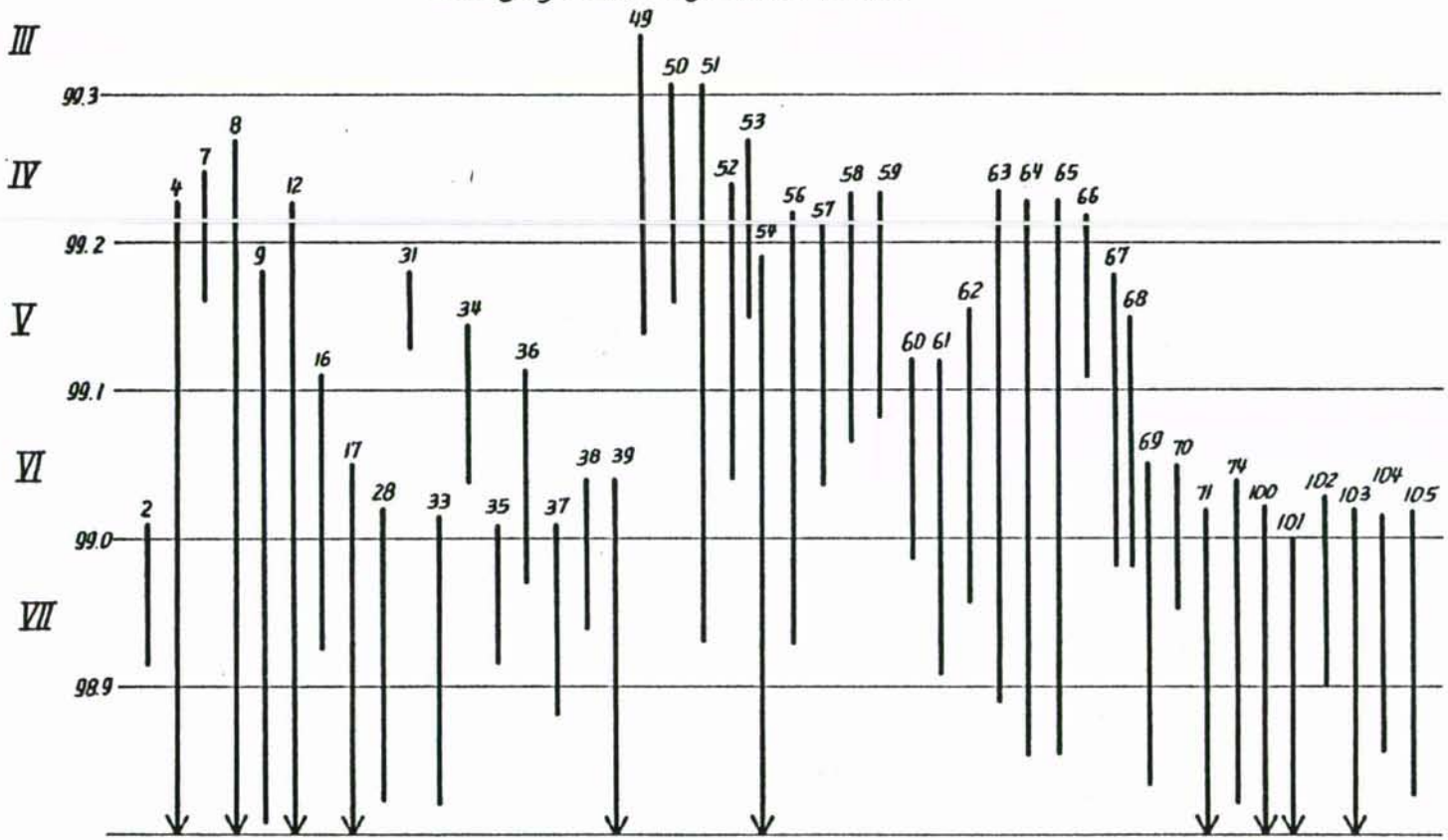


Fig. 16

9 Pm 209
Prov. 6

Schematic Representation
of Features
Belonging to the Long Shoals Phase

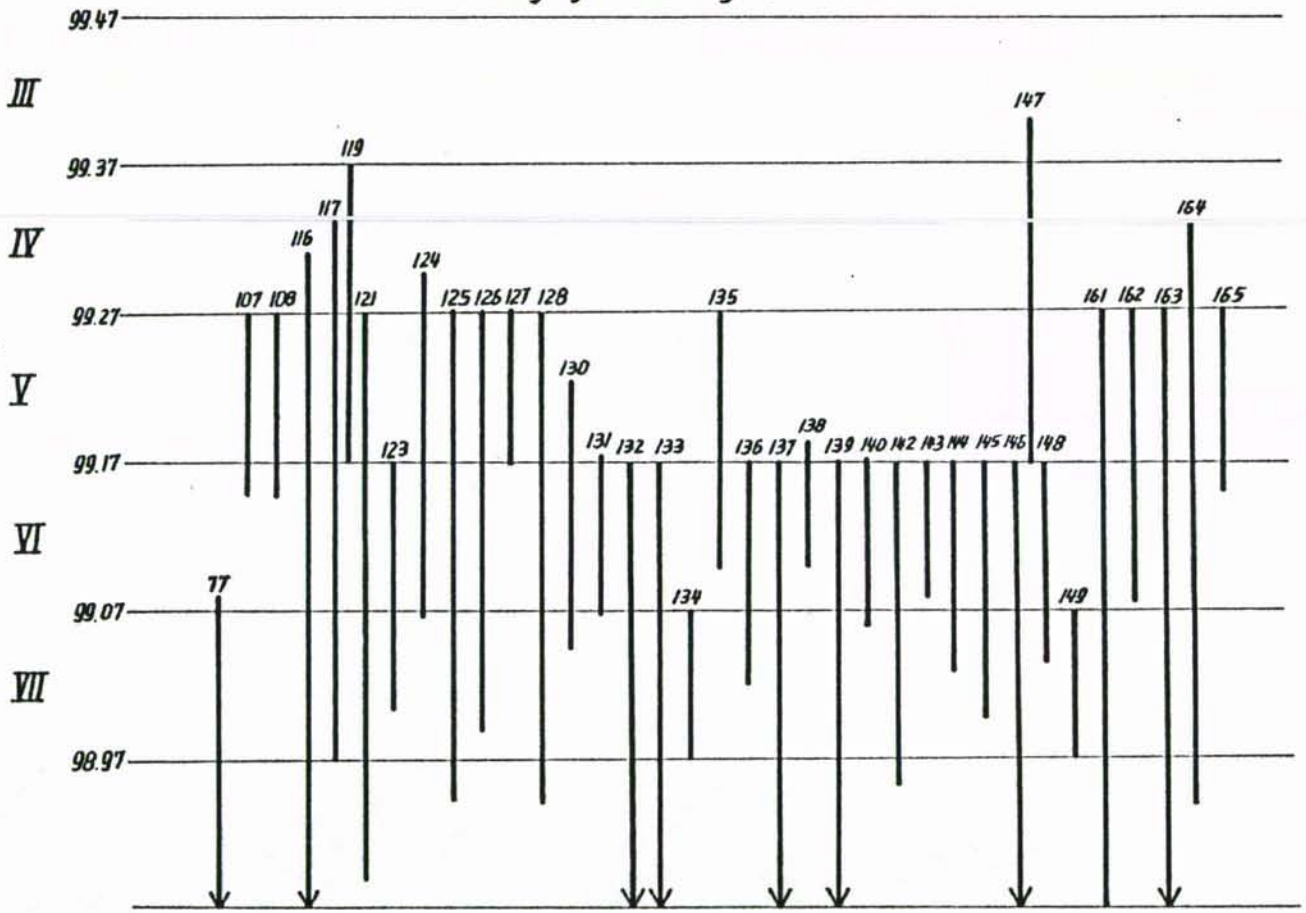
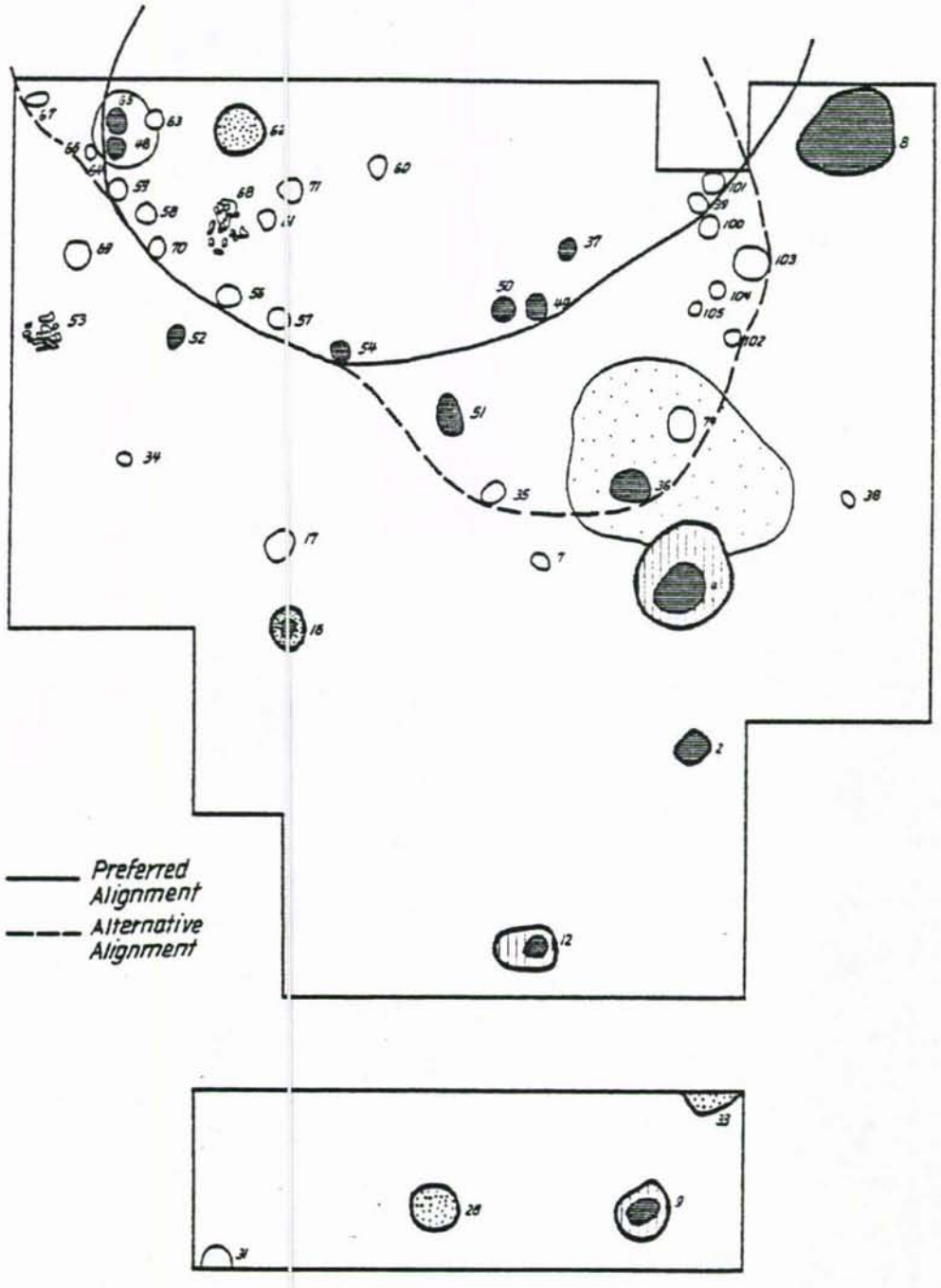
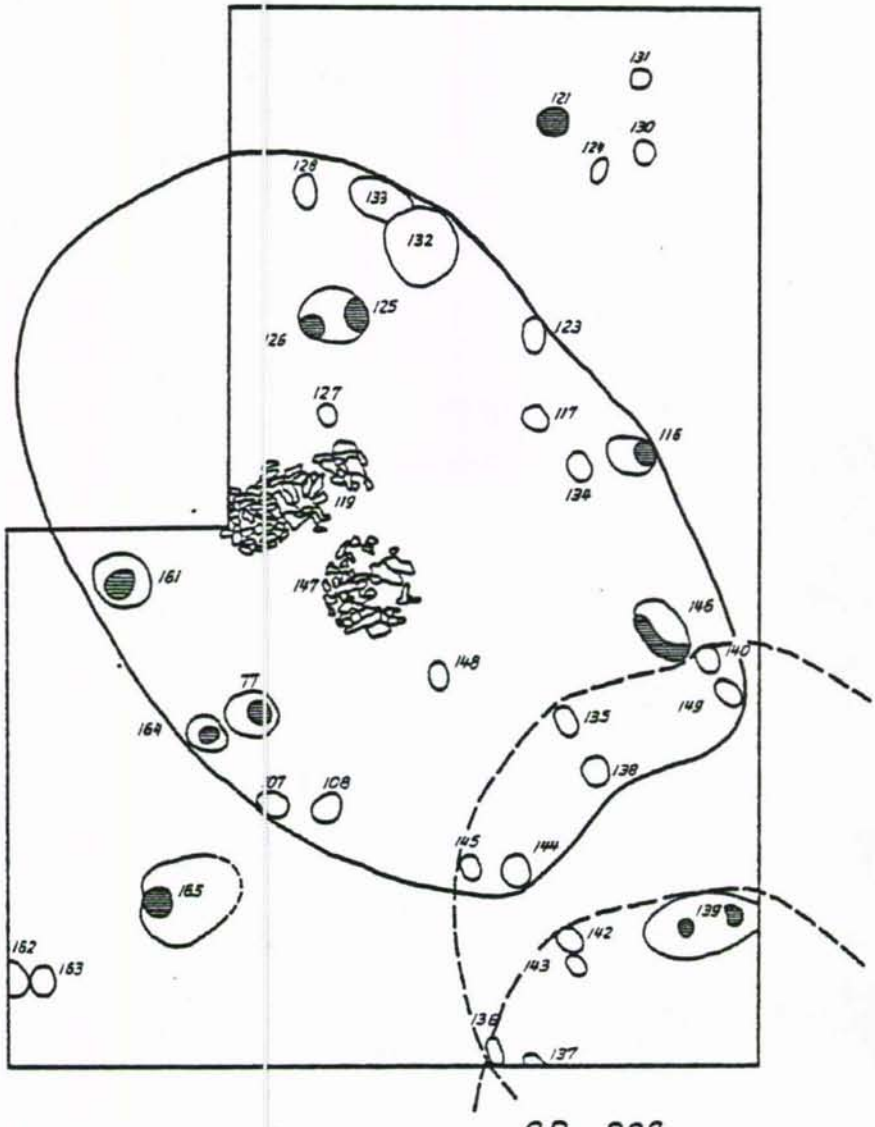


