INTERPRETATIONS

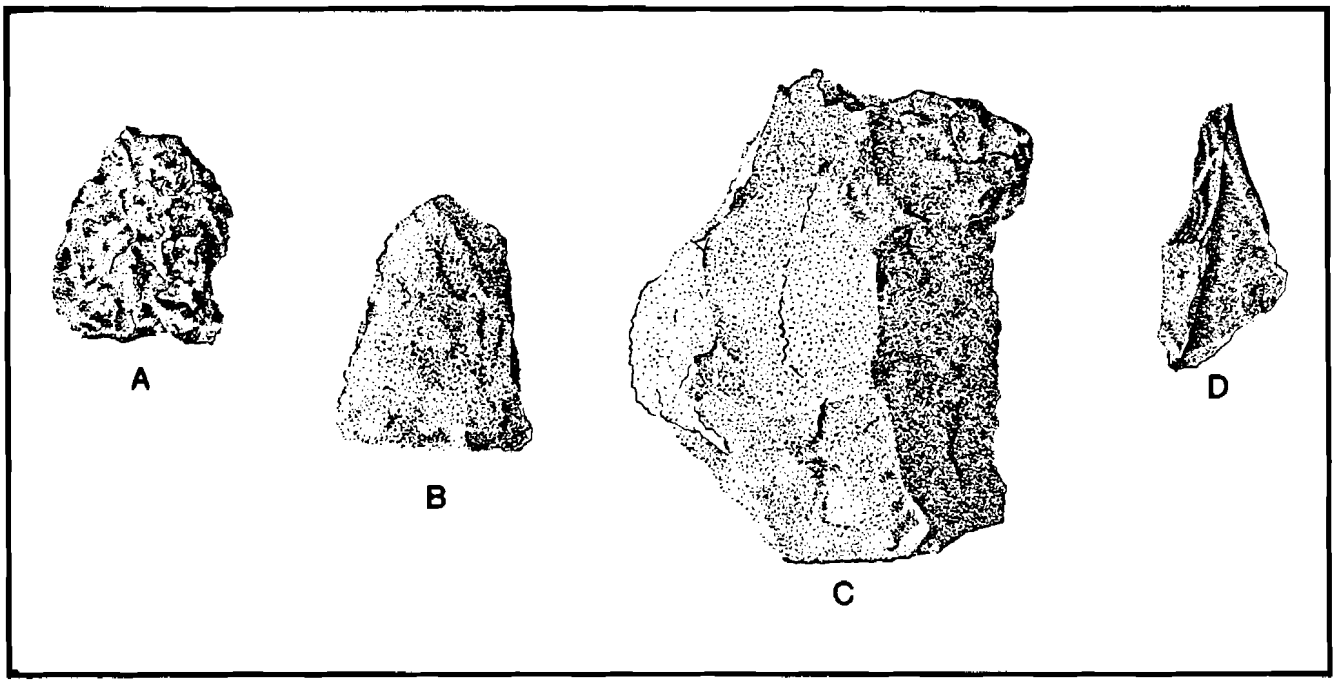
This section of the report will describe the interpretations of the results noted above. Three main themes are addressed: site chronology, stone tool technologies, and activity areas and settlement patterns.

SITE CHRONOLOGY

Figure 20 shows the meager biface assemblage from the site and none of these artifacts are temporally diagnostic. The

FIGURE 20

Hockessin Valley Site Flake Tools



ironstone biface fragment (Figure 19C) may indicate a Clyde Farm complex occupation because ironstone utilization is most frequent during initial Woodland I times (Ward 1988; 1985). However, in the absence of any truly diagnostic bifaces and ceramics, it is necessary to rely upon the radiocarbon dates.

The 3255 B.C. date (UGa-5715) on the hearth inside the structure (Feature 9 - Figure 12) is consistent with the ironstone utilization and probably dates the main occupation of the site. The 960 B.C. date (UGa-5716) on Feature 12 is more problematic. A hammerstone was the only artifact found in Feature 12 and it may well have been intrusive. However, quartz debitage was present in Feature 12. Given these observations, three interpretations are possible:

1) Feature 12 is related to the occupation of the house structure and the Feature 12 radiocarbon date is incorrect;

2) Feature 12 is related to a separate occupation of the site which post dates the structure;

3) Feature 12 is an intrusive non-cultural feature which intruded into the site ca. 960 B.C.

