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► November (1)

► September (2)

► August (1)

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► April (3)

▼ March (2)

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## NEW JERSEY ARCHAEOLOGICAL TIMELINE.doc

### NEW JERSEY ARCHAEOLOGICAL TIMELINE

#### Paleo-Indian Period 12,000 B.C. – 8,000 B.C.

First human presence in New Jersey 10,000 – 8,000 years ago, possibly as early as 25,000 years ago arrived across land bridge (Bering Strait) between Siberia and Alaska during the Pleistocene Epoch (the last Ice Age) migrated across North America Link to illustration p. 49 3.5 followed game animals such as woolly mammoth, musk-ox, bison, horse, bear, caribou, and a variety of lesser animals.

#### CLIMATIC CONDITIONS:

- \* Cool and moist, close to glaciers

#### ENVIRONMENTAL CONDITIONS:

- \* Park tundra, mosaic of boreal and deciduous forests grasslands- spruce/pine, park tundra vegetation

#### GEOLOGY:

- \* Coast of New Jersey and Delaware extended approximately 60 to 80 miles east of the present shoreline, ocean water contained in glaciers causing drop in sea level Link to map p.51 3.6
- \* exposed broad and flat continental shelf was cut by deep river channels
- \* melting ice formed lakes such as Lake Hackensack in New Jersey
- \* branching streams, swampy floodplains, marshes, and meadows
- \* Melting ice formed subterranean ice wedges resulting in wet depressions, frost-thaw basins attractive to both humans and animals.

#### HUMAN ACTIVITIES:

- \* Hunting, fishing, gathering Link to illustration p. 67 3.16

#### TOOLS AND EQUIPMENT:

- \* Fluted spearpoints on spears shafts, knives, scrapers Link to illustrations p. 70 3.17

#### TYPES OF PALEO-INDIAN SITES:

- \* Caves and rockshelters found in rocky, hilly, mountainous regions
- \* open-air sites

#### PALEO-INDIAN SITES IN NEW JERSEY:

On some Paleo-Indian sites, archaeologists are able to identify “hot spots,” consisting of artifacts and lithic scatters that can be plotted and used to reveal settlement patterns and activity areas.

A Paleo-Indian workshop site was identified on a dune-like terrace on the Outer Coastal Plain of New Jersey. A fluted point was found on Island Beach State Park, Ocean County. The point was found on the beach between the ocean and the dune ridge that parallels Route 35 (Shore Road). Read a full account of this find in the ASNJ Bulletin. Link to Bulletin No. 50 1995

Analysis of lithic (stone) material using a process called X-ray fluorescence (XRF) was carried out on a sample of lithic material from two Paleo-Indian sites to determine where the stone used to make Paleo-Indian tools originated. One site was located adjacent to a dry tributary of Kettle Creek in the Toms River drainage. This site appeared to be a small campsite with five lithic concentrations. Food processing and tool refining may have taken place here.

The second site from which lithic material was analyzed occupies an ancient high terrace above extensive tidal wetlands of Crosswicks Creek and the Delaware River. Artifacts recovered from this site are clearly related to an early occupation and consisted of a Clovis Point and four channel flakes (by-products of Clovis point production) fashioned from jasper. The results of the X-ray fluorescence study showed that the material used to make the points originated from quarry sites (places where the stone material originated) within 200 miles of the site. This analysis also revealed that some of the archaeological specimens could not be positively assigned to any previously identified quarry sites. Read a full account of these finds in the ASNJ Bulletin. Link to Bulletin No. 50 1995

#### Archaic Period ca. 8000 B.C. - ca. 1000 B.C.

There is no typical Archaic pattern encompassing all of North America, rather there were specialized adjustments to conditions and natural resources within individual environments such as the Desert Archaic of the Great Basin and Southwest, Shell Mound Archaic of the lower Mississippi Valley, Lake Archaic of the Great Lakes Area, Maritime Archaic of Maine and eastern Canada, and the Woodland Archaic of the eastern United States.

In the eastern woodlands, which is the region that New Jersey is part of, archaeologists have divided this long era into four subperiods: Early Archaic (ca. 8000-6000 B.C.), Middle Archaic (ca. 6000-4000 B.C.), Late Archaic (ca. 4000-2000 B.C.), and Terminal Archaic (ca. 2000-1000 B.C.).