Fig. 17



9Pm 209
Prov. 3 Level IX X XI
Possible Posthole Alignments
Fig. 18

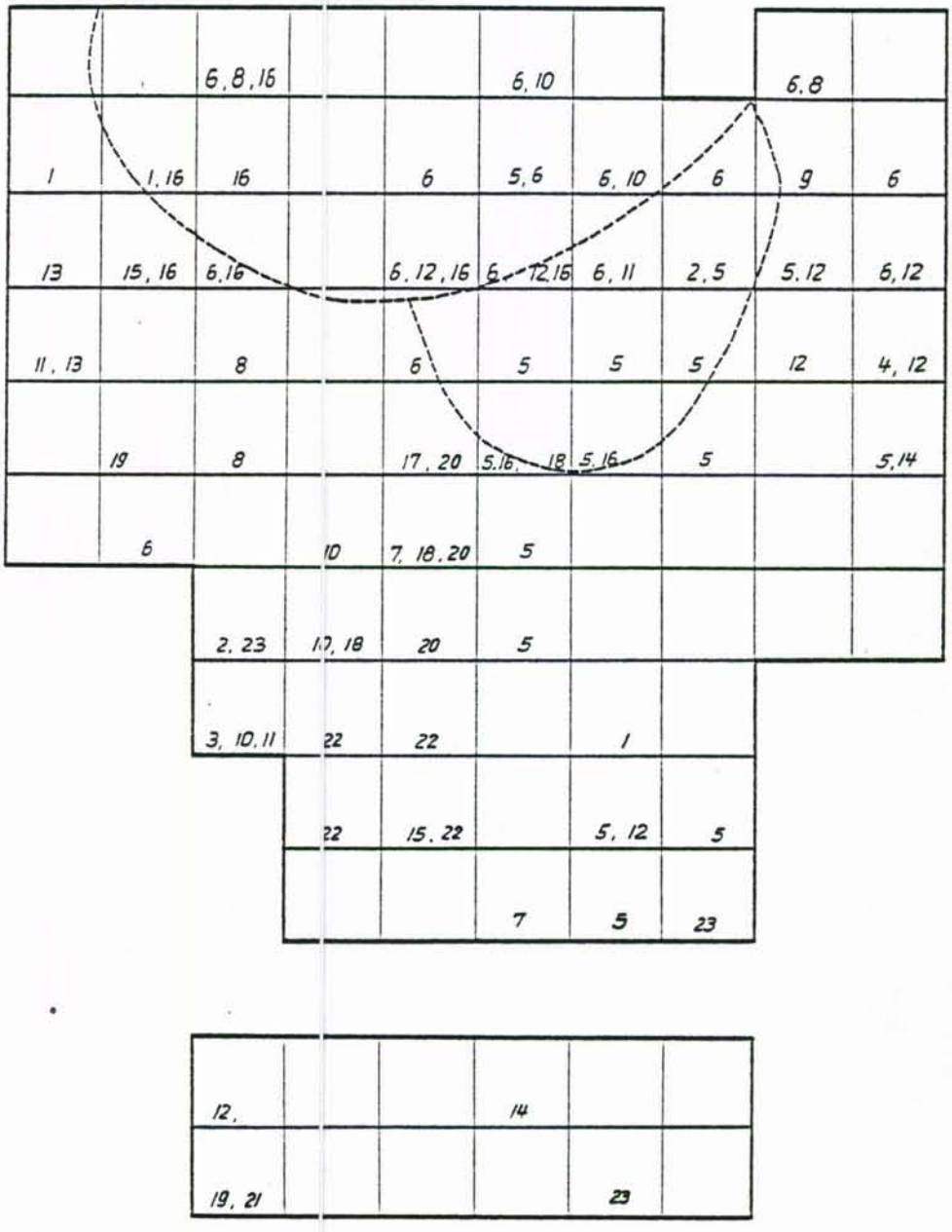


9Pm 209

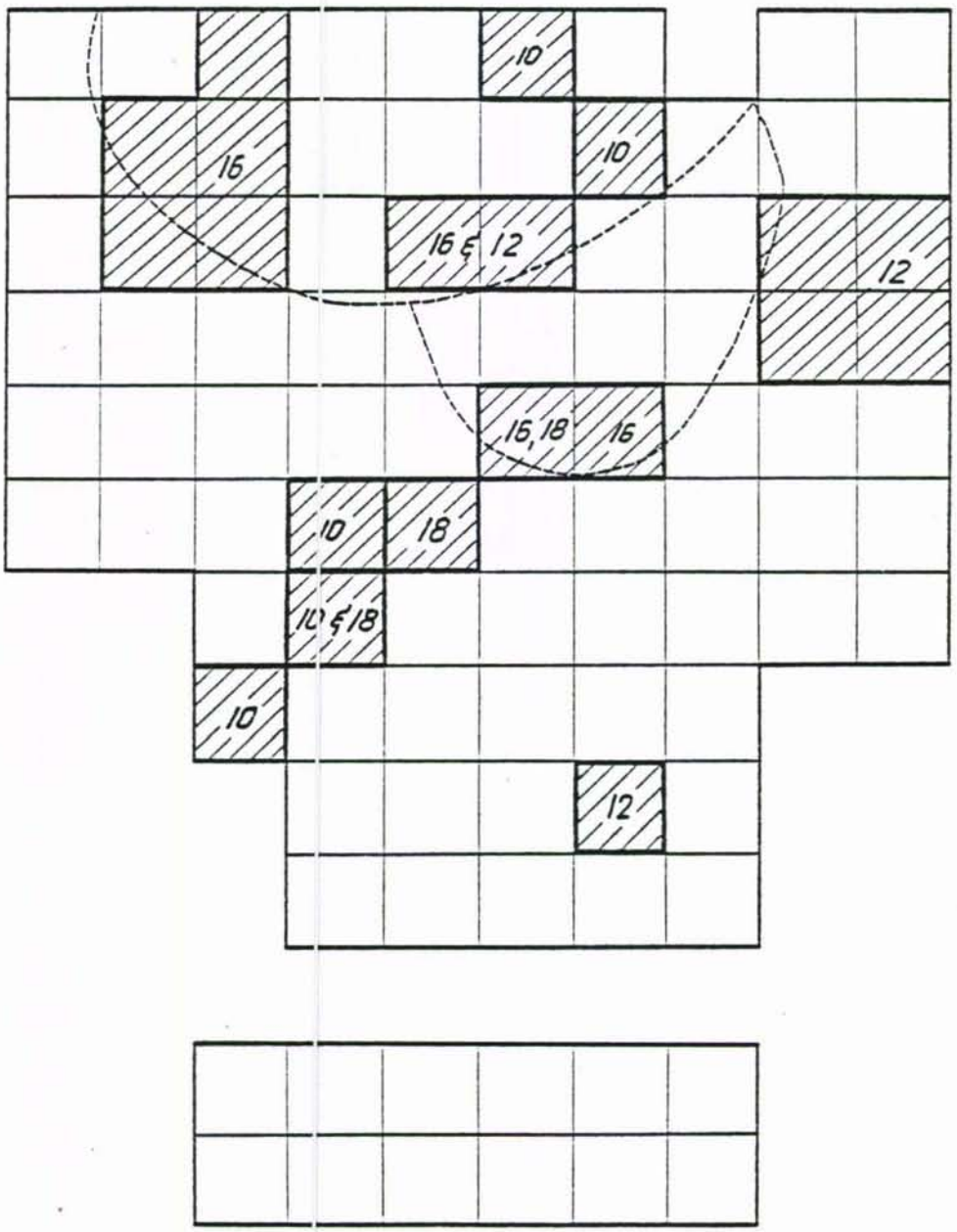
Prov. 6 Level IV V VI

Possible Posthole Alignments

Fig. 19



9Pm 209
Prov. 3 Level IV V VI
Location of all Vessels
Fig. 20



9Pm 209
Prov. 3 Level IX X XI
Location of Major Cartersville Vessels
Fig. 21

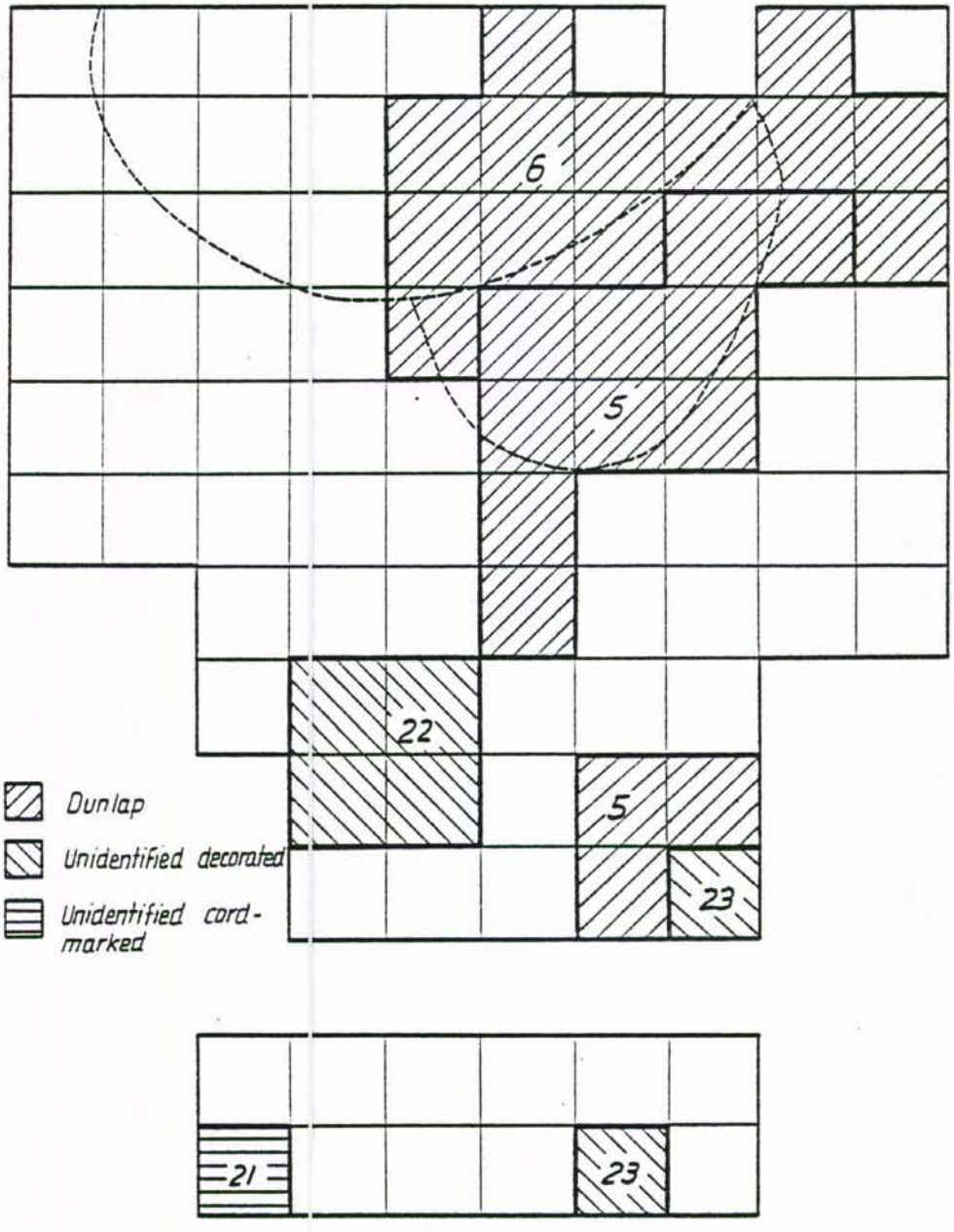
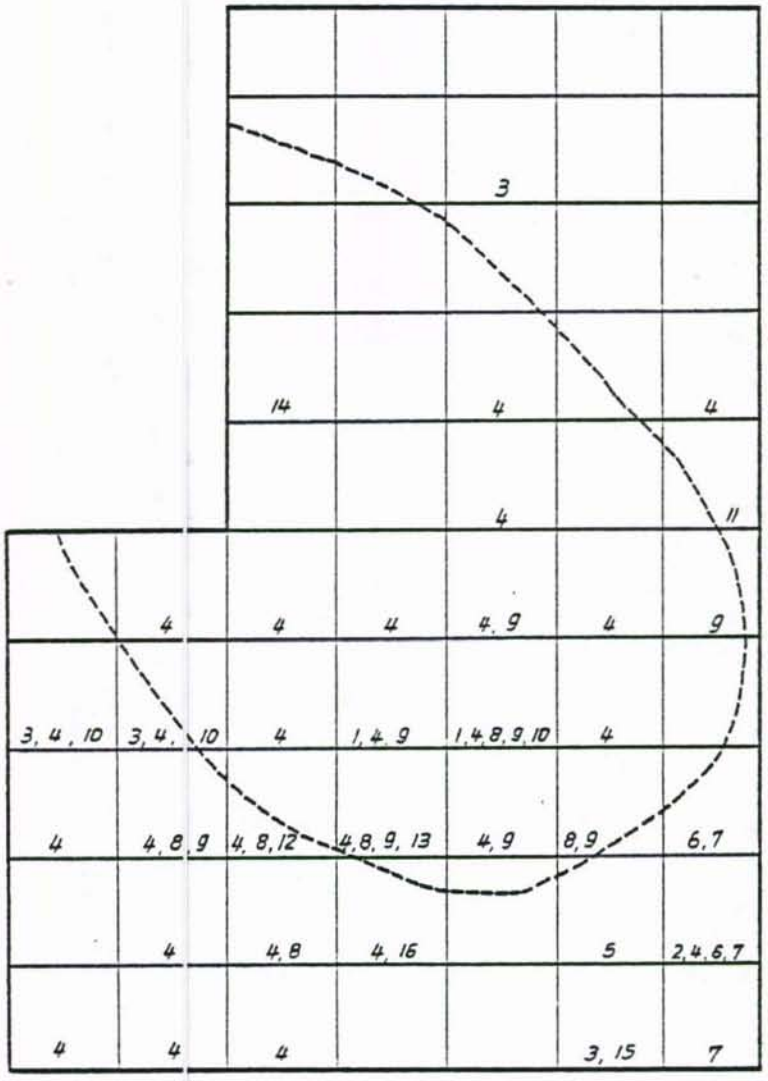
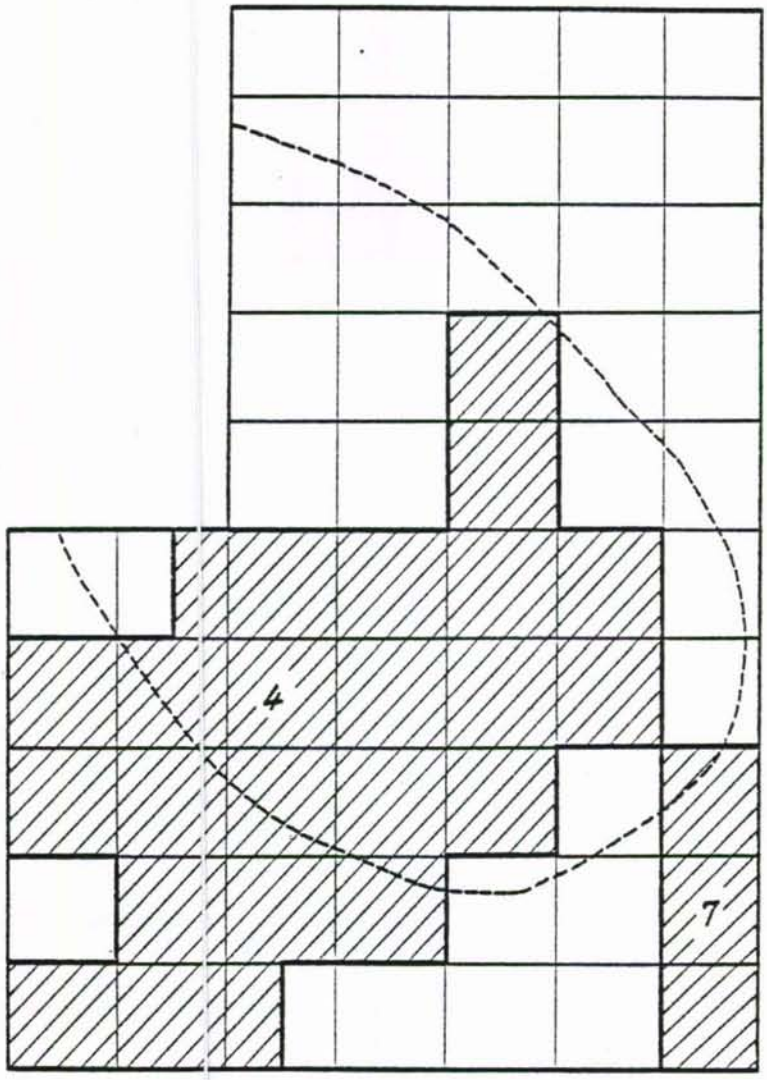


Fig. 22

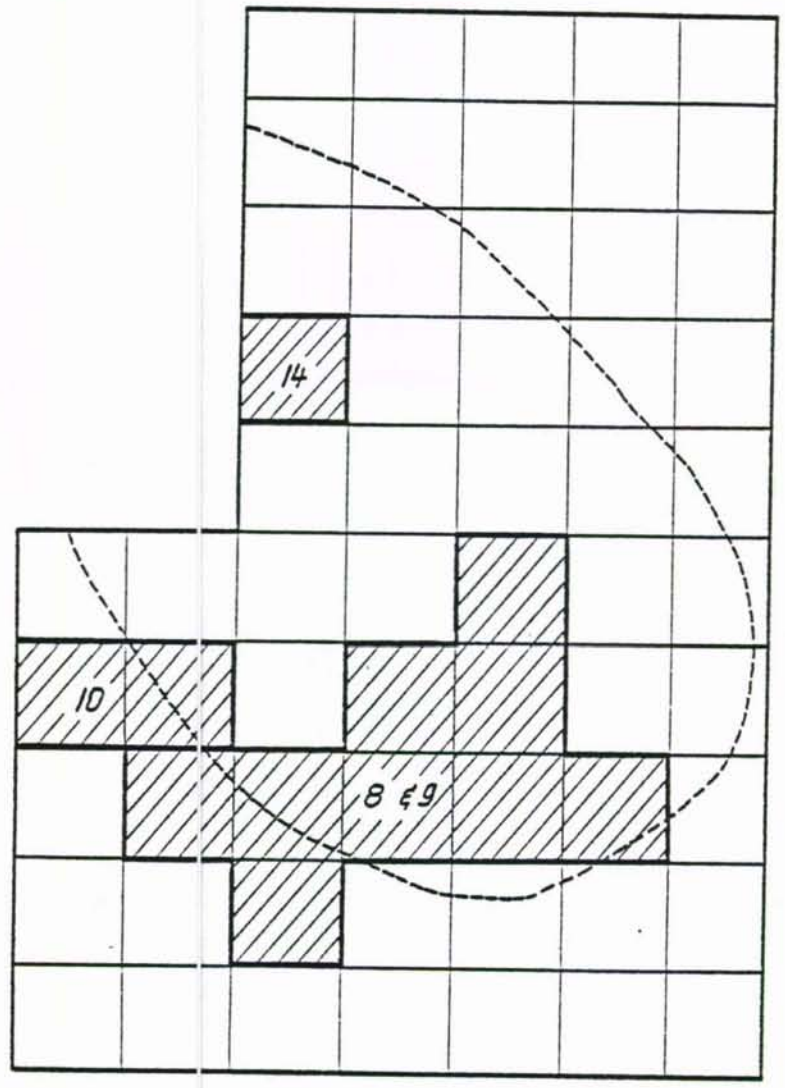
9Pm 209
Prov. 3 Level IV.V.VI
Location of Major Dunlap Fabric Marked And Other Vessels



