

PALEOINDIAN PERIOD IN PENNSYLVANIA

I. Introduction

The Paleoindian Period in North America begins around 16,000 years ago when humans first entered into the New World at the close of the last Ice Age and ends around 10,000 years ago when the climate began to warm quickly.

The Ice Age or Pleistocene Epoch was characterized by a slight drop in temperature (7-10 degrees) and a slight increase in precipitation (5-7 inches per year). The increasing snowfall caused the glaciers to grow and cover the northern latitudes of Europe, Asia, all of Canada and large portions of the United States. The oceans increased in depth by nearly 300 feet because so much of the earth's water was locked up in the glaciers. Much of the Bering Sea, which separates Siberia from Alaska, is shallow and therefore this area became dry land allowing travel between continents. (*See Land Bridge Beringia animation*).

The Pleistocene was also characterized by a significant expansion of grasslands at the expense of forested regions. The animals that inhabited the grasslands were characterized by the term megafauna. Mammoth, mastodon, bison, horse, camel, peccary, caribou and musk-ox roamed in large herds along with saber-toothed tiger, short faced bear, wolves and giant woolly beaver. In Pennsylvania, a northern third of the state was covered by glaciers until 13,000 years ago. After the glaciers retreated from Pennsylvania a mixture of coniferous forests and grassland existed across the state.

II. Humans enter North America.

In the 20th century most archaeologists believed that Paleoindians migrated into the New World across a strip of land that connected Siberia with Alaska and traveled south through an ice-free corridor that opened between glacial ice sheets. But recent evidence from North and South America suggests multiple migrations occurred at different times. Some people may have traveled from the Old World in watercraft taking a Pacific coastal route. Others may have crossed the land bridge later just as the ice-free corridor opened.

Archaeologists agree that by 11,500 years ago humans had entered the New World in relatively large numbers. However, there are a very small number of sites in North America, which date prior to that time. A few sites in South America, the Rocky Mountains and one site in Pennsylvania, the Meadowcroft Rock Shelter, are believed to date between 15,000 and 30,000 years ago. These dates suggest that humans were in North America substantially longer than 11,500 years ago, but not all archaeologists agree with these dates and more data is necessary to establish the correct time frame.

III. The Meadowcroft Site

The Meadowcroft site is located in Washington County. Assuming the Meadowcroft site is accurately dated at 16,000 years ago, it represents the oldest continuously occupied site in the United States. Functionally, it served as a series of hunting camps used by relatively small bands of Native Americans hunting a variety of small game. The region appears to have been more forested than expected. There was no evidence of hunting megafauna. There were no obviously special tool types or distinctive projectile point styles and the technology seems to have been oriented towards a general foraging economy.

Based on a very small number of sites, it would appear that the initial human population in North America was very small and possibly organized in nuclear family bands. The Meadowcroft Rockshelter is the only site recorded in Pennsylvania from this time period and it suggests that Pennsylvania and the northeast in general were rarely occupied. Although large herds of megafauna roamed the western Great Plains and northeastern United States, the southeastern United States probably contained the greatest variety of seeds, nuts, small game, migratory waterfowl and megafauna adapting to a warmer forest. The environment was very plentiful for small bands of hunters and gatherers and human populations probably found food and shelter easily. The sites from the initial period of human occupation are difficult to identify because they did not produce any distinctive technological developments and their population was very low.

IV. The First Fluted Point "The Clovis Point" Changes the Paleoindian Peoples

This situation changed radically around 11,000 years ago as the glaciers began to melt on their final retreat north. The land became predominantly forests. This, coupled with increasing populations through natural means and migrations, created somewhat of a crisis among human populations. A new technological invention was created to increase success in hunting. The invention was called the fluted point. This is a style of projectile point that is entirely unique to the New World. There were eventually several varieties of fluted points and the oldest are called Clovis points. The purpose of the flute is not exactly known but it is believed that it made easier the hafting of the stone spear point to a wooden or bone shaft. It is believed that these were used as thrusting spears, similar to a bayonet, rather than as a throwing spear. Imagine killing a mammoth or a bison with a bayonet! In the west where Pleistocene megafauna bones are more frequently preserved due to current drier conditions, fluted points have been found at "kill sites" where they are mixed with the bones of mammoth, mastodon, horse, camel, bison and peccary. Fluted points are found all over the United States and Mexico.

Our knowledge of Paleoindian peoples in Pennsylvania is based on approximately 304 archaeological sites from this time period recorded in the Pennsylvania Archaeological Site

Survey files (PASS) out of a total of over 22,000 sites for all periods. The majority of these are represented by a single fluted point and a very small number of tools and waste flakes from the production of stone tools. Over eighty percent of the Paleoindian sites are located along major rivers in Pennsylvania. Travel was probably easier along the flat river valleys and although there is no evidence for canoes, there is a strong probability they were used. It is assumed that these people traveled along the same river valleys each year, searching for the necessary resources. This annual pattern of movements is called their seasonal round.