It is important to keep in mind that no sharp breaks or radical changes necessarily divide one subperiod from the next. The hunting, fishing, and foraging way of life typical of this period appears to have continued throughout the Archaic, though there were occasional innovations and modifications in tool and weapon technologies and adaptations to changes in the environment.

Projectile points were no longer fluted: instead, they were made in a great variety of stemmed, notched, and occasional triangular forms with or without serrated and beveled edges.

*Early Archaic ca. 8000 B.C. - ca. 6500 B.C.*

#### CLIMATIC CONDITIONS:

- \* Annual temperatures appear to have increased in warmth and dryness.

#### ENVIRONMENT:

- \* Freshwater lakes, marshes, and brackish estuaries.
- \* Boreal forests comprised mostly of spruce and pine, some deciduous trees and grasslands.

#### GEOLOGY:

- \* Ocean waters begin to rise due to melting glaciers.
- \* Bogs and ponds common resulting from ground ice and subterranean ice wedges. these periglacial features are known as thermokarsts, frost-thaw basins, and pingos. hundreds of these features are still evident on today's landscape, although most are now dried out. [Link to illustration p.77 3.24](#)

#### HUMAN ACTIVITIES:

- \* Lifeways similar to Paleo-Indian: hunting, fishing, and gathering.
- \* Specific adaptations to climate and local environment.
- \* People lived in small, highly mobile bands spread thinly across the landscape.

#### TOOLS AND EQUIPMENT:

- \* Variety of stone projectile points.
- \* Changing sizes and configurations of spearpoints and knives.
- \* Implements of domestic and utilitarian use: scrapers, drills, choppers, hammerstones, and anvilstones tended to remain much the same. [Link to illustrations p. 94-101 4.4-4.18](#)

#### TYPES OF EARLY ARCHAIC SITES:

- \* Open air short-term encampments near river valleys elevated places near glacial lakes, thermokarst basins, confluences of streams, and headlands between drainage systems.
- \* Rock shelters

#### EARLY ARCHAIC SITES IN NEW JERSEY

- \* Early Archaic sites are rare, and are represented mostly from stone artifacts found on the surface.
- \* Some sites may now be up to 80 miles off the coastline, covered by rising ocean waters.

*Middle Archaic ca. 6500 B.C. - 4000 B.C.    [Back to top](#)*

#### CLIMATIC CONDITIONS:

- \* Warm and wet

#### ENVIRONMENT:

- \* Mixed forests of mostly hemlock and oak
- \* Pine and hemlock were still evident, particularly in the highlands, but deciduous trees now dominated the landscape and closed in some of the open spaces
- \* The warm, moist climate known as the Atlantic episode, helped to sustain plant and animal populations, and by 5000 B.C. natural conditions were very much as we experience them today.

#### GEOLOGY:

- \* Ocean waters continue to inundate the continental shelf
- \* Abandoned campsites were gradually flooded by the rising sea water and their cultural contents were lost to archaeology

#### HUMAN ACTIVITIES:

- \* Hunting, fishing, gathering
- \* Nuts from trees such as walnut and hickory trees gathered in the fall sustained the people throughout the winter, for they kept well and were easily stored in pits and baskets

#### TOOLS AND EQUIPMENT:

- \* In addition to bifurcated projectile points, many of which were still in use from the Early Archaic a new point style called Stanly Stemmed link to illustration p. 104, 105, 107, 108- 4.21-4.29
- \* Stanly/Neville points are occasionally found with atlatl weights, suggesting that the spears to which they were once attached were being propelled with the aid of atlatls or spearthrowers link to illustration p. 126
- \* Other innovations such as the making of dugout canoes or rafts were essential for travel on bays and rivers; for traversing lakes and marshland streams in search of bird's eggs, turtles, and frogs; for fishing, and for gathering cattails, sedges, and lotus tubers.
- \* Beds of marine or freshwater shellfish could be found and exploited more advantageously by canoe, and trade and transportation of families and heavy or bulky items was made much easier.

#### TYPES OF MIDDLE ARCHAIC SITES:

- \* Open air short-term encampments near river valleys confluences of streams, and headlands between drainage systems.