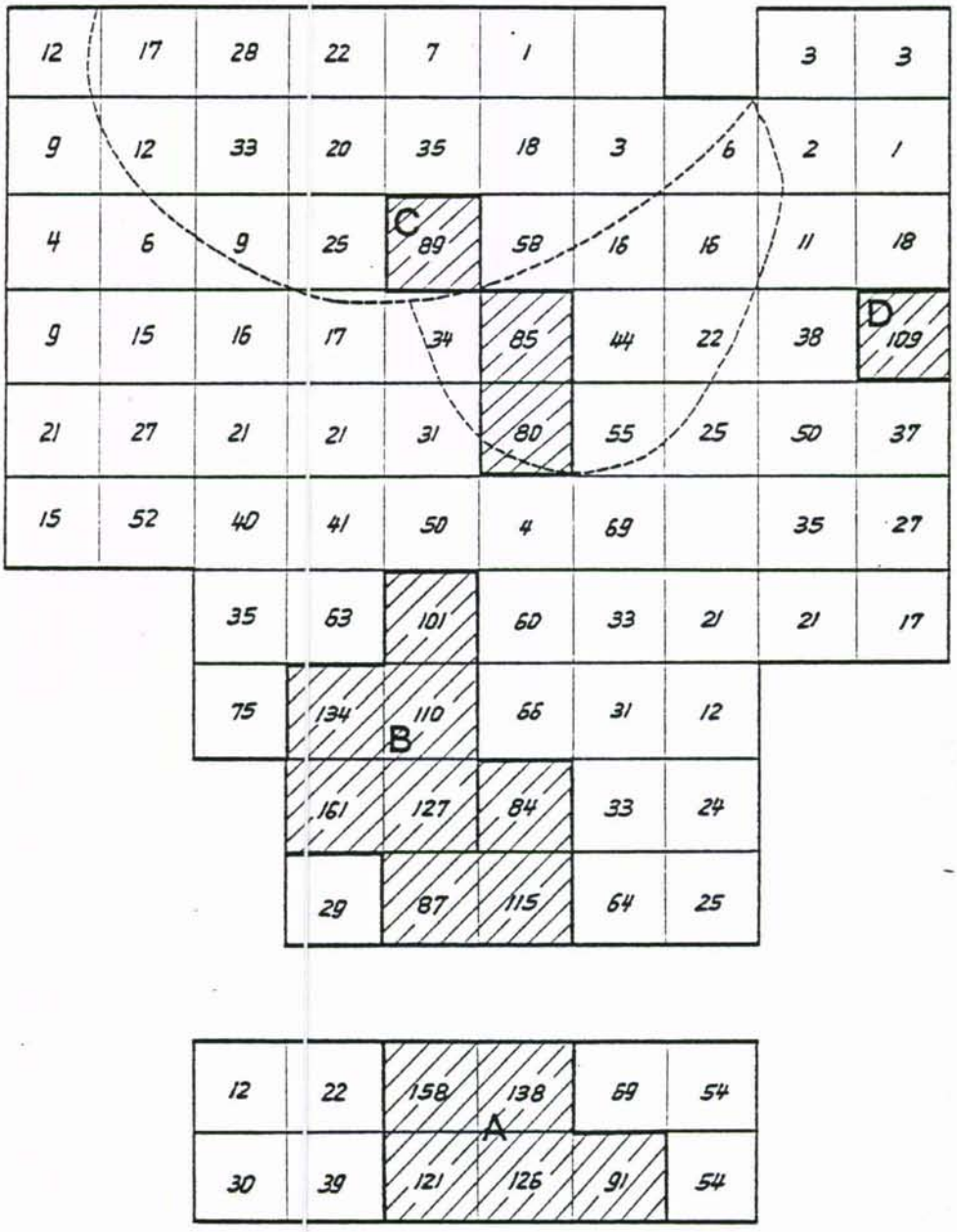
9Pm 209
Prov. 6 Level IV V VI
Location of all Vessels
Fig. 23



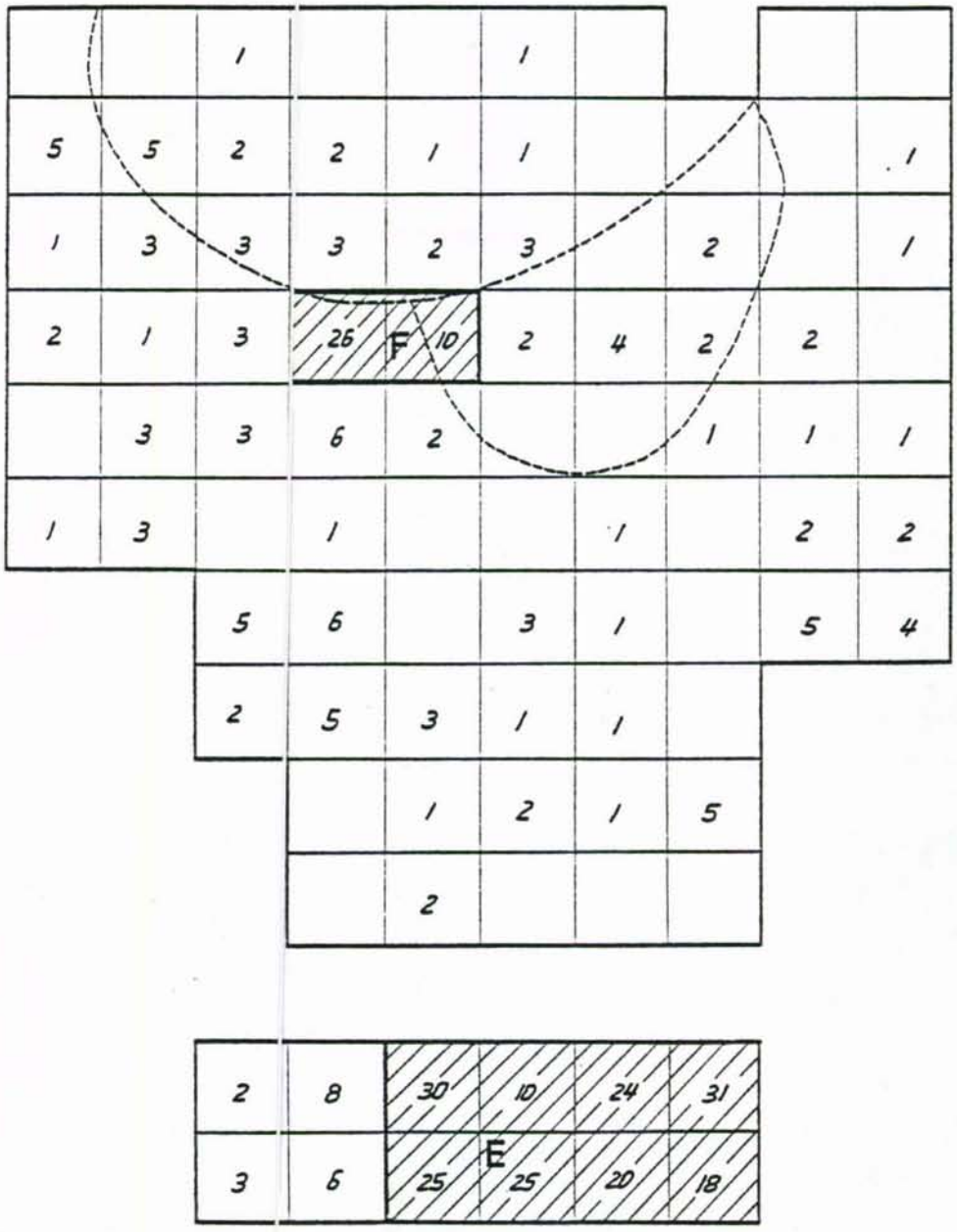
9Pm 209
Prov. 6 Level IV V VI
Location of Major Dunlap
Fabric Marked Vessels
Fig. 24



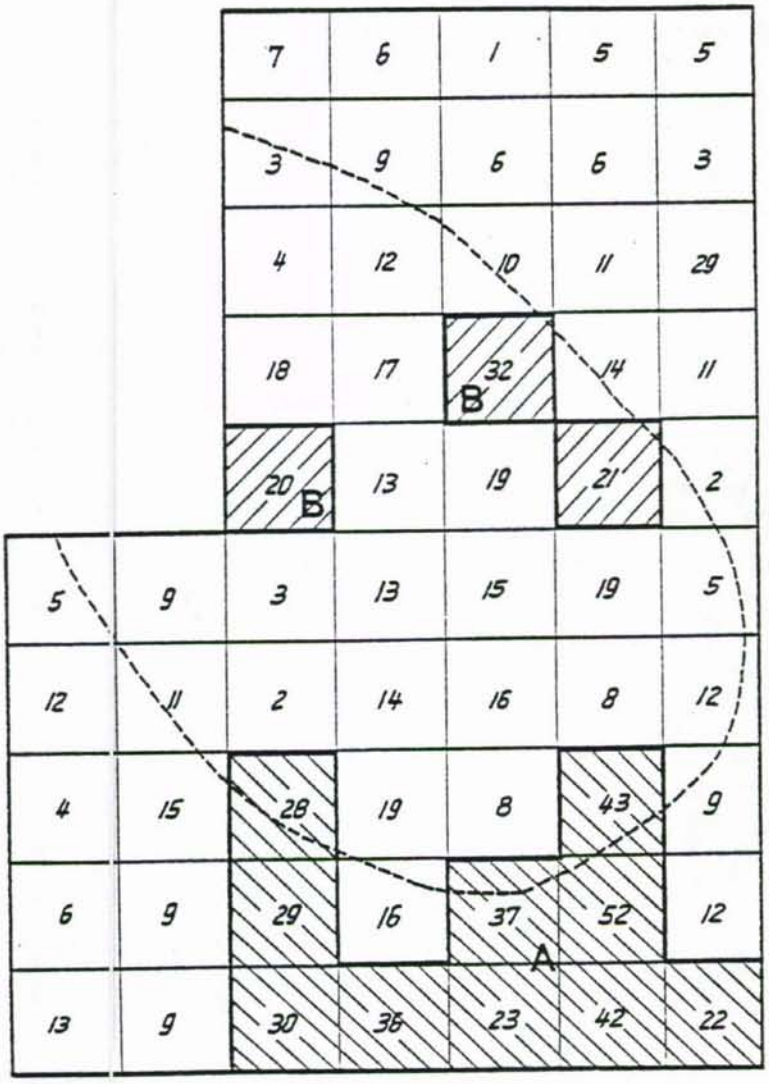
9Pm 209
Prov. 6 Level IV V VI
Location of Major Cartersville Check Stamped Vessels
Fig. 25



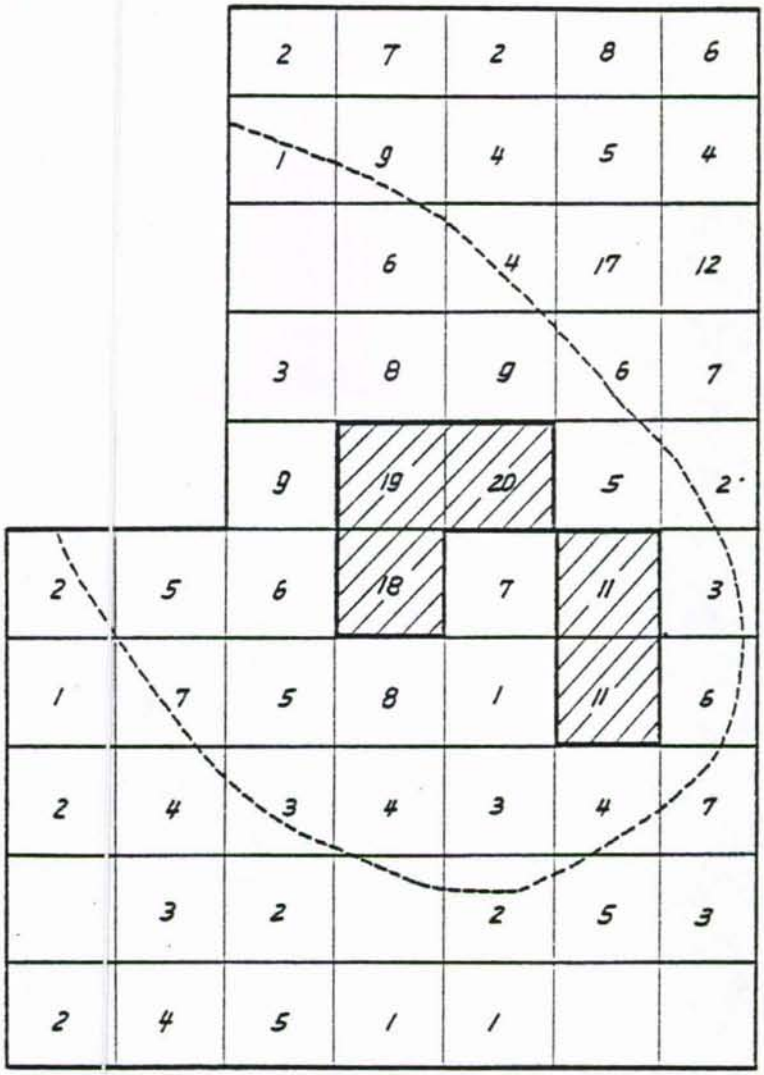
gPm 209
Prov. 3 Level IV V VI
Quartz Flakes
Fig. 26



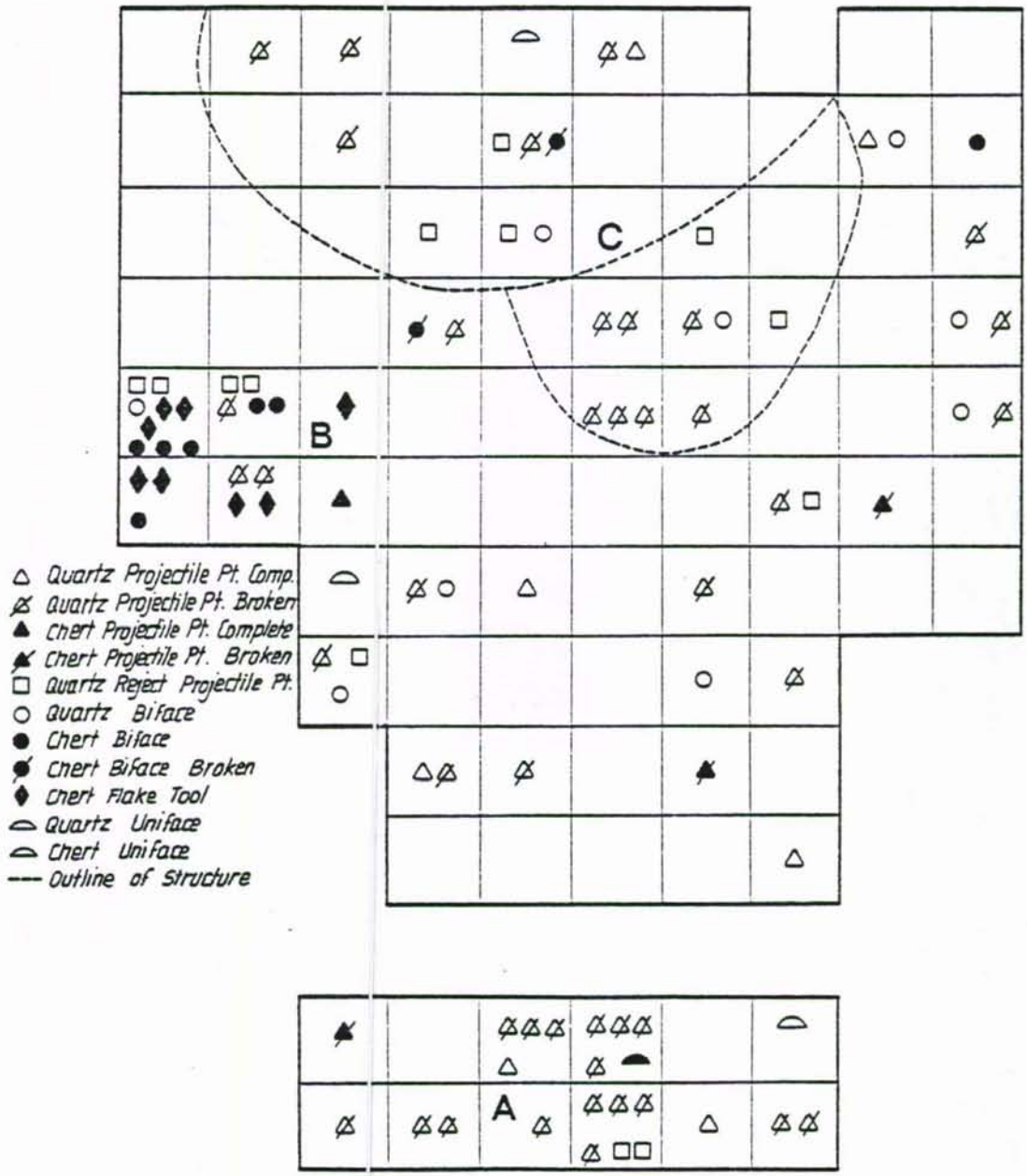
9Pm 209
Prov. 3 Level IV V VI
Chert Flakes
Fig. 27