Dauphin County resulted in cervid blood, which would be deer, elk, moose or caribou. Along with the environmental reconstruction and a very small number of faunal remains from other sites in the East, it is most likely that Paleoindian hunters in the Northeast were hunting modern animals such as caribou, moose or elk or species which do not currently exist in Pennsylvania. Fish bones and hackberry were also recovered from the Shawnee Minisink site in Monroe County. This site suggests that a variety of plant and animal foods were utilized. Contrary to later time periods, it is felt that Clovis point using Paleoindians were primarily hunters rather than gatherers.

V. Making High Quality Fluted Points Caused Paleoindian People to Conduct Seasonal Rounds.

It is important for nomadic stone tool using people to carry as little raw material as necessary. This is a significant problem for the production of fluted points. The fluted point was probably the most difficult projectile point ever made and although these people were superb flint knappers, they undoubtedly broke more spear points in production than other cultures. The process of creating the flute can only be performed using the highest quality lithic (stone) material.

Choosing the highest quality material reduced the number of tools broken in production and also the number of times that a tool needed to be resharpened. However, it required a seasonal round centered on one or more high quality bedrock sources. Much of the Paleoindian research conducted in the east focuses on analyzing the movements of Paleoindian bands based on the source of the lithic material being used. The main bedrock sources for high quality lithic material used in Pennsylvania are the jasper quarries near Allentown, jasper outcrops in northern Virginia and Delaware, Coxsackie chert in eastern New York, Onondaga chert in western New York and Coshocton chert from Ohio. The use of this high quality material resulted in a very efficient stone kit but it required regular movements to the quarry to replenish their supply of stone.

VI. Seasonal Rounds Caused Different Settlement Patterns in Pennsylvania

In Pennsylvania, this resulted in at least two different settlement patterns, which were determined by (1) the location of high quality lithic materials and (2) the types of plants

and animals available to the Paleoindian peoples. In the southeastern part of the state, the sites are small dominated by jasper tools and there was probably a variety of plants and animals. The settlement pattern focused on moving over relatively short distances between the jasper quarries in Pennsylvania, Virginia and Delaware. They lived in small extended families consisting of less than 25 individuals. They occasionally met with bands from adjacent regions for large social/religious/marriage ceremonies.

In the central portion of the state, there was much greater use of the Onondaga and Coxsackie cherts of New York. Some of the sites are very large. This suggests that the annual movements or seasonal round was much larger and the basic band size was also larger. The Shoop site in Dauphin County is the largest Paleoindian site in the east and it contains over 140 fluted points and hundreds of tools for butchering animals and end scrapers for processing hides. The vast majority of the stone tools are from the Onondaga chert quarry. There are several other sites in the region such as Warrior Spring in Lycoming County, Pocono Lake in Monroe County, and Poirier in Northampton County. In the Ohio Valley of western Pennsylvania, there are no large sites and based on the lithic material, the size of the annual round is unclear. The lithic material found at Paleoindian sites is a mixture of Onondaga chert, Coshocton chert and high quality lithic materials.

VII. Paleoindian Social Organization and Religion

The social organization or religion of the Paleoindians is not well understood and there is little data to describe either of these systems. Many Siberian and northern Native American groups are organized into small patrilineal egalitarian bands. These groups are essentially a group of male cousins and their families who operate on the basis of group consensus. There is little material wealth and food and tools are equally shared. This type of organization may have been found in Paleoindian groups but there is little data on this subject.

VIII. The Paleoindian Period Ends And Early Archaic Period Begins

The use of fluted points ends around 10,000 years ago and some argue that this is also the end of Paleoindian cultural tradition. The mixed coniferous and deciduous forest is replaced by closed spruce/pine forest. This type of vegetation does not contain the same variety of food resources and there is some evidence that human populations actually decreased. This new cultural period is defined as the Early Archaic and it almost certainly represents the same people using slightly different technology. They continue to use the high quality lithic material and travel to specific quarries, but they also frequently used lesser quality local material suggesting their seasonal round was somewhat smaller. Axes, adzes and seed grinding stones were added to the tool kit reflecting a more forested environment. The environment continued to change during the Early Archaic Period until

around 8,000 years ago when essentially modern conditions were reached. The succeeding Middle Archaic Period is associated with a modern forest and represents the first significant cultural change, a substantial population increase and possibly a new group of people.

IX. Conclusion

The archaeology of the Paleoindian Period is very significant to understanding all subsequent Native American cultural development. It is also one of the only opportunities archaeologists have for examining patterns of growth and exploitation of a small stone-age population as they expand onto a new continent. Pennsylvania contains some of the earliest evidence for human occupation in North America and also the largest Paleoindian sites in the east. Using the data from these sites, we have the opportunity to make an important contribution to our understanding of some very significant anthropological issues.