*Late Archaic ca. 4000 B.C. – 1000 B.C*

**CLIMATIC CONDITIONS:**

- \* Warm and wet to warm and dry, much like the present

**ENVIRONMENT:**

- \* Mixed oak, hickory, chestnut
- \* Generally similar to the present

**GEOLOGY:**

- \* Geology by the Late Archaic is generally similar to the present
- \* Ocean levels have risen and the coastline is closer to the present

**HUMAN ACTIVITIES:**

- \* Hunting, fishing, intensive gathering, with a greater emphasis on small game, shellfish, nuts, and wild cereal grains
- \* Principal settlements were near major rivers that afforded easy dugout canoe transportation
- \* Coastal areas, estuaries, freshwater springs, lakes, and the divides between drainage basins were inhabited as well
  - \* The primary consideration for settlements is the available source of potable water near swamp edges, ridge tops and overlooks, on kame (a terrace of glacial gravel and sand) terraces, and at the edges of glacial outwash plains In Central America, maize (corn), beans, squash, and peppers had been domesticated for hundreds of years, but the Archaic peoples in the Northeast were not aware of these cultigens and had not yet begun to practice horticulture, or gardening.
  - \* In areas where no single dependable food supply was available throughout the year, the Indians had to schedule their movements to be at predetermined locations when particular plant foods ripened or game animals were available
  - \* Everybody contributed to the well-being of the community, and there was probably a division of labor. Mothers and small children, the elderly, and the infirm probably remained at the campsite while the men and older boys hunted, and females and children foraged for food and raw materials in marches, fields, streams, at forest edges, and in the forest itself.
  - \* Women and girls probably did the cooking, skinned the animals, scraped and tanned hides, tailored garments, made baskets and mats, procured firewood and water, tended the children, and did other domestic shores.
  - \* Men and older boys built shelter, made canoes, did the heavy work around the camp, fished, hunted, and trapped. The making and repairing of tools and weapons was probably an ongoing task.

**TOOLS AND EQUIPMENT:**

- \* Heavy grinding implements provide the means of preparing foods from wild seeds, nuts, berries, and perhaps even dried meat and fish. The tools were simple enough and required little or no preparation: a large flat-faced cobblestone served as a grinding muller. In most instances, a millstone and muller were selected from river cobbles or other sources. Link to illustration p. 112 4.31
- \* Another set of food-processing tools that may have been used in Archaic times was the mortar and pestle. A mortar is a large stone with a more or less hollowed-out depression. portable mortars made from heavy cobbles and weighing up to 50 pounds or more have been found on many Late Archaic sites. Link to illustration p. 113, 114 4.33
- \* Cooking pots of stone or pottery did not exist in the early part of the Late Archaic, and certainly no in the Early-and Middle Archaic periods. It was possible to cook nuts or seed gruels and other foods in containers made of elm, birch, and other bark.
- \* Cooking could also be done in a skin-lined hole in the ground. In bark containers or skin-lined depressions, water, fish, meat, and vegetable ingredients were heated by using the “hot rock cooking” or “stone boiling” method. This was accomplished with the aid of fist sized stones heated in a fire. By means of wooden scoops or “tweezers,” the hot stones were removed from the fire and inserted into the water, stew, or gruel. Stones thus immersed transmitted their heat to the surrounding water, and the replacement of cooled potboilers with freshly heated stones soon caused the food to cook. The thermal shock resulting from the immersion of very hot stones into cold water caused some stones to shatter, and a certain amount of ash and grit was thus sometimes introduced in the food. Link to illustration p.114 4.34
- \* Knives were essential for food preparation and for skinning, butchering, trimming, and paring. Some knives used in Archaic times consisted simply of unmodified, naturally sharp flakes of stone, or shredders comprised of flakes with serrated edges. Link to illustration p. 116 4.37
- \* For reasons as yet unknown, axes, seemingly among the most useful of domestic implements, were quite common in central and southern parts of the region and less abundant in northerly areas.
- \* Spears tipped with stone spearpoints and propelled with spearthrowers or atlatls were the principal hunting weapons of Late Archaic times. Narrow stemmed projectile points are common to the region. Link to illustration p.120, 121, 125, 126 4.43 – 4.50, 4.56, 4.57
- \* Between 2000 and 1000 B. C. (Terminal Archaic period) broadspears appear in the archaeological record. Broadspears may be a type of harpoon point for catching sturgeon and other large fish or they possible served as specialized knives or cleavers used in the processing of meat, fish, and plant foods, or other type of specialized tools. Broadspears would have made excellent knives when mounted in short handles. There is disagreement between archaeologists over the function broadspears served. Link to illustration p. 138 4.66, 4.67
- \* Scrapers are also common to the Late Archaic period link to illustration p. 139 4.69
- \* Soapstone kettles also make their appearance in the Late Archaic period. The heat-transmitting steatite or amphibole talc formed from carving soapstone, was suspended over a fire and used to cook food. Link to illustration 142, 143 4.74, 4.75, 4.76
- \* Pottery also appeared around 2000 B.C. clay used in the fabrication of these pots is tempered or mixed with large amounts of steatite, quartz or pulverized crystalline rock. Link to illustration p. 145, 147 4.82, 4.83