9Pm 209
Prov. 6 Level IV V VI
Quartz Flakes
Fig. 28



9Pm 209
Prov. 6 Level IV V VI
Chert Flakes
Fig. 29

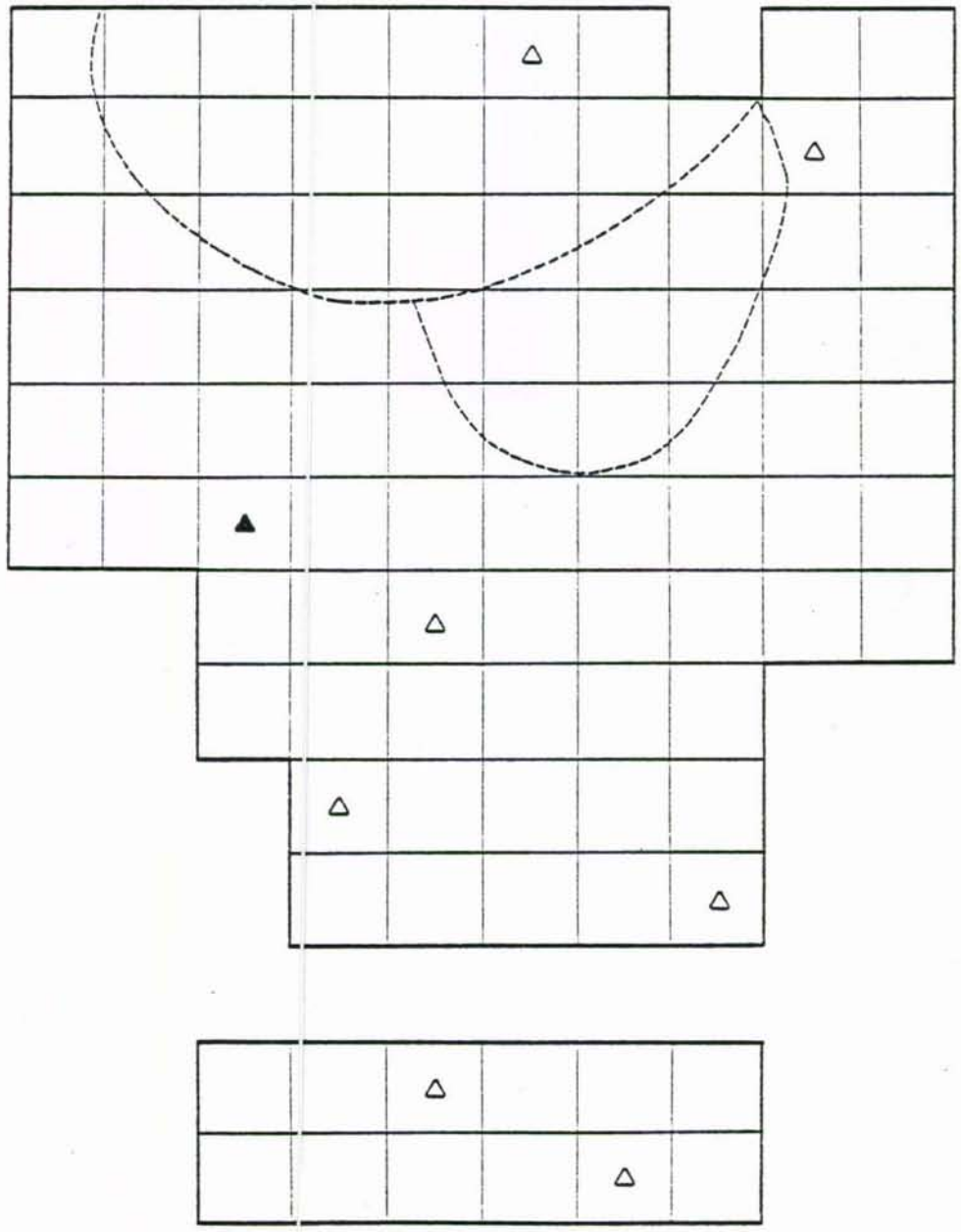


9Pm 209

Prov. 3 Level IV V VI

Chipped Stone Tools

Fig. 30



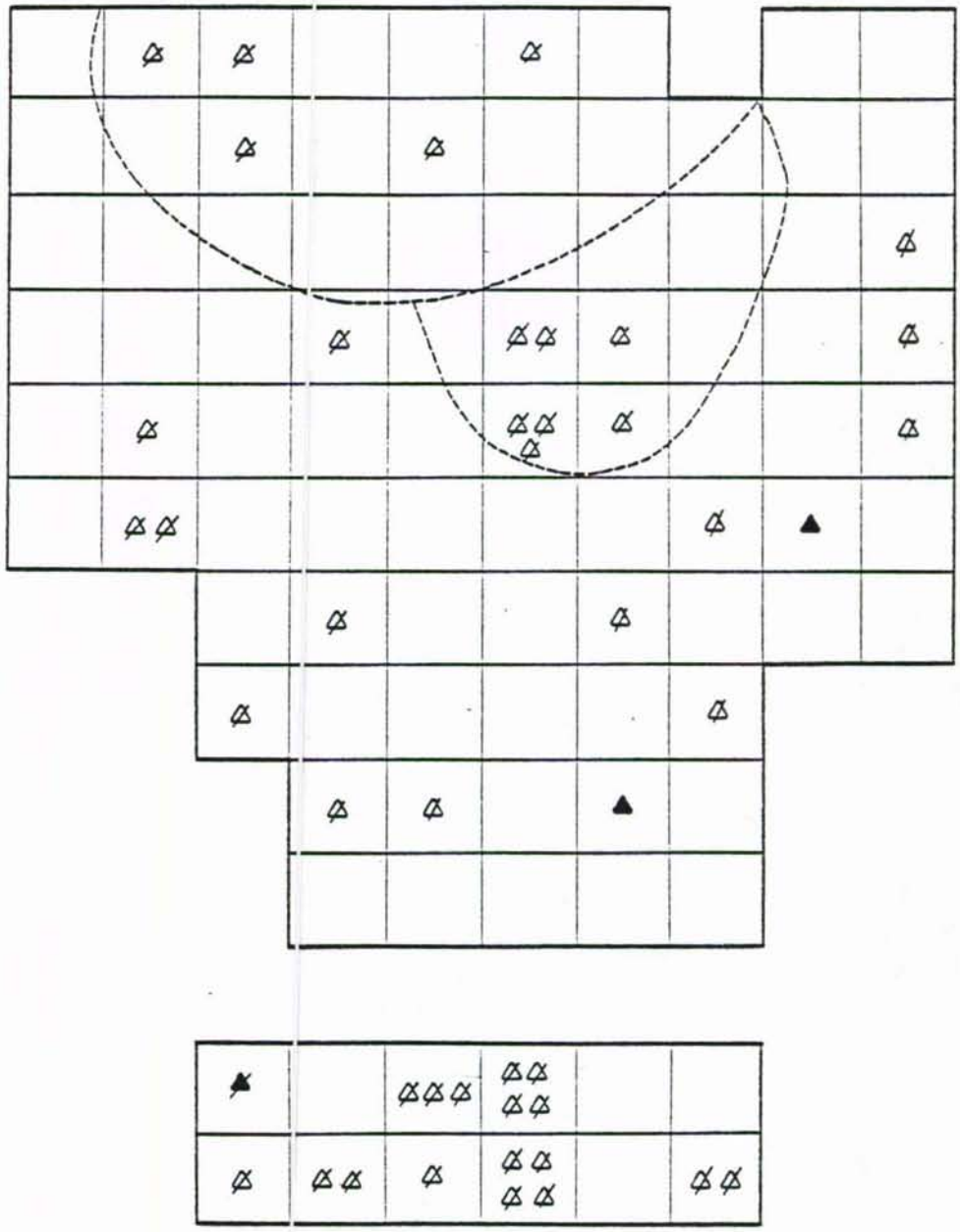
9Pm 209

Prov. 3 Level II I II

△ Complete Quartz Projectile Point

▲ Complete Chert Projectile Point

Fig. 31



Scale: 0 1 m

G.N. M.N.

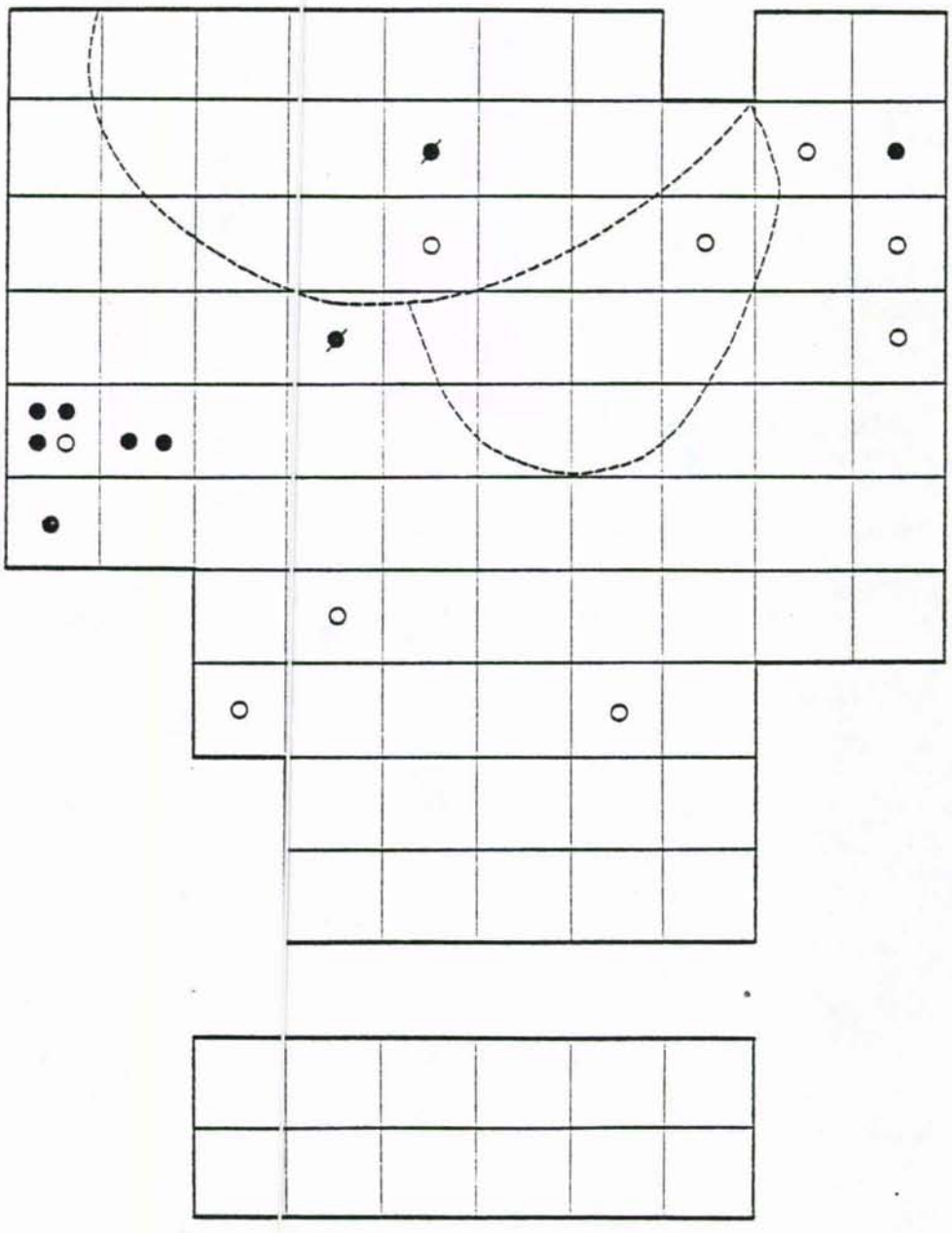
9Pm 209

Prov. 3 Level IV V VI

Broken Quartz Projectile Point

Broken Chert Projectile Point

Fig. 32



Scale: 0 1m

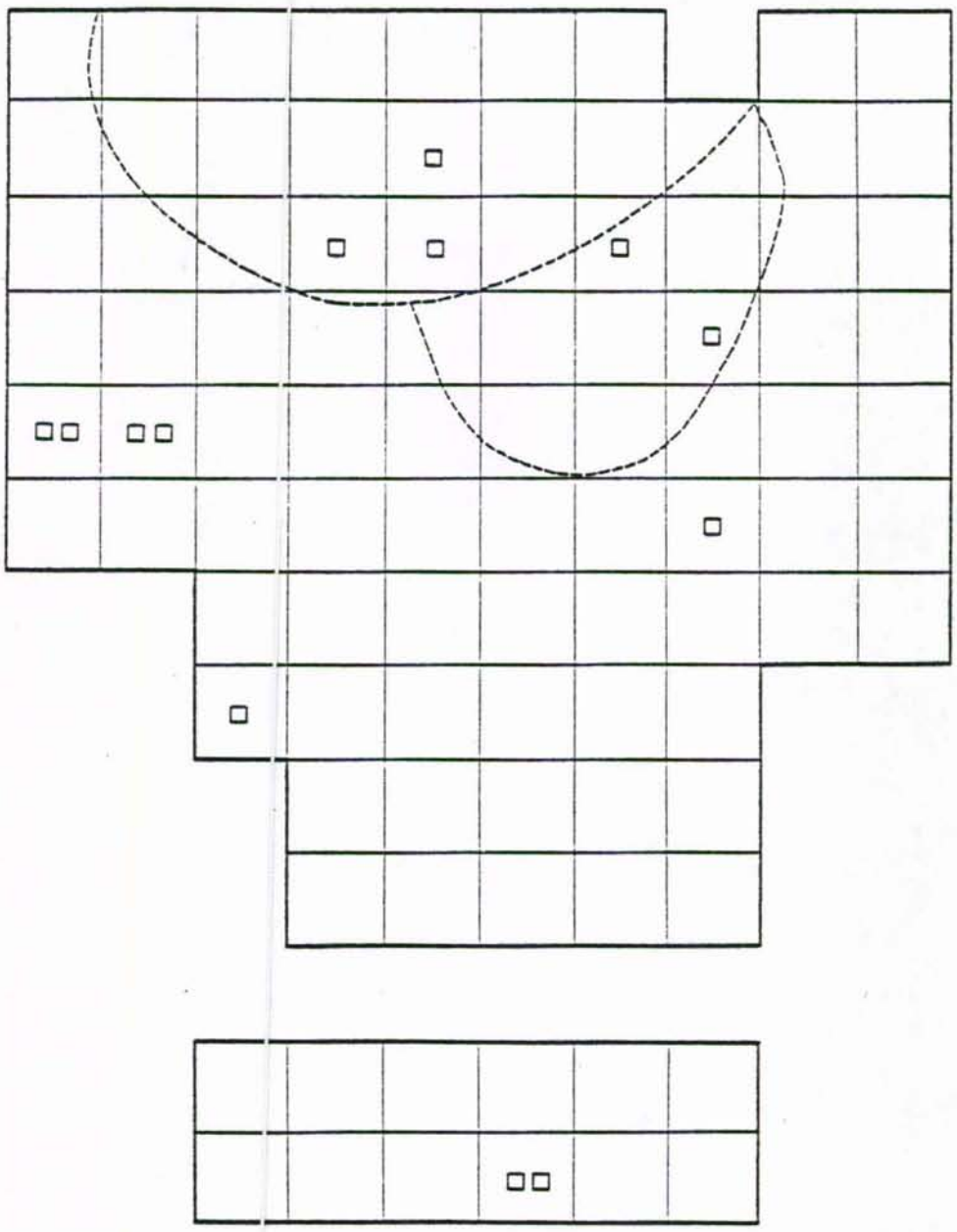
G.N. M.N.