The first two possibilities are the more likely interpretations, but there are insufficient data to discriminate between them at present. Feature 8 which yielded a radiocarbon date of 1305 B.C. is not considered to be a cultural feature.

Given the above observations and interpretations it can be noted that the main occupation of 7NC-A-17 is related to the structure and dates to ca. 3255 B.C. during the Clyde Farm Complex on the "eve" of Woodland I times. Such a date is consistent with the artifact assemblage and the absence of pottery at the site.

STONE TOOL TECHNOLOGY

Given the size of the area excavated, the lithic artifact assemblage from 7NC-A-17 is quite small. This low artifact count is undoubtedly due to the fact that some squares had their plowzones stripped without screening. However, only about 40% of the squares' plowzones were not stripped, and if the artifact count was thereby doubled, it would still be considerably smaller than other sites (see Table 9 for a comparison). This small size of the assemblage indicates a short-term, and somewhat ephemeral occupation.

TABLE 9

COMPARATIVE LITHIC ARTIFACT DENSITIES

Site	Area Excavated (sq. meters)	Number of Artifacts	Artifact Density per sq. mile
7NC-A-17	131	279	2.12
7NC-E-46	123	10,512	85.46
7NC-D-129	76	1,749	23.01
7NC-D-125 Area A	78	10,323	
36LA941	71	1,465	20.63

Bifaces from the site are depicted in Figure 20. Two bifaces (Figure 19A and B) are late stage biface fragments of jasper. One of these (Figure 19A) is a basal fragment of a late stage biface made on a flake. One lateral edge shows pronounced edge crushing and pot lid fractures are present indicating that the biface had been burned. No blood residues were present on the tool. This biface is probably a discarded, exhausted knife which was broken in use. Subsequent burning of the artifact produced the pot lid fracture and probably removed any traces of blood residues, if they were present. The other jasper biface (Figure 19B) is a tip section of a late stage biface which shows considerable edge wear and an impact fracture. This biface fragment is probably a projectile point tip which was discarded when the blade broke. This specimen showed a positive blood residue test reaction and is most likely a hunting weapon.

Another biface in the assemblage (Figure 19C) is the tip of a large narrow-bladed ironstone point. Damage to the tip

suggests use as a projectile point and the biface may have been discarded when it snapped midway down the blade section.

The remaining two bifaces in the assemblage are made from quartz. One specimen (Figure 19D) is a tip of a late stage biface. The edge of this tool is very uneven and on one edge segment a prepared striking platform is evident. Most likely this biface was never completed and broke during its later stages of manufacture. The second quartz biface (Figure 19E) is a fragment of an early stage biface which was broken during manufacture.

The biface assemblage from the Hockessin Valley Site, 7NC-A-17, shows interesting differences in raw material use. Bifaces manufactured from non-local raw materials (jasper and ironstone) were discarded at the site due to damage to them which could not be repaired. Most likely, these bifaces were part of a prepared tool kit brought to 7NC-A-17. In contrast, quartz bifaces were being reduced through both primary and secondary stages on the site. It is possible that some of these quartz bifaces were intended as replacements for the discarded cryptocrystalline tools.

One hammerstone was recovered from the site and it consists of a large (2 kg) quartzite cobble. Such cobbles are not commonly found in the Hockessin Lowlands and this hammerstone was probably transported to the site from the Fall Line and Coastal Plain areas to the south of the study area. The hammerstone is badly battered on both ends and was probably used for early stage biface reduction.

Five cores were found at the site (Table 4). Four are quartz and one is jasper. All five cores are amorphous and very blocky and were probably used to produce flakes of various sizes for use as cutting tools. One quartz core has cobble cortex on it and may have been transported to the site from Fall Line and Coastal Plain areas.

