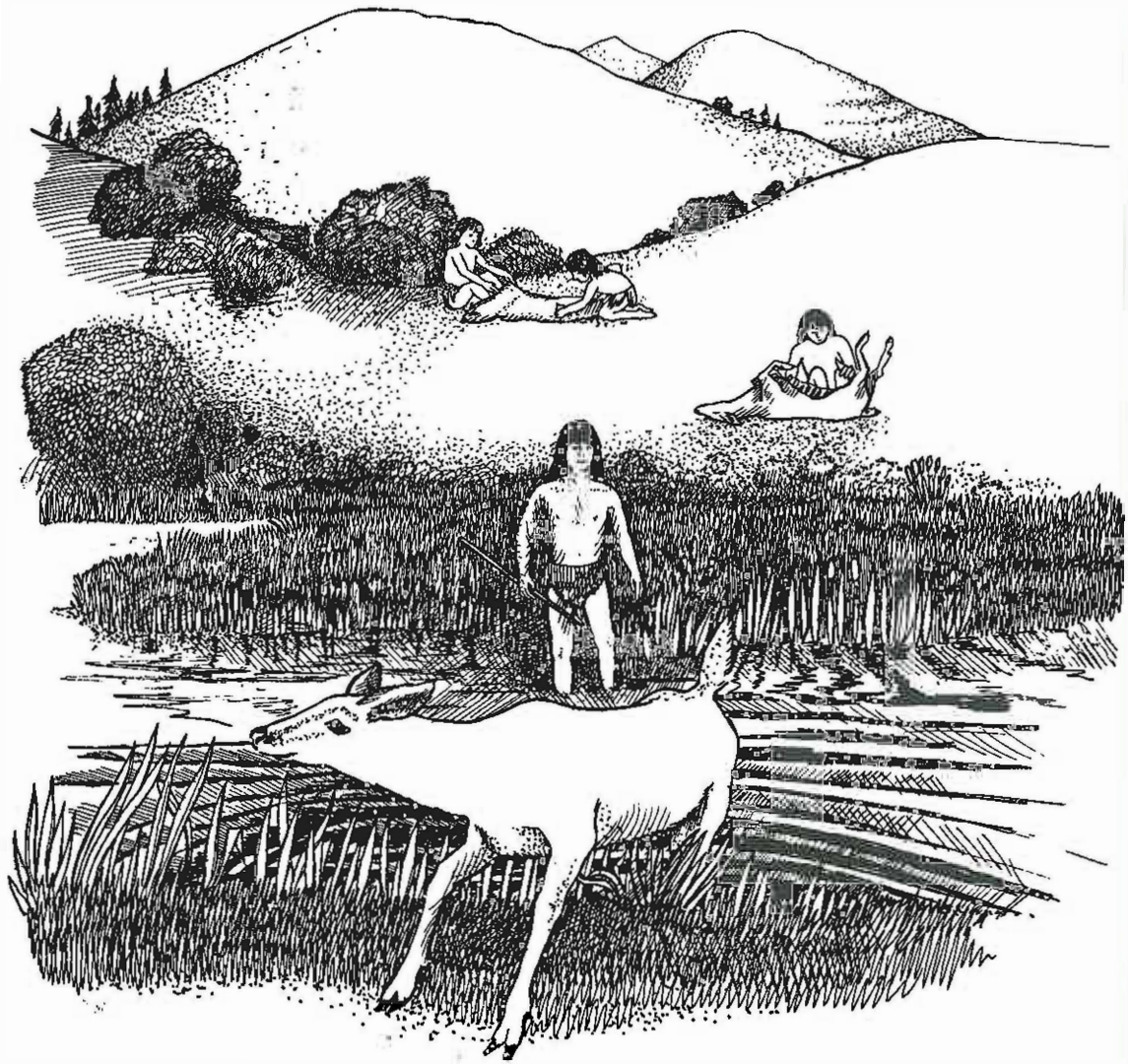
Lost Arrowheads & Broken Pottery

Traces of Indians in the Shenandoah Valley



William M. Gardner

A Thunderbird Museum Publication

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Preface

This book is written for the general public and is designed to be an introduction to the 12,000 years of Indian history in the Shenandoah Valley. It is based on the results of investigations started in 1971 by archeologists from the Catholic University of America, Washington, D.C., and continued over the years since by this institution, the Thunderbird Museum and Archeological Park and the Thunderbird Research Corporation. Funding for this work has come from a variety of sources such as the National Geographic Society, National Science Foundation, Virginia Historic Landmarks Commission, various museum programs and the Catholic University summer field school. In addition, programs supported by matching federal and state grants from Virginia and West Virginia, and contracts connected with environmental impact statements have also been of significant assistance. Of considerable importance for the Museum and Thunderbird Archeological site was the help of John Flynn, without which much of the work would never have been accomplished. Frank Johnson has also been of invaluable aid in the continuance of the Museum. Joan Walker did much of the editing of this volume as well as some of the art work and more importantly, saw the entire manuscript through from rough draft stage to final publication. Anne Legge of Lord Fairfax Community College did the major job of editing. Mary Wehle did the intrepretative artwork. Mary Piehl was responsible for layout. Perhaps the most significant help has been provided by the many volunteers and students who have worked on the various sites since the inception of the program, and the landowners and artifact collectors who have provided access to their land, their collections and their knowledge. It is to all of these that this work is dedicated, as well as to my good friend and companion over the years since 1970, C. Lanier Rodgers.

Introduction

The use of the word "history" in reference to our knowledge of the Indians of the Shenandoah Valley is not quite accurate, for only a minute portion of the data is derived from written accounts. The major source of information comes from archeology, a part of anthropology whose data is not diaries, memoirs, or journals, but rather the detritus of living. Often referred to as "shreds and patches", the artifacts that the archeologist deals with are, more likely than not, the unglamorous: the garbage swept up from the butchering and cooking area; broken pieces of pottery; lost, discarded, or rejected spear points, knives, scrapers, axes, and a variety of other tools; waste from manufacturing tools; stains left behind by long rotted posts; those trash cans of pre-history, the refuse pits; or a buried cache of partially made tools, left behind for future use and never retrieved. Less often, the prehistoric archeologist deals with death when he looks into the burial mounds or the pit graves of people who can never speak again, except through the tools and artifacts left behind by their long vanished bereaved.

Some archeologists, of course, deal with temples and statues, papyrus scrolls, engraved stelae or cuneiform tablets, vessels and ornaments made of precious metals, chariots, and pillars of stone arranged in astronomically oriented patterns. Not so in the Shenandoah Valley. The many generations who were born, grew to maturity, and died in this area left behind a rather full record, but it is the kind of record that consists of clues which would tax the deductive powers of factual or fictional detectives. Certainly, archeology of any kind has its romance: a romance, for example, that might stem from wondering exactly what the next shovel of earth will reveal about the lives of people who camped along the edge of Cedar Creek for a few months over 6,000 years ago. It is also an

often times tedious and always exacting discipline. In what other field of study does a person spend hours on his knees, scraping away soil from pieces of stone, or knee deep in the river with a bucket of clay retrieving fish scales or pieces of charred hickory nuts that float to the surface of the floatation screen? Yet, on the other hand, most of us who work in the Valley do not have to worry about the mummy's curse—only about cramped muscles or sun burn.

In a more serious vein, the prehistoric archeologist is both a social and a natural scientist. In our work in the Shenandoah Valley, in addition to the artifacts and their position in the ground, we must be familiar with what is known about the early history of the American Indians; we must be able to reconstruct the environment and to recognize those aspects of the environment that can help us to explain why a site is located in a particular spot, or what resources were being exploited. The historical Indian accounts provide the archeologist with what is known as a comparative framework, the social and cultural flesh that covers the skeleton of the artifact. Put another way, three pieces of stone may be viewed as simply three pieces of stone. Yet, of the three, the piece which has a particular angled edge takes on a different meaning when the record tells us that stones of that shape were used for scraping hides. The flake becomes meaningful when it is realized that 16th century Indians were observed by European explorers sharpening their scrapers by knocking pieces off the working edge. The third stone, with its battered edge, was the hammerstone used to knock off the flake in sharpening the scraper.

A knowledge of the environment is always important. Even today, we cannot escape the influences of nature, as oil shortages and volcanic dust from recent eruptions which alter the climate are effective testimony. If you put yourself in the place of an Indian family whose technology was based in stone and whose food sources depended on game, roots, nuts and berries, it is easy to realize that an in-depth folk knowledge of botany and zoology is important to survival. If you assume the concerns of an archeologist who is dealing with an incomplete record, at best, then you have to take the bone fragments or the charred seeds, identify them, and determine from what type of setting they were procured. Even more exacting is being able to read the soils from which an artifact is excavated. It is surprising what types of information can be gained from a soils analysis. For instance, even in the absence of charred organic remains to yield a radio-carbon date, or an artifact type

which has already been dated at another site, a good estimate of soil age can be obtained if you know how to look for it. Similarly, one can tell from the particle sizes and shapes of the individual soil grains whether the climate was wet or dry, whether the river periodically flooded or was cutting a deep channel, or even what general type of vegetation grew in the area.

The archeologist has to be, in a sense, a Renaissance man: a person who is familiar with a wide variety of knowledge and facts from a diverse array of scholarly disciplines. Of equal importance is the ability to recognize his/her ignorance, to know when to call in an expert, and to know whom to call. This is especially critical when the period of prehistory being studied is quite remote in time. Climates, vegetation, animal types, and landscapes change; little is static in nature. Some of it changes faster than others: the Blue Ridge has been where it is and in its present form for several million years; the South Fork of the Shenandoah, on the other hand, has migrated in its channel, and has gone from a rapidly flowing, rather deeply incised river, to a system consisting of many small, shallow channels, flowing around numerous islands. The mastodons and mammoths of 12,000 years ago have given way to the deer and elk of the period around 10,000 years ago; the deer have survived to the present time, but the elk disappeared from the area a little over 200 years ago.

The Shenandoah Valley Research Program, as it has come to be called, began by studying the earliest periods, and over the years has come to be concerned with all time periods. The first years were spent with an inter-disciplinary team studying all aspects of prehistoric man and the environment. As the latter became more fully understood, at least as it pertained to an understanding of past lifeways, the geologists, soil scientists, and paleo-environmentalists moved on to other areas. Today, it is the archeologists who continue the work and, while much is understood, there are still a number of significant gaps in the record, a number of interpretations which are largely hypothetical and which require new sets of data to confirm them—or to reject them. The Shenandoah Valley Program is that rarity of archeological investigation, a long term program. In this sense, it is still in its infancy. Yet, looking back at what was known when the program was started, it has become quite mature. Only a truly naive person would say that we know all that we need to know, and so we will continue our work. This booklet, the first on the subject, is thus a state-of-the-art state-

ment. Much of what is said herein will be refined and expanded, and some, possibly, will even be totally rejected or corrected, although it is rather unlikely that major, substantive revisions will be necessary.

Before moving into the subject, a word about the Thunderbird Museum is appropriate. Opened in 1974, the Museum is the creation of Catholic University archeologists and students. The initial funding came from John Flynn. Since 1976, the Museum has been on its own. Often struggling to keep the doors open, the Museum has managed to survive and even to grow. Originally designed simply as an interpretive center, its role has been expanded, and now a diversity of programs and workshops are offered. The basic beginning components—archeological displays depicting the prehistory of the Shenandoah Valley, nature trails integrated with the Museum's environmental displays, and an opportunity to visit an archeological site being excavated (summer season only)—are all still there. Survival, along with demand from the visiting public, necessitated an expansion. Now, the Museum offers lecture series, opportunities for the general public to participate in excavations, workshops on prehistoric technology, and films about various aspects of archeology from different areas of the world. The Museum is small, but it is dynamic, and, as is true with all museums, it is always in need of support. As a totally private operation (the corporate vehicle is the non-profit Thunderbird Research Corporation), the Museum receives no federal or state support, except in the form of competitive grants. Its day to day operations depend on income from admissions, programs, friend memberships, and whatever money can be channeled from Thunderbird Research Corporation overhead on contracts. This book is yet one more potential source of financial support as a considerable percentage of the purchase price goes directly to the Museum after costs and a nominal percentage for the author.

If you, the reader, or any friends to whom you may loan this book, wish to make a tax deductible contribution to the Museum, or to join the Museum's membership program, write to the address below or call the director for more information.

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1 The Environment

While all people are to some degree dependent on the environment, those whose tool technology was based in stone and who hunted, fished, and gathered plants as the major or sole source of their subsistence were so intertwined with the natural world that it pervaded almost all aspects of their lives. Such a statement does not mean that the prehistoric peoples of the Shenandoah Valley, or of any other area, were completely at the mercy of their environment. On the contrary, as with all people since the dawn of man, the possession of cultural elements—tools, systems of beliefs and values, and social structures—freed them from a total dependence on the vagaries of nature; the Indians of the Valley, no less than anyone else, were well adapted to the natural world in which they dwelled. Adaptation, however, does not mean complete freedom from environmental constraints; no one has ever achieved that goal.

The natural environment is a dynamic place and one of the corrollaries of dynamism, that of change, is one of the few real constants existing in nature. Change can be either long or short term. An example of the former can be seen in the succession of glacial advances and retreats which took place during the million years of the Pleistocene, or the gradual warming which has occurred since the last glacier began to recede from central Pennsylvania some 15,000 years ago. Short term changes can range from the Little Ice Age of the mid-14th to mid-18th centuries when England, for instance, reported "several years without summers," the 15-20 year cyclical fluctuations of animal and plant populations, or a three year drought. Any of these can affect the way a people must behave in order to survive. Long term change is gradual, allowing an almost equally long time for adjustment. The cultural response is therefore gradual, not perceptible to any one generation. A short

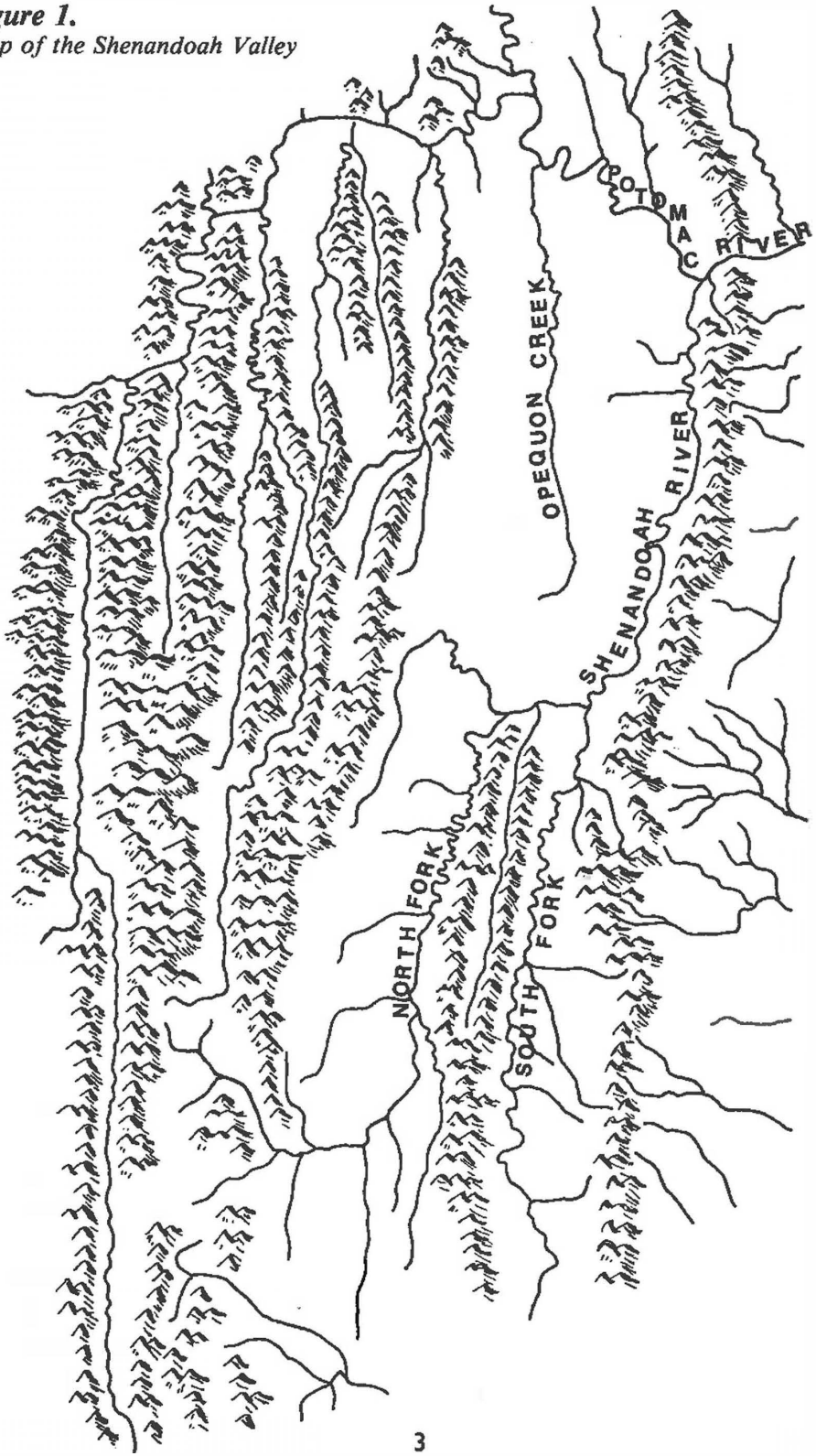
term change, however, is often a relatively sudden onset and may lead to rapid adjustments in less than a generation. A recent example of this is the Dust Bowl of the 1930's, attributable partly to natural resource mismanagement and partly to short term change in precipitation; the combination resulted in population migration from the Plains and a significant contribution to the Great Depression.

In our studies in the Valley, we have been able to document both long and short term change, and to show how each affected lifeways in the prehistoric past. We have also been able to see how certain aspects of the environment which are generally considered static have exerted influence, such as the distribution of specific types of stone. Much of this material was transformed to rock hundreds of millions of years ago, only to become important to prehistoric hunters living twelve thousand years ago. A quite similar situation can be seen in the recent shifts in global economics and power politics as a result of geologic processes in excess of 150 million years ago, processes which determined the distribution of oil.

In this chapter, we will venture far back into time, well beyond the range of human history. The intent is not to present a geological history, although that will be touched on, but rather to provide a general discussion of those nonliving, or abiotic, aspects of the environment which have relevance for an understanding of prehistoric Indians. The nature of the climate and the animals and plants of the time will be discussed in the chapters dealing with specific prehistoric cultural periods.

The Shenandoah Valley (Figure 1) ranges from its southern extremes at the headwaters of the two forks of the Shenandoah River to its northern limits, the Potomac River. The eastern margin is the Blue Ridge while the western boundary, extended somewhat for archeological purposes, is the Alleghany Front. This entire area lies within the Ridge and Valley physiographic province. The Shenandoah Valley itself is part of the Great Valley system which extends from northern Alabama into southern New York. The broadest part of the Shenandoah Valley and that portion with the lowest relief lies between the northern terminus of Massanutten Mountain and the Potomac River. Massanutten Mountain, a 50-plus mile long series of parallel ridges, breaks the Valley into two parts, the North and South Fork valleys. South of this, the Valley opens again and continues to be rather wide up to the divide between the Shenandoah and James River drainages.

Figure 1.
Map of the Shenandoah Valley



To the west are a series of ridges of varying elevations interrupted by generally narrow valleys; these contain streams of varying widths. This portion of the Ridge and Valley province is much more rugged than the eastern section. There is both an east/west and a north/south increase in elevation. The highest peaks in the area are in the Blue Ridge which, in the Valley, is nowhere more than 2000-3000 feet above the valley floor. Passes and gaps exist in all of the mountains and ridges, providing east/west routes of movement. North/south movements occurred through the valley corridors as well as along the top of the Blue Ridge. The mountain system with the most level areas of terrain is the Blue Ridge with its numerous "meadows." The other ridges are generally more rugged with lesser tracts of level terrain. Flats and saddles, however, exist in all of the mountain systems and provide numerous small expanses of low relief topography.

Simplifying the geological history considerably, the Valley is sedimentary in origin. The sediments which make up the Valley were deposited in an ocean; the ultimate origin of these sediments was an elevated land mass which lay to the east during this time. The Blue Ridge is composed of rocks which have been uplifted and eroded several times. It is both sedimentary and volcanic, with the last period of major uplift resulting from pressures generated by the collision of two different tectonic plates. During this collision, a portion of the Blue Ridge was thrown up and over the Valley floor along a fault zone we know as the Blue Ridge Overthrust Fault. This mountain building process is very similar to what is currently occurring in California, Oregon, Washington, and Alaska; in the Valley area, 400 or so million years ago, earthquakes and volcanic explosions were common just as they are today on the West Coast.

While the Blue Ridge was being uplifted, the Valley was also undergoing structural change and the sediments which had been deposited as relatively horizontal layers of different kinds of sands, silts, and clays underwent great pressures and were uplifted, as well as folded and twisted. The Blue Ridge is estimated to have been just over 40,000 feet high. It is unknown how much higher this mountain chain was than the contiguous Valley, but what is known is that the softer sedimentary rocks of the Valley eroded more quickly than the harder rocks of the Blue Ridge. Within the Valley, some of the sedimentary rocks were more resistant to erosion than others. This erosional action over the millions of years since these mountain

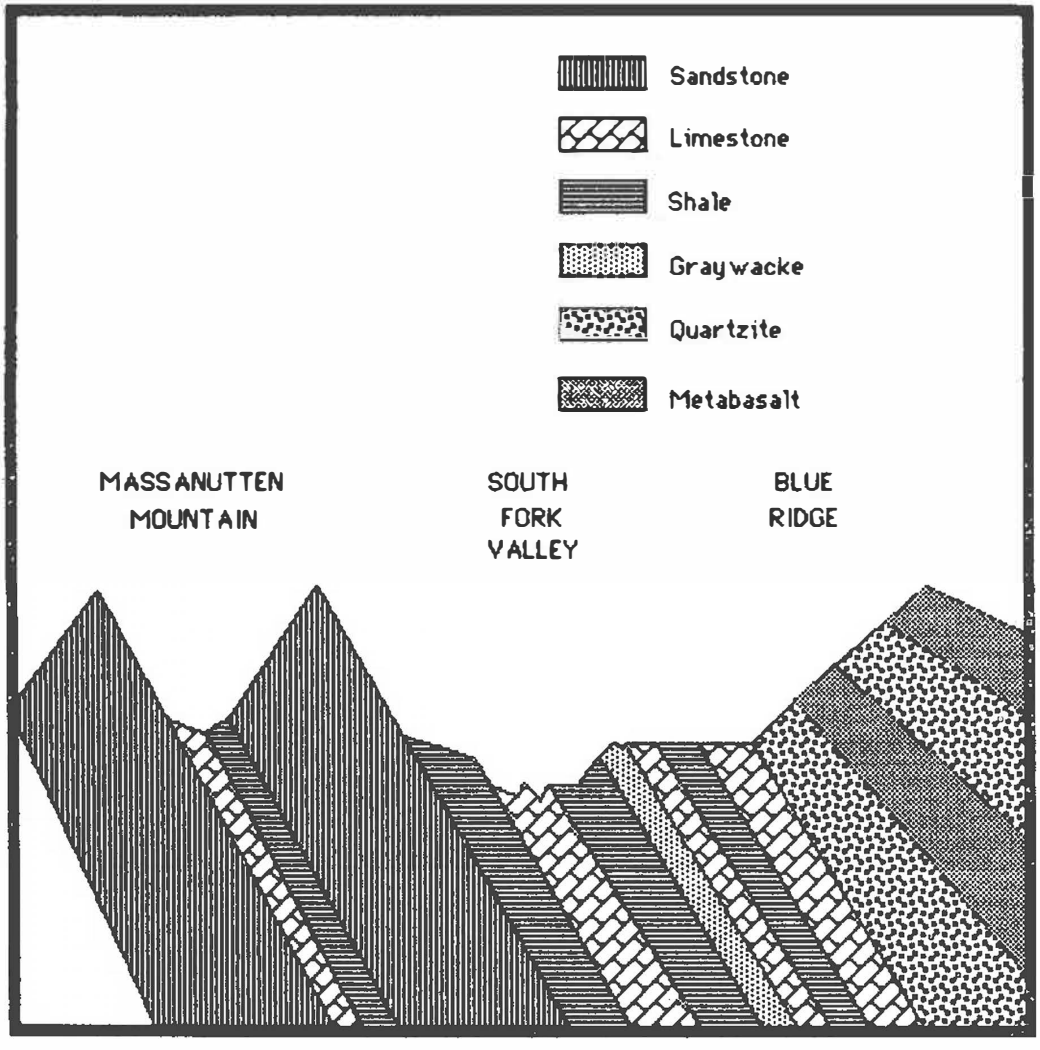


Figure 2.
Stylized lithological cross section of the South Fork of Shenandoah

building events created the various valleys and the associated ridges.