9Pm 209

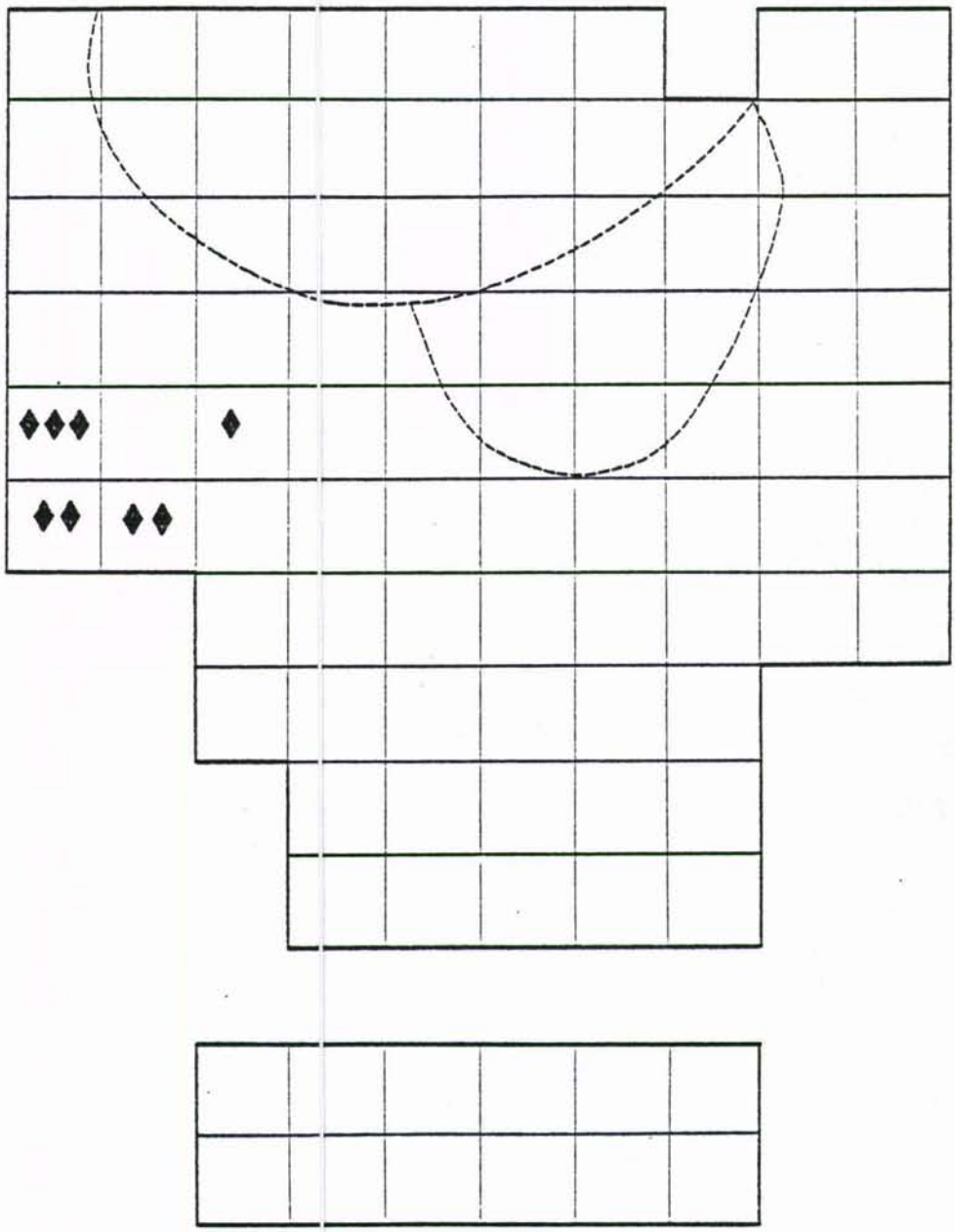
Prov. 3 Level IX X XI

○ Complete Quartz Biface
● Complete Chert Biface
◉ Broken Chert Biface

Fig. 33



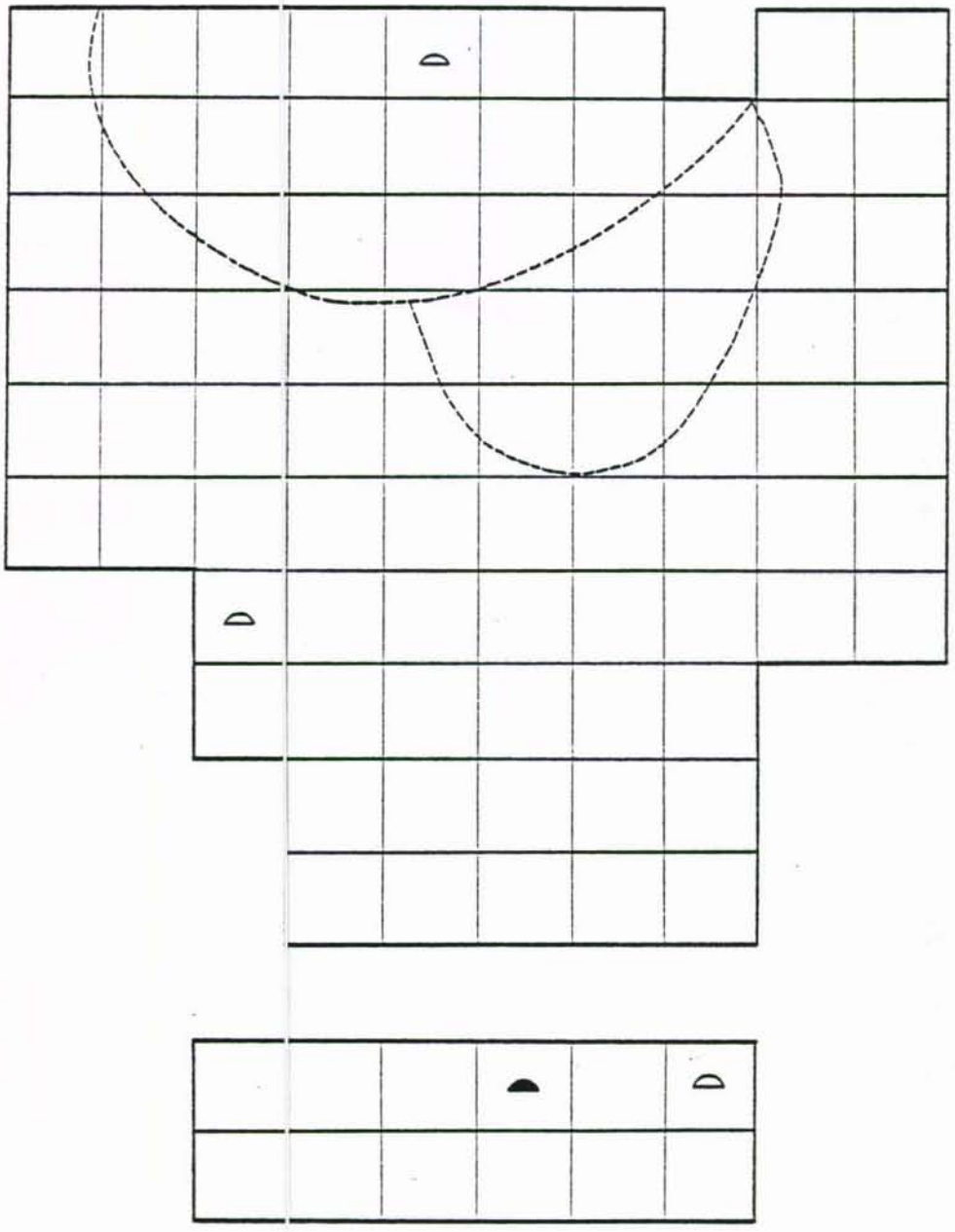
9Pm 209
Prov. 3 Level IV V VI
□ Quartz Reject
Fig. 34



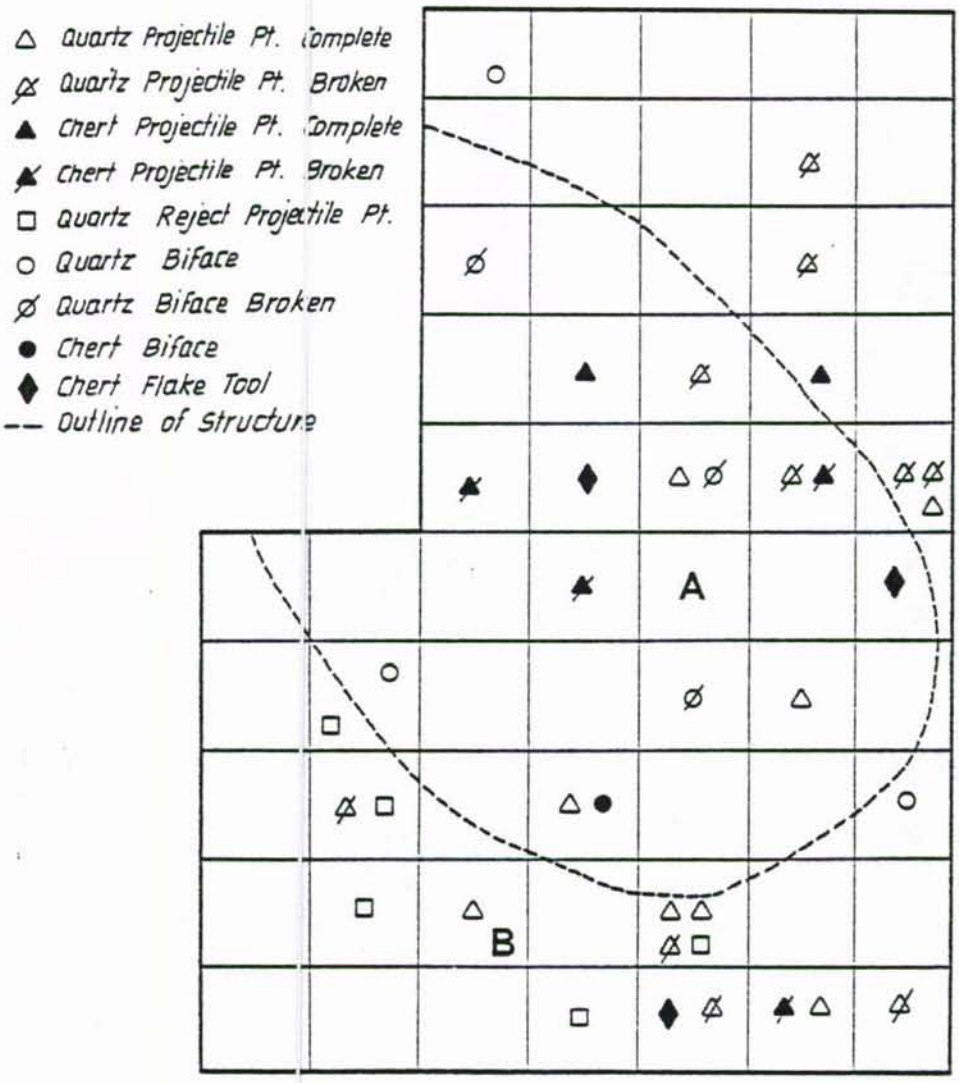
Scale: 0 1m

G.N. M.N.

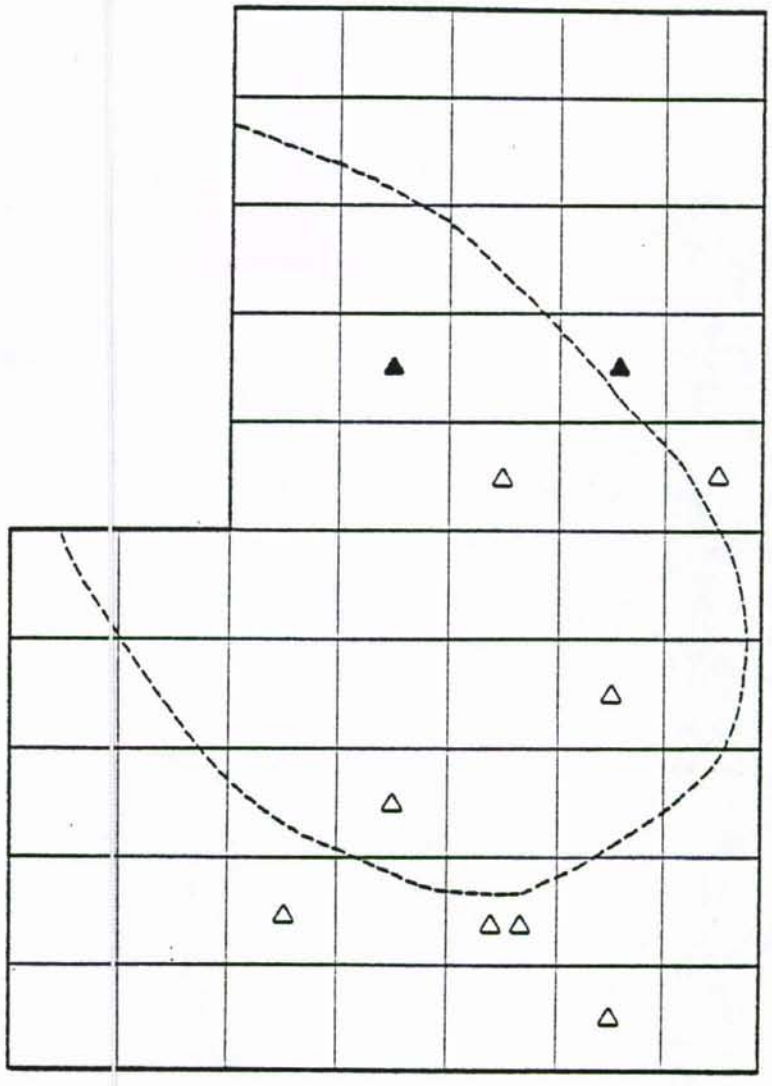
9Pm 209
Prov. 3 Level IX X XI
♦ Chert Flake Tool
Fig. 35



9Pm 209
Prov. 3 Level IV V VI
Quartz Uniface
Chert Uniface
Fig. 36



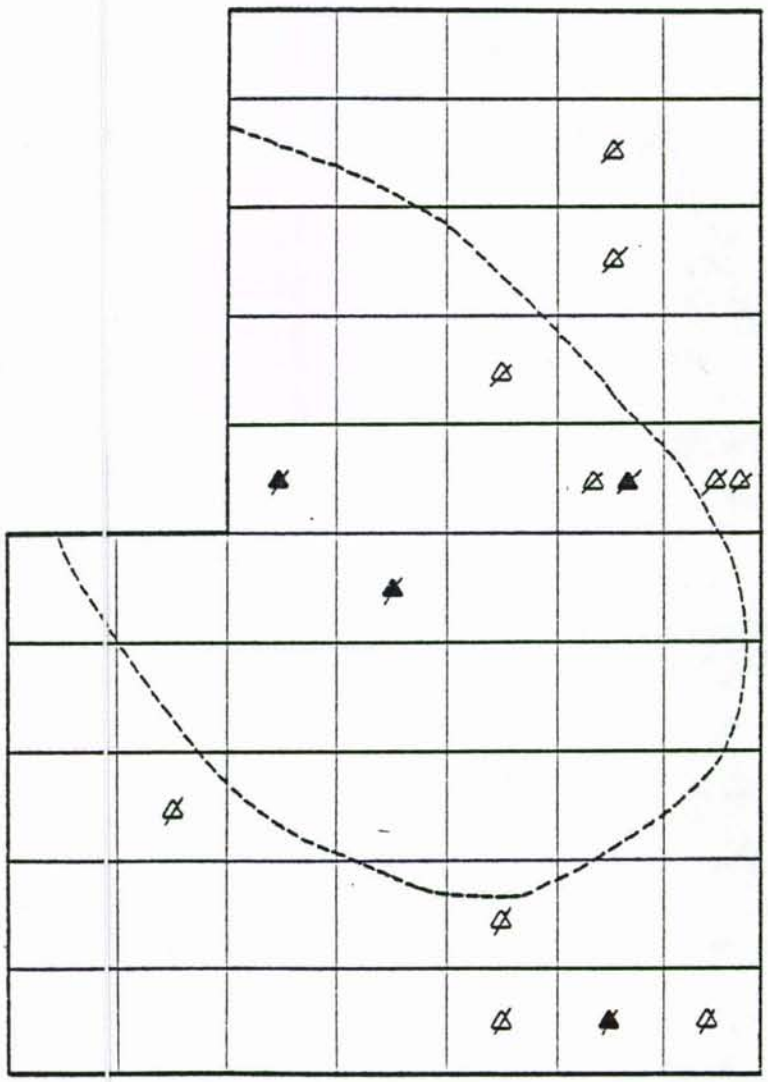
9Pm 209
Prov. 6 Level IV V VI
Chipped Stone Tools
Fig. 37



Scale:
0 1m

9Pm 209
Prov. 6 Level IV V VI
△ Complete Quartz Projectile Point
▲ Complete Chert Projectile Point