Various flake tools were found at the site and samples of these tools are depicted in Figure 20. Most of the flake tools are quartz and examples are depicted in Figure 20A and B. A large quartz scraper made from a section of a cobble core (Figure 20C) was also found and may have been transported to the site. The edges of the tool are badly worn and this tool was probably used to scrape hard materials. Blood residues were present on the tool and would indicate that it was used primarily on bone and antler. One jasper flake tool with cobble cortex was recovered and shows nibbling use wear on most of its usable facets. Especially heavy wear is present on one concavity. This flake tool had multiple uses and is a highly curated tool that was part of the tool kit brought to the site, used, and then discarded.

The debitage assemblage is dominated by quartz (Table 4). Quartz debitage ranges in size from less than 1cm to greater than 6cm in their longest dimension. On the whole, the quartz flakes are amorphous in shape, fairly thick, and have poorly defined striking platforms. Most of the quartz debitage is not related to biface reduction and seems to be related to production of flakes for tools. Only a small percentage of the quartz debitage (10%) shows signs of cobble cortex and most of the quartz flakes

are derived from primary quartz cores obtained at the site. Quartzite debitage shows attributes similar to quartz.

Cryptocrystalline debitage is composed of jasper, chert, and chalcedony in order of decreasing frequency. A large portion (95%) of the cryptocrystalline debitage is small, less than 15 mm in its longest dimension. In many cases, biface edges are evident on the cryptocrystalline debitage and the main source of cryptocrystalline debitage at the site is biface edge maintenance. Debitage recovered from flotation is primarily quartz (85%) with some small amounts of jasper and chert.

When the lithic artifact assemblage is considered as a whole, it is apparent that several activities took place at the site. The site's inhabitants apparently arrived at the site with a tool kit that included cryptocrystalline bifaces and cores of both quartz and cryptocrystalline materials. Tools from this prepared tool kit were used for hunting and processing activities. And, during this use some were damaged. Retouching of these tools took place as evidenced by the small cryptocrystalline flakes recovered from 1/4" screens and flotation. Some bifaces, which were beyond repair, were discarded. Replacement tools of locally available quartz and quartzite were manufactured although this activity was somewhat limited. Production and resharpening and retouching of expedient flake tools from the local quartz and quartzite took place more frequently and many of these tools seem to have been discarded at the site soon after use.

ACTIVITY AREAS AND SITE SETTLEMENT PATTERN

Analysis of activity areas and the site settlement pattern is focused on the structure at the site. The postmold pattern shown in Figure 12 is believed to be the remnants of a post-in-ground frame that supported a covering of mats, bark, or hides. Figure 21 shows a conjectural reconstruction of the framework and completed structure which resembles the wigwam of eastern Algonkian speakers who inhabited most of the Atlantic Coastal region at the time of European contact. The framework reconstruction is based on the work of Callahan (1981; 1985) and the covering is based on observed ethnographic structures (Bock 1978:113; Conkey, Boissevain, and Goodard 1978:183; Speck 1922; also see overview in Callahan 1981). Similarly sized pole frame structures have been identified at other sites of varied time periods, both older and younger than 7NC-A-17, in the Middle Atlantic region (e.g. - Gardner 1974:20-21; Kinsey and Graybill 1971:25-27).

The presence of the interior hearth (Feature 9 - Figure 12) underscores the identification of the postmold pattern as a house structure and provides some insights concerning the seasonality of the site occupation. Studies of pit house structures in the American Southwest (Gilman 1987; Cordell 1979; 1984:82-83) have suggested that structures with interior hearths are cold-weather occupations, and it is possible that the structure at 7NC-A-17 with its interior hearth was also occupied during the cold-weather season. The presence of substantial debitage in the hearth feature flotation indicates that substantial tool retouch work took place within the structure.