**TYPES OF LATE ARCHAIC SITES:**

- \* Peoples of the Late Archaic period lived near large rivers such as the Delaware and other large streams and may have been settling into territories that were somewhat defined, and in which they could claim rights to food resources. In places like the upper Delaware River valley where the resources were abundant and varied, it may have been possible to establish more or less permanent year-round base camps.
- \* Other sites, such as the Savich Farm site, are located near the headwaters of streams where fine, loamy sands provided good drainage and where shellfish might be procured. The remains of hearths and refuse pits are commonly found on Late Archaic sites.

**Early and Middle Woodland ca. 1000 B.C. - 1000 A.D.**

- \* The term “Woodland” is not directly related to woods or forests; it is an archaeological label used for a time of cultural transformation among Indian groups throughout the Eastern Woodlands (the geographic regions extending from Manitoba, Minnesota, Iowa, and northern Missouri

eastward across the United States and Canada to the Atlantic Ocean). For purposes of comparison and study, archaeologists usually divide this era into Early, Middle, and Late Woodland periods.

#### CLIMATIC CONDITIONS:

- \* cool and wet

#### ENVIRONMENT:

- \* vast deciduous forests of mainly oak and chestnut with conifers.

#### GEOLOGY:

- \* sea level rise continues. The submergence of the land by rising sea levels continues at a rate of about 5 feet per 1000 years.
- \* the Greenhouse Effect seems to be hastening the melting of polar ice and the corresponding deepening of oceans.

#### HUMAN ACTIVITIES: Early Woodland

- \* continuation of the Archaic way of life with the addition of pottery.
- \* hunting, fishing, intensive gathering, trade.
- \* introduction of tobacco and smoking pipes, wearing of ornaments such as stone gorgets and copper, in addition to an increase in mortuary ceremonialism. link to illustration p. 174 (Fig. 5.30), 175 (Fig. 5.32), 177 (Fig. 5.37).
- \* the practices of garden farming had yet to be known or accepted by people in the Middle Atlantic and Northeast regions.
- \* Indian traders from the Ohio-Mississippi River valleys, upper New York State, and perhaps other regions came to visit the people of Lenapehoking in New Jersey on occasion.
- \* an enormous wilderness was apparently occupied by relatively few people. Here and there, on terraces overlooking large streams, along marshlands, and on selected coastal sites, evidence of occupation would have been observable in clearings where people inhabited bark or thatch huts and used fireplaces, dugout canoes, grooved axes, soapstone pots, and ceramic vessels. link to illustration p.153 (Fig. 5.1).
- \* the people probably spoke an Algonquian language.
- \* archaeologists have identified distinct cultures that existed during the Early and Middle Woodland period:
  - \* the Orient Culture (ca. 1200-600 B.C.) - extended from the Potomac River into New England and from the Susquehanna River to the Atlantic Ocean.
  - \* characterized by slender Orient “fishtail” points. link to illustration p. 154 (Fig. 5.2, 5.3).
  - \* dugout canoes were essential for travel on rivers.
  - \* food was cooked in soapstone (steatite) or amphibole talc and in ceramic pots.
  - \* fishing was a major activity and fish was a large part of the diet. Fish were caught with woven nets attached to netsinker stones. Some fish were eaten raw, and others were roasted on spits.
  - \* excess fish were cleaned, split, dried, or smoked for storage or transport. Cobble filled drying platforms have been found by archaeologists. link to illustration p. 156 (Fig. 5.7, 5.8)
  - \* the Meadowood Culture (ca. 1250-500 B.C.) – appeared at about the same time as the Orient Culture and may have originated in central or northwestern New York State, extending into the Great Lakes region and Lower Canada, and eastward into the Lower Delaware, Wallkill, and Hudson River valleys and Long Island.
  - \* characterized by hunting camps, nut-harvesting camps in spring and summer.
  - \* small bands with populations rarely exceeding 30 to 50 persons. Sites occupied for short terms.
  - \* fishing was fundamental to the economy, supplemented by game and gathered vegetal foods. seeds of goosefoot, and smartweed found in abundance near riverbanks and on floodplains were found in some graves by archaeologists.
  - \* the culture of the Meadowood people appears to have been centered around a mortuary cult with cremation as its primary mode of disposal. The bodies of the deceased were apparently kept in charnel houses until all or most of the flesh had decayed, after which the remains were burned on a pyre. Archaeologists have found tools and ornaments along with burned foods such as dog, deer, bird, fish, and plants, buried in some graves, probably for use in the afterlife.