Fig. 38



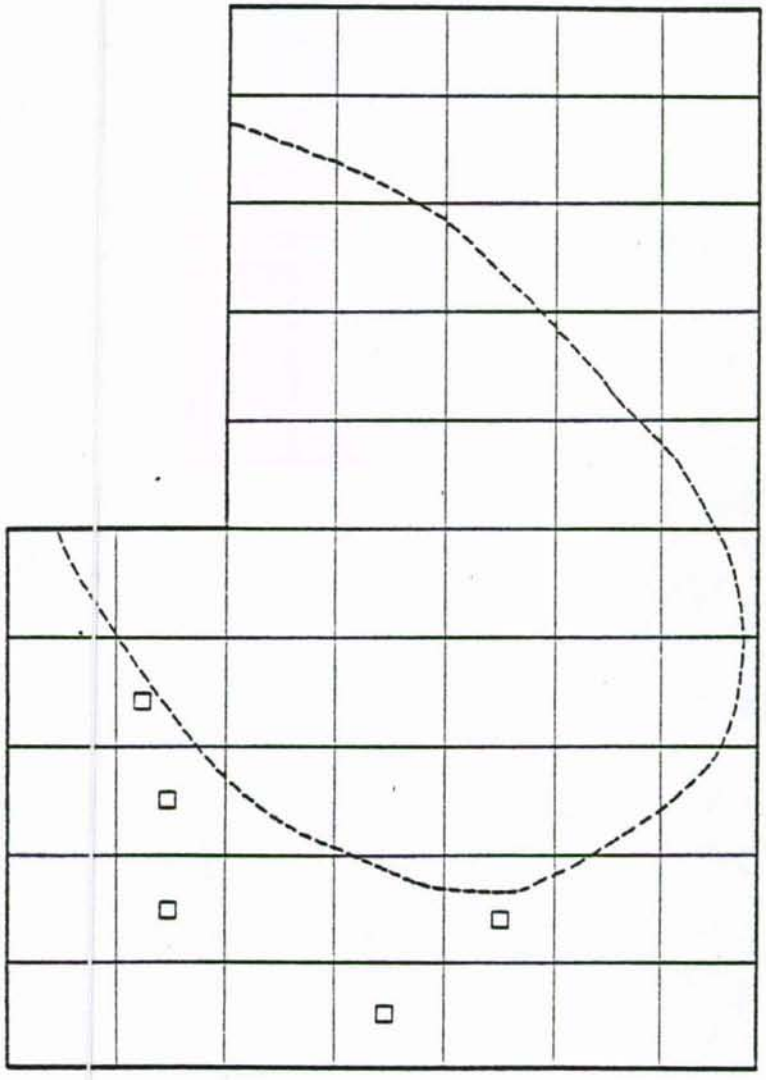
9Pm 209

Prov. 6 Level IV V VI

Broken Quartz Projectile Point

Broken Chert Projectile Point

Fig. 39



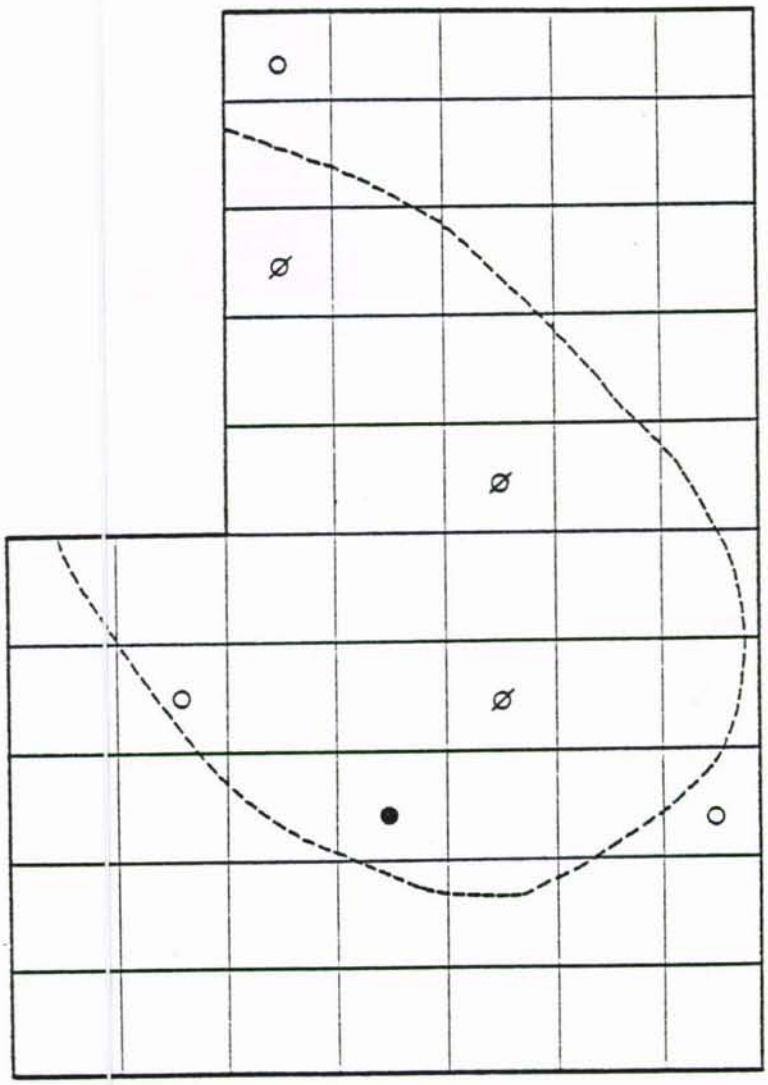
Scale :
0 1m

G.N

M.N

9Pm 209
Prov. 6 Level IV V VI
□ Quartz Reject

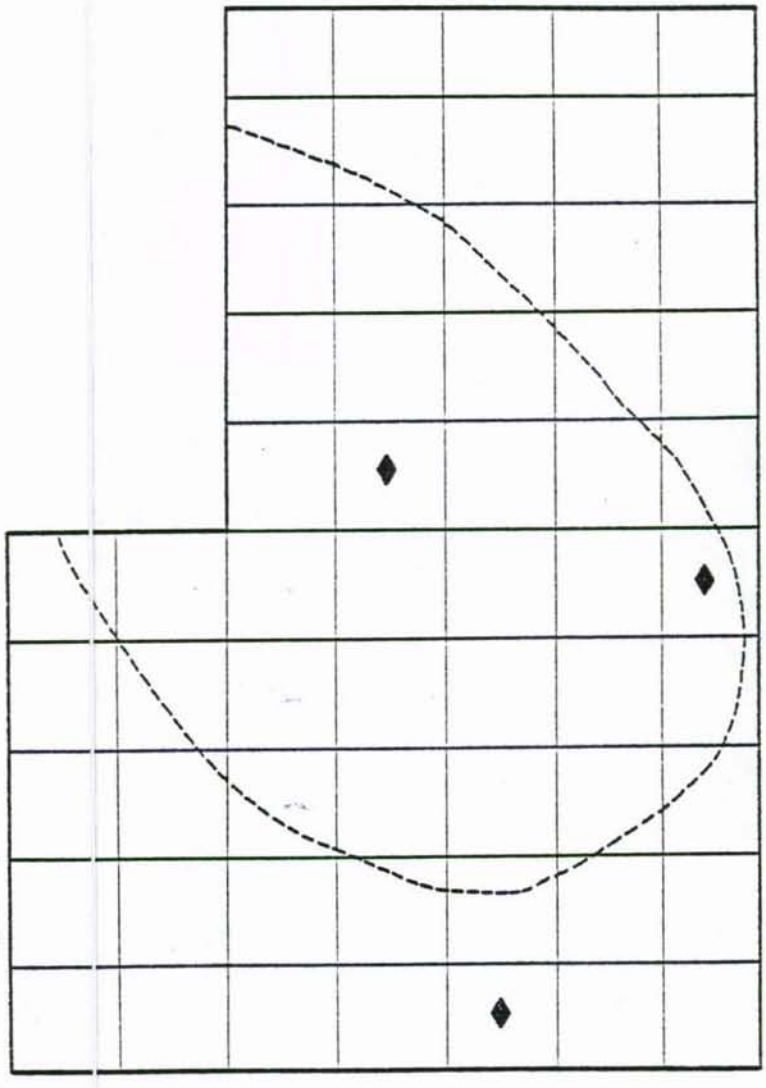
Fig. 40



Scale :
0 1m

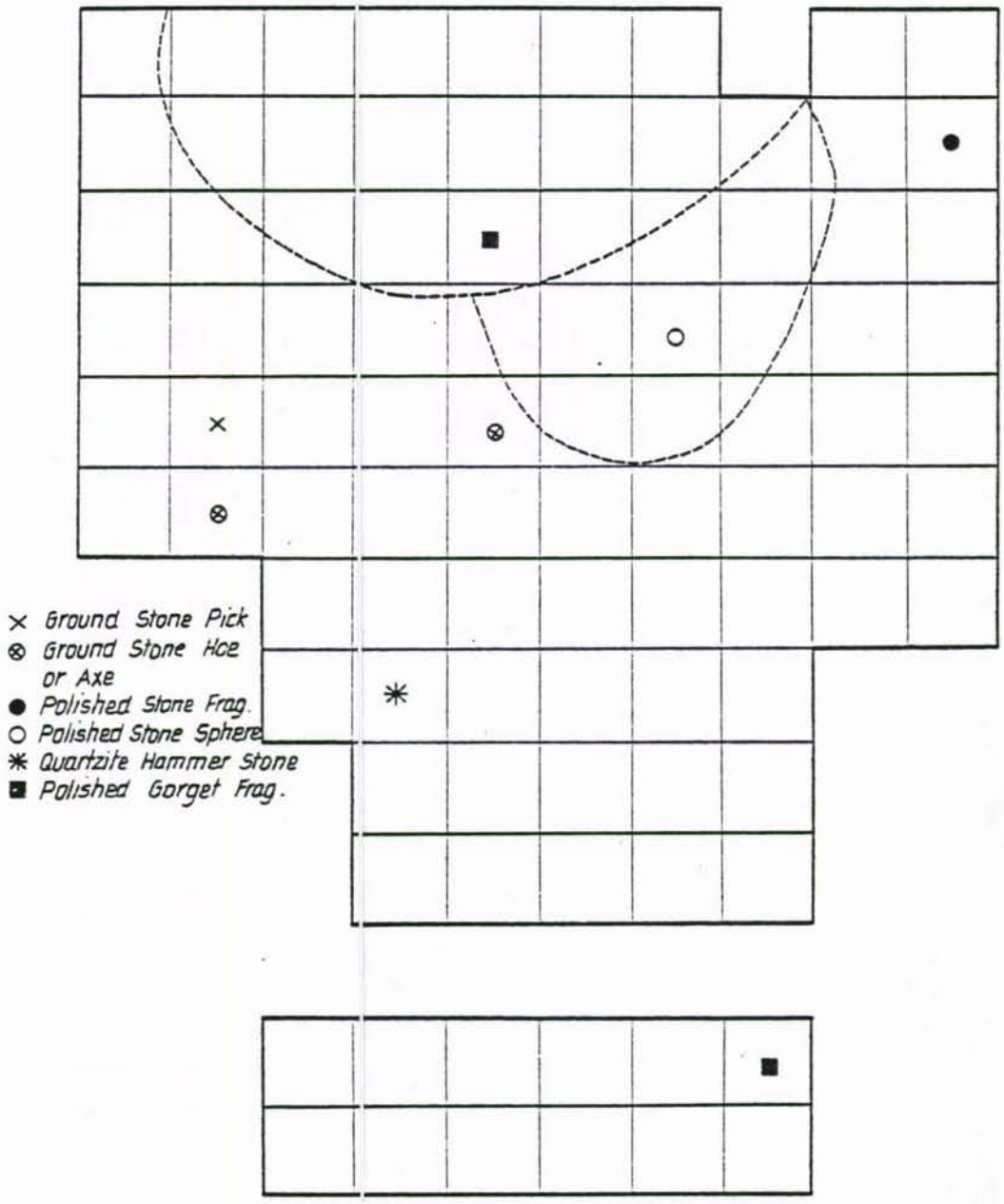
9Pm 209
Prov. 6 Level IV V VI
○ Complete Quartz Biface
ø Broken Quartz Biface
● Complete Chert Biface

Fig. 41

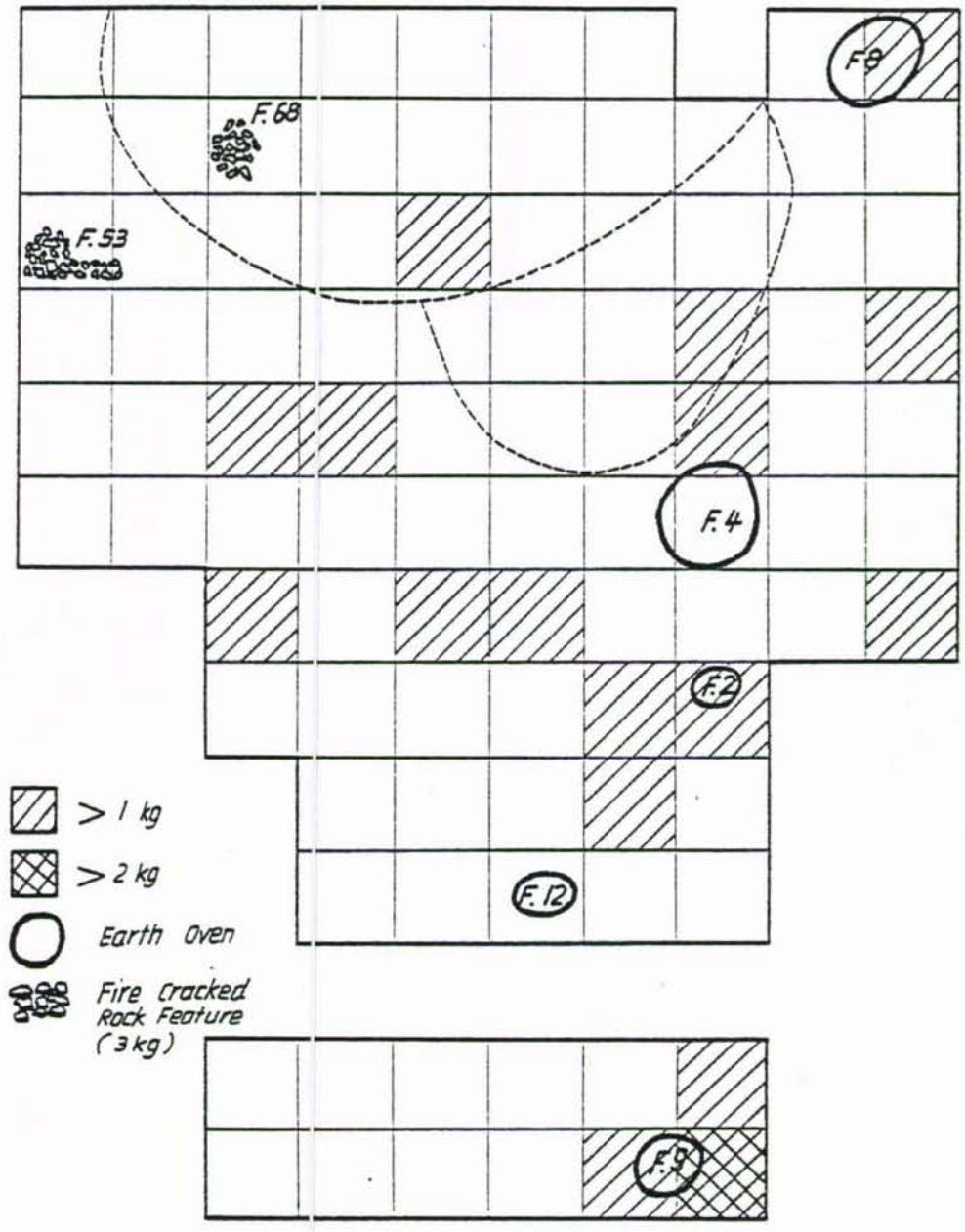


9Pm 209
Prov. 6 Level IV V VI
♦ Chert Flake Tool

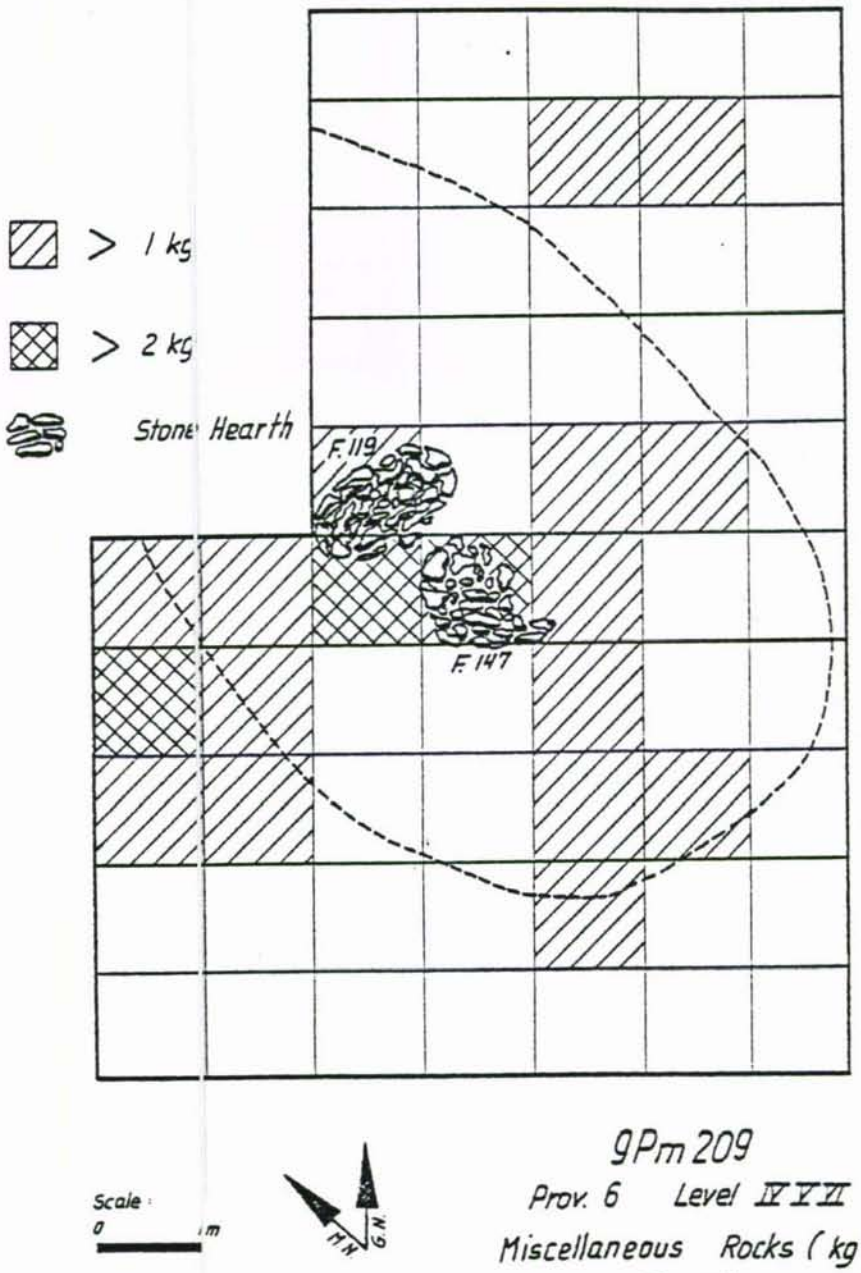
Fig. 42



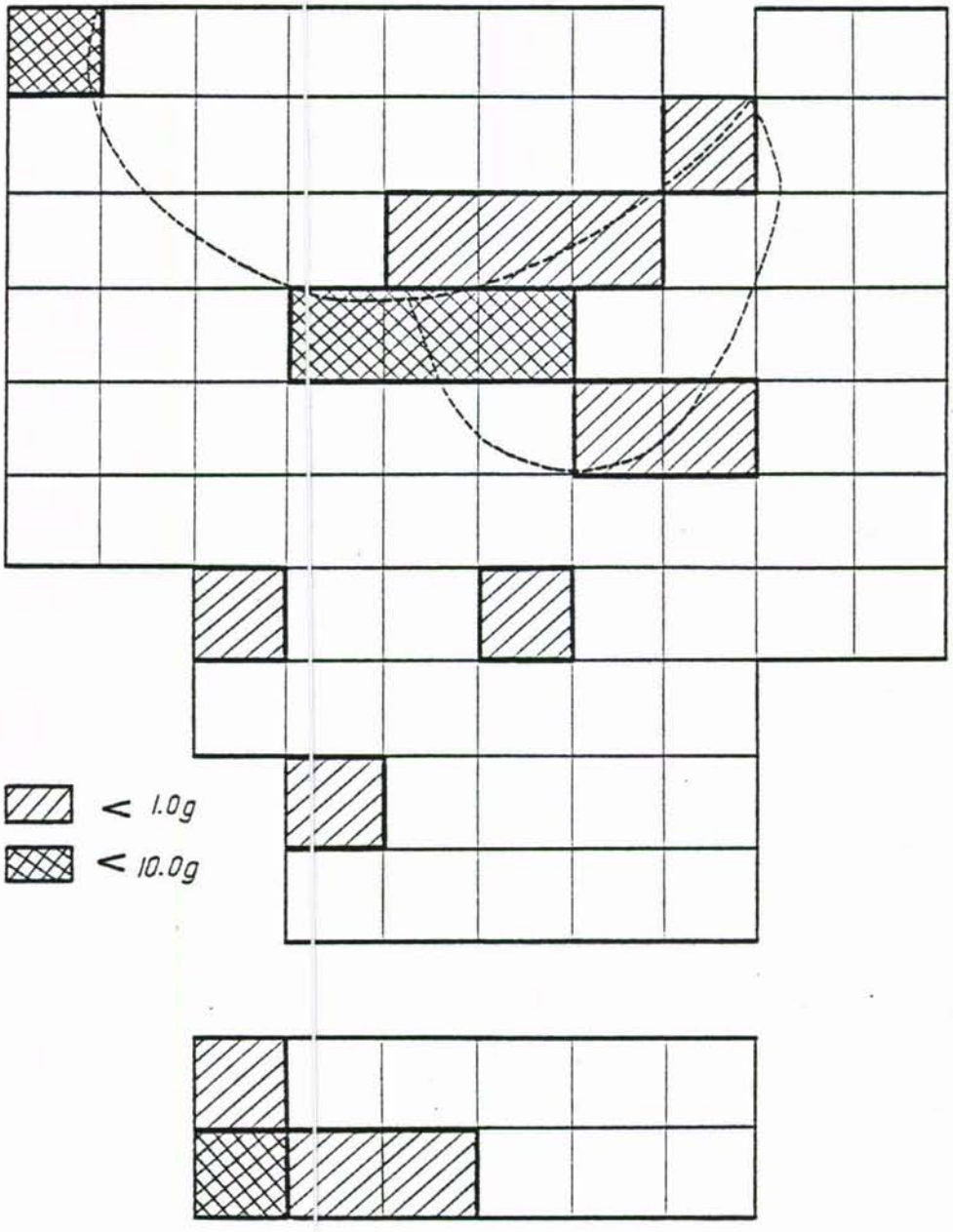
9Pm 209
Prov. 3 Level IV V VI
Ground and Polished Stone Artifacts
Fig. 43