These events, as well as the erosion and deposition which took place before them, resulted in different lithologies for the various parts of our area (Figure 2). The Blue Ridge, for instance, consists principally of both basalt, which is volcanic or igneous in origin, and

quartzite, a highly metamorphosed sedimentary rock. The Valley floor consists of alternating bands of shale and limestone, many with their own peculiarities and histories reflected in their names, such as Beekmantown dolomite and Martinsburg shale. Sandstone is also a common rock of the Valley and, because of its relatively greater resistance to erosion, serves as the major element in many of the ridges, as, for example, in Massanutten Mountain.

Bedrock variation can influence such factors as local topography, drainage, and vegetation. Level terrain, as previously noted, is much more extensive in the Blue Ridge than in the Massanutten Mountain. As a result, in the historic period, Massanutten was mostly used for specialized purposes such as logging and mining. While the Blue Ridge saw similar use, there were also a number of small farms scattered throughout the top of the mountains, and vacation homes came into the area quite early. Some of the limestone areas of the Valley are known for their karst topography: they are filled with sinkholes. These features form as surface water works its way through the permeable limestone, becoming groundwater that then flows in underground streams and carves a network of passages and vaults. As the water table continues to drop, the bedrock becomes increasingly hollow and often results in a collapse of the surface deposits. Today, most of these sinkholes have been rounded by erosion. Many of the underground passages still exist as testified by the numerous caves in the Valley. Shale is considerably more resistant to this type of erosion; cave formations are not found in shale. Caves are rarely formed in sandstone, but these are known in some areas.

Shale areas tend to be more rugged, with steep slopes and narrow valleys more common than in other bedrock zones. As a result, water tends to flow more rapidly through the streams, and soils are shallower in the uplands. Floodplains, or river bottomlands, in shale bedrock tend to be more poorly drained and require different management techniques for farming. Poor drainage also exists in low areas bordering sandstone ridges. Limestone regions are usually much better drained, except where limestone lowlands border shale or sandstone uplands. Upland localities with limestone bedrock are more gently rolling, with stream valleys which tend toward a broad U-shaped profile in contrast with the V-shaped profile of shale uplands and with deeper soils.

Vegetational differences also follow bedrock differences. These

tend not to be well differentiated since the main factor controlling vegetational variation is climate, but even subtle differences prove important in archeological studies. A rough calculation of the natural food potential of specific types of bedrock localities indicates that in comparable upland settings shale areas were the most attractive to prehistoric populations. In poorly drained localities in the lowlands it is the limestone areas that appear to have been the most attractive. Other factors contributing to vegetational differences are drainage, elevation, and soils, all of which are dependent on bedrock as well as the amount of sunlight. Some shale areas have such shallow soils that they are known as barrens, an indication they would have offered little to attract prehistoric hunters and gatherers. In the historic period, much of the Valley floor in limestone regions was covered with expanses of grassland, a reflection of both soil and climate. The trees that grew on the Valley floor were dominated by white oak, and chestnut abounded in the mountains in areas where there was adequate soil and sunlight. Pines were also common, and these could tolerate lesser soil depths and poorer soils. Hemlock and mountain laurel lived in the almost continuously shaded and steep sided slopes of the higher elevations. Sycamore and cottonwood were, and are now, common in the bottomlands along the streams and rivers, and marsh vegetation grew in poorly drained areas of limestone uplands and in the backwater swamps of the shale floodplains.

Many animals, usually the smaller species, are restricted to specific types of woodlands and open areas. Larger mammals such as deer and elk can cross these ecological boundaries, but they also have their restrictions, at least in terms of where they tend to be most abundant. At the beginning of the 18th century when there was mixed woodland and grassland in the Valley, it is probable that deer were at one of their greatest population densities, since they thrive in an environment where there are extensive edge areas between different types of vegetation communities, such as the junction of open grassy areas and the forest margins. Elk were also numerous, but tended to concentrate in the higher elevations. They have become extinct in the area since the historic period. Deer at one time had also almost reached that point, but have since come back as much farmland has been abandoned and a natural edge area has once again been developed.

In nature, the greatest variety and highest population of flora and

fauna tend to occur in unstable habitats. If a community moves toward what ecologists call a climax condition, variety in species populations is reduced as the numbers of a limited set of species increase. This tends to reduce the resource potential for people with a general foraging economy. Hence man tended to concentrate in unstable environments, utilizing the stable settings on a more limited basis. The most extensive unstable environment is that of the floodplain adjacent to a river. In addition to a wide variety of natural foods on a year-around basis, the floodplain is also the focus of small trees and saplings, the kinds most amenable to cutting with stone axes, and a variety of other plants providing material for many aspects of human technology, such as vegetable fiber for cordage and bark for containers. The soils found in floodplains are also richer and are more easily tilled with primitive agricultural techniques. The river and its associated floodplain were thus in one sense the "supermarket" of the prehistoric world. Uplands and mountains provided a richness, but of a limited variety, and only for short periods of time. An example of this is the chestnut; occurring in the millions, the fruits of the chestnut tree provided a rich but brief harvest. After that, the mountains were not a particularly bountiful place. These areas can thus be likened to specialty stores: needed, but not something on which survival could depend.

So far, we have concentrated on food resources but paid only minimal attention to technology. Given the fact that the prehistoric Indians of the Valley employed stone as the major and basic element in their tool kit, the variation and distribution of rock types in the area was of considerable importance. Prehistoric stone tool makers, or knappers, made most of their lithic artifacts by removing flakes from a stone, a technique that began more than 2,000,000 years ago in East Africa and which continued in North America until the Indians replaced their native artifacts with those of European derivation. Flakes were removed by hitting the stone with another harder stone, or with bone, or alternating both, depending on the stage of manufacture or the size of the flake to be driven off. In some cases the flake was the desired goal; by removing smaller flakes from the edges of the flake, several tool types could be made—scrapers, burins, gravers, etc. In other cases, the portion remaining, or the core, was the desired product; this was fashioned into projectile points, knives or axes. Through their knapping skill, working in much the same way as a stone sculptor, the Indians could

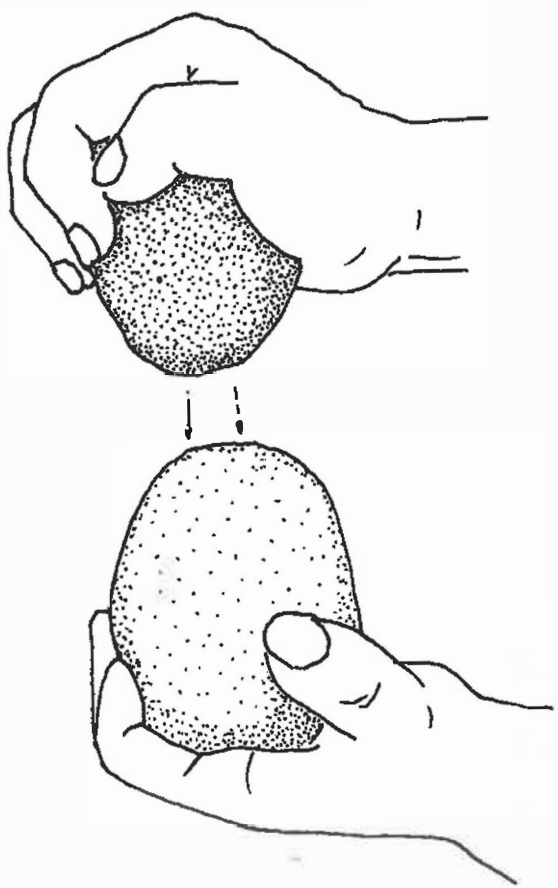
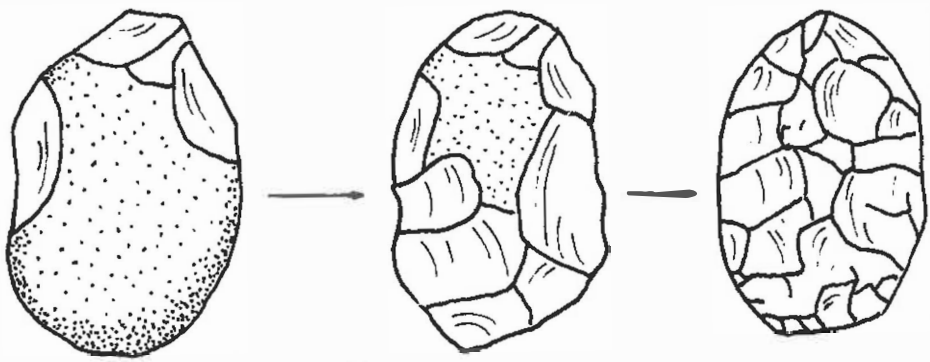


Figure 3.

Flakes are removed from the core with a hammerstone and a bone or antler billet, shaping the stone core into a bifacially worked axe



reduce the core down to the finished product (Figure 3). The most important property of different types of stones was the way in which they flaked. While all flake in a similar manner, each has its own peculiar characteristics and desired qualities. Jasper and certain cherts were the favorites of the earliest populations, probably because these people depended principally on hunting, and jasper and chert could be easily thinned into efficient penetrating and cutting tools which could be readily resharpened. Later groups had a more generalized subsistence economy and were accordingly less selective in their choice of stone tool materials. There was also a less commonly used technique of stone tool manufacturing, that of grinding, or pecking and polishing.

The primary types of rock used by these groups were: chert (also known as flint), which occurs in a variety of different colors dependent on the chemistry of its constituent elements and includes gray, black, white, and pink, as well as variegated; jasper, simply another form of chert, which occurs in yellow or red and, less often, green and brown; chalcedony, which is virtually colorless, although it is sometimes grayish and, unlike chert and jasper, is translucent to transparent; quartz, of which there are several varieties including white, which is the most common, rose, and crystal; and quartzite, which comes in a variety of colors and is invariably opaque and granular. These are the most common rock types used in the fabrication of tools such as spear points, arrowheads, knives, scrapers, drills, adzes, gouges, punches, etc. Other tools such as axes and pestles for grinding were generally made of metamorphosed basalts, or greenstone.

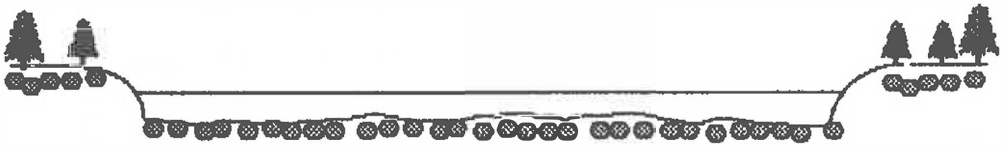
These materials are, however, not uniformly distributed. The greatest variety, although not necessarily the most abundant, found in any one place is within the major river systems and along their terraces, and these occur in cobble form. The lithic types represented in the cobbles will contain examples of the bedrock material through which the river flows (it is in this way, for instance, that the Potomac has transported Ridge and Valley cherts to the Chesapeake Bay). Another source of secondary material is in the talus deposits at the base of mountains or ridges where the primary deposit occurs. The material represented in talus will consist only of the parent material and is therefore limited in variety.

In primary or outcrop form, distribution of these stone types is rather limited. The most ubiquitous material is quartz, which can

occur in a wide range of bedrock types, for instance, as seams which have filled cracks or crevices in the surrounding rock. The primary outcrops of quartzite are in the Blue Ridge and are common. The same can be said of greenstone. Chalcedony formation is probably similar to that of chert, and it is the most uncommon of all. Chert can occur in two forms, either in beds, or seams, or as nodules, and in both forms is generally restricted to areas of limestone (at least in the Ridge and Valley—this is not the case in the area to the east, the Piedmont). Bedded chert is usually found at or near the junction between different rock types, e.g. shale and limestone, or sandstone and limestone. The nodular form has a more random distribution, at least as far as we can tell now. Nodular chert is what is called replacement material and consists of silica and other minerals which have filled in erosional cavities in the surrounding limestone matrix (this is a general, but not exclusive formation process).

One variation of nodular chert is jasper. Our studies, particularly through the efforts of our team geologist, Dr. A.V. Segovia, have shown that the jasper distribution within the Valley of Virginia occurs at the junction of the Blue Ridge Overthrust Fault and the sedimentary rocks of the Valley floor. The material components of jasper include iron, copper, and other minerals whose source is the Blue Ridge, as well as its primary component, silica. This material was deposited in solution along the fault zone and compressed into rock through eons of geologic history. The ability to recognize where jasper will occur has proved invaluable in locating sites of the earliest groups of prehistoric people.

The history of the rivers and streams of the area is also important in archeology studies. As Figure 4 shows, there have been some important changes. The higher terraces illustrated were formed well before man entered the Valley and are of significance in that they provided cobbles for use as tools and, in low relief areas near streams, were choice locations for upland sites. The terraces are of interest from another perspective, in that their formation can be tied into climatic changes associated with glacial advances. Although the glaciers themselves did not affect our area directly, associated climatic changes did, and the terraces of the rivers provide an excellent history of the glacial sequence. In general, when the glaciers advance, there was a long era of increased precipitation or lowered evaporation because of the cooler climate, and more water reached



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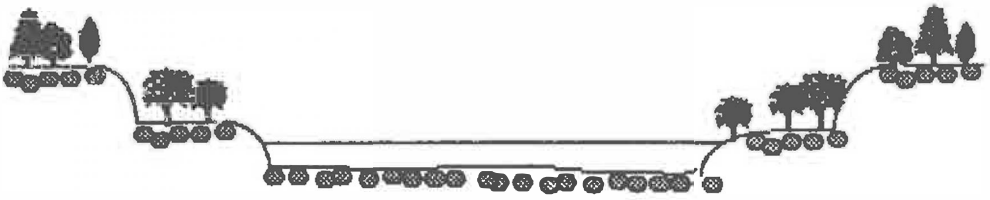

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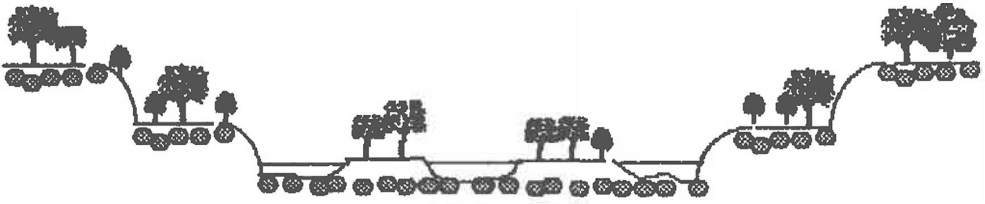

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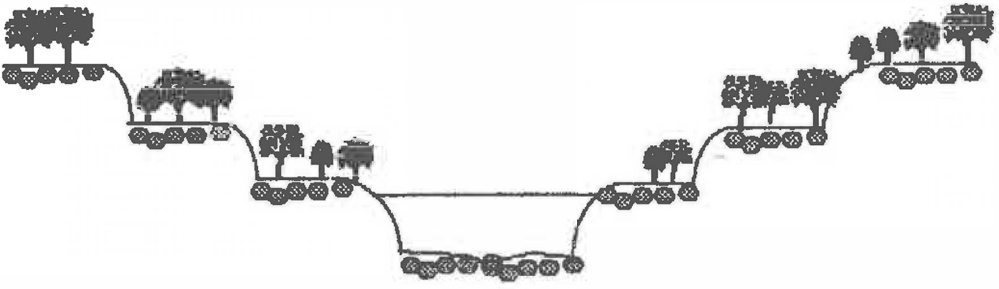
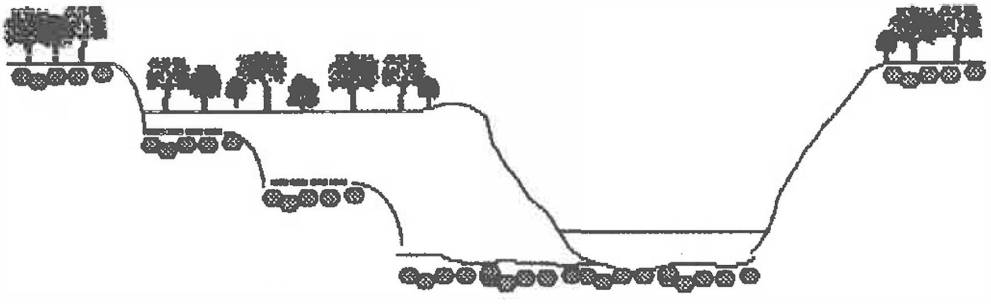


5,500 B.C.



A.D. 1600

the rivers. The initial geomorphological response to such conditions is one of river downcutting. When the glaciers retreated, there was reduced rainfall, higher evaporation because of warming temperatures, and the streams became sluggish as less water reached them. Through time, the river developed what is called a braided pattern—flowing through several shallow channels rather than a single major course. Vegetation invaded the streams, islands formed, and overbank deposition built up the bottomlands with river deposited soils. When conditions cooled, downcutting and perhaps Valley widening followed and the cycle continuously repeated itself. The end result can be a complex of buried land forms and erosional lows that have little resemblance to the present day homogenous surface.

The river also responded to smaller scale climatic change, a crucial point in the understanding of the area's prehistory. Each of these periods of deposition (or aggradation) and downcutting can be tied into a climatic event. These climatic events can, in turn, be tied into changes in flora and fauna. This can all be linked to the behavorial changes evident in the archeological record. The use of an inter-disciplinary approach had enabled us to interrelate many changes and support our conclusions through multiple sources of data.

Before ending this introduction to the general environment, iet us look at some of these environmental features from the point of view of both the prehistoric populations and the archeologist who, in a sense, tries to think as these early peoples did. It has already been noted how lithic material was important; the basic constituent of prehistoric technology was stone. Although a wide range of organic materials were also used, stone was the most crucial of all

◄ ***Figure 4.***

Changes in the river profile along the South Fork of the Shenandoah River

elements. In this sense, the prehistoric Valley Indians were a "Stone Age" people. Stone was so much a part of the system that, when selecting a spot for camp sites to be occupied for any length of time, care was taken that some form of usable lithics were located near the camps.

At more transient sites, or for specific occasions, cultural mechanisms cound overcome the handicaps imposed by geology. For specific trips, when the Indians were likely to be in areas where the material they wanted, or preferred, was not available, or when there was no material of any kind that could be used, at least two solutions could be employed. The first involved the carrying along of blanks, or preforms. These were pieces of lithic raw material, often called bifaces because they had been shaped on both sides, which were almost in final finished form and would be transported along with the already finished tools. With only minimal modification they could be quickly turned into tools or made to produce flakes with sharp working edges. Given the difficulty in transporting a cumbersome load of stone through the woods and mountains, this was an admirable short term solution. The second option was not necessarily exclusive of the first and involved extra care in insuring the longevity of their tools. This technique, called "curation" by archeologists, involved using and resharpening a tool until it was so small that further resharpening or use was impossible. This, again, was only a short term solution.

There were two other means by which raw materials could be acquired. One of these was trade. Trade does not show up in Valley prehistory conclusively until around 2,000 B.C. Trade was primarily a way of gaining access to luxury or status items, but was rarely used for acquiring essential elements of the tool kit, although this was not always the case in other regions. While long distance quarry visits were also another possibility, this would have been an inconvenient method of obtaining items for use. Interestingly, at the 8,000 B.C. level at the Thunderbird site, a cache of material was found containing two large preforms of rhyolite, a lithic material found some sixty miles to the north; some projectile points made of this same material do come from the Thunderbird area. This may indicate part of a settlement round which took the people responsible for those items away from Front Royal to the Gettysburg area, or, less likely at this time, may indicate that trade networks existed.

Common sense and the desire to conserve human energy reserves also came into play with regard to food and water. These two factors

were undoubtedly even more important than being near lithic material. Water is essential to life, and the prehistoric Indians of the Valley did not have the water storage or water capture technology that we do today. There were no wells, cisterns, or reservoirs. There were, however, plenty of sources of natural water. Hence, sites are invariably located near water. Indeed, studies have demonstrated that sites generally are located no further than 200-400 feet from water. The only exceptions to this are extremely specialized sites such as quarries or burial mounds. Food is nearly as important as water. Prehistoric peoples had no particular compunctions about eating things we would never consume. Undoubtedly, there were taboos and preferences, and they were wise enough to avoid items that would make them ill, but they were also quite wide-ranging in their tastes. Given the fact that children, pregnant women, women with infants, old people, and infirmed persons were part of any social unit, locating the site in close proximity to a variety of foods was an important consideration. It is probable that the main selective factor for a base camp was plant foods, since hunting took place on wide ranging forays. Whatever, locating the site in an area with multiple choices as regards food was an important consideration.

Other important variables to be considered in the understanding and predicting of site locations are topography, drainage, and aspect, all of which may be considered relevant to personal comfort. Level ground was apparently an important consideration, for sites are rarely located on terrain with greater than a 10% slope. In mountainous terrain, as an example, sites are virtually always found on flats, meadows, or saddles, all of which share the virtue of gentle topography. Dry ground was also important, and while the sites tend to be located quite close to water, the area selected was always well drained. Aspect is a variable that takes advantage of nature's heating system, and prehistoric groups made a considerable effort to situate themselves in order to maximize the advantages of sun's heat and to minimize the wind chill factor. Obviously, these considerations would be more important under cooler climatic regimes or during the fall and winter of seasonal eras.

These environmental factors—level ground, drainage, aspect, lithic raw material, water, and food—all come into play in understanding why sites are located where they are and in predicting in advance where they will occur. Except in special cases, such as a

deer stand, none of these variables operates independently. There are more outcrops of prehistorically usable lithic material than there are sites. Rivers have quite long courses, but archeological sites do not occur continuously along their lengths. At times, then, certain of these variables are more important than others.

Jasper played a much greater role during the period between 9000-7000 B.C. than it did at any other time. Quartzite, on the other hand, seemed to have been of extreme importance between 2500-1500 B.C. This differential emphasis reflects the preferences of individual cultural traditions and, to some degree, the subsistence emphasis of the different time periods. Plant foods play a greater role in the food gathering economy after 6500 B.C. than they did before, a reflection of the nature of the environment and the allied food quest. Some factors are constants, such as water, but while need for water may be continuous, the location of the water source is not. Rivers changed courses, and springs dried up. One may always be aware of the important variables, but changes in nature and culture force the investigator to look at a variety of settings, always keeping in mind the changes which took place over the millenium. Very few sites were inhabited the entire 11,000 years of human history in the valley.

2 Cultural Chronology

Time has different meaning to different people. For the young, it is unimportant; they have the conceit of immortality. For the old, it is a precious commodity. The poor and starving have little concept of time, for their days are never ending. Those with greater luxuries and leisure have the options of considering their past. People in the Eastern tradition have almost no conception of time, while those in the West think of time segmented into past, present, and future.

Workaday pre-industrial Europe thought in terms of daylight and dark, while in today's business work there is the eight-hour day, five-day week, and overtime. In England, the time perspective from the point of view of nationality goes back to A.D. 1066, with some being proud to trace roots back into the Celtic era. The Greeks scoff at this and trace their beginnings to 600 B.C., and perhaps before, if they are aware of a possible link with the Myceneans of 1500-1100 B.C.

In the United States, our citizens generally think no further back than Columbus. If interested in genealogies, some may trace their roots back to the European or African country of their ancestor's origins. On this continent, however, there is a considerable break between colonization by the Europeans and the American Indian colonization. For most people, the first is our country's "history", a more relevant, immediate history—"our past." The second is considered prehistory, rather distant and remote from our cultural experience. This is understandable, if lamentable, for any area of this country has a record of human occupation that extends far back before the first European migrants. In the Shenandoah Valley, human history begins between 9500-9000 B.C.—over 11,000 years ago. Such a perspective requires the archeologist to view time differently from the average person. If one views this in terms of a 25

year generation, over 440 generations have lived and died since the first people walked into the Shenandoah Valley. From the perspective of the life span of three score and ten years, an individual would have completed over 160 life spans.

With this time depth in mind, how does an archeologist place dates on the material with which he deals? Relative age, the age of an object relative spatially to another and without an absolute chronology, is determined by stratigraphic position. As Figure 5 shows, if artifacts lie in the ground in an undisturbed context, the older artifacts lie below the younger ones in a sequence that increases in age with depth. If the archeologist is fortunate, these ar-

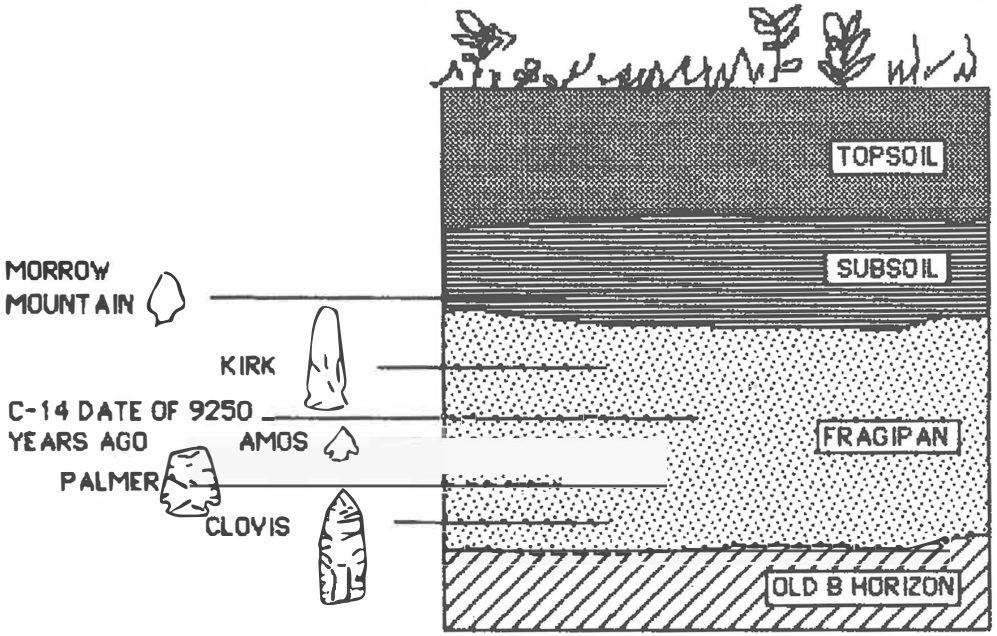
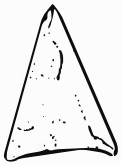


Figure 5.