FIGURE 21

Hockessin Valley Site House and Hearth Reconstruction

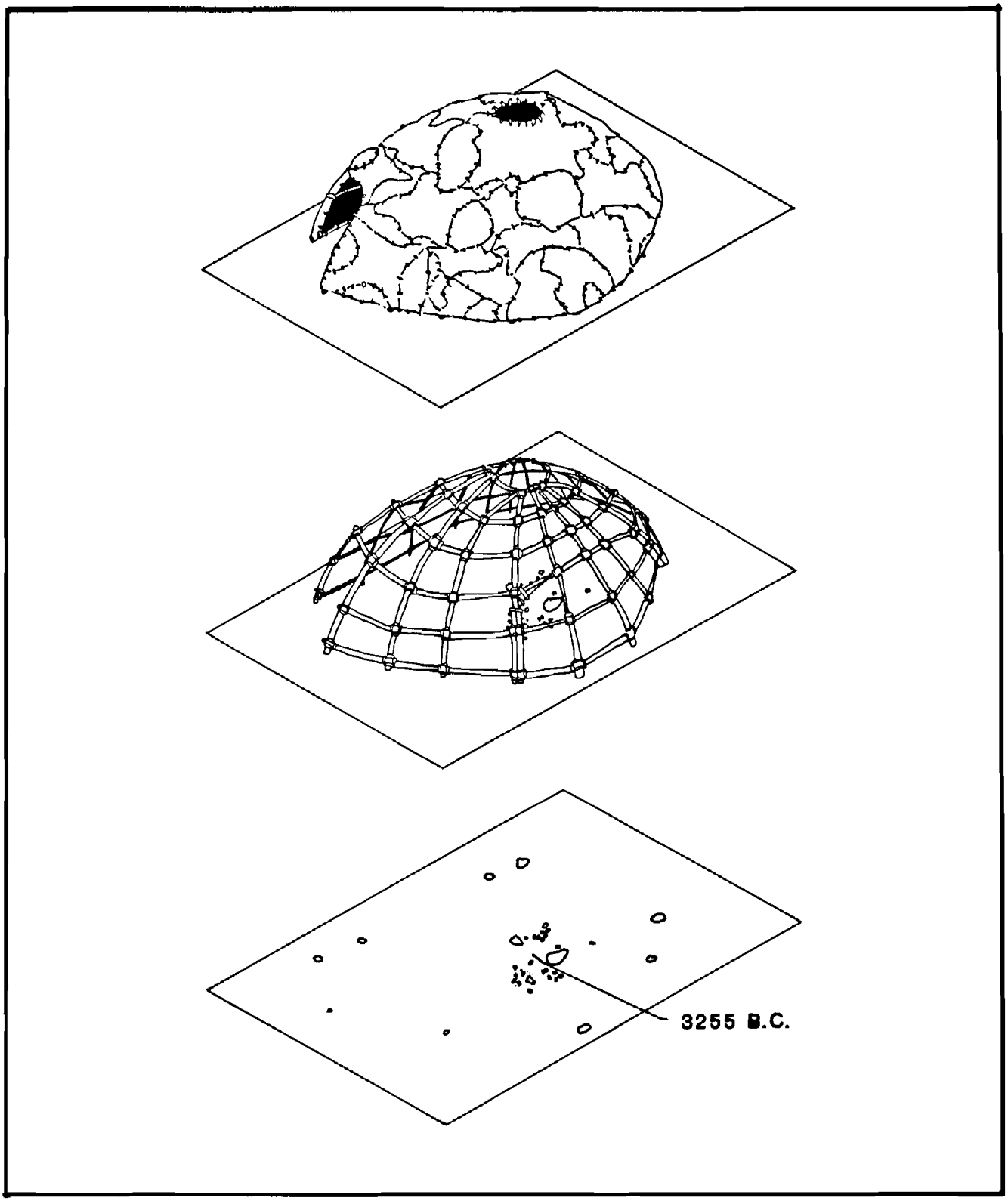
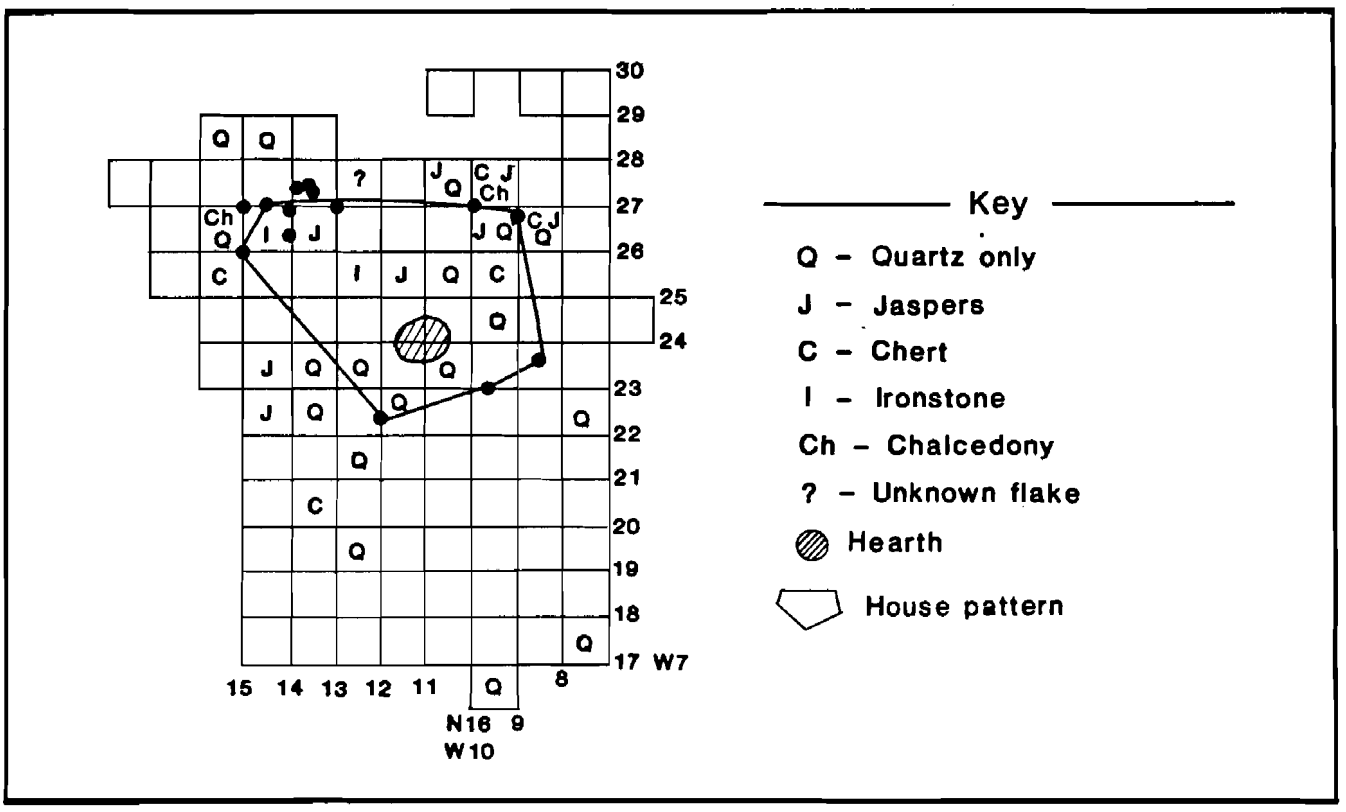