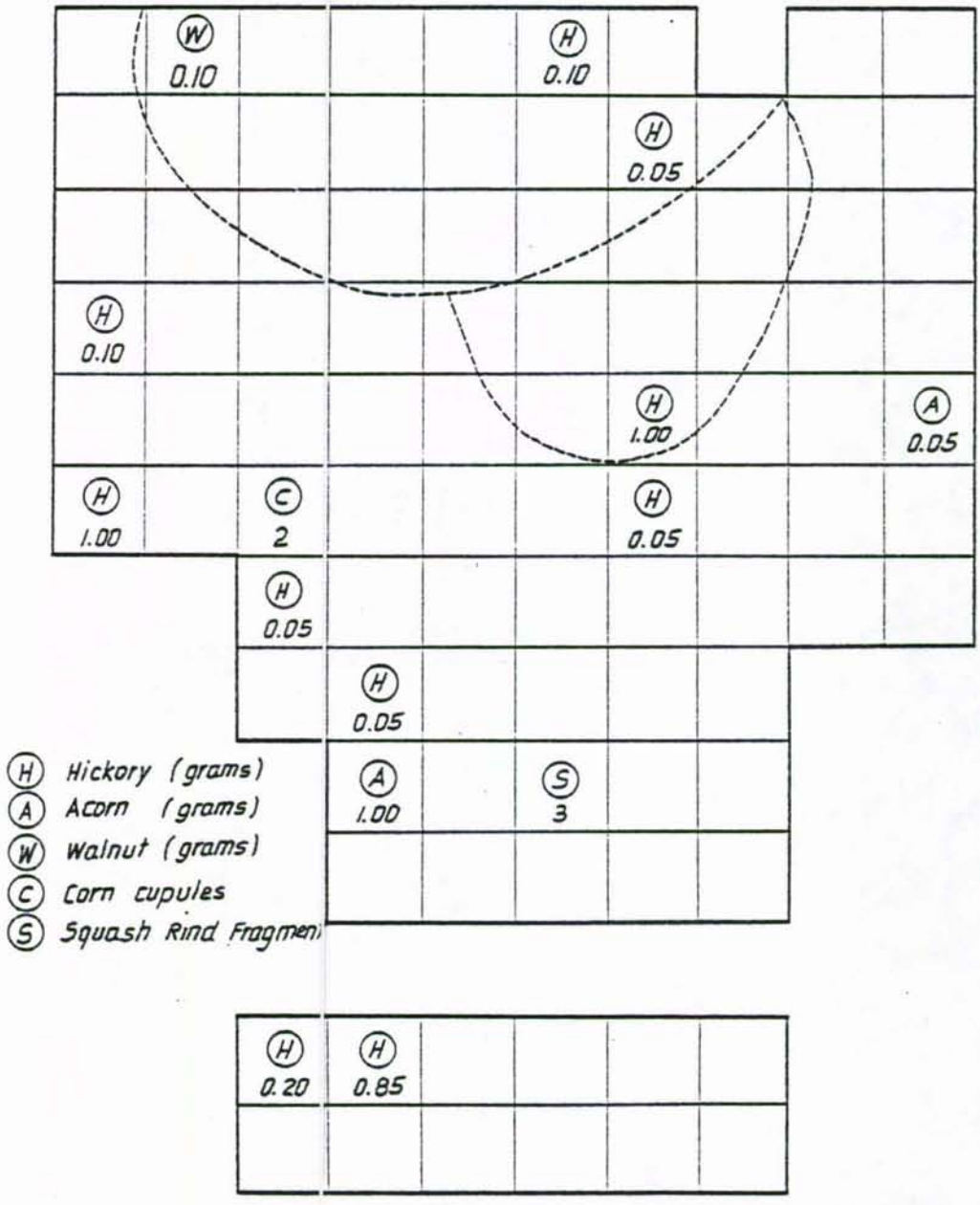
9Pm 209
Prov. 3 Level IV V VI
Miscelaneous Rocks
(kg)
Fig. 44



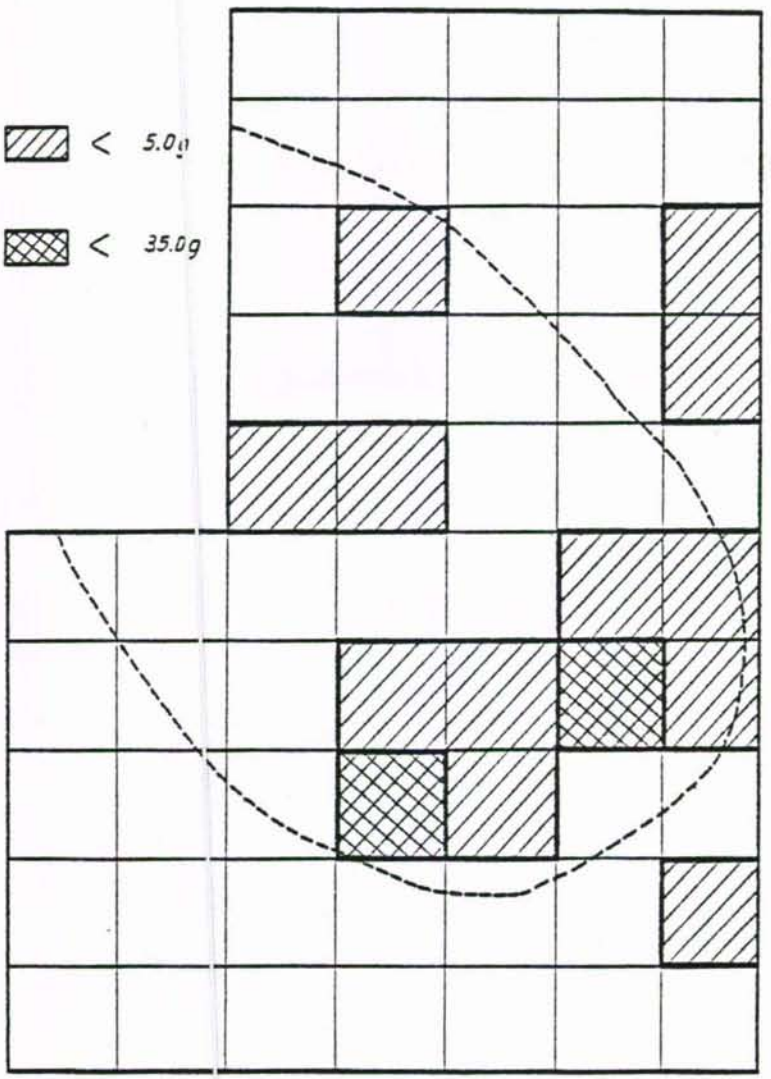
gPm 209
Prov. 6 Level IV V VI
Miscellaneous Rocks (kg)
Fig. 45



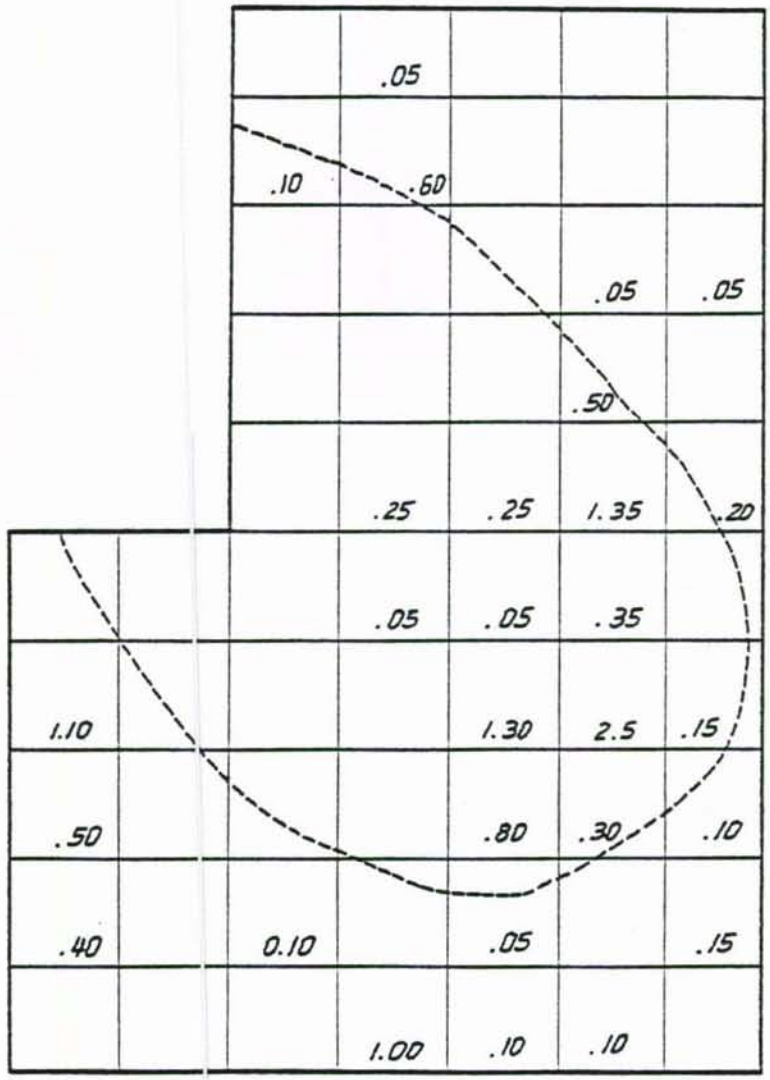
9Pm 209
Prov. 3 Level IV V VI
Distribution of Charred Wood
(grams)
Fig. 46



9Pm 209
Prov. 3 Level II X XI
Location of Floral Remains
Fig. 47



9Pm 209
Prov. 6 Level IV V VI
Distribution of Charred Wood
(grams)
Fig. 48



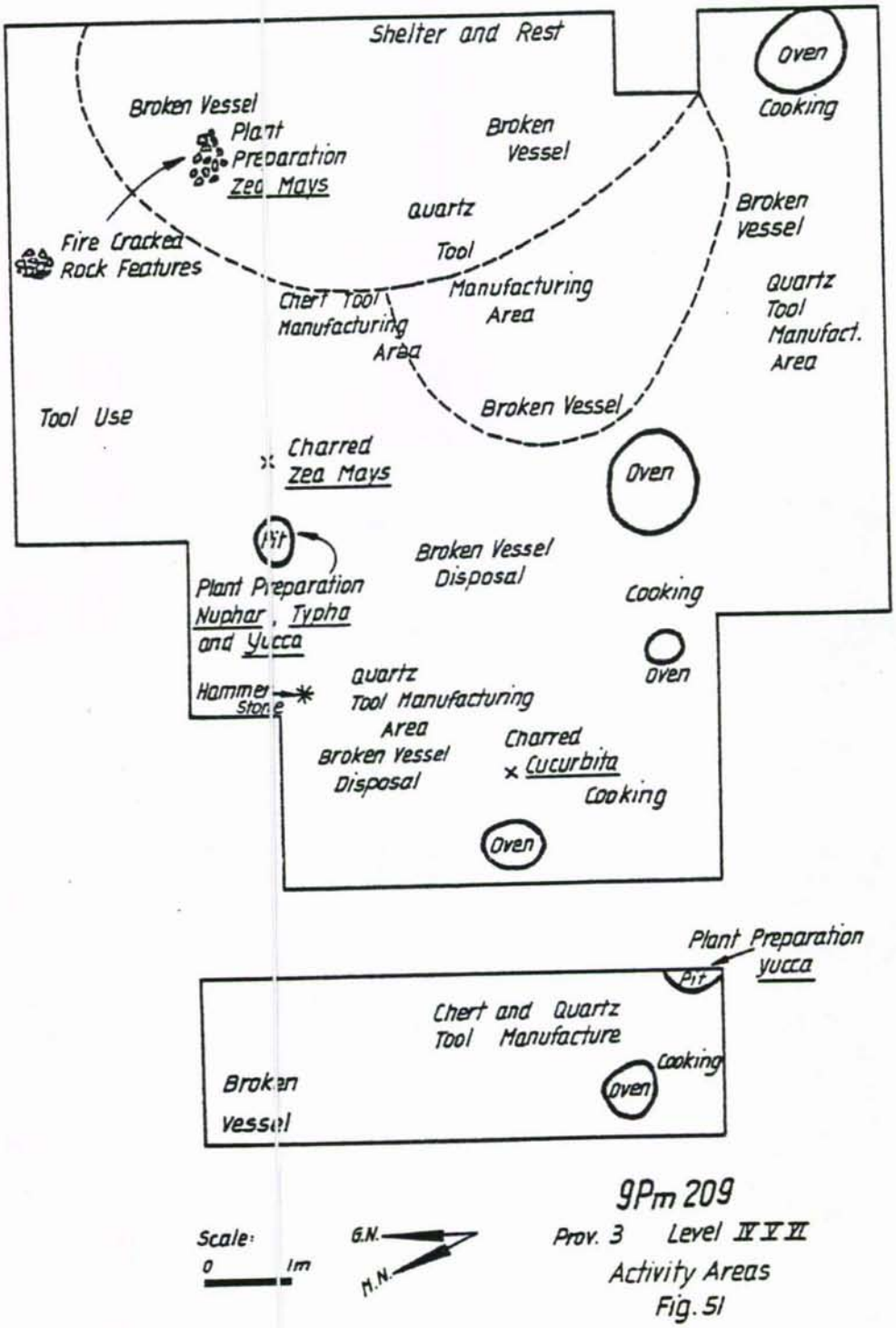
9Pm 209
Prov. 6 Level IV V VI
Distribution of Hickory Nut
(grams)
Fig. 49

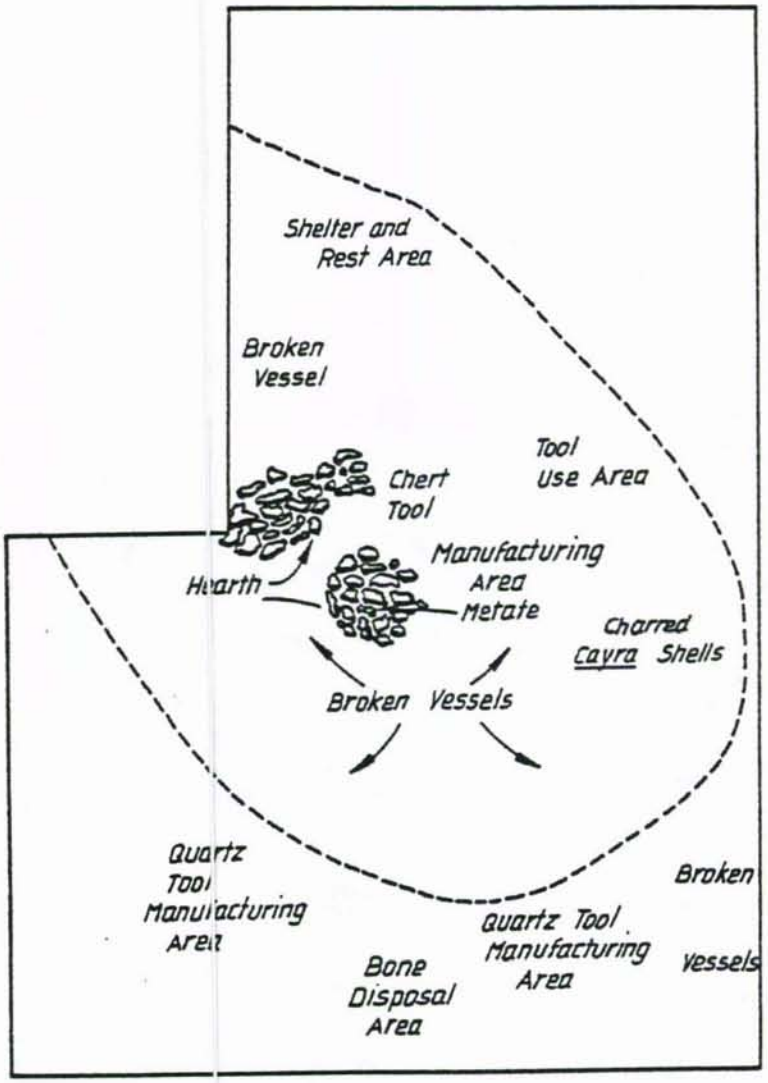
		.28		.54		
		.17	.10	.20		.06
			.98	.07	1.48	.20
				.16	.07	.17
		.30	.27	.06		.94
.65	2.83	.66		.45		
.63	3.13	.66	.24	.39	.42	4.21
.91	3.48	3.22	1.67	1.18	.59	.83
.22	1.77	6.72	14.01	1.31	.27	2.70
.15	1.05	6.85	14.36	2.45		

Scale: 0 1/17

G.N. M.N.