A hypothetical excavation unit from the Fifty site, using a composite of information from several squares to demonstrate soil and cultural stratigraphy

Figure 6.

Late Woodland triangular points



Quartz

Black Chert

tifacts can then be compared to artifacts with similar forms from other sites and, if demonstrable formal similarity in style exists, then the two can be said to be approximately the same age. For instance, the two triangular shaped points in Figure 6 can be said to date from approximately the same time on the basis of their similar dimensions. This is much like the way antique collectors date pieces of furniture, architects deal with house styles, or art historians place a picture in time. Relative dating of archeological artifacts becomes increasingly refined as more and more artifacts are found in context in stratified sites.

Chronometric dating, that is, assigning a calendrical or absolute date in terms of years, became possible in the 1950s with the discovery of radio-carbon dating. This technique operates on the knowledge that living organisms both accumulate and release carbon while they live. At death the organism no longer accumulates carbon, but carbon continues to be released in the form of carbon 14 isotope (C14). The rate of release has been calibrated over the years since this discovery and radio-carbon, or C-14, dating has become the main chronometric tool of the archeologist. Recent adjustments in calibration, done in conjunction with dendrochronological studies of the long-lived bristle cone pine, have shown the existence of an error in the earlier calibrations, an error which increases as one proceeds further back in time. The chronology used in this volume follows the older system that is still the one most commonly used. C-14 dates are given with a plus or minus factor and are always in years before present (B.P.). Correlation with the Roman calendar is done by subtracting the years before present from A.D. 1950 (as, for example, a radio-carbon date of 2500 ± 70 years B.P. equates with 500 B.C., and 700 years ± 40 translates to A.D. 1250. The plus and minus factor provides a possible range.

In the latter example, this would be A.D. 1210 - 1290). The magnitude of the plus/minus factor varies with a number of factors, and greater confidence is placed in those readings with a smaller range. Radio-carbon dating is useful back to 25,000 years ago; after that it becomes increasingly unreliable, and so is rarely used for dating deposits that exceed this range. Methods such as potassium-argon and uranium (fission-track) dating operate on the same principle, but have no real application to man in the Western Hemisphere, for they only yield dates in the hundreds of thousands of years. Soils, of course, can also be used for relative dating and, if they contain sufficient organic material, can provide a radio-carbon date.

There are a number of other problems which exist with the C-14 method that need not be gone into here. Suffice it to say that all archeologists are aware of these limitations and use C-14 only in conjunction with other evidence. Despite these shortcomings, this method is our most reliable and only universally applicable dating method in its temporal range. Tree ring dating, or dendrochronology, which uses the annular growth rings in trees from both living trees and wood from historic and prehistoric sites, is able to provide dates to within a year back to about 2,000 B.C. Unfortunately, it has limited applicability because wood preservation is highly dependent on arid conditions such as are present in desert settings. The archeologist who works in more temperate climates can only envy those who work in the Southwestern United States because of their highly refined chronology for the later prehistoric periods. Preservation of organic material in general is higher in these low rainfall localities, and Eastern archeologists have to live with the fact that perhaps less than 5% of what organic materials were once left behind in a site remain to be recovered by the archeologist. Here in the Valley, for instance, bone found in open sites is rarely preserved beyond 900 years ago. In certain open settings or in caves where oxygen is unable to penetrate the deposits, or where mineralization has occurred, bones and/or vegetable matter in excess of 10,000 years of age are preserved. These situations, however, are rare.

The chronology of prehistoric time periods used in the Shenandoah Valley is, with recent modifications, similar to the one used throughout Eastern North America. An approximate synchroneity and generally similar patterns of cultural events allow such a widespread application. There are, of course, regional differences,

Table 1.

SHENANDOAH VALLEY CHRONOLOGY

Paleoindian-Early Archaic Period	9500/9000 B.C.-6500 B.C.
Paleoindian Subperiod	9500/9000 B.C.-8000 B.C.
Clovis (Early) Phase	? -9000 B.C.
Mid-Paleo (Middle) Phase	9000-8500 B.C.
Dalton (Late) Phase	8500-8000 B.C.
Early Archaic Subperiod	8000-6500 B.C.
Corner Notched Point (Palmer-Kirk) Phase	8000 B.C.- ?
Side Notched Point (Warren-Big Sandy) Phase	? -7200 B.C.
Stem indented Point (Kirk Stemmed) Phase	? -6500 B.C.
Archaic Period	6500-1000 B.C.
Middle Archaic Subperiod	6500-2500 B.C.
Bifurcate Point (Lecroy-Kanawha) Phase	6500 B.C.- ?
Stanly Phase	? -5500 B.C.- ? B.C.
Contracting Stem Point Phase	5500 B.C?-3500 B.C.
Morrow Mountain Phase	5500-4000 B.C.?
Guilford	4000-3500/3200 B.C.
Second Side Notched Point (Halifax-Brewerton) Phase	3500/3200 B.C.-2500 B.C.
Late Archaic Subperiod	2500-1000 B.C.
Savannah River Broadspear Phase	2500-1500 B.C.
Susquehanna Broadspear Phase (North) Savannah River-Holmes Point Phase (South)	1500-1000 B.C.
Woodland Period	1000 B.C.-A.D. 1650
Early Woodland Subperiod	1000-500 B.C.
Early Woodland I Phase	1000-900 B.C.
Early Woodland II Phase	900-750 B.C.
Early Woodland III Phase	750-500 B.C.
Middle Woodland Subperiod	500 B.C.-A.D. 900
Middle Woodland I Phase	500 B.C.-A.D. 200(?)
Middle Woodland II Phase	A.D. 200-900
Late Woodland Subperiod	A.D. 900-1650
Late Woodland I Phase	A.D. 900-1100
Late Woodland II Phase	A.D. 1100-1200
Late Woodland III Phase	A.D. 1300-1400
Late Woodland IV Phase	A.D. 1400-1500
Late Woodland V Phase	A.D. 1500-1650

and the chronology presented in Table 1 has been modified from the more general Eastern one to demonstrate this. The units used in the Valley chronology are periods, subperiods, and phases, each being separated from the others on the basis of degree of cultural change. Phases show the least amount of change and are often based on nothing more than a shift in projectile point styles or ceramics, the two major sets of chronological diagnostics. Sub-periods imply a greater magnitude of change, while the periods represent major restructuring within the cultural system. Phase names are usually derived from a type site, a particular locality where the artifact form was first recognized and defined, e.g. "Savannah River" from the Georgia-South Carolina border or "Marcey Creek" from a small stream in Arlington County, Virginia. Terms such as Archaic, Woodland and Paleoindian have different histories. The latter represents the earliest period in North America. The "Paleo" prefix was borrowed from the term for the European Stone Age, the Paleolithic, and "Indian" was added to it—the terms together literally mean "old-Indian." "Archaic" was originally applied to an archeological manifestation in New York, used to imply that it was simply older than later complexes. The use of this term was subsequently extended throughout North American and has become loaded with multiple, often contradictory, meanings. "Woodland" is short for Eastern Woodland Indians, a term which is virtually inclusive of all Indians living east of the Mississippi. It is the latest period and the one which can be most directly linked with historic Indians. Early, middle, and late are self-explanatory.

The chronology presented in Table 1 will be discussed in the subsequent chapters. All that really needs to be stressed here is that these divisions are arbitrary, used principally for purposes of ordering and presentation. In this sense, they can be roughly equated with the divisions used by historians and other social scientists, divisions such as the Homeric Era, the Depression, or the Rennaissance. They are time blocks used to bracket events. In no sense, at least in the Shenandoah Valley, do they really represent the beginning or the end of anything, except perhaps at the very earliest and latest ends of the prehistoric cultural spectrum. The end of the Paleoindian period and the begining of the Archaic, for instance, overlap, with the one blending into the other just as John Doe at age 21 is in some ways different than he was at 20, but still remains the same person. On the other hand, John Doe at 5 and at 55 is radically different

despite the fact that he is still John Doe. In our earlier studies, we recognized discontinuities in the sequence. As our work proceeded and more information was gathered the gaps were filled in and the distinctions began to blur. The chronological scheme has now simply become a convenient way of discussing the past.

In order to provide a broader perspective, Table 2 presents a comparative chronology highlighting significant events in three different areas of the world: the Shenandoah Valley, Mexico, and the Middle East/Europe. As can be seen, the Shenandoah Valley and Mexico were first populated at approximately the same time and the early cultural adaptations, technologies, and artifact styles were quite similar. The Middle East, on the other hand, had been the center of human development for many thousands of years before the earliest date on the chart. At this date the people of the Middle East had already moved away from hunting and were beginning to concentrate their energies on the domestication of the animals and plants they had earlier procured through hunting and gathering, notably wheat, barley, goats, and sheep (the people of Europe, however, were still hunting, fishing and gathering at this juncture). Importantly for subsequent developments in the Middle East, a burgeoning trade was being carried on at this time. Trade, of course, means interaction and the dissemination of ideas. In Mexico, by 8,000 B.C., people had shifted away from the hunting orientation of their earliest adaptation, in part a response to the increasing aridity of the time, and were beginning to focus on a wide variety of plant foods which were distributed in a number of different habitats, an activity that would ultimately lead to plant domestication. In the Shenandoah Valley, however, the hunting way of life continued, with only minimal modification.

By the time the Valley groups began to deemphasize hunting, pottery had already been developed in the Middle East, and the people were practicing agriculture in small villages much the way they do at the present time. In Mexico, through familarization, deliberate selection, accidental hybridization, and the movement of plants from zone to zone, the process of wild harvesting was beginning to be replaced by deliberate cultivation. By 5,000 B.C., the ancestors of the Mexican Indians had already domesticated forms of beans and squash, chili peppers, and a variety of other plants. At this time, copper was being used in the Middle East, and agriculture had worked its way into Germany and France. The American Indian staple,

Table 2.

	Shenandoah Valley	Other Areas
9500 B.C.	First people arrive	Big game hunters move into North American Continent from Siberia
9000	Hunting emphasized	General foraging prevails in area from Egypt to China
8500		
8000	Notched point replaces lanceolate form	Hunters and gatherers in Middle East and Southeast Asia on threshold of plant and animal husbandry
7500		First walls at Jericho built - Pottery developed by fishing groups in Japan
7000	shift in general foraging pattern	Sheep and goat domesticated in area of Turkey and Iran
6500		Wheat and barley domesticated in Turkey - Iran area; domesticated cattle and pigs appear Peas, cucumber, black pepper among crops grown in Southeast Asia
6000	seasonally shifting camps	
5500		Settled village agriculture from Greece to Thailand
5000		Agriculture spreads into Eastern and Central Europe along the Danube Village centered religions based in agricultural fertility become widespread in Middle East
4500	Middle Archaic pattern continues	Beans, squash and tiny pod corn domesticated in Northern Mexico
4000		Agricultural communities appear in Nile, Tigris-Euphrates, and Huang-Ho River Valleys

	Shenandoah Valley	Other Areas
3500		Rice and chickens added to domesticates in Southeast Asia. Agriculture reaches England
3000		Sumerian city states develop in Mesopotamia; first Egyptian dynasties; bronze metallurgy prospers
2500		
2000		Babylonia replaces Sumeria; city states appear in Indus Valley; Huang Dynasty in China Activity at Stonehenge begins
1500	Pottery, storage pits and sedentism appear	Hybrid races of corn develop in Mexico providing staple food crop; white potato & peanut in S. America Minoan and Mycenaean civilizations
1000		First temple centers appear in Mexico and S. America Iron working in Middle East
500		Melanesia and Polynesia settled Agriculture spreads to Tropical Africa
0 A.D.	Burial mounds and trade	Christianity develops
500		
1000	Agriculture appears	Era of Charlemagne, Moslem Expansion, and Ankor Wat
1500	Warfare and village coalescence	European Renaissance
1800	Europeans settle in Valley	End of Reign of Louis XIV

corn (or maize), first appears in the archeological record around 3,500 B.C., in a tiny and highly unproductive form. It was not until around 2,300 B.C. that hybridization created varieties of corn which could be used as a food staple and highly productive crop. By this time, in the Middle East and Europe, a number of significant events had taken place. Civilizations had already risen and fallen in the Tigris-Euphrates Valley. The first Egyptian dynasty was well under way and the Age of Pyramids was over. Copper had given way to Bronze, and Stonehenge had been a ceremonial place for a long time.

Around 2,000 B.C. ceramics appear in Mexico City (they had appeared in South American and the South Carolina-Georgia coastal area even earlier, at 2,500 B.C.). Locally, stone bowls were being made and traded in our area. The Valley Indians were still gathering, hunting and fishing, and were still leading mobile lives, seasonally harvesting various resources. The Mexican Indians had shifted into peasant village agriculture and, some three or four hundred years after the Hittites developed the process for making iron, the first temple-ceremonial-market centers appear in Mexico. Shortly after this, ceramics were made for the first time in the Shenandoah Valley. By 750 B.C. the Shenandoah Valley Indians were living a mostly sedentary existence in small hamlets, and we may be seeing the first traces of gardening, or at least manipulation of the local environment to create a more productive habitat for wild plants. Less than two centuries after this, the largest city ever in Mexico, Teotihuacan, began its remarkable growth. In Europe, classical Greek civilization began. By the time the Shenandoah Valley Indians were really farming, Charlemagne had already lived and died and, not long afterwards, the Aztecs began their manipulation of local politics preparatory to going on a conquest spree rivaling those of Alexander the Great and Julius Caesar several centuries earlier.

The cultural lag evident in this comparison between these different world areas should not be taken as an indication of the superiority of one area over the other. Not the least of the causes is the accident of place, the environmental setting of a particular area, and the peculiarities of the plants and animals which were naturally distributed in a particular locale. The ingenuity of one population over another has little to do with the natural distribution of wild wheat or barley, goats or sheep, or *zea mays*. An important factor in the different rates of development is just when in time the

local to-be-domesticates were transformed from the wild state to the cultivated form. As the table indicates, this occurred earliest in the Middle East, but being first is only a portion of the influences affecting the rate of subsequent developments. The Middle East had the luxury of domesticating both plants and animals, a most important factor which enabled them to abandon hunting and gathering for both food procurement and for the technological by-products such as wool and draft animals. The fact that only plants were domesticated in the New World seriously limited development for the Indians of the Western Hemisphere. In addition, comparatively speaking, the Middle Eastern plant domesticates were genetically capable of becoming staples virtually overnight. In Mexico, a minimum of 1,200 years passed from the initial domesticated corn to the more productive hybrid on which the Middle Americas' rise to civilization ultimately depended.

Population density is also a crucial factor in understanding the developmental history of an area. Growth in numbers invariably occurs when a new technological item that raises the standard of living is introduced. This was especially true of agriculture, which, for the first time, made it possible to provide dependable surpluses for a burgeoning population. A number of studies have demonstrated a correlation between population growth and technological innovations. Growth triggers new ideas, new ideas trigger growth, and so on, *ad infinitum,* until the entire system becomes like a snowball rolling downhill. For example, with the addition of trade, ideas spread and become modified by different groups, only to diffuse back to the donor area for additional modifications. The end result is a world in intellectual fomentation. As concepts spread beyond their original borders, large areas became linked. In the Middle East, the connections can be documented from Asia on the east to Egypt on the west. As the crops became acclimatized, they spread to other areas, and with them went the associated intellectual developments; in the Old World, Europe soon participated in this. The same pattern held true in Mexico; an interaction area that extended through the Mayan region into the Andes of South America can be documented.

What is also remarkable is the incidence of parallel development occurred. Both Mexico and the Middle East found religious beliefs becoming an integral part of their systems. These began as household fertility fetishes and were ultimately transformed into

centralized and institutionalized belief systems. In both areas, we see the development of astronomy, mathmatics, engineering, and writing. Of course there were also differences. Among these were animal domestication, which provided food as well as draft animals (although the wheel was developed in both areas, it was of little use in Mexico because of the lack of animals that could pull a vehicle); control of fire (kilns and ovens were lacking in Mexico—thus the amount of heat which could be generated was limited); and, linked with control of fire, differences in metallurgy (simple bronze items were made in Mexico, but iron could never have been worked in open fires).

The Shenandoah Valley, along with the rest of Eastern North America, received agriculture rather late, although it is probable that a number of areas were practicing some form of horticulture involving local plants as early as 750 B.C. Even if they were, these efforts were insufficient to overcome a primary dependence on hunting and gathering. Even when the Mexican-derived corn, beans, and squash arrived, wild plants and animals continued to provide a major portion of the subsistence. However, the new agricultural system did result in the usual burst in population; the initial cultural response to this, however, was expansion in space rather than innovation in technology. This expansion was possible because of the low population density coupled with extensive river systems with fertile floodplains, neither of which occurred in either the Mexican or the Middle eastern "cradles of civilization." It is probable that, once the population had reached a level in which fission and migration were no longer possible. intensification of the means of production by means of new technological inventions would have taken place, and marked population density would have occurred. Such thoughts are, of course, only speculation because, before this level of development was actually reached, the devastation resulting from the European migration and colonization took place. Nevertheless, it seems probable that Eastern North America—and the Shenandoah Valley—would have seen the development of empires such as that of the Aztecs and Incas had their development been allowed to continue.

3 The Paleoindian and Early Archaic

Sometime between 9500 and 9000 B.C., the first group of humans entered the Shenandoah Valley. These were the descendants of populations who had entered North America from Asia by way of the then connected land masses of Siberia and Alaska (Figure 7), sharing the same ancestors with today's Asian population. In America, early predecessors of the American Indian had spread out in various directions, with some groups reaching the tip end of South America as early as 9,000 B.C. The American continent provided an untouched paradise for these peoples with their hunting-oriented economy. Vast herds of game covered much of the western Plains, including the elephant-like mammoth and now-extinct forms of horse, camel and bison. Glaciers lay over much of the northern third of the continent, from the Arctic to just south of the Canadian border. Considering the rapidity with which these people spread, there must have been a combination of large numbers of people migrating and rapid population growth resulting from the abundance of resources in the untouched larder of North America.

The environment of the Valley at the time of man's initial entry was similar to yet different from what we see today. The climate was cooler, with long winters and short summers, but considerably warmer than it had been around 15,000 years ago when glaciers had formed in areas as far south as central Pennsylvania. Snowfall may not have been much greater than it is today, but it probably stayed on the ground for longer periods. The rivers and streams contained icy waters; fish life was probably minimal. The South Fork in the area of Limeton was quite shallow with many rivulets as opposed to a single, fast flowing stream, and islands abounded. Springs gushed forth from the adjacent hills and flowed across the limestone

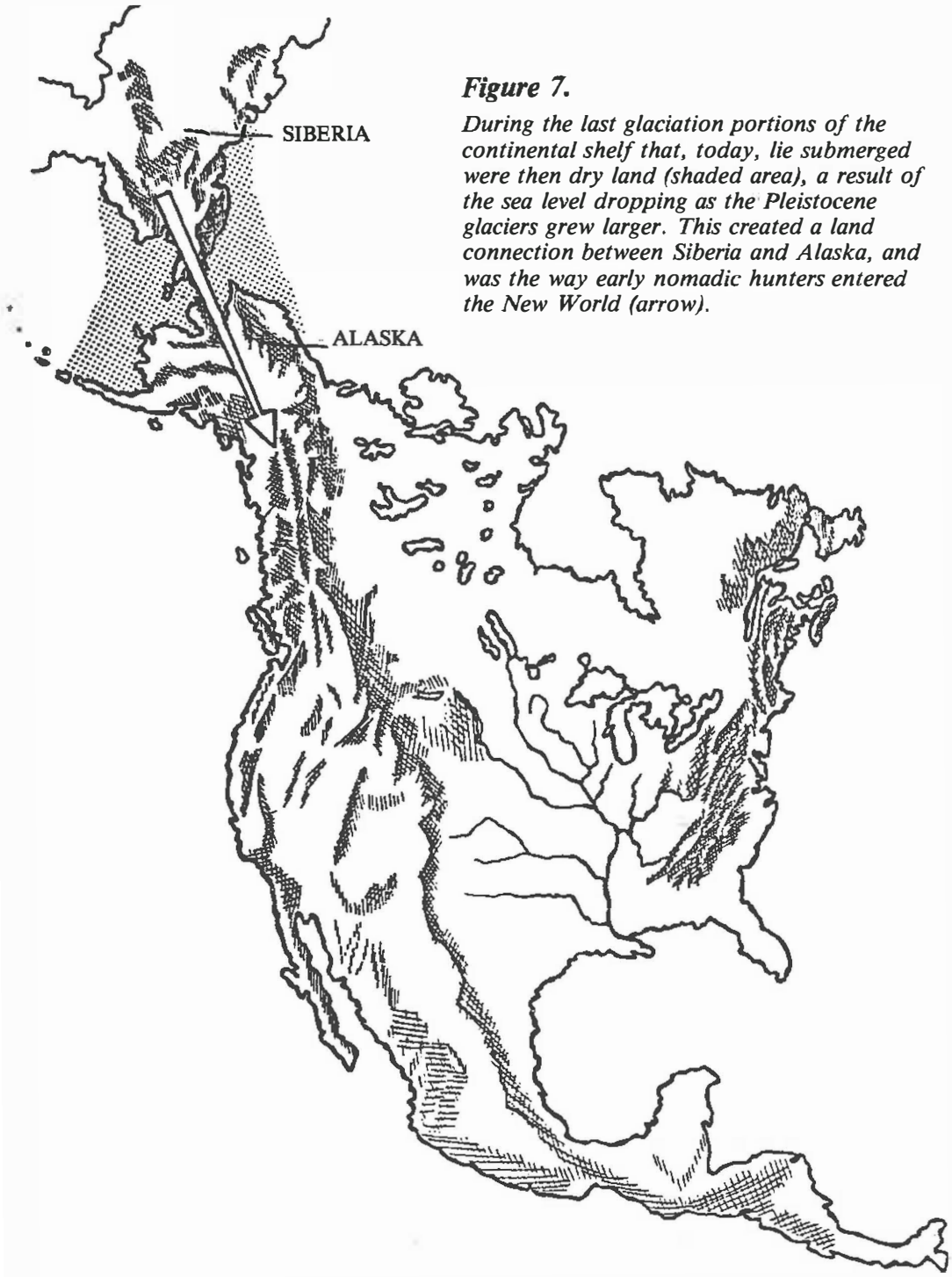


Figure 7.

During the last glaciation portions of the continental shelf that, today, lie submerged were then dry land (shaded area), a result of the sea level dropping as the Pleistocene glaciers grew larger. This created a land connection between Siberia and Alaska, and was the way early nomadic hunters entered the New World (arrow).

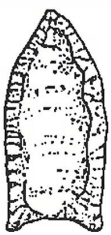
floodplains. Marshes dotted the flat limestone lands of the Valley in the area between Winchester and Harpers Ferry. Numerous backwater swamps, sloughs, and vegetation-filled abandoned river channels marked the shale floodplains of the streams and rivers. Stream junctions, in particular, were poorly drained and swampy.

The vegetation varied. Much as today, there were extensive areas of open range. But, unlike today's grasslands, these were climatically induced—not the result of agricultural practices. Clumps of vegetation, much like those of a parkland, could be seen everywhere. In the more well-drained areas, spruce and other cold adapted conifers grew in dense stands. Nearer to the more poorly drained locations were concentrated the deciduous species such as oak and hickory, which had earlier been reduced to a refuge position. Vegetation similar to what we have today—the cottonwoods, sycamores, and willows—formed long linear belts following the water courses of the streams and rivers. The mountains were covered by dense stands of pine, except perhaps at the peak elevations which may have been above the tree line.

In our early work, it was assumed that now-extinct forms of animals were abundant in the Valley at the time of man's arrival. This now seems not to be the case. These forms had been present somewhat earlier, but the overall warming trend of the terminal Late Pleistocene contributed to widespread extinctions. It is possible that the elephant-like mastodon, a small family group browser of the coniferous woodlands, may have been present, but the kindred mammoth and the horse, camel, and bison had disappeared. Also gone, but through a territorial shift rather than through extinction, were the caribou and musk ox which, as late as 15,000 years ago, had ranged as far south as Saltville, Virginia. In their stead were large numbers of deer, elk, and moose.