FIGURE 22

Hockessin Valley Site Artifact Distribution



This small debitage was either dumped into the hearth or tool retouch took place close to the fire. Figure 22 shows a plot of artifacts recovered from subsoil contexts, primarily debitage, in relation to the house structure outline. Clearly, artifacts are clustered near the house feature. Of the 35 total artifacts, 12 are located within the structure and 23 were found outside the structure. When converted to density measures, the artifact density within the house is 0.48 artifacts per square meter while the density outside the structure is 0.28 artifacts per square meter. The higher density of artifacts within the structure may indicate that flint knapping activities took place within the

structure and this observation strengthens the inference of a winter occupation. Indeed, the presence of artifacts, particularly sharp debitage, within a structure is not common (see Custer and Bachman 1984:39-43; Fitzhugh 1972; Gardner 1974; Leroi-Gourhan and Brezillion 1966; Binford 1983:144-160; 1978), although not unknown (Stewart 1988; Kinsey and Graybill 1971). Therefore, it is highly likely that the Hockessin Valley Site, 7NC-A-17, was occupied during cold weather months and many activities, including flint knapping and lithic tool edge retouch took place within the house structure. The very low artifact density (Table 9) also suggests that this occupation was of a very short duration. Consequently, 7NC-A-17 is best characterized as a winter hunting/staging camp from which forays to adjacent hunting locales were made.