#### TOOLS AND EQUIPMENT:

- \* cooking was done in collarless pottery vessels (called Vinette I pots by archaeologists) characterized by cord-marked exterior surfaces and interiors that were smoothed. link to illustration p. 161 (Figure 5.12)
- \* fires were started with flint strike-a-lights and pyrite. These fire-making kits were deemed to be so necessary that they were consistently included among grave goods for use in the afterlife.
- \* Meadowood culture is identified mostly by the carefully-fashioned projectile points, knives or mortuary “cache” blades, scrapers and drills. link to illustrations p. 162 (Figure 5.13, 5.14, 5.16)
- \* cache blades have been found buried in caches of four to 1500 pieces. The purpose of Meadowood cache blades is not known. Similar to projectile points, they are extremely thin and very skillfully made by a well controlled pressure-flaking technique that would have required only side-notches to convert them into conventional spearpoints or knives. One explanation for the many cache blades is that they were buried by the Meadowood people with the intention of retrieving them as needed, possibly for trading purposes or for grave offerings. link to illustration p. 188 (Figure 5.59)
- \* The Adena-Middlesex Mortuary Culture- archaeologists have identified a distinct mortuary complex in New Jersey and through the northeastern United States, and southeastern Ontario, Quebec, and the Maritime Provinces of Canada. These sites, and those with similar components identified with the Delmarva Adena complex in Delaware, Maryland, and Virginia to the south date to between ca. 1000-100 B.C.
- \* they share a number of cultural traits presumably derived from, or influenced by, the Adena people of the Ohio River Valley. But while the Adena people of the Midwest erected large burial and effigy mounds, including, for example, the Great Serpent Mound in Ohio, there is absolutely no evidence of mound-building throughout most of the Middle Atlantic and Northeast.
- \* cemetery remains generally consist of cremated or inhumated reburials placed in pit graves located near watercourses and atop natural promontories or hills. There is very little evidence besides burials relating to the habitation and daily life of the people responsible for these burials.
- \* Other cultures also buried their dead in this way with grave goods. The people of the Adena and Middlesex cultures had well-established trade routes that criss-crossed and extensive area from Labrador, Canada, to the Gulf of Mexico, and westward to and beyond the Great Lakes. These routes of communication facilitated the exchange of economic goods, encouraged social interaction, and made possible the transmission of ideas and ideologies.

#### TOOLS AND EQUIPMENT:

- \* artifacts found on all or most of the Adena, Delmarva Adena, and Middlesex sites included certain types of lobate, stemmed, and side-notched

projectile points, some of unusually large size, delicate workmanship, and exotic stone. Link to illustrations p 169 (Figure 5.23- 5.28).