The fluted spear point is the main diagnostic tool of the Paleoindian. This point style is found to have been used from Nova Scotia to Florida, west to the Rocky Mountains, south into Mexico, and north to Alaska, and it is roughly similar in form wherever it is found. The earliest fluted point style is called the Clovis point (Figure 8), after the type site in New Mexico where it was first discovered. In the Southwest, it has been consistently dated at 9,500 B.C. The Folsom point, a slightly thinner type with a somewhat different shape and fluting which travels most of the length of the blade, is the marker type for the second Paleoindian

Plano Spearpoint



Folsom Spearpoint

Clovis Spearpoint

phase in the west. Dates on this style average around 9,000 B.C. The final phase of this early period in Western North America is called the Plano point. This style lacks fluting, but is consistently the finest example of spear point making in the continent.

The sequence in the Shenandoah Valley for the first two phases is remarkably similar (Figure 9). The earliest point is virtually identical to the western Clovis, and therefore has been given the same name. Although no C-14 dates have been obtained on this style anywhere in the east, it is presumed to date somewhere between 9500-9000 B.C. Given the fact that the migration of the Paleoindians is from west to east, some time lag must be allowed; this, then is the basis for the temporal placement of man's arrival in the Shenandoah Valley. The marker type for the second phase of the Valley Paleoindian sequence is approximately similar to the western counterpart, but yet is different enough to call it something other than Folsom: hence, our use of the term Mid-Paleo. The final phase is considerably different from the west's terminal Paleoindian, although in both areas the fluting concept disappears virtually simultaneously. The marked point style for this phase in the east is the Dalton point. The geographic range of this type is from

◄ ***Figure 8.***
Examples of Western Paleoindian spearpoints

just west of the Mississippi River to the Atlantic coast, and from the Ohio River and central Pennsylvania south to the Gulf of Mexico. West and north of this the Plano tradition prevails.

It is noteworthy that during the initial Paleoindian phase, the projectile point style and the rest of the tool kit—scrapers, knives, gravers, etc.—are virtually pancontinental in distribution. The best explanation for this is one of rapid migration of a population with a common technological heritage. The subsequent similarities between Folsom and Mid-Paleo are more difficult to explain. It is possible that a roughly parallel stylistic evolution from the basic Clovis form was inevitable. Alternatively, group membership may have been so fluid that individual families moved in and out of different areas, resulting in a relatively continuous interaction with their nearest neighbors and leading to a spread of style concepts to all groups. Neither of these possibilities is particularly satisfactory as an explanation, and the problem still remains to be resolved. The separation of projectile point styles in the final phases is understandable in terms of the vastness of the geographic area considered, but the area of stylistic similarity is still so large as to confound easy explanation.

Dalton-Hardaway Spearpoint

Mid-Paleo Spearpoint Resharpened

Clovis Spearpoint

Figure 9. ►
Examples of Paleoindian spearpoints from the Shenandoah Valley

Dates on Mid-Paleo in the east range between 9,000-8,500 B.C., while Dalton dates cluster in the 8,500-8,000 B.C. range. The Mid-Paleo dates all come from the Northeast where a true Clovis population appears absent. True Clovis points are, however, present in the Southeast. If this is not simply a matter of undiscovered early sites in the Northeast, it would appear that the movements of Clovis populations were west into the Middle Atlantic and Southeast, and then north into the Northeast and Canada.

Our knowledge of the Paleoindian (and Early Archaic) in the Shenandoah Valley, and, indeed, much of the Middle Atlantic, is dependent on the Thunderbird site. Located on the South Fork of the Shenandoah River, some six miles south of Front Royal, it is one of the most important sites of this time period in all of North America. The site is so significant that, in 1979, it was made a National Historic Landmark, an honor not accorded many prehistoric archeological sites. The site was discovered by amateur archeologists, members of the Northern Shenandoah Valley chapter of the Archeological Society of Virginia. Fortunately for the work which subsequently followed, the site was left virtually untouched, a tribute to these avocational scientists who recognized the importance of the site and tried for a number of years to create interest in the professional community.

The site came to the author's attention in late 1969. One of his graduate students, who had presented a lecture to the Northern Shenandoah Valley chapter, returned to Catholic University and reported the occurrence of a number of fluted points and associated artifacts coming from the surface of a relatively small geographic area. The potential significance of this was immediately recognized, and, with the assistance of one of the chapter members, C. Lanier Rodgers, the groundwork was laid for the initiation of an archeological investigation.

Field work began at Thunderbird (the name is derived from the then existing Thunderbird Ranch Hunt Club) in 1971, and almost from the start there was an onslaught of startling revelations. In order to understand just how new our discoveries were, it is necessary to recognize the limited state of knowledge that existed prior to 1971 for the Paleoindian period. Interpretations which then existed stressed, among other things, the high mobility of Paleoindian populations. All sites were assumed to be the same type. Sites were expected to occur in upland settings because it was

assumed that floods since 8,000 B.C. had destroyed any earlier landforms in the bottomland settings. The possibility of buried Paleoindian sites was not even considered. The Paleoindian period was seen as an entity in itself with no connections with later manifestations; the earlier populations were assumed to have been replaced by later groups. Because of the presumed high mobility, no evidence for living structures was anticipated. In essence, the viewpoint was that the Paleoindians represented the simplest, most basic cultural adaptation—a surprisingly misanthropic viewpoint from anthropologists! Actually, and less critically, much of archeology is a state-of-the-art discipline with interpretations based on knowledge and data currently extant, and thus is subject to considerable revision with subsequent discoveries. This is true of virtually any discipline—the problem with much early archeology is that its practitioners tended to stretch the data beyond the end of credible elasticity and to offer intrepretations based in a quite narrow framework. Overall, we have advanced considerably, but it would be foolish to suggest that what is said today will survive intact in the face of tomorrow's discoveries. Indeed, that is not the point of science, and it is the misguided scholar who adheres to outmoded ideas just because they are his.

The first indication that the Thunderbird site would produce a unique set of data came with the initial excavation unit. Prior to opening this first square, the entire field, an area of 4400 by 300 feet, was gridded into 10 foot squares and mapped; all of the artifacts collected from the surface of this plowed field were then represented by dots on the map. Our use of this technique—called controlled surface collection—was one of its first applications in Eastern North America. The reasons behind using this approach related to one of the factors then known about Paleoindians—in the larger sites artifacts tended to cluster in circular or oval concentrations, known as "hot spots." Our controlled collecting procedure pinpointed the location of over 20 such hot spots. The student in charge of the mapping process then selected the "hottest" of the hot spots for the first excavation square. After removing the foot or so of plow disturbed soil, we came down on undisturbed deposits which, according to our resident soil scientist, John Foss, were in excess of 10,000 years old, and we were still finding artifacts!

The finding of Paleoindian artifacts in uncultivated soil was only a

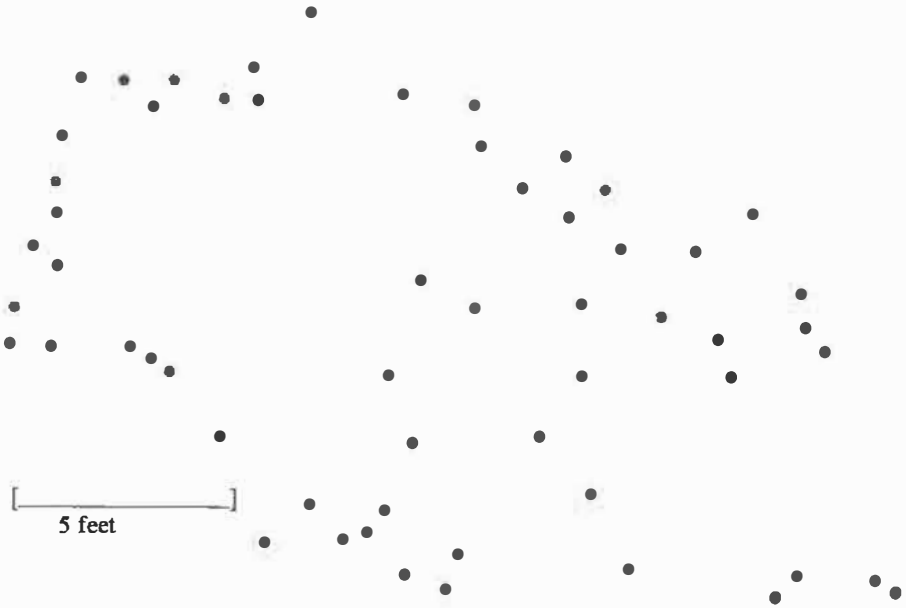


Figure 10.
Patterns of post stains excavated at the Thunderbird site in 1971.

mild surprise. More startling was the presence of post molds. Post molds are dark organic stains in the soil left by the rotting of a post, or are the result of organic topsoil washing into the post hole after the post is pulled out—they show up as circular stains in the surrounding yellowish matrix of the undisturbed, inorganic soils. The artifacts from both the plowed soil zone and the undisturbed soil were all of the Paleoindian period (predominantly Mid-Paleo, as we were to discover later). This meant that the posts which had left the molds were of the same period. Excavation of the entire area ultimately uncovered a pattern of post molds in a rough oval some 30 feet by 40 feet (Figure 10).

What we had done in less than two months of the first season was to uncover the floorplan and associated artifacts of the oldest known structure in North America. While this was being digested, an equally significant discovery was made by Foss. As part of our overall study of the site area, a soil study was being made of the entire floodplain. The purpose of this was two-fold: first, to determine the ages of the soils within the river bottom; and second, to detect any chemical or other anomalies in the soils which might

point to human activity. About 150 feet east of the house toward the river, which lay yet another several hundred feet away, in a zone where no artifacts had occurred on the surface, the soil auger picked up artifacts at a depth of three and one half feet below the surface. The site was on a slope, and a completely buried Paleoindian period living surface, undisturbed by the plow, was present. Excavations in this area demonstrated that not only did we have a buried Paleoindian period deposit, we had an entire sequence that covered the period from earliest Paleoindian to around 7,000 B.C., almost to terminal Early Archaic! In this stratified deposit, it was possible to document cultural changes within the sequence, in addition to demonstrating that there was marked continuity between Paleoindian and the succeeding archeological culture. Thus, we had bridged a gap in knowledge that had previously influenced the interpretation of Early Man in Eastern North America.

New discoveries have their excitement, and there is always considerable personal satisfaction in being in the vanguard of new knowledge. Yet the unique, if it is to contribute anything to the advancement of a discipline, must ultimately be replicated and have a solid foundation of more mundane data to support it. Over the years, we have continued to work at Thunderbird and have branched out into other sites in the area, as well as into locations ranging from Pennsylvania to Florida. Since the initial outpouring of new finds, these and all the other information which has been accrued have been integrated into a picture, or model, of a total operating system of Indian lifeways and adaptation through time. The model has been tested in a number of locations; replication has been accomplished and predictions verified. In the way of all science, we move further and further away from the unique as disparate pieces of evidence begin to fit comfortably with the new approach. Thunderbird and its companion site, Fifty, still stand by themselves for the variety of information they contain and for their stratified cultural deposits. It is, however, only a matter of time before these sites become "just another of the Paleoindian sites."

The site complex from which the model was ultimately developed became known in the world of archeology as the "Flint Run Paleoindian Complex," so named because of the sites' geographic proximity to the stream of that name. Five site types—quarry, reduction station, base camp, maintenance site, and hunting camps—each with its own set of activities and associated artifact assemblages, make up

the complex. In the Flint Run Complex, the single most important element in this constellation of sites is the lithic resource known as jasper found at the quarry site.

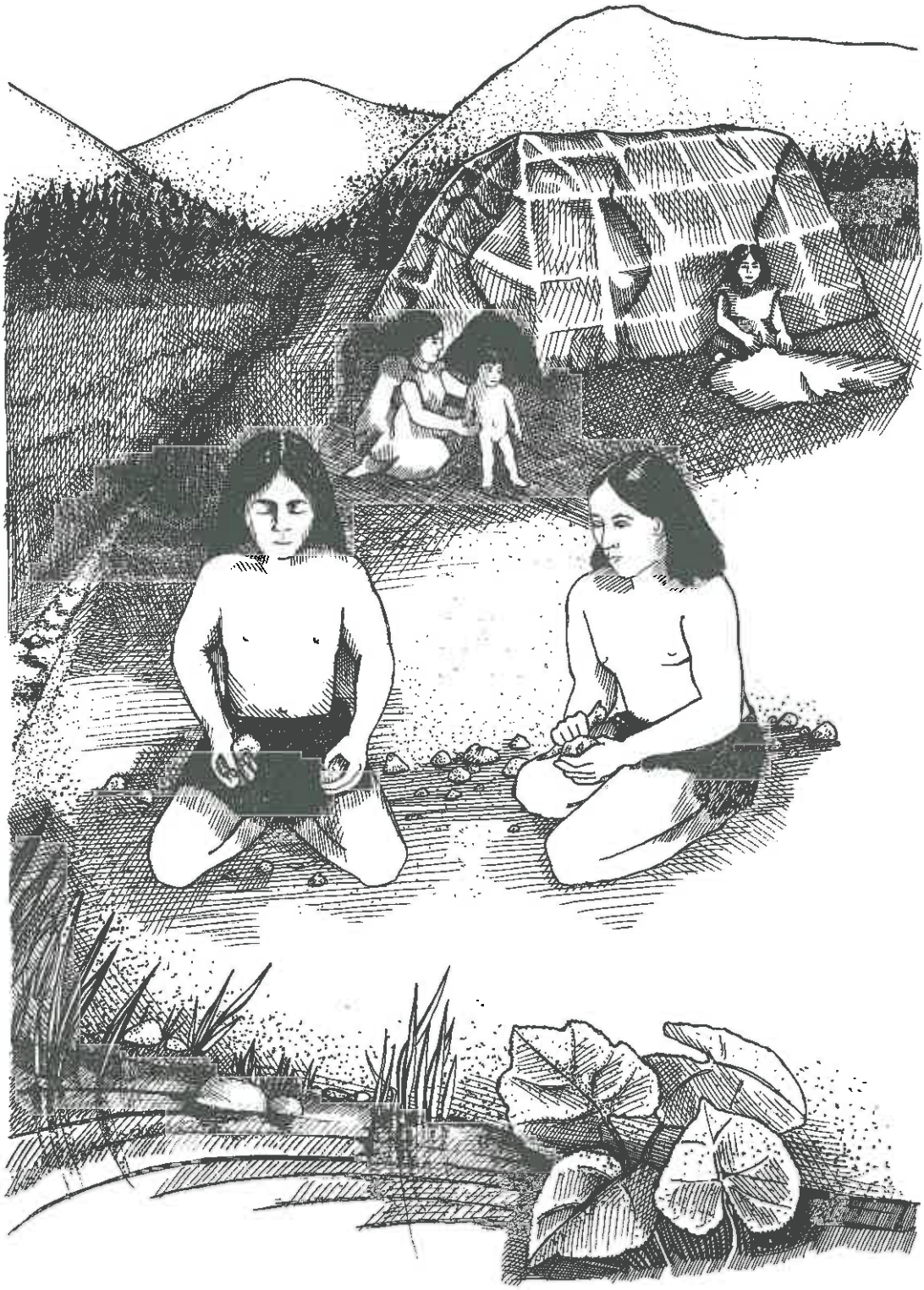
A quarry is a highly specialized type of site with, generally, a single activity, that of the mining of raw material, dominating all other activities. Artifacts left behind consist primarily of discarded or rejected waste. In some localities, the quarry is combined or spatially included with the other types of sites. In the Flint Run area, however, the outcrops are on hilltops away from water, or on the steep slopes of these hills, as well as in locations which receive minimal amounts of daily sunlight. In short, the jasper outcrop areas are not favorable ones for habitation.

The second type of site is termed a quarry or lithic reduction station. This is not a site type which can be expected near all lithic quarries and its occurrence is a reflection of the environmental variables noted above. In the Flint Run area, this is the location to which large blocks or chunks of jasper were carried, after which the cortex (the weathered outer crust of the stone) was removed, and the chunks were shaped into manageable sizes which could then be transported across the river for final processing at the base camp. Like the quarry, the reduction station is an extemely specialized site. In modern terms, these two site types can be likened to a mine (the area of lithic resource occurrence) and the associated area where the desired product is then separated from the unwanted material (the reduction station).

The third site type is the base camp, described as a temporary habitation area where a number of activities took place. In addition, base camps can be understood as "staging areas," areas from which people radiated out in different directions in order to carry out a variety of tasks related to day to day life maintenance activites. Thunderbird is a classic example of a base camp. It is to this site that the quarried and preliminarily shaped jasper was brought for final fashioning into tools. As Figure 11 shows, there were at least two different activity areas in this base camp setting. These were the

Figure 11. ►

Artist's reconstruction of activity areas at Thunderbird: men chipping new stone tools sit by the river's edge; behind them is the general purpose living area, where one woman works on hides while the other watches her child.



area for the manufacturing of the hunting tool kit and the general purpose living area, with the combined areas representing the use space of a household.

In the general purpose area was the dwelling. Recovered from within and around the dwelling area were a variety of tools, most of which were general purpose tools (scrapers, knives, gravers, drills, etc.). Slightly downslope and closer to the river bank, as it was then located, is the area where the Indians made tools which were employed in the killing and processing of animals. In its own right, this is a highly specialized area and the range of artifacts is limited. Included are the waste from tool manufacture, various rejected or broken stages in the projectile point manufacturing process, and hammerstones. Given the almost universal association of males with hunting throughout the world, this was probably a work area for the men of the associated household. The women most likely did the bulk of their work at the site near the dwelling. The structure was built adjacent to a now-extinct spring stream; this probably served as the main source of water. Analysis of pollen indicates the presence of a nearby poorly drained area where there grew certain types of marshy plants which were probably gathered for food.

While we are still a long way from understanding many of the finer details of the lifeways of these early peoples, there is still enough evidence to do some speculative or, if you prefer, hypothetical reconstruction. The household group of the time, at the minimum would have consisted of a man, a woman, and their children. Since most people set a premium on children, it is probable there was more than one child. It is unlikely that a woman would have been burdened with more than two or three very young children, given the necessity for her participation in the day to day survival of the group, and the mobility which would have been required during the hunting forays. A minimum nuclear family size of six seems a reasonable guess. If the structure at Thunderbird represents multiple rebuildings of small structures, then the three small, nearly circular units contained in the post mold pattern may be multiple single family dwellings occupied over a period of time. If this is the case, then the primary social unit was the nuclear family, with perhaps one or two other close relatives. If, on the other hand, the post molds are from a single large dwelling, then the social unit was probably somewhat larger, perhaps that of an extended family consisting of the nuclear family, various unmarried siblings of

the husband and wife, and maybe one of their aged or widowed parents. It is also possible that more than one nuclear family comprised the household, as suggested by the three small circular units observable within the larger oval floorplan. This could increase the social unit population to 18-20 people. We suggest that this represents the maximum number, based on the size of the hunting sites, which will be discussed shortly, and the type of hunting patterns which would have been followed. Any larger sized group would have presented a severe liability to survival.

As we noted previously, the controlled surface collection indicated more than twenty "hot spots" which we can now translate as representing household activity areas. All of these areas have locational variables in common. Each is situated close to a spring and probably a marshy area, although not enough have been excavated to state this with assurance. When the entire Thunderbird site is viewed as a unit, it can be noted that it is so situated as to receive the maximum amount of daily sunlight but a minimum of wind. Comfort and convenience were obviously both prime factors in selecting the location of the occupation site itself and the positioning of the individual structures. These comfort factors are not easily found on the opposite side of the river near the quarries; this fact is most likely the best explanation of why the living areas were not located immediately adjacent to the quarried outcrops.

We have no idea how many of these households gathered at the Thunderbird site at any one time. It is doubtful if there was anything close to twenty. The area could simply not support such a dense population concentration, and the surplus foods were probably limited. We can assume, however, that more than one household was present on any given occasion, based on the knowledge that man is a social animal who, for a variety of reasons, needs and desires the companionship of others.

This brings us to the two major reasons why Thunderbird was inhabited in the first place. As we noted previously, one of the reasons for its existence is the presence of jasper. We know that individual households moved into Thunderbird and set up camp because they needed to gather this raw material to fashion it into new tools in order to replace their heavily resharpened and worn out tools. There is good archeological evidence for this in a number of discarded, worn down projectile points and tools, most of which were made of materials other than jasper—materials which they

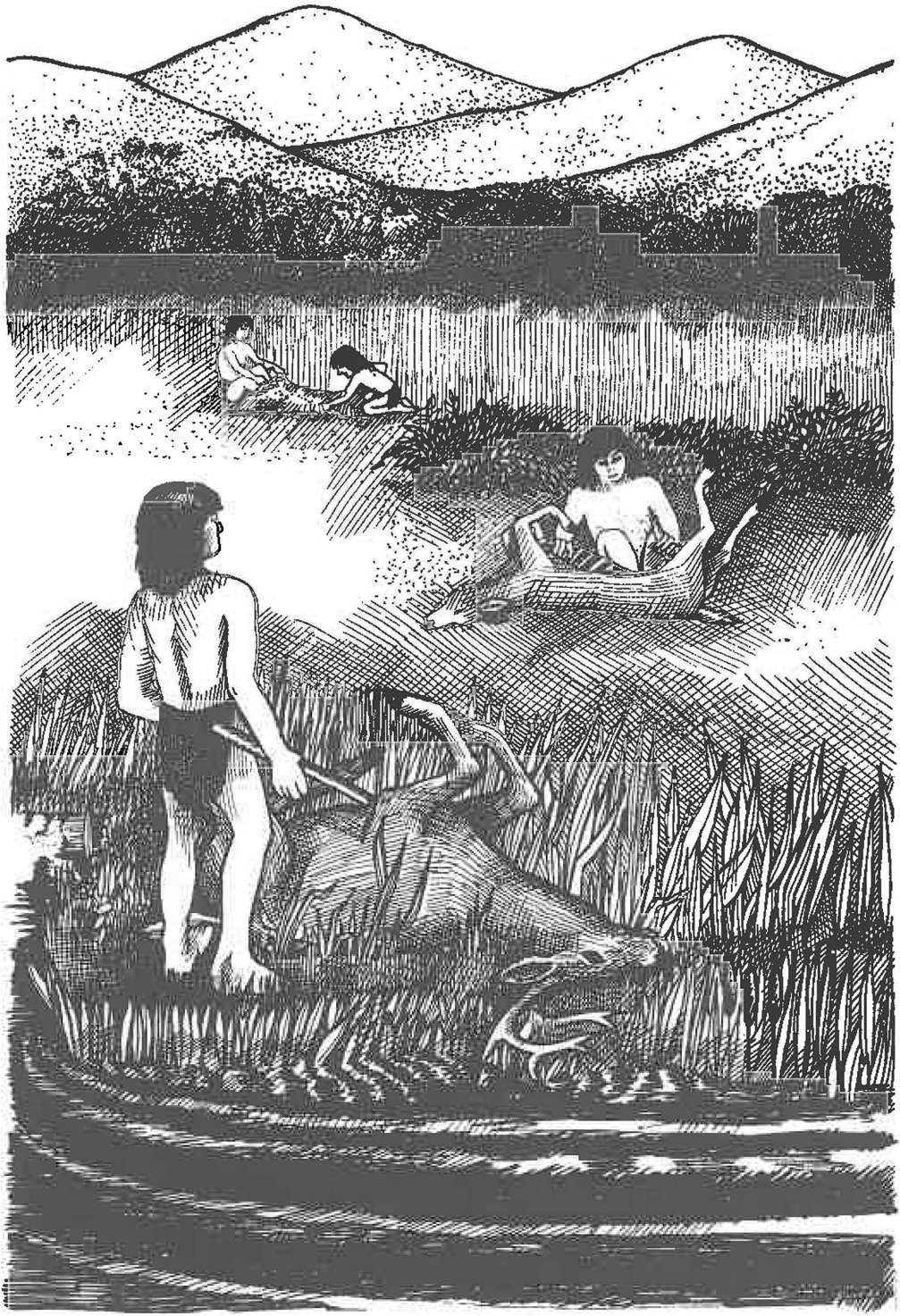
must have gathered from other quarry locations or picked up during hunting rounds whenever necessary to replace broken implements quickly. The other reason is the factor of social interaction. Hard scientific evidence to support this is, of course, absent, but, in addition to the logic cited above, there is some indirect evidence. At Thunderbird, we have at least 2,000 years of continuity which, in itself, attests to a continual transmission of ideas and to survival success, neither of which is possible without social interaction.