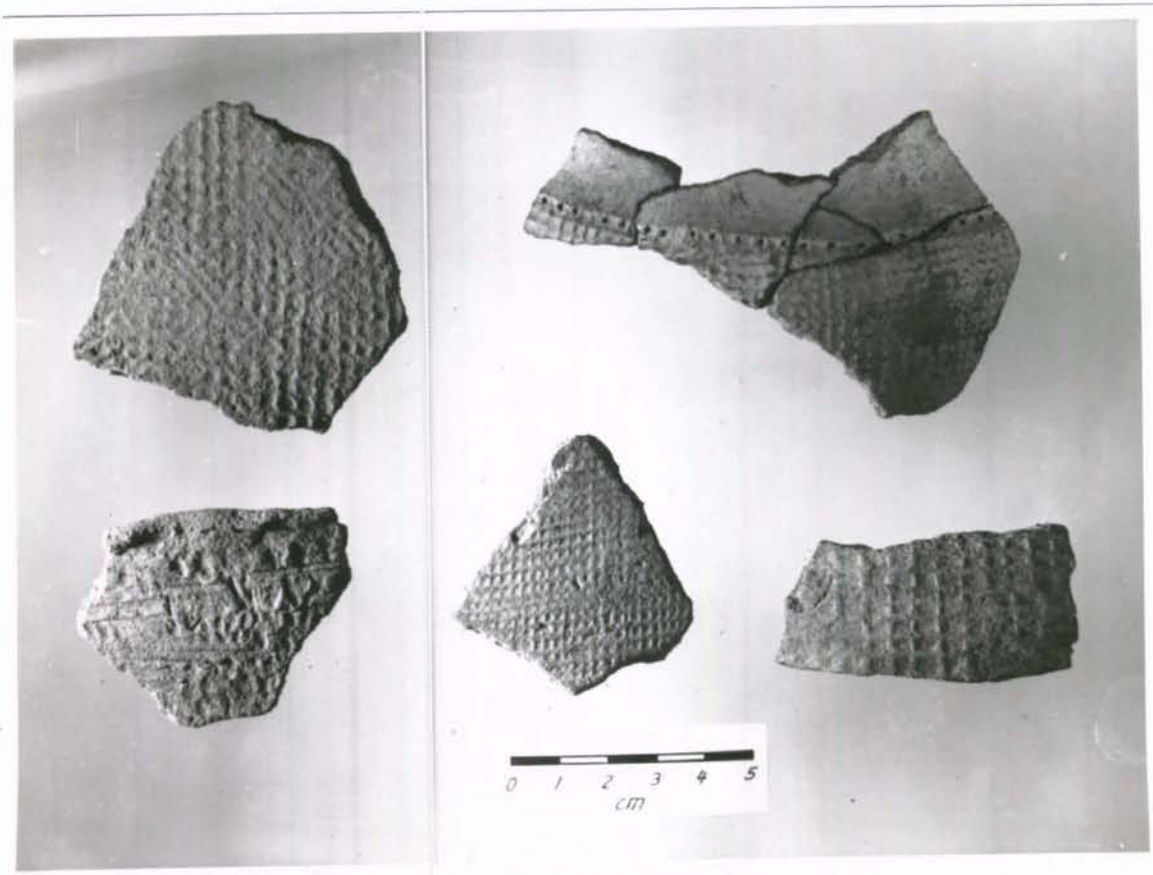
9Pm 209
Prov. 6 Level IV V VI
Distribution of Bone (grams)
Fig. 50


Shelter and Rest
Oven
Cooking
Broken Vessel
Plant Preparation Zea Mays
Broken Vessel
Quartz Tool Manufacturing Area
Broken Vessel
Fire Cracked Rock Features
Chert Tool Manufacturing Area
Quartz Tool Manufact. Area
Broken Vessel
Tool Use
Charred Zea Mays
Oven
Pit
Broken Vessel Disposal
Plant Preparation Nuphar, Typha and Yucca
Cooking
Oven
Hammer Stone
Quartz Tool Manufacturing Area
Broken Vessel Disposal
Charred Cucurbita
Cooking
Oven
Plant Preparation yucca
Pit
Chert and Quartz Tool Manufacture
Cooking
Oven
Broken Vessel
Scale: 0 1m
G.N.
M.N.
9Pm 209
Prov. 3 Level IV V VI
Activity Areas
Fig. 51



9Pm 209
Prov. 6 Level IV V VI
Activity Areas
Fig. 52

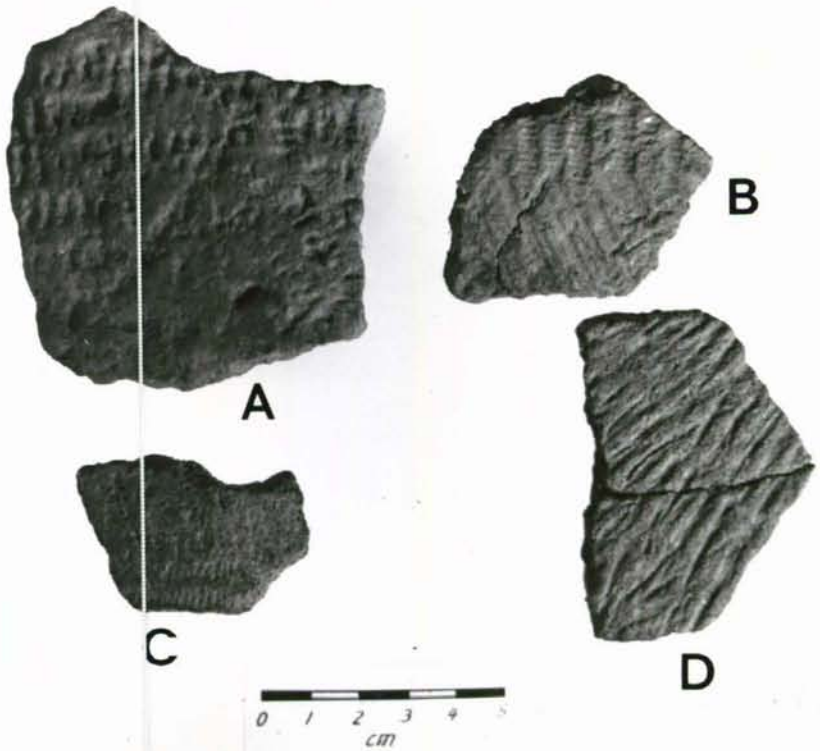
PLATE 1. LONG SHOALS VICINITY



A, B, D, E Cartersville Check-Stamped

C Complicated Stamped

PLATE 2. CERAMICS, PROVENIENCE 3



A-C Dunlap Fabric-Marked

D Cord-Marked

PLATE 3. CERAMICS, PROVENIENCE 3

A, B Dunlap Fabric-Marked

C - F Cartersville Check-Stamped

PLATE 4. CERAMICS, PROVENIENCE 6

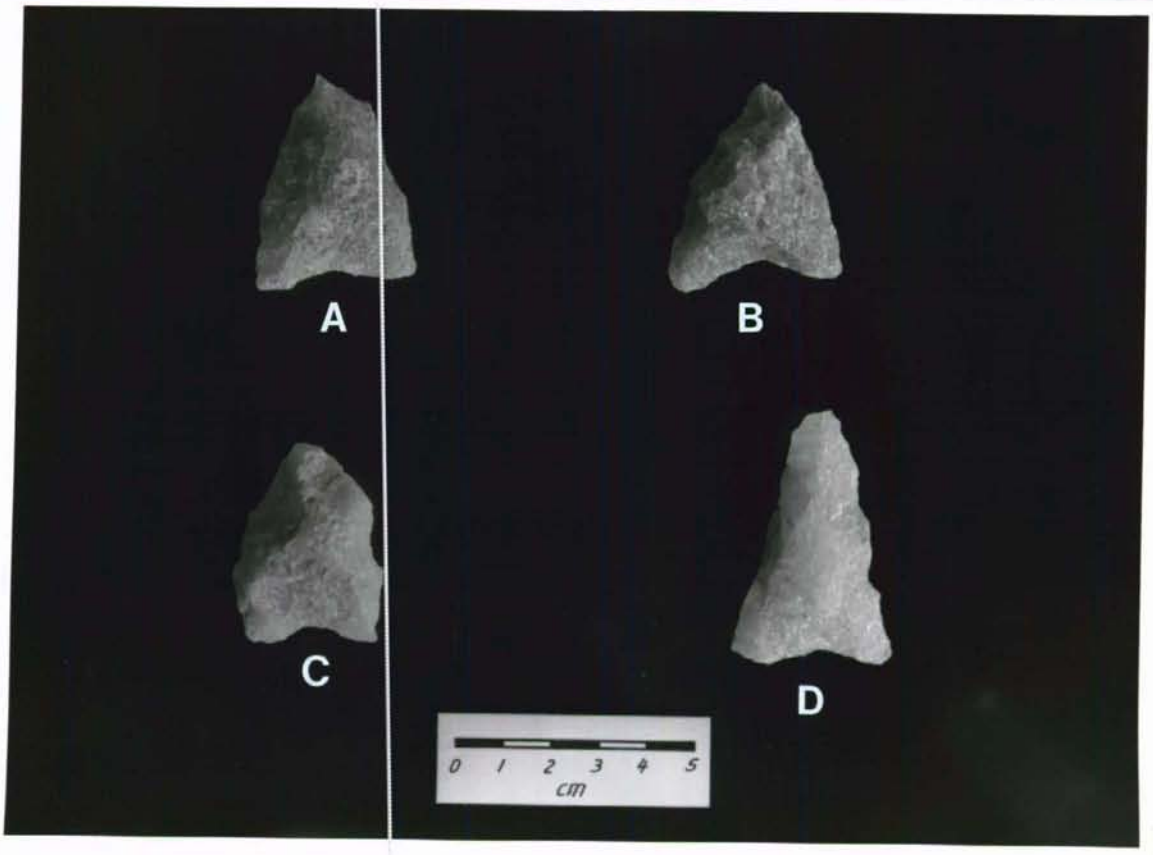
A. Chert Projectile Point

B - C Quartz Projectile Points

E Chert Biface

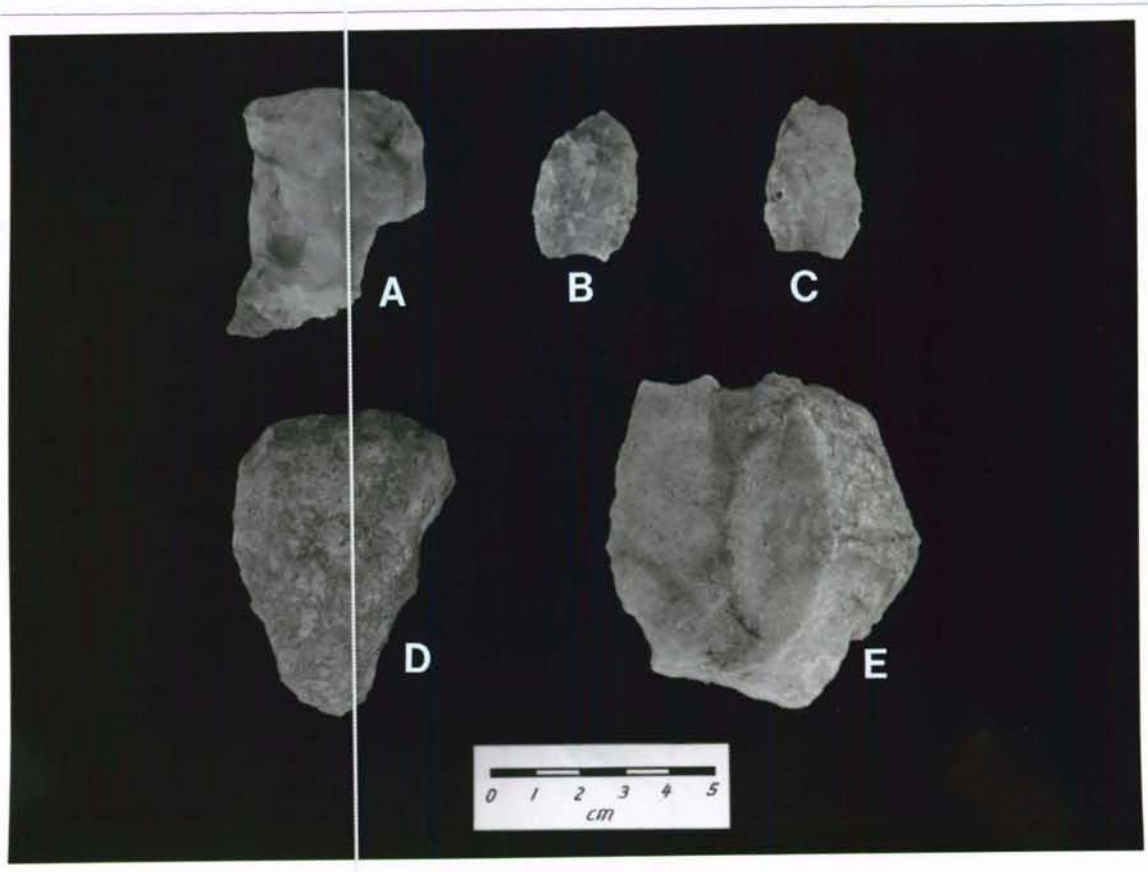
F - G Quartz Bifaces

PLATE 5. CHIPPED STONE TOOLS



Quartz Rejects

PLATE 6. CHIPPED STONE TOOLS



A - C Chert Flake Tools

D - E Quartz Unifaces

PLATE 7. CHIPPED STONE TOOLS

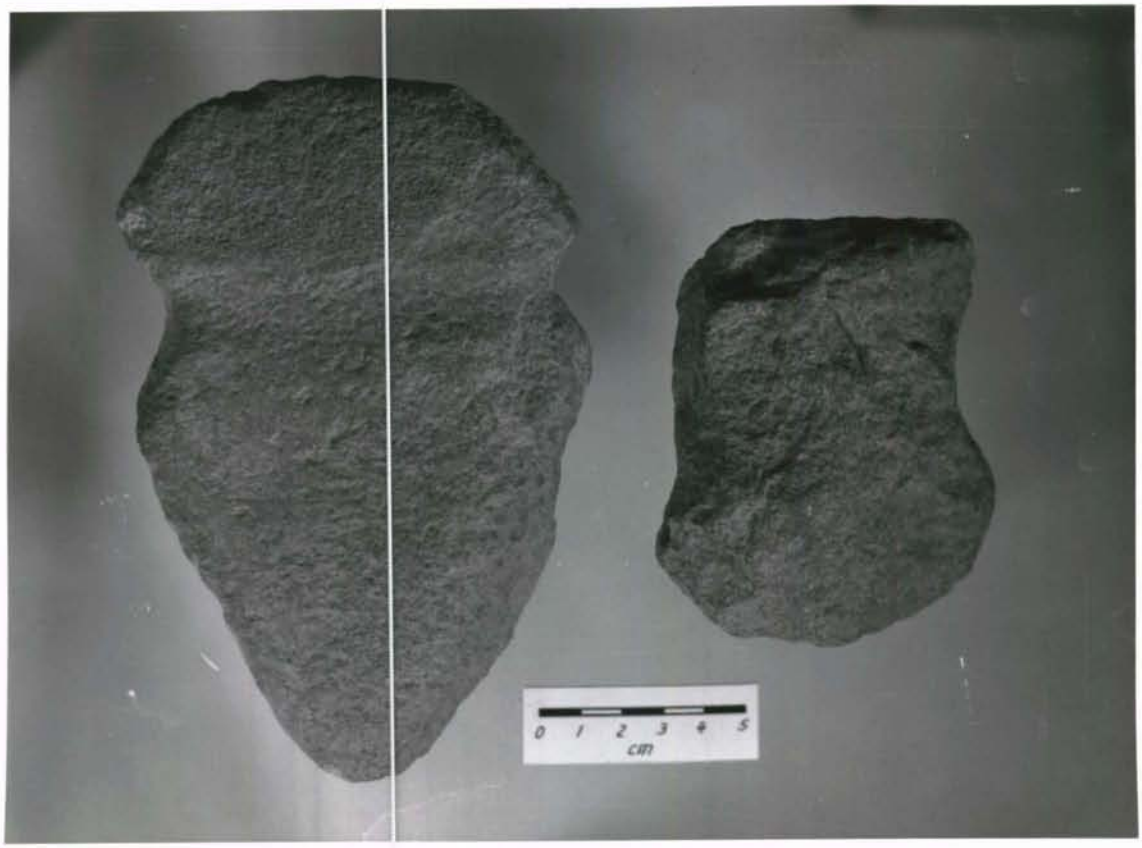


PLATE 8. GROUND STONE HOES

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