Let us envision a scenario that goes like this:

> *Individual households of Paleoindians moved about the Valley hunting. The hunting sites were all small; the artifact scatter represents at best the debris from the activities of a single household no larger than that of the maximum six people we have defined for Thunderbird. The nature of the environment in which they found themselves offered plentiful but rather dispersed resources; it could not support large concentrations of populations for any length of time. The social factor involved in survival success, however, necessitated periodic interaction between households. The only factor in the environment that everyone needed and which was not limited was the lithic raw material—in the case of Flint Run, this was jasper. This was also one of the only fixed and highly dependable or predictable resources in their world. A household might count on meeting another group at one of the quarries. Their ability to survive at the quarry depended on the nature of the immediately contiguous and nearby resources, some of which were available at Thunderbird, and some of which, as we will discuss shortly, were available nearby. It is also probable, but again not demonstrable, that they brought food reserves, such as dried or smoked meat, with them into the base camp. An element of seasonality may have also been involved, and winter was the normal time for otherwise independent households to gather in base camps or settlements along river bottoms.*

Figure 12. ►

Artist's reconstruction of hunters at the Fifty site shows they have killed their prey next to the swamp and begun the process of butchering the animals. Behind them, along the old river terrace, others work on hides



Even if the people who came into the base camp had brought a supply of food, stays of any duration would have soon exhausted these reserves. The setting of the base camp was, of course, such that certain immediately local plant foods could be gathered, and women and children probably did gathering of a number of resources in locations at varying distances from the camps. Hunting would have also been necessary, and the fourth type of site associated with the Flint Run complex is what we have called a base camp maintenance station—a hunting site. The prototype for this category is the Fifty site (named after the later part of its state designation, 44WR50) which is located about one-half mile upstream from Thunderbird. Others are known from surface finds to occur in similar settings within similar settings within the next mile.

The Fifty site, like Thunderbird, is located on an old terrace of the South Fork, but the terrace itself is much older. In addition, the site extends out into the floodplain on an alluvial fan. Immediately in front of the site was a backwater swamp, an abandoned channel of the South Fork (Figure 12). The fan slopes gradually down to this swampy area. In 1975 excavations into the swamp uncovered a blue-gray clay characteristic of swampy conditions and rich in organic remains, which capped masses of preserved vegetation. It was hoped that we could find animal bones, the remains of the animals killed at the site. Unfortunately, the soil acidity was not conducive to bone preservation.

Like Thunderbird, Fifty is divided into activity areas. On the fan and the area closest to the swamp a variety of large tools for cutting, pounding, and smashing were recovered. The inference is that this part of the site was the area where the major butchering and processing of the animals killed took place, an inference supported by tool wear analysis. Behind the fan and along the terrace, the artifacts were much finer cutting and processing tools, such as thin sharp knives, scrapers, and various small tools of unknown function. The overall inventory of artifacts is specialized, with the activities represented by these tools being limited to the killing of animals and the processing of the meat, hides, bones, and other by-products. Sites like Fifty are not living sites *per se,* and little primary tool-making took place there. This degree of specialization leads to the conclusion that the site was simply a food support loci for the Thunderbird base camp.

The Fifty site is also significant in another respect. As Figure 13 shows, the site is stratified, with the projectile point sequence generally replicating that from Thunderbird. At least two gaps, the Mid-Paleo and Dalton, are evident, a situation which most likely reflects site sampling techniques. Overall, the site substantiates many of the interpretations made by the Thunderbird data. Fifty is, then, the second stratified Paleoindian site known in the East, and is also part of the National Historic Landmark complex.

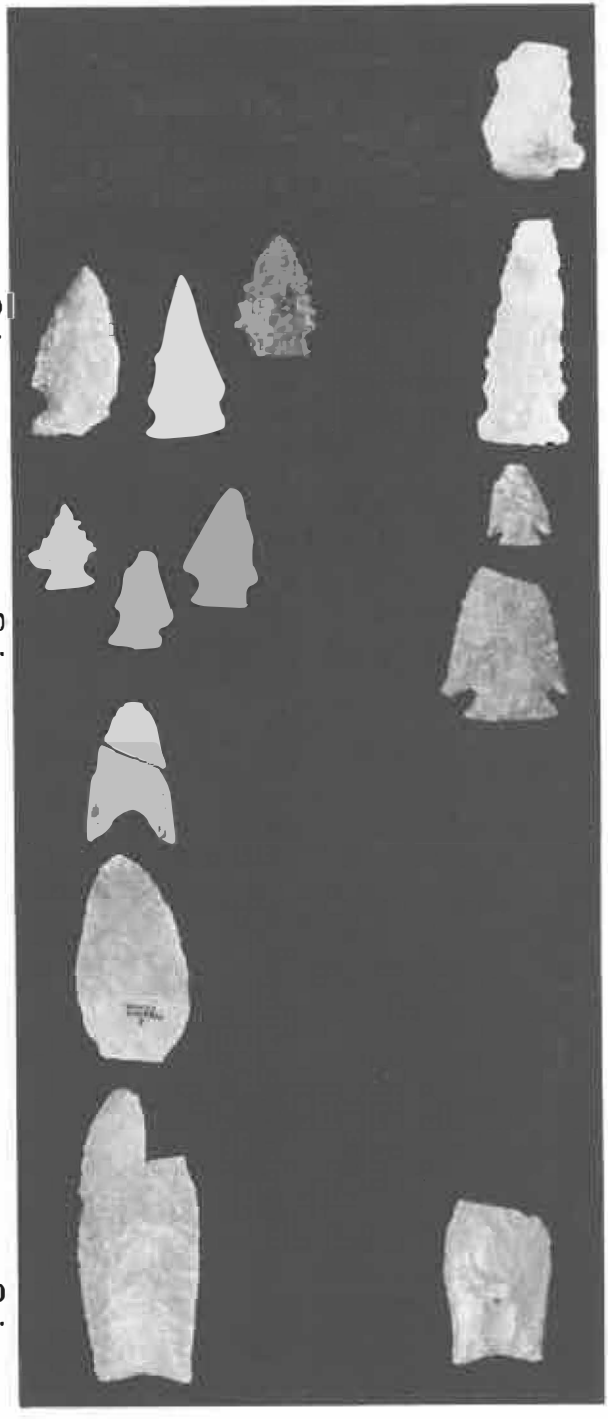


Figure 13. *Projectile point sequences excavated at the Thunderbird and Fifty sites, showing the point sequences that begun with the earliest Paleoindian time period and go to around 7000 B.C.*

These four types of sites—the quarry, reduction station, base camp, and maintenance station—are all interrelated. In our hypothetical scenario, let us envision a family group that has moved toward Flint Run from the area now occupied by Winchester.

The stone tools they carry are barely functional any more, their usefulness having come to an end as a result of constant resharpening. Over the time that they have been hunting, they have been careful and parsimonious, but this has been stretched to the limit; now, fresh tools are needed. The hunt has been good. They have eaten well, and have made a number of bone tools as well as prepared hides for clothing and to cover their tents when they make camp in the open Valley. There is also some precious dried and smoked meat, a surplus which they hope will tide them over until they can set up camp near the quarry, make new tools, and do some additional hunting and gathering. Winter is drawing near; soon the heavy snows will fall, and movement across the Valley will be difficult. Each member of the group is looking forward to meeting others whom they all anticipate will be there. Perhaps it will be someone they have camped with before, perhaps not. It makes no difference. There will be time for gossip, story telling, and maybe some singing and dancing.

At the camp site, they find there are already a half dozen families who have arrived. The word is that others have been spotted moving toward the area. Everyone hopes that not too many will arrive, for this would put a strain on food resources, but each group welcomes all the new arrivals. The family moves to a spot at the site, adjacent to where clear spring water flows. Just below the camp site are growths of pond weed; this will provide some needed food. Taking their stone chopping tools, the men of the household move along the edge of the river, which is low and cold. Spotting small saplings, they fell these and drag them back to camp. The women have unpacked all their belongings and spread them out on the ground. Together, they dig out small holes, and, taking the sharpened end of the posts, they put these in the holes and drive them into the ground, filling in and tamping the ground around them. Once the sapling framework is completed, hides and brush are used as outer coverings for protection against the cold.

The men, perhaps along with others from the camp, then wade across the shallow river to the quarries. The yellow stone they find is just what they want. Locating a spot on the side of the hill, they begin to dig away the earth. Fires are built under large outcrops and, when the rock is sufficiently hot, cold water from the creek is thrown on it. An explosive crack follows; large blocks of stone fall onto the ground. Using cobbles brought from the river, they break these blocks into smaller pieces. Some shaping is done on the spot, but most of the stone blocks are carried down the creek bank. Here the men do more shaping, and the resulting smaller pieces are then carried across the river to camp. Some of the material is given to the women so they can make tools for the tasks that they must do to keep the family fed and clothed. The men carry the best material down close to the river, sit down, either in groups or individually, and begin to shape the rock. Their primary objective is to make finished projectile points which they will use later in the hunt. The small, stubby points which have been used over and over again are taken off the wooden spear shafts and thrown on the ground. The spear shafts are saved, for good wood of the proper size and durability is not easily come by. Using river cobbles as hammer stones, they proceeded to pound on the jasper, striking rock against rock as the stone tool kit takes shape. Finished points are made and attached to the shafts, and a number of small thin bifaces are also fashioned. These bifaces will serve as reserves for when the points break. It will be a simple matter at that time to remove a few flakes and drive out the central flutes whenever it is necessary to replace a point. Certain types of flakes are placed in a cache for later packing. These will be used as scrapers to work the hides of the animals they kill and to scrape away the cartilage and fat from the bones.

At some point during their stay, a group of men from several households head up the river. They move along the bluff looking for swamps where animals come to water and browse. Sitting silently in strategic places, they wait. Soon a family of deer come along. Acting in concert, they kill several deer, and, using heavy chopping and cutting tools, they begin to butcher the dead animals. The kill is apportioned to each group member, and the women from individual households who have come to the site move back away from the swamp to begin to work the hides and bones and to cut the meat into thinner pieces. Today's kill has been sufficient to provide them

much needed additional meat. They all agree the area is rich; they will be able to hunt satisfactorily until it is time to move out again.

Spring comes. All of the families are ready to move. Everyone greets this camp break-up with mixed emotions, for it will be some time before they meet other people. After packing, the women and children load up everything from the household and, somewhat laden, they move away from the Flint Run area. Their men have gone on ahead to find game and seek good spots for camping. The women all hope they will find a spot that is near a poorly drained area, one that contains a variety of useful plants.

The camps they moved to, in this unabashedly romanticized scenario, represent the fifth and most common type of site known for the Valley Paleoindians. These sites are all quite small and are recognized by broken projectile points, infrequent waste flakes from tool manufacturing, occasional broken bifaces, scrapers, and other tools connected with animal processing, and a few generalized tools. As noted, the sizes of the sites indicate activity areas of single households. The sites are invariably located on well drained land with a southern exposure, as close to a local water source as was feasible to maintain dry conditions. Environmental reconstructions indicate the setting for these sites was a somewhat marshy area caused by stream ponding. The sites are generally near stream junctions, yet some distance back up the smaller of the streams. Often an old spring head is in the immediate vicinity. These locations replicate the environment of the household settings at Thunderbird, only they are much larger and undoubtedly had larger quantities of immediately accessible foods. It is possible these sites were also the locations where game was killed. It is more likely these hunting camps were like base camps in the sense that they were staging areas from which hunting expeditions took place.

Hunting sites are dependent on the location of outcrops of desired lithic materials in the sense that they increase in number close to quarry areas, and decrease dramatically away from them. They are independent in the sense that abundant natural food habitats ultimately control where they are situated. In the Northern Shenandoah Valley, we have plotted movements out from the Flint Run quarries of between 30-35 miles. As distance from the quarry and the time between visits increase, alternative lithic materials such

as chert, quartz, and quartzite were utilized in tool making. At some point in time, as yet unknown, there was a movement back to a quarry. In our scenario, this was depicted as winter, but circumstances may have forced them back sooner, circumstances such as unusual loss or breakage of tools.

The Early Archaic time period is simply a continuation of the Paleoindian period but with some new additions. From the perspective of temporal diagnostics in the artifact style, the most notable addition is the notched spear point. It has been suggested that this is associated with the introduction of the spear thrower, a weapon with potentially greater distance, accuracy, and penetrating power. Other additions were the chipped stone axe and the twist drill (Figure 14).

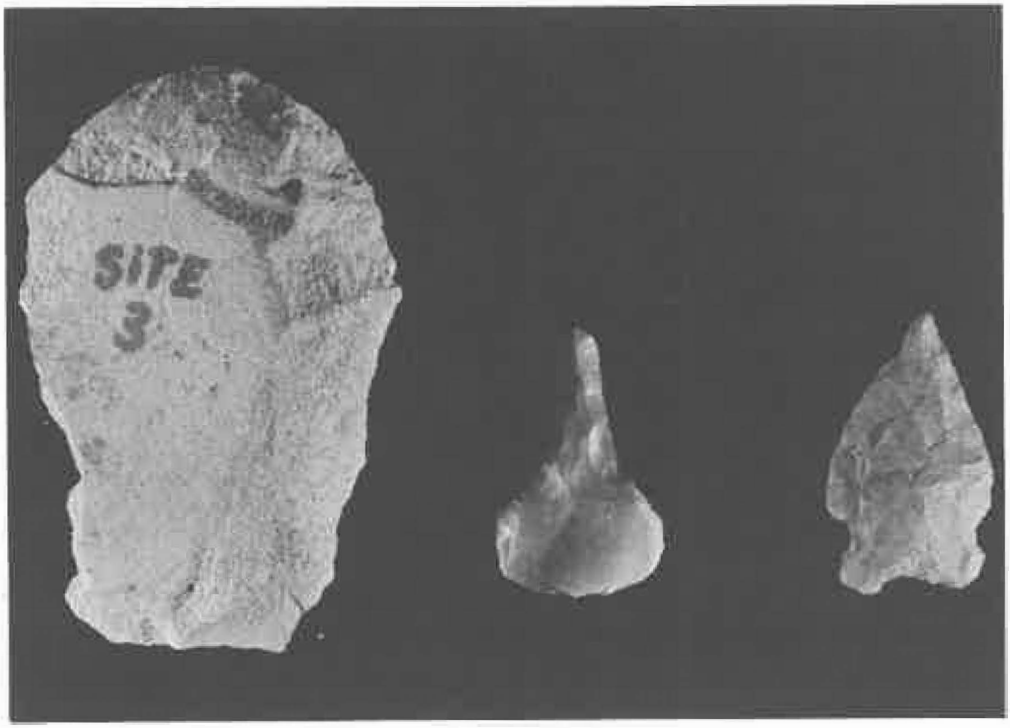


Figure 14.

Some of the innovations of the Early Archaic: a chipped stone axe, twist drill, and notched spearpoint.

Dates on the beginning of this period, defined by the appearance of the notched points, everywhere fall around 8,000 B.C. This rather remarkable congruency suggests that the concept of notching spread with the spear thrower, and people everywhere adopted the projectile style along with the invention, although it is by no means necessary to have a notched point base for hafting spear thrower propelled weapons. In the Valley, the different phases are marked by the different styles illustrated in Figure 15. The shift is from corner notching to side notching and finally to straight stemmed points with a slightly indented base. This latter occurs in the last phase of the Early Archaic. Common elements of the manufacturing process on the points throughout are lateral serrations, which provide a saw-like effect, and grinding on the edges to keep from cutting the gut or cord used in tying the point to the spear shaft. Not all points have either or both of these elements; they are by no means universal identifying criteria. The Valley's Early Archaic sequence is repeated in North Carolina, eastern Tennessee, and western West Virginia.

There is some evidence of an increase in the population of the Valley Indians during the Early Archaic. This is documented by the greater number of satellite maintenance sites in the Flint Run area, and the greater number of artifacts at Thunderbird at this level in the excavations. While this could be simply an

Figure 15.
Early Archaic point style sequence

indication of longer stays at base camps, examination of artifact collections from a number of areas in the Valley supports the idea of a gain in the number of peoples, as virtually every collection has Early Archaic points but only the rare few have Paleoindian points. The biggest jump appears to be during the middle part of the Early Archaic sub-period.

The drift away from the earlier Paleoindian lifeway starts with the beginning of the Early Archaic, and, by the end, the way of life has altered significantly. Among the changes are a movement into areas not previously inhabited by the Paleoindian or very earliest Early Archaic populations, and the abandonment of many of the earlier site locales. The Thunderbird and allied sites, of course, continued to be visited, but the visits seem to have become less frequent, and by the time of the stem-indented points the Thunderbird had been virtually abandoned. This change in settlement pattern is understandable; the environment was also in a state of flux and previously preferred site locations may have become so altered that they were no longer attractive. Spring and surface streams were disappearing; food resources—both plant and animal—were changing. Accompanying the alterations in site location was a drift away from dependence on a restricted range of lithics such as jasper. As the use of other lithic materials became increasingly common, visits to some of the older quarry locations, such as the Flint Run jasper quarries, were no longer necessary.

Another factor which may relate to the abandonment of Thunderbird was a possible change in groundwater within the limestone area; the surface-flowing springs at the site may have dried up or channelled underground by this time. The Fifty site, on the contrary, continued to be used with no indication of a change in intensity of use through to the end of the Early Archaic, and, indeed, into the next period. The role of Fifty as a hunting site and the continued viability of the adjacent swamp undoubtedly transcended its use within the quarry-oriented settlement system. This is fortunate, for the Fifty site stratigraphy was the evidence that enabled us to fill the earlier gap between terminal Early Archaic and beginning Middle Archaic.

By 6,500 B.C., the descendants of the valley's Paleoindian and Early Archaic populations had so changed that they reflect little of their former heritage. This first part of the pre-history of the Valley thus came to an end, and a new era began.

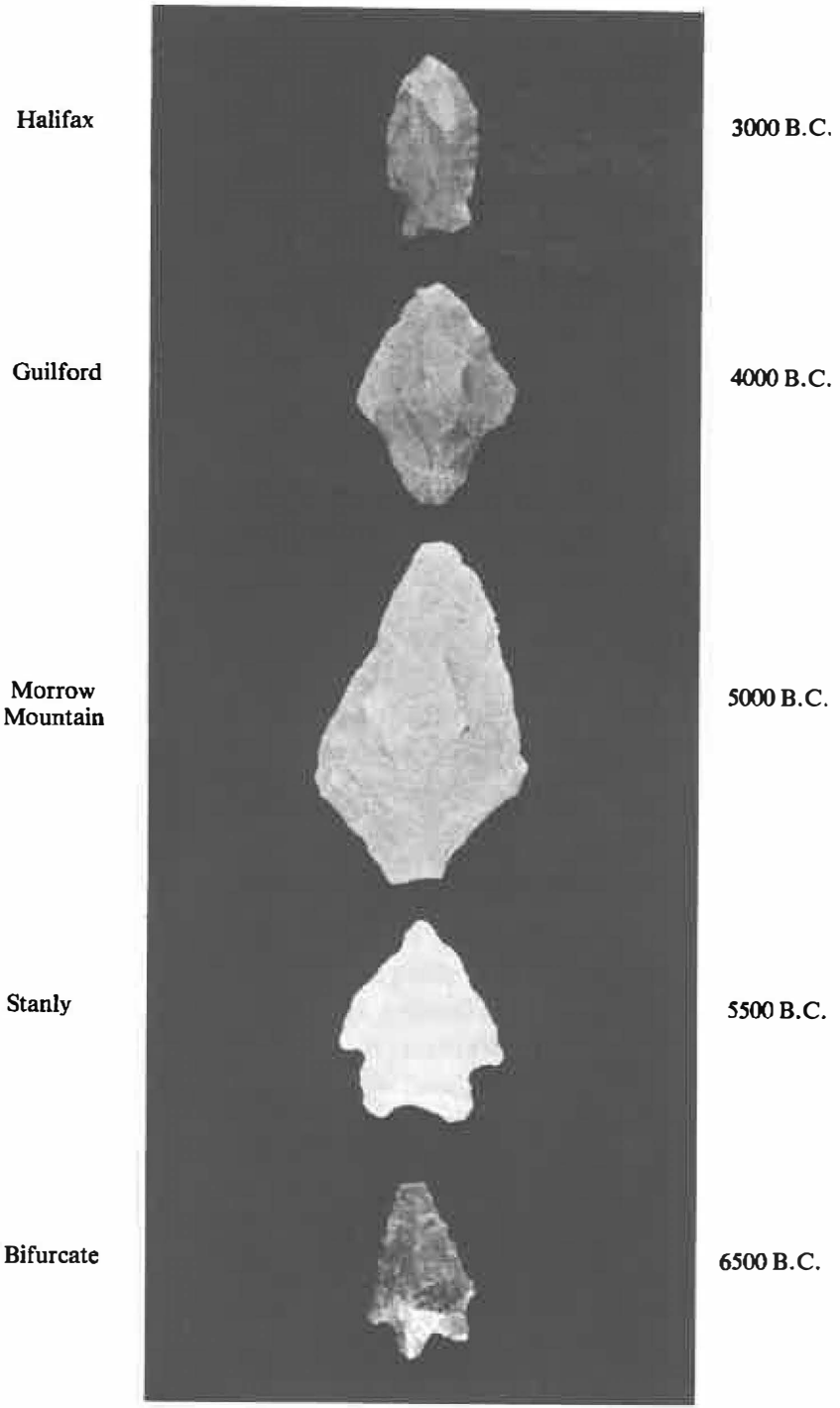


Figure 16.
Middle Archaic point style sequence.

4 The Middle Archaic

The Middle Archaic sub-period begins around 6,500 B.C., gradually evolving out of the preceding Early Archaic, and, by between 2500-2000 B.C. it gives way to the Late Archaic. During the interim, several phases, defined virtually exclusively by changes in projectile point styles, are discernible. The diagnostic point styles for these phases are presented in Figure 16. The earliest, LeCroy, consists of a style with a deeply indented base which is often serrated, traits which link it with the earliest terminal Early Archaic style. The succeeding type, known as a Stanly, follows an apparently logical evolution in form, exhibiting a much less concave base and a complete absence of serrations. In the next phase, Morrow Mountain I and II, the stem has contracted, often coming to a point. This reaches its extreme in the ensuing phase when the stem and shoulders become barely discernible in the point style referred to as Guilford. The last of the Middle Archaic point types, the Halifax style, represents a return to the side notched form. The Valley sequences parallel similar sequences documented in the North Carolina Piedmont and on the Kanawha River in western West Virginia.

Two sites have provided projectile point sequences for the Valley. One of these is located along Flint Run, and is called the Rudacil site. The other is the Fifty site, mentioned earlier. The post-Early Archaic sequence from the Fifty site enabled us to see the sequence in a continuous column, demonstrating the probable stylistic connection between the stemmed points of the final phase of the Early Archaic and the bifurcate base points of the Middle Archaic. In surface collections, we were also able to note a virtual absence of the earlier Early Archaic styles. The Fifty site stratigraphic column was also interesting in that it showed a major soil change between

the end of the Early Archaic and beginning of the Middle Archaic. Such changes can often be related to a change in vegetation, which, in turn, correlated with a climatic change. The point styles allowed us to place a date on this soil change of 7000-6500 B.C. This fits extremely well with changes documented in pollen sequences from a number of bogs in the Great Valley and the adjacent Appalachian Uplands, as well as with our own studies of changes in sedimentation rates in the South Fork floodplain. It is this dovetailing of a number of independent lines of evidence that lends confidence to our interpretations.

The climate at the beginning of the Middle Archaic was considerably warmer than it had been in previous eras, but was not as warm as it would become at the end of the sub-period. While the general climatic trend was one of gradual warming, seasonal fluctuations, much as we know them today, replaced the long winters and short summers of the preceding sub-periods. As is also the case today, precipitation varied considerably, both annually and for longer term sporadic wet and dry periods. The rivers were subject to frequent and periodic flooding, and much of the current soil in the floodplains was deposited during this era. The overall conditions were favorable for the spread of the deciduous forests at the expense of the previously dominant northern conifers and hardwoods. The earliest climax reached in this succession was that of the oak-hickory forest, a biome replaced toward the end of the sub-period by the oak-chestnut climax. Another extremely important factor was the trend toward forest closure and the reduction of open rangeland.

During this period, the moose disappeared from the area as the range of the pine forests became more northern in distribution. Deer and elk, of course, remained, but their numbers became considerably fewer as spreading forests reduced the favorable areas. Smaller forest and woodland animals, however, proliferated under these conditions. The big increase in the natural food larder took place in the plant kingdom, and nuts, seeds, shoots, tender leaves, roots, and berries became important resources. Vegetation distribution took on a zonal pattern with horizontal differences controlled by bedrock, soil, and drainage variation. Vertical zonation was also affected by these variables as well as by elevation.

Seasonality, present in both the climate and plant world and also, to some degree, in the animal kingdon, became the controlling

variable affecting the cultural systems. With the reduction in the large animal population paralleled by an increase in the plant food potential, that aspect of subsistence which focused on hunting became less emphasized, while general foraging gained increasingly in importance. The distribution of the plant foods, controlled by vertical and horizontal zonation, was uneven, as was the seasonal ripening of these foods. Subsistence, geared to these cyclical patterns, influenced the settlement patterns; shifting of sites based on seasonal availability of resources became the norm.

Again, we may follow a hypothetical family group throughout an annual cycle, beginning in the spring.

Located along the river bottoms near the junction of a stream or spring and the river, this family group would have welcomed the end of winter with great joy and relief. Winter is a hard time for hunters and gatherers, but the spring sees the natural world awaken. Plants begin to burst forth with blossoms and tender leaves, providing much needed food. In the rivers, fish begin to bed, and suckers, in particular, begin to group together in large numbers for the spawning season. Turtles and snakes come out of hibernation, and mussels are available for collecting from the melted waters. Migratory birds such as geese and ducks and, more importantly locally, passenger pigeons would be coming back into the area, returning from their southern migrations.

The many families gathered in this base camp setting would find themselves with a wealth of food, all available in the immediate vicinity. By late spring, these resources would be severely depleted, and the individual households would begin to break camp. Each would head out into the Great Valley, camping along streams and rivers where food was available. A camp would be established and the men would go out on the hunt. The household's women and children would stay in camp and gather local plants, snails, grubs, and other delicacies, and set traps for smaller mammals. This camp would be occupied until the resources were exhausted. A series of moves into other locations would follow throughout the summer, and, by early fall, the household would find itself at the foothills of the mountains. Many of the springs and streams of the Valley floor would be dry, but water sources of the foothills would still be flowing. In the highly productive locations, more than one family would gather. In these camps

and in the immediately adjacent area, the women would gather various types of foods. The men would use the camp as a staging area, and from here would make periodic treks to the mountains, hunting wild turkey and gathering baskets of nuts which would be brought back to camp for the women to process into meal. Other families would camp on the mountain tops in areas such as Big Meadows, and would be doing much the same thing. This would continue throughout the late fall and early winter. In addition to feeding themselves during these months, it would be absolutely necessary for survival during the approaching winter for them to process enough acorns, walnuts, hickory nuts, chestnuts, and game to last until spring. If they had a bad season at this time of year, they would be in serious trouble.

As the severe winter approached, they moved back toward the river. The river and its bottomlands were always the most dependable larder, for even in the dead of winter ice fishing could take place, turtles could be dug out of the frozen mud, and the mammals that did not hibernate would come to the river for water. Other groups would come into the camp. It was hoped that everyone who stayed at the winter base camp had been successful; otherwise some sharing would be necessary. Ceremonies including talk fests, dances, and singing, and simple gossiping and visiting would take place at this time. As the winter lengthened, the men would be forced to go out on hunting trips. Supplies would become short and the people would long for spring. When spring came, the cycle would start again.

We are in a worse position to surmise the sizes of the different populations for this time period than we were for the Paleoindian and Early Archaic. Overall, it is possible to recognize a considerable population increase during the Middle Archaic, as long as one recognizes that some of the increase in the number of sites and artifacts of the time is a reflection of the wide ranging, seasonally based settlement cycle. Since we have excavated no large group base camps dating to this sub-period, all we can do is to infer that the numbers of people who gathered in the base camps were probably relatively small.

The basis for this inference is the low productivity of the winter months and the necessity for families to share in what local resources were available. This would also enhance sharing of the reserves. In general, it can be assumed that when one family had a

bad year, the same probably held true for others. Plants, like animals, vary cyclically in productivity and, of course, can be severely affected by droughts, blights, diseases, and pests. Even so, while lean years probably occurred, there was sufficient variety in the Valley's deciduous forests that it was unlikely that mass starvation was a frequent problem. Based on the single family base camps which we have worked, it appears that there was no major change in the size of the population of the individual household.

It is obvious from the above discussion that one of the hallmarks of the Middle Archaic subsistence systems is that of subsistence generalization, as contrasted with Paleoindian and Early Archaic hunting specialization. This generalization is evident in the food quest, technology and utilization of lithics. With regard to the latter, the lithic preferences of the preceding sub-periods can be linked to an emphasis on hunting and game processing, and a concomittant concern with finely made hunting implements. Since hunting was deemphasized in the Middle Archaic, no such restricted lithic selection was felt to be necessary, and lithic use became a matter of propinquity. In other words, the Indians used what stone happened to be available nearest to their camp. Accordingly, Middle Archaic tools can be made out of any of the stones noted in Chapter 1. The parsimony noted for Paleoindian and Early Archaic groups was also not a factor in Middle Archaic, for some kind of stone was, literally, always available. Indeed, tools at the various small base camps show a quick use-discard pattern. In addition, the tools themselves also become quite generalized in form. The specialized hunting tool kit of the Paleoindians and Early Archaic groups disappears.

There were also some new developments in the world of technology. Perhaps the most significant was the grinding stone, or mortar and pestle, for with the emphasis on plant foods, it became necessary to process certain of these, particularly nuts and seeds, to aid in digestion and especially to make meal which could be transported and stored. As far as we can tell from the archeological record, these first appear in the desert areas of the southwestern United States and Mexico. In these arid locations, the animal population was reduced much more quickly at the end of the Late Pleistocene; consequently, the general foraging emphasis and grinding stones appeared as early as 8000 B.C. Another new item in the tool kit was the spear thrower weight, which apparently provided balance to the spear thrower and increased the weapon's efficiency.

These were made of soft stones which could be ground into the desired shape. Other stone items were still made by chipping away with harder hammerstones and bone tools. In some areas, a variety of woodworking tools came into the record. These included adzes and gouges, both of which have been found on Shenandoah Valley sites. To date, no house patterns have been found, so we have no information concerning house types or sizes.

Trade is not evident in the Shenandoah Valley, although trade does appear toward the end of the Middle Archaic in the Midwest. The Valley has also produced no burials. Work in Illinois and Mexico has shown that deliberate human and dog burial begins around 6000-5000 B.C. This is the first glimmering in the archeological record of any kind of ritual belief associated with death, or indeed of any kind of religious or spritual beliefs. Since evidence for such beliefs occurs quite early in Europe and the Middle East (ca. 40,000 years ago), it is probable that our Valley populations also were concerned with the supernatural. What they might have believed in is beyond our knowledge at present, but it can be assumed that their beliefs were grounded in the natural world.

The Middle Archaic is a time of relatively little change. In part, this is surely a reflection of the stability of the environment. The adaptation to this particular type of environment began in the Early Archaic and reached its zenith by 6500 B.C. The process of change stagnates after that, but then change for change's sake is not normally observed except in modern fashions and the market place. If an adaptation is successful, people tend to continue in the same patterns. The *status quo* tends to resist change as long as the rest of the world is stable.

Stability, however, is a short term phenomenon, and change is inevitable. The shift from the Middle to Late Archaic begins earlier in other parts of eastern North America than it does in the Shenandoah Valley. In the Northeast and Great Lakes region, trade and burial ceremonialism suggesting an orientation toward wealth begins to appear as early as 3000 B.C. Climatically, by the 3000 B.C. period, much of the East is in the midst of the hottest and driest period documented since the middle of the last glacial retreat some 35,000 years ago. Change was thus on the horizon, but it was slow coming in the Shenandoah Valley.

5 The Late Archaic

Between 3000-2000 B.C., the Shenandoah Valley was extremely hot and dry. Vegetation in all zones consisted of tall stately trees with high canopies and iittle undergrowth on the forest floor. Overall, this represented a reduction in both variability and numbers of individual plant and animal species. Exceptions did exist. In the mountains, especially, the nut bearing trees such as the chestnut produced tremendous harvests during the late summer and fall. The rivers, while shallow, teemed with fish and mussels. The adjacent floodplains were the most unstable part of the environment and served as a minor edge area where some plant and animal food variety and abundance did exist. In addition, the seasonal dryness in the upland areas forced far ranging animals to the rivers in search of water.

In response to this changed setting, the prehistoric Indians of the Late Archaic began to focus on two main areas, the floodplains and the mountains. To be sure, intervening areas were still visited by small hunting parties for short periods of time, but many of the areas exploited by their ancestors were no longer used by the Late Archaic groups. This should be no means be taken to indicate that survival was difficult during the Late Archaic, for it was not. Different strategies, however, had to be developed, just as was the case in the transition from the Early to Middle Archaic.

The temporal marker for the Late Archaic is a projectile point style known by archeologists as the Savannah River Broadspear (Figure 17). This particular style enjoyed widespread popularity in an area stretching from northern Florida to New Hampshire and west to the edge of the Appalachians. The earliest date on this type is 3000 B.C. from a site in South Carolina. In the Northeast, the earliest date so far recorded is 2000 B.C. Assuming this is a correct

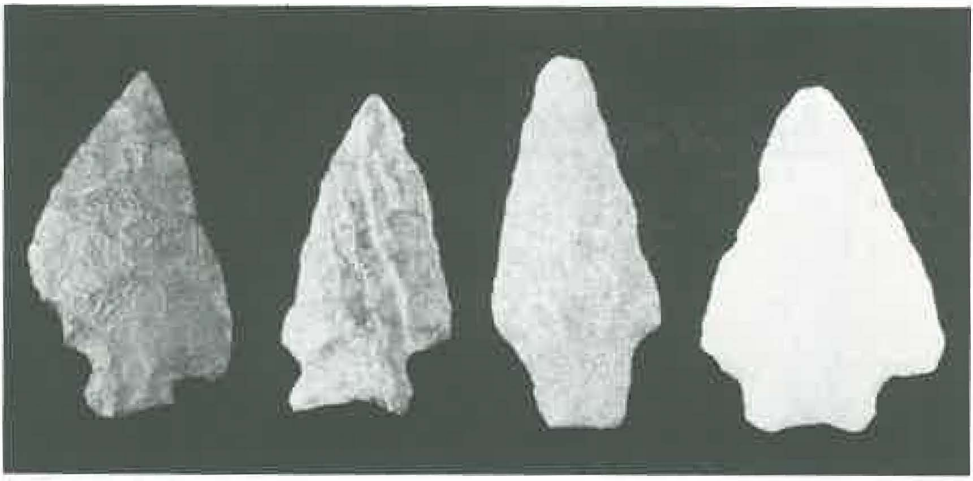


Figure 17.

Late Archaic projectile point styles from left to right: Perkiomen, Susquehanna, narrow bladed Savannah River, and broad bladed Savannah River.

indication of time difference in the distribution of the type and not of sampling strategy, the style would appear to have originated in the southeast with a gradual spread northward. The answer to why it spread so far is no more understandable than the explanation for any of the preceding pan-regional styles. These is no evidence for a migration and corresponding population replacement, nor is there any readily obvious technological advantage to the particular form. Archeologists can offer no explanation. The Savannah River Broadspear was, however, one of the last of the geographically widespread styles, and this can be explained by the subsequent development of sedentism and territoriality.

Accompanying the broadspear was a rather significant technological innovation, the stone bowl. These bowls were made of stones such as steatite, talc, or soapstone, and occasionally sandstone. They were not particularly difficult to make, but did provide, for the first time, containers for cooking which could be used directly on an open fire. Prior to this, the method employed in container cooking was that of stone boiling, a technique in which stones are heated on fires and dropped into soup or stew filled containers, such as baskets or hide bags, until the temperature is raised sufficiently to cook the contents.

The stone from which the bowls were made is restricted in distribution: in our area, this is in the Piedmont on a line between

Charlottesville and Baltimore. For Valley Indians this meant that the raw material or finished vessels could only be procured through trade or by traveling to the quarries. By whatever means these vessels were obtained, they were expensive, but they were also desirable enough to be by no means uncommon in our area.

In the Valley stone bowl fragments are usually found in riverine base camp settings and only rarely in the mountain or foothill base camps. The bowls, while obviously useful, were probably too heavy and cumbersome to transport between the different locations. The implication is that they were left at floodplain base camps by their owners, to be used again on their return to that site. This indicates the return to specific locations by households, something which we have no concrete evidence of in any earlier period. However indirect, this is the first hint of "belonging" to a specific geographic locale.

The stone bowls and the seasonally shifting dual base camp patterns of the Valley, also point to, if not sedentism, at least a movement away from the greater mobility of the preceding period. Actual sedentism was, however, present in a number of other areas, In the southeastern Atlantic Coast, large semi-permanent or permanent sites oriented to shellfish gathering appear at this time. In addition to stone bowls, these sites also contain North America's earliest ceramics, a technological innovation that does not appear in the Middle Atlantic and Northeast until almost 1500 years later. Considerable trade with Piedmont populations was also being carried on at these coastal sites. Sedentism has also been suggested for the James River area sometime just after 2000 B.C. In these areas where permanence of settlement has been documented or suggested, resources such as oysters along the coast and anadromous fish in the Piedmont provided the necessary productive food base. In the Valley, the only single season mass resource harvest possible was the chestnut and the chestnut was primarily a mountain species. Year round mountain living was not possible in prehistoric times because of the extremely low productivity in these high elevations in other seasons.

The movement toward sedentism and individual identification with a restricted geographic area (or teritoriality) inevitably resulted in reduced interaction between groups in widely dispersed geographic areas; this, in turn, was bound to lead to the development of more circumscribed artifact style zones. The first evidence

of this in the Middle Atlantic begins around 1600 B.C., with the appearance of the corner notched Perkiomen style in Eastern Pennsylvania. The antecedents for this type are not clear, although some archeologists insist that it developed out of the Savannah River type. In most other areas, including the Valley, this latter moves toward a straight stemmed, more narrow bladed form (Figure 17). Although rare, there were some Perkiomen manifestations in the Valley, with the only excavated one being near where U.S. 50 crosses the Shenandoah River near Shenandoah Farms.

One significance of the Perkiomen style is it perhaps gave "birth" to a type known as the Susquehanna Broadspear (Figure 17). This style literally explodes out of Eastern Pennsylvania, moving in several directions. In our area, this can be traced down the Monocacy Valley, eastward along the Potomac to the Great Falls area, west to near Hancock, Maryland, and south along the Shenandoah to at least the Limeton, Virginia area. Populations using this particular style exhibited a singular preference for rhyolite, the meta-volcanic stone which occurs in the Blue Ridge between Harpers Ferry and Gettysburg, and also used soapstone bowls. These people were extremely riverine oriented and intensive fishing appears to have been the major element in their subsistence. In the Valley, Susquehanna Broadspears are most common north of the Forks. Another common find are large bifaces or preforms of rhyolite. The lowest levels of the Corral site on the Thunderbird Museum grounds have a minor manifestation of this culture.

The Corral site has always been relatively enigmatic because, although a large number of completed and resharpened points have been recovered, the site has produced little in the way of other tools and only a few tiny rhyolite flakes whose size indicates resharpening, not manufacture. In 1985, a site was found and tested on a farm near Woodstock (in Shenandoah County, Va.) which yielded not only Susquehanna Broadspears but a considerable quantity of rhyolite debitage. The size range of the flakes suggested all manufacturing stages from late stage bifacial reduction to resharpening. A barely discernible pit which extended to a depth of 3.5 feet below the surface was also recovered. At the base of the pit was a compact hearth consisting of several huge river cobbles. The pit fill contained only rhyolite flakes and scattered pieces of charcoal including one hickory nut fragment suggesting, at the minimum, a fall occupation of the site. Clearly this particular site is

different from the Corral site, although we are not sure what these differences are. The tentative interpretation is that the Corral site is a satellite food procurement station associated with a more permanent and general purpose base camp, as yet undiscovered. The Shenandoah County site, known as the Peer site, is in turn interpreted as being a base camp. Of course much more work needs to be done before any firm conclusions can be reached. Another interesting find from the Peer site was a northern broadspear variant, the so-called Lehigh or Koens-Crispin point. These points are very much like the Savannah River Broadspears except the stems are contracting or pointed similar to the Middle Archaic Morrow Mountain style. In the Northeast, where the Lehigh/Koens-Crispin point is more common, they have been dated to between 1800-1400 B.C. A recent radio-carbon date of 1540 B.C. from the Corral site on the Susquehanna Broadspear hearth dates the occurrence of this point style in the Shenandoah Valley. This date conforms with the earliest dates on Susquehanna Broadspears from Pennsylvania.

The narrow bladed derivative of the Savannah River Broadspear is made in all areas of the Middle Atlantic south and east of the distribution of Susquehanna points. The appearance of this latter type in the Valley and elsewhere definitely indicates a migration. In some cases, the non-Susquehanna populations appear to have abandoned large areas. In much of the central Valley, co-existence of the two populations may have occurred, for subsequent events indicate the Susquehanna intrusion was short-lived; the points of the succeeding sub-period belong to the straight-stemmed tradition. The best explanation for the contemporaneous co-occurence of these different styles is a lack of resource competition. People making the Savannah River derived points may not have been as heavily riverine oriented as the Susquehanna populations. Unfortunately, just what was happening at this time is by no means clear. Subsequent events, as we will see, can be used to argue an assimilation of the intruding populations into the resident groups just as easily as the short-lived migration argument.

By the beginning of the next sub-period, a number of significant changes have occurred. The knowledge we possess at this writing does not allow us to say much about the processes that led to these changes; all we can say is that whatever was occurring during the terminal portion of the Late Archaic laid the ground work for the rise of sedentism during the next sub-period.

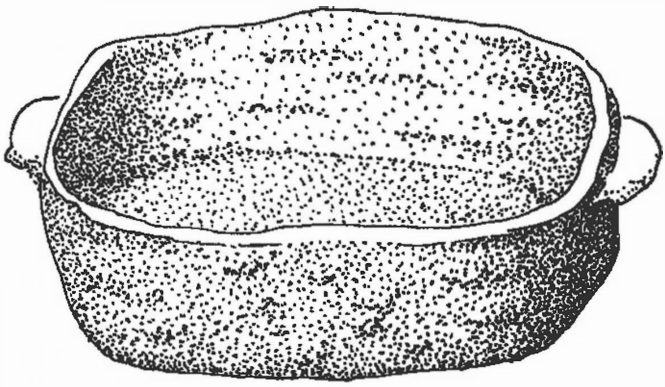


Figure 18.

Typical early phase Early Woodland vessel from the Middle Atlantic region.

6 The Early Woodland

The stone bowl was the technological innovation of the Late Archaic. In the Early Woodland, between 1200-1000 B.C., this is superceded by pottery. Ceramic making first appeared in North America in the Georgia/South Carolina coastal area around 2500 B.C. in association with Savannah River Broadspears. The technology was simple: clay was gathered, mixed with vegetable fiber as an aplastic, molded into a trough-like shape, and baked in an open fire. Initially, the exterior surfaces were plain, but around 1700 B.C., the surfaces began to be decorated with incised and punctated designs. It is also around this time that the concept of ceramic technology spread to the west along the Florida Gulf Coast. Traces of fiber tempered ceramics have also been reported as far north as the Chowan River in eastern North Carolina.

The ceramics which first appear in the Middle Atlantic may or may not be related to this earlier tradition. Chances are they are not, for the fiber tempered ceramics seem to have little connection with these more northerly developments. If this is the case, then we must assume an independent invention of a very similar technology. The first Middle Atlantic pottery was also molded into shapes resembling the earlier stone bowl forms. The aplastic used was the same type of soft stone—indeed, in some cases, the earlier vessels were probably crushed and then mixed with the clay. Vessels were flat bottomed, often contained a heel, and occasionally had the impression of a mat or a basket on the base of the vessel (Figure 18). This series, known as Marcey Creek Plain after the type site in Arlington County, has been found in a number of areas in the Valley. At the Corral site, Marcey Creek pottery is found directly overlying the Susquehanna Broadspear occupation level. At a site excavated by James Madison University archeologists near Port

Republic, this steatite tempered pottery also represents the first ceramics in the sequence. Similar ceramics were also found at the earliest occupation levels at the Cabin Run excavations near Front Royal.

Sometime between 900-750 B.C., some significant changes had occurred in the ceramics. The molding or modeling technique was replaced by the coiling or annular ring approach. In this technique, only the base of the vessel is modeled; the remainder is built up by a series of coils. The coils were subsequently smoothed by using a wooden paddle on the exterior walls and a smooth stone on the interiors. The resultant vessel shape is cylindrical with a rounded or conoidal base. For some reason—it has been suggested that it may enhance heat retention—the wooden paddle was wrapped with cord, giving the exterior vessel wall a roughened appearance. This technique is called cord marking. The combination of some form of textile impressed surfaces, cylindrical vessels with pointed bases, and the coiling technique remain the hallmarks of prehistoric pottery until the end of the prehistoric period. The type which immediately succeeds Marcey Creek is known as Seldon Island Cordmarked, and is also steatite tempered. After 750 B.C., sand tempering comes into vogue and continues until the end of the Early Woodland (at 500 B.C.). This ware is known as Accokeek Cordmarked, and has a wide distribution over much of Maryland and Virginia. In the Pennsylvania area, crushed rock tempering replaces steatite during this time; this series is known as Vinette. It is not known in the Valley, although Vinette Cordmarked has been found in a rock shelter in Maryland near Harpers Ferry.

Pottery was a major addition to the lives of the prehistoric Indians. At first glance, it would seem, and it actually was, little different in function than stone bowls. By replacing stone bowls with fired clay vessels, the expense associated with procuring the stone bowls was dispensed with and solid wall containers passed from luxury items into being easily accessible to all. The clay for the type of earthenware made by the Indians was available virtually everywhere, and the sudden ubiquitousness of fired clay sherds as opposed to the comparative rarity of the stone bowl fragments is testimony to the accessibility of pottery. This is also a testimony to the fragility of the pottery manufactured by the Indians, but since it was so easily replaced there was no need to be particularly careful with it.

To the archeologist, pottery making is also an indication of seden-

Figure 19.

An Early Woodland hearth from the Corral site in the Archeological Park. Note the dark stain of the intrusive hearth, originating apparently in a slightly later occupation.

tism, and it is during the Early Woodland that we see some kind of residential permanence in the Valley for the first time. The best evidence for this comes from the Corral site at Thunderbird Museum. Just above the Susquehanna living floors are found Early Woodland pottery, hearths (Figure 19) of varying size, and storage pits. This latter, in particular, is an exciting bit of evidence, for pits show both a degree of residential permanence, development of a food storage technology, and the ability to generage sufficient surpluses to warrant digging pits for their storage. Food storage, such as drying and smoking meat, must have been around since Paleoindian times. Construction of underground caches for this purpose is an innovation of the Early Woodland, and it can be assumed that there were probably other new techniques in this area. More importantly was a mental outlook or a way of thinking that encouraged the generation and storage of surpluses.

Surpluses and storage were, of course, absolutely essential for sedentism. A number of archeologists are increasingly inclined to postulate the appearance of early forms of gardening, and squash and beans have been reported from archeological sites of this time period in eastern Tennessee, Kentucky, and Illinois. Our failure to find them at local sites may simply be a vagary of discovery. On the other hand, year-round single site living could have been accomplished simply through an intensification of the previously developed general foraging approach, in addition to some manipulation of local habitats in order to favor the growth of certain seed plants.

The scenario postulated for the Valley reveals small hamlets, clusters of few houses, with perhaps three or four households living on the natural levees immediately adjacent to the river. These sites, as in the past with floodplain sites, are located adjacent to a stream which originates in the adjacent uplands, crosses the bottomland, and empties into the river. At this juncture, the hot-dry climate had ameliorated somewhat, and periodic flooding, while not high enough to breach the levees, did create backwater swamps. In such a setting, concentrated efforts in the direction of maximizing local production, e.g. fish, mussels, turtles, and seeds, could have provided a considerable portion of the necessary food. The local resources would not have been totally sufficient and there would still have been a need for forays ("shopping parties," so to speak) to visit other localities such as the uplands and mountains. Unlike the practice in the Middle and Late Archaic, these would not have

been seasonal habitation localities but treks in which the hunting and/or gathering parties would have returned to the site with their respective "harvests" rather than consuming them where they were produced.

As mentioned in the Late Archaic chapter, the connections between the earlier populations and those of the Early Woodland are not altogether clear. In the Potomac Valley, the earliest ceramics, Marcey Creek, are part of the tradition of the evolved Susquehanna populations, a link which can be made in the projectile point styles, continued use of rhyolite, settlement pattern, and the use of steatite as the aplastic or temper for pottery. Steatite is also used as the tempering agent by the Valley populations, but there is little in the way of other connections. Small side notched points (Figure 20) not dissimilar to those in the Potomac Piedmont do occur, but small stemmed points are equally common. Rhyolite usage in our area is nonexistent and there is only one example of the same site being used more than once. All we can do is to repeat the possibility mentioned earlier: the Susquehanna migrants blended with the evolved Savannah River Late Archaic groups and drifted in a different stylistic direction. Some population interaction must have been maintained as indicated by the identity in ceramics. A pottery style, however, is a type of innovation that could have spread rapidly, independent of any strong interactions.

Figure 20.

Early Woodland points. On the left is a side-notched style, and, on the right, a small stemmed spearpoint.

Sedentism, surpluses, and pottery—all are Early Woodland innovations in the Valley. Over 8,000 years had passed since the earliest prehistoric Indians had moved into the Valley; since that time only minor new technological developments had appeared, with only one (Middle Archaic) definite and one (Early Archaic) possible episode of significant population growth. This is not a very remarkable set of changes when measured against the hectic pace of today's events, or even against the prehistory of other areas. The ways of life which were chosen and evolved were apparently quite successful; the growth we do see was additive, preparing our Valley groups for the next sub-period when some rather fundamental changes in the complexity of the cultural systems did occur.

7 The Middle Woodland

The Middle Woodland is a rather long sub-period beginning around 500 B.C. and terminating sometime just before A.D. 900. This over-long temporal unit has recently been sub-divided in our work into Middle Woodland I and II, with the former covering the temporal span from 500 B.C. to A.D. 200, while the latter runs the 700 years between A.D. 200-900.

The most striking element in Middle Woodland I in the Valley is the appearance of stone burial mounds. These single event tumuli are burial areas, piles of stone and earth, which cover one or more graves. The graves were excavated into the ground surface and filled with earth and river cobbles available from the immediate area. All of the graves were then capped with a mixture of earth and cobbles. In the one mound excavated in recent years, there were four graves, three of which had been filled in with rocks, while the fourth was simply covered with earth. It would appear that the three stone-filled graves were earlier than the earth-filled one. Perhaps a flat burial ground was kept clear, and individuals were successively interred here. The fact that the graves are between five and six feet long indicates the burials were made shortly after death with the body placed in the grave pit in the extended position. The three graves which were filled with rocks were probably left uncovered until the final interment, at which time all of the burials were covered with the mound. This may have represented the end of a ceremonial cycle, or the death of the final members of whatever type of social or political unit is represented. No skeletal material has survived because of the extreme soil acidity, although there is an unconfirmed report that a portion of a child's skeleton was removed from one mound.

The mounds tend to occur in clusters or concentrations and have

a fairly wide distribution, occurring from the South Fork of the Shenandoah through West Virginia with the major concentrations along the South Fork and the South Branch of the Potomac. In the intervening area, there are small concentrations as well as isolated mounds. Our current interpretation of these clusters is that they may represent actual socio-political as well as population centers. In this scenario, the dense mound clusters would represent major centers, while the lesser concentrations would correspond to minor centers. Implicit in this reconstruction is a socio-political ranking system with the major centers being the centers of some kind of larger polity grouping together with nearby clusters into a "confederation" of allied hamlets. This represents a major jump in social and political organization over the preceding periods, for there is no indication of any kind of larger body politic in earlier times other than neighboring hamlets interacting in loosely structured social activities.

The burial mounds themselves could either represent the burial grounds of the entire population, or the last earthly repositories of an elite portion of the social group. Our inclination is to lean toward the latter, since there do not seem to be sufficient mounds to account for 700 years of dying if the entire population were all treated the same at death. Social ranking would, of course, fit with territorial ranking, and the concept of a number of large political alliances would assume the existence of leaders. Again, if there was social ranking achieved either through individual attainment or by virtue of birth into a particular social set, this represents the first indications of any kind of social system based on differential positions of individuals in the society. The inclusion of artifacts made of non-local raw materials found in the graves, which could be both wealth items and symbolic manifestations of a person's position, also tends to support this interpretation.

The earliest and only C-14 date on Shenandoah Valley mounds comes from Thunderbird Ranch and places the earliest part of the mound phenomenon at 420 B.C. Artifacts from mounds excavated by the Smithsonian Institution in the late 19th and 20th centuries suggest, by comparison with dated artifacts from the Midwest, a terminal date of around A.D. 200. A number of the artifacts interred in the graves are of non-local material, such as Great Lakes copper, Ohio cherts, and Carolina slates. These represent only a minor component of the grave assemblages which, by and large, tend to

be made of local materials. This is in contrast to temporally coeval mounds in the Midwest, Southeast, and Northeast, where there are generally more items made of non-local than local materials.

What the attenuated Valley trade indicates is not clear. It is obvious, however, that the Valley participated in a widespread phenomenon at this time period and that there was a borrowing of ideas which were common at the time. It is also clear that the Valley populations didn't simply copy their neighbors, but took the constellation of ideas associated with trade and mound burial and worked these into their local social and ideological framework. The general consensus of archeologists is that the whole concept represents, at the minimum, nascent chiefdoms with a ranked social structure in which the idea of wealth (as measured in non-local items) was somehow interwoven with religious concepts which are not yet well understood. These ideas have their origin in the Late Archaic and Early Woodland cultures of the Midwest, Circum Great Lakes, and Northeastern Regions, and culminate in the complexes known as Ohio and Adena. The mounds in the Valley are the easternmost manifestation of this complex. In many respects they pale in comparison to other areas because of the paucity and comparative poverty of the grave goods. However, there are very few geographic areas that have so many mounds within such a small geographic area, nor do most other areas have as clear an indication of mound centers.

Life in Middle Woodland I thus underwent some considerable change. We can see that in the settlement pattern, or locations of occupation sites, there was a shift to the inner part of the floodplains. This began toward the end of the Early Woodland and culminated with the almost complete abandonment of the outer levees as living areas. Middle Woodland I sites are spatially focused on the poorly drained, backwater floodplain areas. It is presumed that they were focusing their subsistence efforts of the plants in these swamps and were quite likely doing some gardening as well or at least manipulating the plants in the swamps to ensure maximum natural harvests.

Hamlet arrangements still prevailed. The spatial distances between these hamlets is unknown, but it is assumed that they tended to cluster together somewhat, within the limits of the productivity of the environment. The mounds were located on the bluffs overlooking the rivers, generally above the areas of the broadest floodplain. The mounds were probably the repositories for the dead

of a number of allied hamlets, because it is unlikely any floodplain could support a dense enough population to account for upwards of sixteen mounds.

The ceramics from this time period are tempered with crushed rock. The shift from sand to crushed rock has been rather adequately traced at a site near Port Republic where the Early-Middle Woodland sequence shows a gradual increase of crushed rock tempering as opposed to sand. In Early Woodland, the only surface treatment known on the ceramics is cordmarking. By Middle Woodland I, net marking has been added. The addition of net-marking indicates interaction with the Piedmont and Coastal Plain peoples, as this is where that particular stylistic concept seems to originate.

The evolution of the type of social complexity that seems evident for Middle Woodland I is not something that is surprising. It is simply an exaggeration of trends that had begun in the Early Woodland. The idea of the acquisition of a surplus food supply began during this sub-period. All that is needed to reach the way of life inferred for Middle Woodland I is for someone or some set of individuals (the chief, chiefs, or leaders) to gain control of the surplus harvests, both for their own growth of power, but also, in terms of welfare for the populations under their aegis, for general redistribution in times of need. Add to this the influx of ideas associated with the social-ceremonial complex of trade and differential access to items of wealth probably with symbolic value that began in the Midwest and Northeast, and the crystallization of the Valley complex is understandable.

In most areas of the east, the burial mound system and all that it implies begins to fade. In the Valley, the end seems to come around A.D. 200, earlier than in some areas but later than in others. We have no real explanations for this. It is apparent that the values associated with the complex changed; the first things to be discarded are the mounds and the non-local items. This may be interpreted as representing a break-down in the centralization of power. Climatic shifts have been offered as a possible explanation; this may well be part of the reason. It is more likely that multiple causes were involved. Given the low level of the productive techniques of the prehistoric populations, it is a wonder that such a system could survive for 500-600 years, if indeed, it actually did.

The variables that tied the whole thing together probably lay in the social sphere. As long as there were social mechanisms to en-

sure that everyone conformed to the social norm and did his share, the system could survive. As leadership weakened, the entire system would begin to break down. Climate could have played an important role as cooler conditions would have placed a strain on the productive systems that had evolved, and no amount of leadership exhortations would have been able to overcome this.

Whatever the cause or causes, the system did change. Burial mounds and trade had disappeared by the beginning of Middle Woodland II. As far as we can tell at present, other facets of life probably went on much as before. People focused on backwater swamp resources, fished and hunted in the vicinity of the river, and went out on exploitative treks to distant places in order to procure resources which could be brought back to the hamlet. There is also some indication of a wider dispersal of hamlets, something that would be expected as the *raison d'etre* for the fact that close spheres of interaction diminished or disappeared altogether. Net marking on pottery drops out, to be replaced by fabric impression, an idea that seems to have originated in southwestern Virginia/ Tennessee.

Cordmarking still continued to be one of the techniques used to smooth out the coils on pottery. The absence of trade and the lack of any change for the next few hundred years both point to a situation of insularity, which supports the idea of increased localism in both social systems and technology. Undoubedly neighboring hamlets continued to interact, for the social necessities of man required this kind of interaction and mate exchange.

Thus, during the 1400 years or so of the Middle Woodland, the Valley witnessed a minor version of the "rise and fall of civilization." While the area saw no developments remotely similar to something on the order of Rome, there was indeed the rise of a more complex social order and the subsequent return to something less complex. Neither the earlier pattern nor the succeeding one can be viewed as "better"; rather, they represent the human adaptation of the time under natural/cultural circumstances then operating. At the end of the Middle Woodland, circumstances once again changed and the seemingly static conditions of Middle Woodland II were considerably altered, ushering in a period of quite rapid change unlike anything seen before in the Valley. Unfortunately for the prehistoric Valley Indian populations, the end of the next sub-period was also the end of their story.

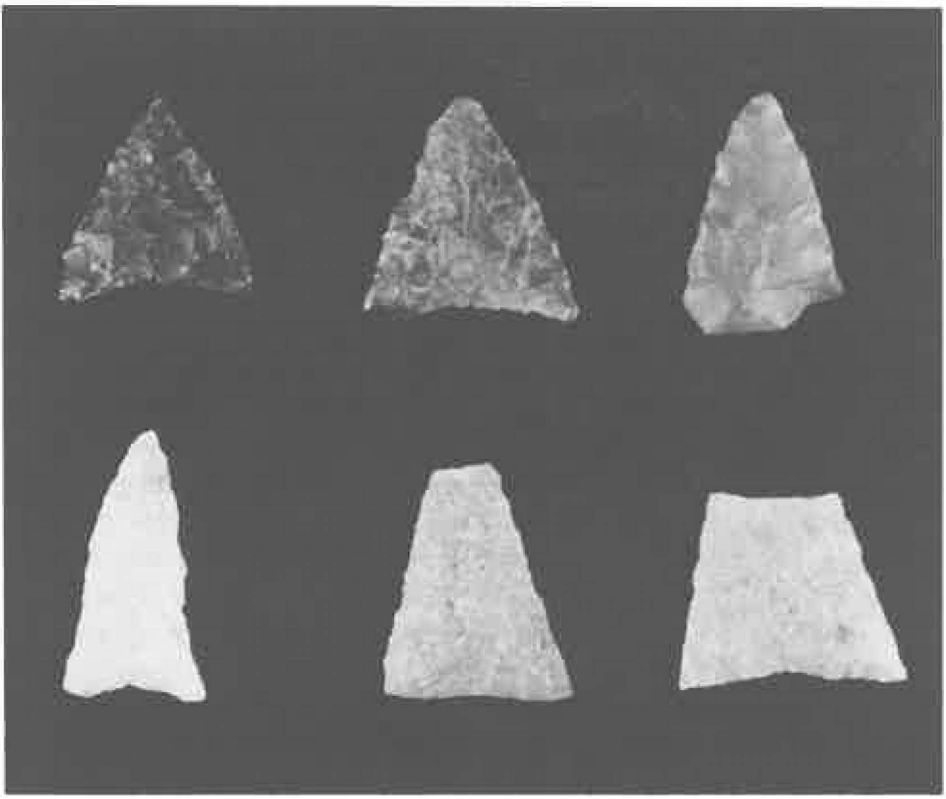


Figure 21.

Triangular projectile points - "arrowheads" - of the Late Woodland period.

8 The Late Woodland

Prior to the 1970's the Late Woodland sub-period was viewed as a single, rather static era covering the span from A.D. 900-1700. Today, however, we have, in the Valley, a picture of events leading from independent hamlet farming, to stockaded villages and inter-Indian hostilities, through population growth and migration, and, finally, to depopulation as a result of Indian-European fur trade and the depredations of the Iroquois. In short, we see a shift from peaceful farming to virtually complete disappearance in 800 years. Much of this new knowledge came from a single set of excavations, those associated with the construction of the Front Royal sewer line, which allowed viewing of previous sets of data in a new light. Also of importance were Thunderbird Museum excavations on U.S. Forest Service property near Hazard's Mill, on the South Fork of the Shenandoah, and a major salvage project undertaken by archeologists from James Madison University in the Gathright project, Bath County.

As seen now, the Late Woodland opens at around A.D. 900 with the arrival of agriculture based on the cultivation of corn, beans, and squash, along with other plants such as sunflower. With the advent of intensive plant cultivation as an element of the food production system, the settlements shifted from their Middle Woodland II locations in the inner floodplain back to the natural levees adjacent to the river where the Early Woodland populations had dwelt. Apparently the rationale behind this shift was a desire to locate themselves close to the best agricultural soils, which happened to be located on the levees where soils easily tilled with digging sticks were found. In understanding aboriginal agriculture techniques, it is necessary to realize that such methods were not conducive to high yields. The Indians tended to plant in hills of soil spaced three feet

apart; there was no concept of crop rotation, fertilizing, or the plow. As a result, yields were low, perhaps no more than 5-10 bushels per acre. A considerable percentage of the food base, then, had to continue to come from hunting, fishing, and gathering—all the old traditional food sources. Of equal importance, general foraging was also the only source for items such as hides, vegetable fibers, and bone for tools.

Another major innovation to be introduced at this time was the bow and arrow. This is represented in the archeology by the triangular projectile point (Figure 21). The invention of this new weapon, apparently originating in Mexico or the Southwest, spread across the entire continent with a rapidity equal to the notched point and the spear thrower. As a result, triangular points are virtually ubiquitous across all North American at this time. Why this weaponry should arrive at the same time as agriculture is unknown, though it is unlikely that there was any meaningful connection. The bow and arrow was also probably an important advance in food procurement technology, for it would have increased hunting efficiency.

While agriculture among the Valley's prehistoric Indians probably provided little more than an estimated 25% of the total food base, when added to the efficiency of their previous productive techniques, it was enough to generate considerable surpluses. At the beginning of the Late Woodland, while no specific figures are available, a generally low population density can be assumed. The number of people per square mile would, however, have been at a maximum with respect to the food production procurement technology and the environmental potential, as population invariably tends toward the maximum potential if there are no cultural checks on growth. When a new element is introduced into the system, this upsets the previous balance. If the added element increases the productive capacity, the population also responds with a growth spurt. Population growth initially tends to outstrip productivity, and ultimately levels out if other solutions are not made. Two solutions are generally available: 1) additional technological innovations or change in the social structure which further increase productivity; or 2) migration of a portion of the population out of the area.

The archeology of the Valley and surrounding areas to the South and Southwest demonstrates population growth after A.D. 1000. There is no evidence for technological or social change. As the increase in numbers began to strain the local resources, hamlets

would have begun a cycle of fissioning and multiplying. The initial expansion remained within the immediate local area, and movement was within the floodplain of the major river systems—the optimal agricultural and natural food production habitat. As the local area became overcrowded, expansion continued, again following the optimal zone; the ultimate result was that people who had long histories of living in restricted geographic areas found themselves in new areas. Given the absence of any evidence of hostilities prior to the post—A.D. 1400 period, these migrations could have only taken place into underpopulated regions. It is also obvious that ultimately these growing populations would sooner or later come into intimate contact with one another as the optimal zones began to fill. As long as peaceful conditions continued, interaction, coresidence, and ultimate assimilation or acculturation could be anticipated; and this is indeed what happened, at least until sometime after A.D. 1400. As the optimal areas became scarce both through population growth and over-exploitation, less optimal habitats were chosen, and recent studies have resulted in the discovery of these Late Woodland agricultural hamlets in zones where previous interpretations would not have predicted them to be located.

Four major documented population movements between A.D. 900 and 1400 affected the Valley: 1) Groups from the southwestern Virginia Piedmont moved north and west through the New and Roanoke River Valleys, then north along the eastern side of the Great Valley to the James River valley; 2) Groups moved up the central and western parts of the Great Valley from southwestern Virginia; 3) Eastward from the southern Shenandoah Valley and the northern James River drainage, groups traveled through the James River corridor into the western Piedmont; and 4) An eastward dispersal of people from the Potomac Piedmont traveled into the northern Shenandoah Valley. It is important to remember that none of the areas out of which these groups were moving was abandoned; what we are witnessing is an infilling of previously underpopulated space.

The main key to the tracing of these migrations lies in the geographic spread of ceramic traditions and the sites associated with these traditions. There are four ceramic series of importance. The first of these is known as Albemarle; this is the tradition resident in the Valley, recognizable by crushed rock tempering. The ceramic tradition which spreads north from southwestern Virginia is

known as Radford (or Page) and is characterized by pottery tempered with crushed limestone. Like Albemarle, Radford has a long history going back to the beginning of the Middle Woodland. Appearing in the Great Valley from the southwestern Piedmont is the sand tempered Dan River series. It, too, has antecedents in the Middle Woodland. The fourth series is known as Potomac Creek, and its Middle Woodland antecedents are the Potomac Piedmont manifestation of Albemarle. Another ceramic tradition which is all important for the post A.D. 1400 era will be discussed later in this chapter.

In discussing what happened during this period in the Shenandoah Valley, let us first focus on the excavations on the South Fork of the Shenandoah on Ivan Habron's farm near Cabin Run. This archeological sequence begins with a Late Woodland hamlet dating from between A.D. 900-1100. The community which was excavated in this project consisted of a minimum of four houses with associated activity areas (Figure 22). It is highly probable that all of these households were kin related and formed a cooperating economic unit. Because of the size, the community would have had to have been exogamous: that is, marriage partners would have been sought from other hamlets. This would have extended the social and kinship network to other hamlets; there may have been economic and ceremonial ties between these hamlets, but there is no evidence of any kind of larger polity such as a tribe. The distance between hamlets is an unknown, but a few miles would have been necessary because, despite the new plant cultivation of corn, beans, squash, etc., each hamlet would have found it necessary to exploit an area for some distance outside of the immediate hamlet boundaries, hunting game and gathering plants for food, fiber and wood. The remains from the storage pits, most of which were recycled into refuse pits after their useful life, show a considerable emphasis on general foraging.

The dominant ceramics, the Albemarle tradition, show little change from Middle Woodland II. Included in the debris from the

Figure 22. ►

Artist's conception of the A.D. 1100 hamlet at the Cabin Run site.

site, however, were traces of two distinct ceramic series. One of these was the Radford Series. From the work by James Madison University, we know this series was used by resident populations on the upper James by A.D. 1000-1100. The few sherds from Cabin Run indicate some form of contact—most likely trade. The other non-local series represented consisted of a sand/crushed rock-tempered pottery with zoned incised decoration (Figure 23). The closest analogs of this material are to be found to the north in the Pennsylvania area, or northeast in New Jersey/northern Delaware.

The significance of this trade is that the regional isolation of the last part of the Middle Woodland had come to an end. In the case of the appearance of limestone tempered ceramics, culture contact was with people who were literally at the Valley's backdoor. The presence of other non-local ceramics indicated contact with much more distant groups. Elsewhere, in the area between the headwaters of the South Fork and along the James, trade at this time, or shortly thereafter, included shell beads whose ultimate derivation

Figure 23.

Zone incised decoration on pottery from the Cabin Run site.

was the Atlantic Coast. These are commonly found in burials from this time period, in that area and across the Piedmont in the Dan River drainage.

After A.D. 1100, limestone tempered ceramics spread up the Shenandoah Valley to near its terminus at Harpers Ferry. At a number of sites reported from Clarke, Page, Shenandoah, and Warren Counties, this limestone-tempered ware and the local Albemarle series co-occur in relatively high percentages. This could be taken as an indication of two different periods of occupation at these sites. Belying this, however, is the cross-over between the two series of different attributes: in other words, there was borrowing between the different pottery traditions. This is the best archeological indication of enculturation we have and serves as a further demonstration of the peaceful co-existence and co-residence of the new arrivals and older residents. Similar events were taking place elsewhere, as for instance, in the south, where southern Virginia Piedmont groups had spread north to the James and were interacting with the remaining Radford populations.

As the enculturation process proceeded, the Albemarle tradition disappeared and a complete shift to the making of Radford style ceramics occurred. The last migration into the Shenandoah Valley prior to the post A.D. 1400 period was confined to the northern Valley, as represented archeologically by an intrusion of the Potomac Creek series. This may have been part of a settlement movement from the adjacent Piedmont.

Before moving to the events of the past A.D. 1400 period, there are other aspects of the lifeways of the Valley Indians of this time that need to be addressed. House types throughout the area were made of posts which were sharpened and driven into the ground (Figure 22). In all areas, the floor plan was approximately circular. In most of the Shenandoah Valley, these were approximately 15-20 feet in diameter. In the extreme southern Valley and the James River area, houses were almost double in size, and in Bath County, rather than being arranged in clusters, these larger houses were linearly spaced along the bluffs overlooking the floodplains. By about A.D. 1300, this house type had occurred as far north as Page County. After this, there seems to have been a shift to the smaller units. In some localities, especially in the James River Valley and the southeastern Piedmont, a "long house" approximately 60 feet long and 15 feet wide has been found in a number of hamlets in associa-

tion with the round houses. These were probably specialized structures such as "council houses".

In addition to differences in house types by region and ceramic area, funerary customs also differed. Throughout most of the Shenandoah Valley, burial appears to have been a community matter, which is in keeping with the postulated pattern of hamlet independence. The burials from Cabin Run, for instance, consisted of a single pit into which four bodies were placed in a single isolated grave. The group burial was composed of three bundle, or secondary burials, and one flexed, primary interment. The bundle burials were all incomplete skeletons and this, along with the bone bundling, indicates they were interred or defleshed at some other location prior to being buried in the pit. The primary burial was interred in the pit in a flexed or fetal position shortly after death. The suggestion here is that upon the death of the flexed individual, the others were brought to the pit for a mass burial ceremony. On a small scale, this resembles the Huron Ceremony of the Dead in which at a predetermined period, all the Hurons who had died were dug up and their skeletons transported to a single location where they were placed in a mass grave known as an ossuary. Similar practices were also known in the Virginia and Maryland Coastal Plain during the late prehistoric and historic periods. In these cases, we are talking about rather large populations and hundreds of skeletons. One of the results of the Huron type of cyclical burial was the periodic stressing of the "Huroness" of all these otherwise dispersed people. The Cabin Run example, at best, would have only reinforced the "oneness" of the community, all of which is another indication of the absence of any kind of larger geographical polity.

The individuals in the Cabin Run grave were all males between the ages of 18-34. The isolated grave at the site was that of a female, around 18 years of age, who was interred in the extended position. The different treatments by gender may be a reflection of the difference between the social position of males and females in the society, perhaps the patrilineal orientation of the kinship structure. But, on the other hand, this may simply be a sampling anomaly. The ages of the individuals at death is mute testimony to the short life span of these prehistoric populations.

Burial practices further south diverged considerably from the pattern just described in that a village burial area consisted of a single cemetary which, through continuous use, began to build up, forming

a mound. These mounds, which are accretional, bear no similarity to the true burial mounds of the early part of the Middle Woodland, for these are deliberately constructed tumuli. The Late Woodland "mounds" simply grew up over time through continuous use of the same plot of land. Accretional mounds occur over a wide area, including the headwaters of the South Fork, the James River Valley, and the western Piedmont of the James. Excavation of one of these mounds near Charlottesville by Thomas Jefferson represents one of the first examples of archeology in this country.

The mounds often contain several hundred bodies. In this respect, they are similar to the mass interment ossuaries of the Northeast and Virginia-Maryland Coastal Plain. Unlike the ossuaries, bodies in accretional mounds were all interred immediately after death. Since no villages or towns are known from this time, a logical assumption is that the accretional mounds were the final resting place for the dead from a number of hamlets. Again, there is a similarity with the ossuaries in the use of burial ritual and burial place as a mechanism for integrating otherwise dispersed social units. There was a major difference, of course, since interment in the accretional mounds was a continuous process rather than a periodic one: the cyclical ceremony of intergroup mourning would seem to have been omitted, unless there was periodic gathering for lamentation independent of the actual burial ceremony. While there are obviously some flaws in the interpretation, the accretional mounds would seem to indicate a unity of a number of dispersed hamlets within some as yet undefined territory, and a confereration of hamlets, or a tribe may have existed. The spatial distribution of the mounds suggests the possibility of at least eight of these larger polities. If this is indeed the case, it represents a different socio-political focus than the apparent hamlet centered orientation of the rest of the Shenandoah Valley.

The temporal range on accretional mounds is from A.D. 1050-1350, and they are associated with both limestone and crushed rock tempered pottery. Indeed, their occurrence in what approximates an early border zone between two different ceramic traditions (and, perhaps, different ethnic groups) suggests that the hypothesized condereracies were formed in response to the initial interaction between the differing groups. The disappearance of the mounds after A.D. 1350 indicates a major organizational restructuring—most likely a return to a hamlet centered focus. The only

burials which can be associated with this part of the Late Woodland come from a site in the Potomac Piedmont at the eastern edge of the Blue Ridge, near Point of Rocks, Maryland. At this site, which dates between A.D. 1400 and 1450, the dead were interred in individual graves in a space associated with the hamlet and reserved for burial or, in other words, a community cemetary. Burial was shortly after death, for all the skeletons were articulated, in the extended position. All but one of the individuals recovered represented the extremes of the life cycle: younger than two years and over sixty years. While the older populations are rather extreme, this type of mortality is more in keeping with what is known about early historic Indians: if a person made it beyond infancy, chances were he or she could expect to live to around forty or, in lesser percentages, even beyond.

Burial offerings in these burials are uncommon. At Cabin Run, the artifacts contained in direct association with burials consist of two pipes—one of clay, one of sandstone—a bone and a stone tool, and the incisor of a beaver (Figure 24). All of these artifacts were so close together that they were probably wrapped in skin and placed

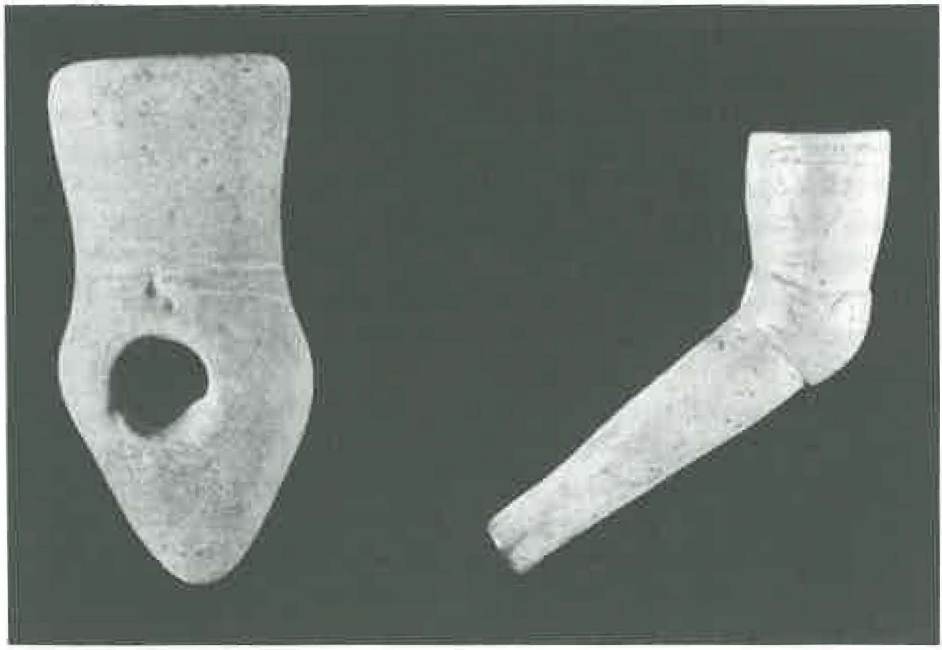


Figure 24.

Pipes recovered from the Cabin Run site.

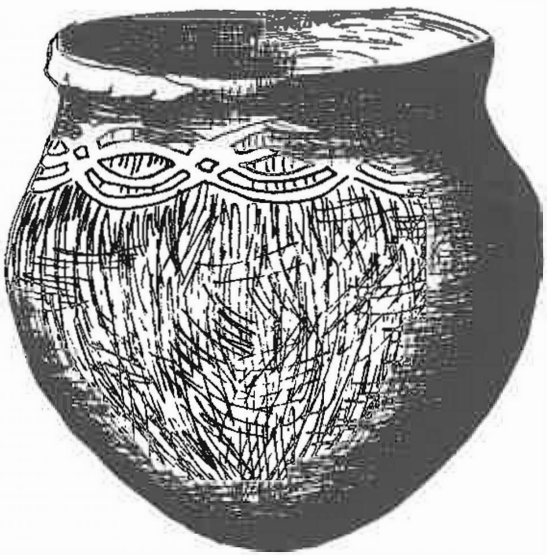


Figure 25.
Example of a Fort Ancient ceramic vessel.

in the grave as a bundle. Accretional mounds often have marine shell beads placed with the dead, most likely in the form of necklaces. More often than not, these are within the graves of infants and small children, again suggesting a cultural value associated with the young. The lack of any real evidence for differential wealth or treatment of the individuals is suggestive of relative social equality; the only differences which were likely to have existed would be those associated with a sexual division of labor and with age grades. In the Point of Rocks burial, the only artifacts were shell beads around the neck region of an 18 year old female. Again, no major social differences can be inferred.

The period after A.D. 1400 witnessed some fundamental changes. Events which led to these changes had their beginnings in the Ohio River Valley, beyond the Appalachians. There, as elsewhere, populations increased after A.D. 900-1000 as a result of the introduction of agriculture, and the same processes of migration took place. All indications are that this again represents the infilling of underpopulated areas. The local ceramic complex is known as Fort Ancient and consists of shell tempered ceramics with considerably different vessel forms than those extant in the Shenandoah Valley (Figure 25). The villages consisted of a cluster of houses arranged in a circle around a central plaza area. This complex begins

to spread eastward through the same processes of migration, enculturation and assimilation. For our concerns, two major routes of movement can be noted. One of these was through the New River corridor into the Great Valley. The second was along the Monongahela/Youghigheny drainage, and then along the branches of the Potomac. The first of these is manifested in a ceramic tradition which appears in eastern West Virginia and southwestern Virginia and is known as the New River series. Prior to A.D. 1400, there was considerable interaction between this new population and the resident Great Valley groups, and there was considerable interchange of ceramic attributes between the makers of all the ceramic series. The northernmost series in West Virginia and western Pennsylvania is known as the Monongahela and in the Shenandoah and Potomac Valleys as Keyser.

There is every indication that prior to A.D. 1400 peaceful interaction was the norm. After that, relationships between these various groups, especially in the northern area, broke down and inter-group hostilities prevailed. This can be documented in a number of ways. For instance, there is virtually no exchange of ceramic stylistic attributes between the Monongahela-Keyser series and the Shenandoah Valley limestone tempered ceramic complex. This latter, as well as the Potomac Creek series, virtually disappears from the Valley and the Potomac Piedmont west of the Monocacy, a contraction that can only be linked to a retreat of resident Indian populations from areas which they formerly inhabited. Another important change is the loss of the dispersed hamlet settlement pattern, which was subsequently replaced by the concentration of populations in villages. A more significant new element reflecting the nature of the change in relationships is the appearance of stockades or fortified villages.

The primary cause of this set of changes now appears to have been a major climatic shift. Between A.D. 1350-1750, much of the northern half of the northern hemisphere was in a cool and dry climatic regime known as the Little Ice Age. This had a significant impact on the prehistoric Indians, for the cool, dry climate would have lowered agricultural productivity. Without a consequent population loss, alternative strategies were necessitated, and one area of the subsistence system which would have been enhanced was that of hunting. The climate of the time reduced the vegetation cover, but increased open forests; the subsequent increase in edge

areas would have resulted in a rapid growth of deer and elk, enabling the hunting aspect of the subsistence cycle to compensate for the loss of agricultural productivity. This increase in hunting can be documented by the presence of a large number of non-floodplain sites for this time period, sites with a specialized hunting tool kit inventory. By turning to hunting, however, each local community would have been forced to increase the territory it exploited. This would have inevitably led to competition and territorial disputes. The situation would not have been immediately stressful for hamlet populations, since each community did not have a large number of people. Village dwellers, on the other hand, would have needed a tremendous area and would have been forced to move more often because they would ecologically exhaust their use area considerably faster. This seems to have been the basic source of conflict; of course, as external stresses grew and people were forced into villages for protection, resource competition and stress would have multiplied.

Inter-group, or inter-tribal warfare, was endemic throughout much of the Middle Atlantic by A.D. 1500. This was particularly true in the more northerly areas such as the Shenandoah Valley, but no areas were entirely free of it. In the southern portion of the Great Valley, the warfare seems to have been directed as much against other communities as it was against different ethnic groups, as indicated by the continuance of some co-existence of different ceramic traditions in the same sites. This may also have reflected a refugee situation. In the Shenandoah Valley, if we can link the Keyser and Radford-Page ceramic series with different ethnic groups, the situation was one of inter-ethnic hostility. By A.D. 1500, the sole proprietors of the Shenandoah Valley are those groups associated with the shell tempered Keyser series.

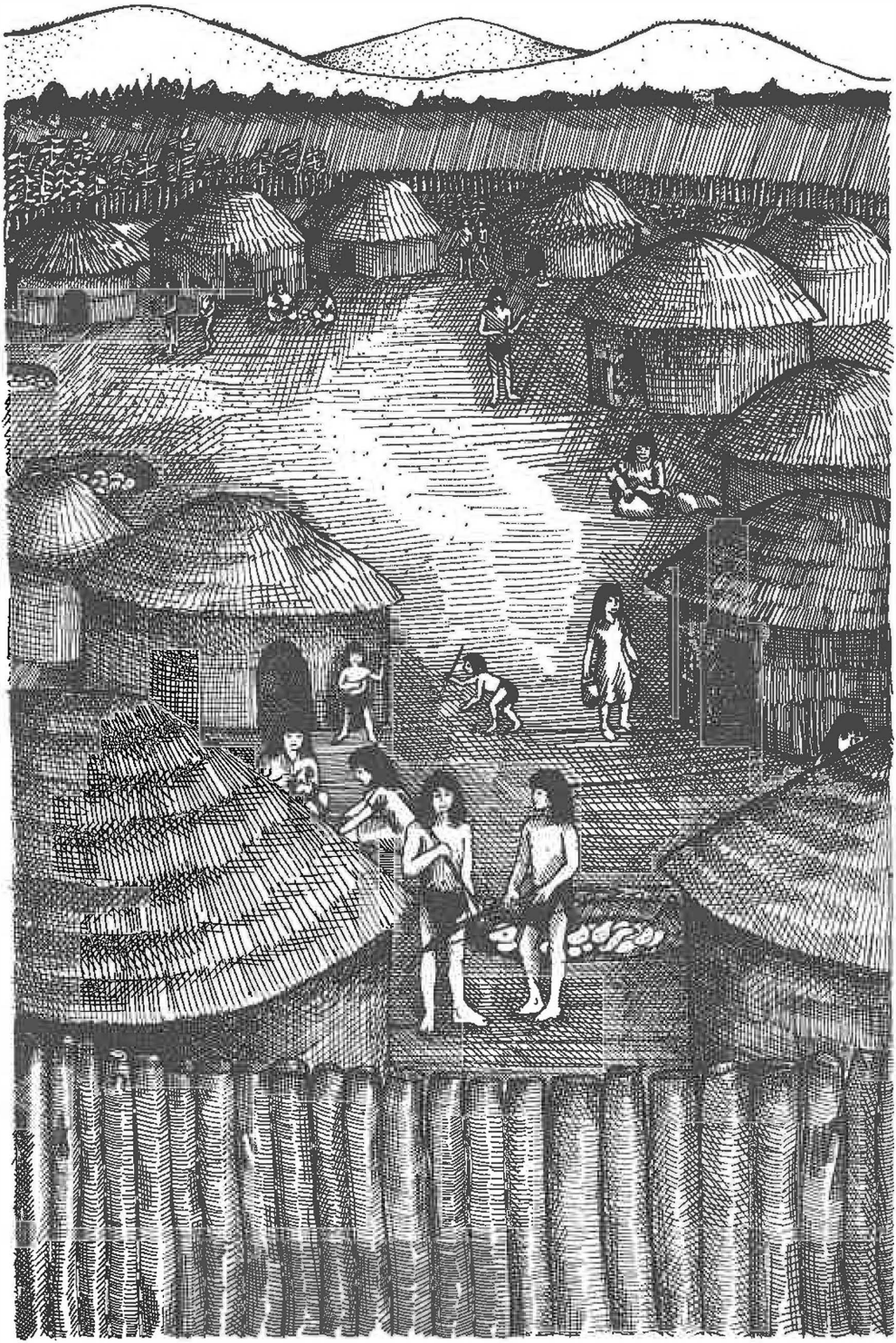
There was yet one more external stress to come. In the Northeast and along portions of the east coast, the fur trade between Indians and Europeans came into full swing. By dint of various circumstances, certain Indian groups occupied favorable positions in this trade and assumed control over it. The earliest group to achieve pre-eminence and to influence the Shenandoah Valley populations was the Susquehannocks. Sometime between A.D. 1550 and their meeting with Capt. John Smith in A.D. 1608, these Iroquoian related peoples were living in the lower Susquehanna Valley and had assumed ascendancy and virtual suzerainity over a

large area that extends westward to include much of the Potomac. After their defeat, and the destruction of the Huron and adjacent tribes in A.D. 1648, the League of the Iroquois became the dominant force. They continued a campaign against all western Indians, culminating in their total domination of the area east of the Ohio and north of the Potomac. By the 1680's the Susquehannocks were no longer a factor, and the Iroquois had virtually total control. One of the policies of the League of the Iroquois was the depopulation of large areas with the reversion of these areas to hunting territories, primarily for furs and deer hides to trade to the English and French. One of the areas which was depopulated was the Shenandoah Valley; after A.D. 1700 the Valley became a "no man's land."

The Late Woodland Keyser phase sites are villages. Some of them are stockaded (Figure 26), surrounded by a defensive wall of posts. In rare instances, bastions or watch towers have been reported. Within the palisade lines are the houses and work areas. Houses are circular or oval, generally 15-20 feet in diameter, and are arranged in a circular pattern. In the center of the village is the plaza, assumed to be a public area. Storage pits vary in size, some quite large, six feet across and 8-10 feet deep. This is consistent with the larger residential population and the need to generate greater surpluses. If we assume 6-10 people per house and use a typical village pattern of around 20 houses, the entire community would have consisted of between 120-200 people. Some villages were probably larger, others smaller. In association with the villages are scattered farmsteads, homesites for extra-village populations. We have no information on the relationships between communities and no hint whatsoever of any larger amalgamation of villages into a larger polity. The behavorial norm was probably one of village independence with neighboring villages acting together in response to external pressure. At best, this would have been a situation alliance or confederacy. This lack of a more structured organization may explain, in part, why, ultimately, they were so easily driven out by the Iroquois. Trade was still taking place, as indicated by the fact that some

Figure 26. ►

A Late Woodland stockaged village dating from A.D. 1600.



of these sites have yielded beads made of marine shells. Burial was in pits dug especially for that purpose or in abandoned storage-refuse pits. Burials occur randomly within the confines of the stockade, not in any designated area. Grave goods are still not common, with marine shell beads comprising the most frequent offering. Trade in this item apparently continued even during the peak of inter-group hostilities.

Archeologists are often asked for the tribal name of the Indians associated with the artifacts or sites being excavated. For those of us who work in the Shenandoah Valley, this question must remain unanswered, for by the time the first Europeans arrive in the Valley, the only Indians reported are those simply passing through on their way to someplace else, or are the raiders of the French and Indian War period. Doing some educated guessing, the Indians around the James, New and Roanoke Rivers on the eastern side of the Valley who manufactured pottery within the Dan River series were most likely Eastern Siouans. Eastern Siouan is a linguistic classification, not an ethnic one; Tutelo and Saponi are possible "tribal" groups within this language group. The last Indians in the Valley, those associated with the shell-tempered Keyser series, may have belonged to the Central Algonquian linguistic stock. In a vague way they could be called "Shawnee" if that term is not restricted to a specific Shawnee entity. The limestone-tempered Radford-Page ware may also have been the product of Central Algonquians of unknown tribal affiliation. Potomac Creek pottery in the area around Washington, D.C. and adjacent Maryland and Virginia was definitely associated with the Piscataway, Conoy, Anacostia, and related Indian groups. These are Coastal Algonquians who are linguistically kin to the Nanticoke and Powhatan and, at some quite remote period in time, the Central Algonquians. Earlier than that, tribal associations had become even more tenuous.

9 The Historic Period

Our interest here is only in the Indians, for the history of the Shenandoah Valley has been dealt with from various points of view by a number of different people. As we saw in the previous chapter the Indians were gone from the Valley by A.D. 1700. Batts and Fallam, two early explorers who set out from Carolina in an expedition through the Roanoke area encountered a small group of Eastern Siouan Indians who have been interpreted to be the Saponi or Tutelo. Later in the historic period, these groups appear on the eastern side of the Blue Ridge and southern Virginia and North Carolina. John Lederer reported visiting Indian groups in the Valley in his sojorns of A.D. 1669 and 1670. When Luis Michel explored the Valley, however, in A.D. 1705 he reported seeing no Indians. As the Euroamericans moved into the area in A.D. 1725, there were no resident Indians, but only groups traveling through in small-sized parties. Before A.D. 1750, Shawnee are reported as living just west of Winchester, but it is probable these were simply camp sites, as the Shawnee were highly mobile at this time and desperately seeking a place to settle. A Susquehannock village is reported on the upper Potomac near Hancock, but this had to have dated before A.D. 1680. Iroquoian type artifacts have been reported from various rock shelters along the Potomac and the Iroquoians, along with the Cherokee, were reported in early histories as moving through the Valley. A delegation from the League of the Iroquois attended a treaty meeting in Winchester around A.D. 1750. Groups of Tuscarora moved through the area, primarily to the east, and after their early 18th century defeat in North Carolina, ultimately joined the League of the Iroquois in New York.

By and large, before 1750, the Indians who were in the Valley were a sad lot of disoriented people, uprooted by the Europeans

and more powerful Indian tribes and decimated by disease. Initially there were friendly relationships with the European settlers in the Valley, but this, in time, changed. The change was brought about by a deterioration in the relationships between the English and French and the final settlement of their respective territorial claims in North America. The Indian allies of the French, coming from beyond the Appalachians in the Ohio Valley, began to conduct raids on the Valley settlers. This period between A.D. 1750 and 1765 is known as the French and Indian War. If you read French history, it might be known as the English and Indian War, for both sides had their allies.

There were a number of raids in the Valley; some of these are noted by historic markers. The devastation which was wrought in the area is discussed in a number of the early Valley history books, when many of the events were still fresh in the minds of some of the descendants. In 1976, at a road being cut for a new development within Shenandoah Farms, Thunderbird Museum archeologists excavated a site that provided the first and, to date, only glimpse at the traces of an Indian raiding party of this time. Known as the Conrad Cemetary site (because of the presence of a cemetary containing the remains of the Conrad family), the site consisted of a large hearth (Figure 27). Included in this hearth were a variety of historic period artifacts dating from the 1750's, and the food remains of hunting activity. The European derived artifacts consisted of a melange of items such as nails, a button and a thimble, pipe stems and bowls (of kaolin clay), salt glazed stoneware fragments, broken wine bottles, a metal cutlery handle and a portion of an iron snaffle bit, and fragments of ceramics such as creamware, spongeware, and pearlware (Figure 28). The aboriginal artifacts showed that there had not been major changes in the aboriginal technology. The association of shell-tempered pottery with this site indicates the Indians in the party were Central Algonquians—if not Shawnee, then Shawnee related. They may well have been descendants of some of the populations who had once claimed the Shenandoah Valley as their home.

This was, literally, the last gasp of the Indians in the Valley. After almost 12,000 years of history, they are heard from no more. In a sense this is sad, yet the history of the world is replete with records of one group ousting another, and the roots of any peoples, whether English, German, Persian, or Chinese, are hardly older

Figure 27.

The large hearth at the Conrad Cemetary site which gave evidence of the activities of an Indian raiding party dating to about 1750 A.D.

than a few thousand years at the most. Who knows what may happen in the future? The weapons of today's armament could completely depopulate an entire country in a few days. Who would then colonize it?

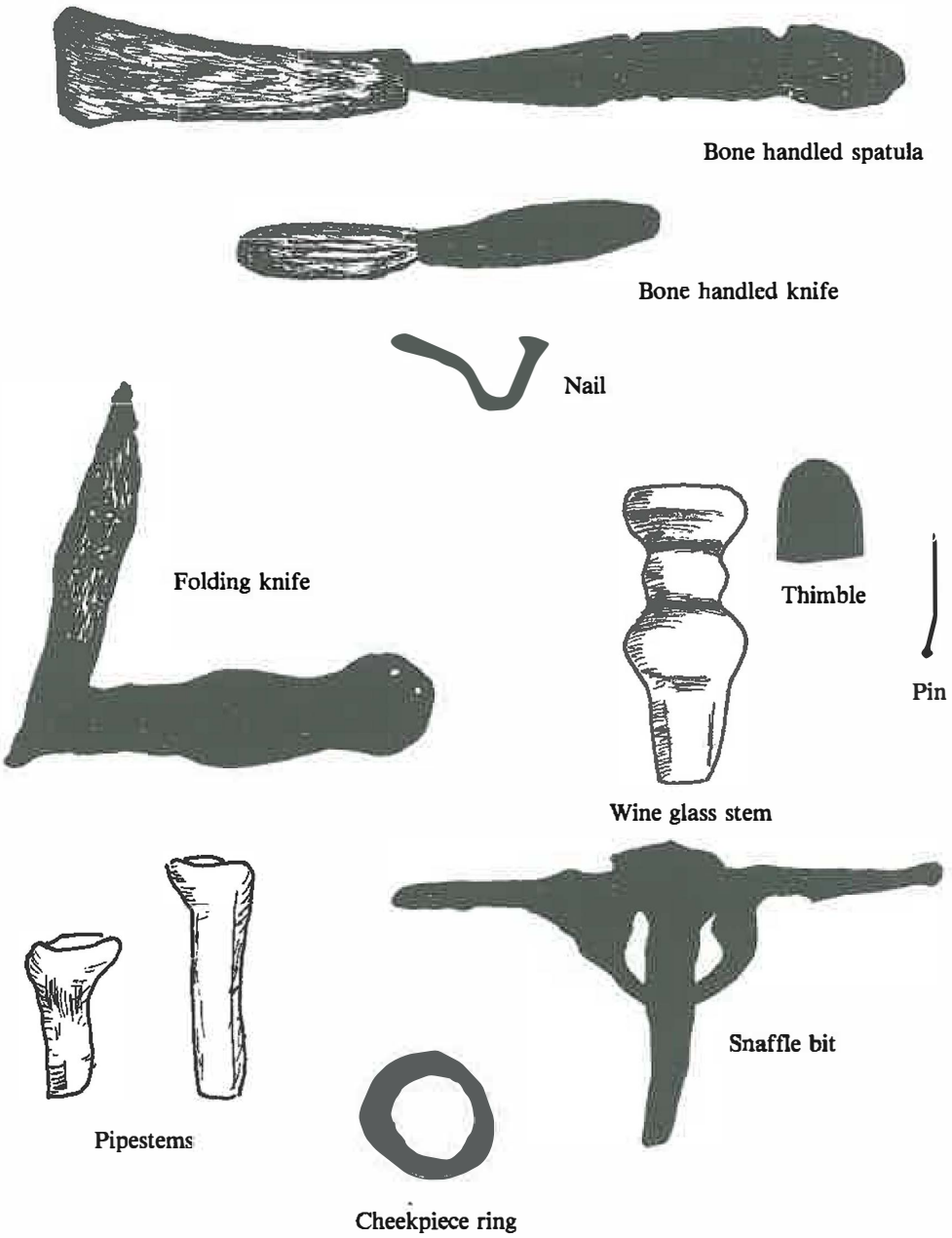


Figure 28. *Historic artifacts from the Conrad Cemetary site.*

Epilogue

In these pages, we have traced the history of the Indians of the Shenandoah Valley from a point in time over 11,000 years ago, when they became the first people to see its panoramic beauty, to the period of the French and Indian War when they vented their rage on those whom they considered to be usurpers of their land. In many ways their history is the history of much of mankind. From a beginning which saw them as mobile hunters, to a time when they tilled the soil, to the final end, one of primitive but effective warfare. The sole traces of their existence are not monuments and buildings, but the flotsam and jetsam of a way of life practiced now only in the most remote corners of the world: broken pieces of pottery, arrowheads, stone axes, modified flakes of stone, pieces of broken and burned bone, stains in the soil, and the occasional burial mound. Not much of a legacy for so long a period of time.

The recounting of most of their story is left to an interested few: the archeologist with his shovels, trowels, dental picks, brushes, bags and cameras, if he is honest, realizes that his view of these people is but a small window into the past. As much as the archeologist knows, there is an almost infinite accounting that remains untallied. Facts are really only clues, and archeology becomes one of the greatest detective games of all times. Sherlock Holmes in a pith helmet, the gadfly hero in search of the Lost Ark, an absent minded old man in a dusty museum, a skinny bespectacled woman in mufti, are all excellent stereotypes—as is the concept of the "Noble Savage" living in harmony with nature. Unfortunately, there is hardly a grain of truth in any of these. The archeologists are men and women from diverse backgrounds who really have only one thing in common, an abiding interest in the past and an increasingly scientific approach to their field. The "Noble Savage" was no better, or

worse, than the average person of today or yesterday. Like everybody, he struggled to live, had good times and bad times, worked some and played some, placed faith in his belief system, and ultimately grew old and died.

The Indian in the Valley is no more, but the archeological research will continue. As we have admitted, there is much to be learned and, as the data accumulates, the interpretations presented in this booklet will change and perhaps become outdated. The biggest information gaps by time period are in the Middle Archaic, Late Archaic, and Middle Woodland. There are many areas of the Valley which remain unstudied, and other areas which are understudied. Information concerning population, social and political organization and belief systems is limited. The research that will be conducted in the next few years will go toward filling these gaps so than an increasingly complete picture can be developed.

The work of the Museum is essential in this task, because it is the primary organization involved in investigating the archeology of the Shenandoah Valley. It is hoped that if you have not visited the Museum that you will do so, because it cannot exist without your support. While it is a private organization, it really belongs to the people of the Valley. The staff are simply the people who gather and interpret the data, and tell the story, and a story has no significance without an audience to listen and appreciate it.