## Middle Woodland Period (A.D. 1 to A.D. 900)

### HUMAN ACTIVITIES:

- \* characterized by new ceramic types that were more complex and sophisticated than had been seen previously. In northern areas, these changes in pottery styles led directly to later cultures such as the Pahquarra or Owasco series of early Late Woodland times, and ultimately into the incised collar styles of pottery of the Minisink phase. The ornamentation became increasingly complex with styles of decoration that lasted to Historic times. link to illustration p291 7.48

- \* a distinct lack of evidence for burial or mortuary practices with little evidence of mortuary ceremonialism.

- \* very little evidence has been found relating to the shelters used by cultures of the period. In good weather, the people might have slept under the stars. In case of rain, they might have set up a lean-to or lodge made of brush and skin. Except for charcoal from cooking fires, such overnight campsites left few if any clues for archaeologists. Rockshelters and caves offered protection in highland areas. In the absence of natural shelters, lodges had to be constructed from saplings covered with thatch, slabs of bark, woven mats, or skins.

- \* in winter, it was advantageous to split into smaller groups or family units and scatter across the landscape to survive. Animals that could be caught and killed in the winter included fat, hibernating bears, roused out of their dens, deer, elk, rabbits, and other small mammals, as well as such nonmigratory birds as turkeys, grouse, and passenger pigeons.

- \* food gathering activities included trapping, fishing through the ice, and, if possible, collecting shellfish from unfrozen river bottoms and seashores. Nuts, seeds, dried fish, and other provisions helped Indians through the dreaded winter and early spring months. Life in winter could be very harsh and was often a time of starvation. Each year many Indians died from lack of food, chronic illness, and exposure.

- \* with the spring thaw, life began to return to the land. Geese, ducks, and other migrating birds returned to the area. Spawning fish appeared in astonishing numbers by the end of March or early April when water temperatures warmed.

- \* the Fox Creek Culture – artifacts attributable to this culture have been found throughout the Middle Atlantic states and in parts of New England. Found in the Trenton area in New Jersey.

- \* fish appears to have been a staple of the Fox Creek people. Remains of this culture found mainly on river and coastal sites from the Chesapeake Bay, north into the Delaware, Susquehanna, and Hudson River drainages.

### TOOLS AND EQUIPMENT:

- \* characterized by Fox Creek stemmed and Fox Creek Lanceolate points that served as spearpoints or knives depending on how they were hafted. Link to illustration p 185 (Figure 5.52)

- \* Fox Creek peoples probably threw spears without the use of the atlatl. Bolas were used in hunting and fowling.

- \* fabric-impressed pottery and Petalas blades were common. Ornaments may have been made from perishable wood, bone, and antler. Celts, or ungrooved axes were used for chopping; and pitted stones, hammerstones, anvilstones, and pestles are among the domestic food-processing tools.

- \* petalas blades were used for butchering and have been found by archaeologists in direct association with sturgeon remains on certain Hudson River sites. Large, broad blades were usually made from local argillite and chert, and sometimes of jasper, and are occasionally found in buried deposits or caches. Link to illustration pl 186 (Figure 5.53 – 5.56, 5.57, 5.58).

- \* It is conjectured that the Indians, in anticipation of fish spawning runs, realized the need for many fish-scaling and butchering knives, and so knapped hundreds of handy Petalas blades during a previous year's trip to argillite and chert quarries, then buried these tools in caches near fish-processing sites so that they would be available when needed. In the spring, when fish ascended the river, and possibly in fall when they reversed directions into the warmer waters of the ocean, alewives, river herring, shad, and sturgeon, as well as eels, were caught in large quantities. At such times, Petalas blades were probably dug out of their caches and distributed so that every worker might have one in hand on one or two extras for the purpose of gutting, scaling, and splitting fish preparatory to drying them. Link to illustration 189 (Figure 5.61)

- \* The Kipp Island and Webb Phase Cultures – the Kipp island culture (ca. A.D. 300-850) was first identified in central New York State, and the Webb Phase (A.D. 410-1180) at the Island Field site in Delaware.

### TOOLS AND EQUIPMENT:

- \* both the Kipp Island and Webb Phase cultures include traits such as Jack's Reef Corner-Notched, Jack's Reef Pentagonal, and triangular projectile points, platform pipes, several styles of stone pendants, bone combs, antler harpoons, beaver-tooth incising tools, and sharks' tooth beads. The lithic artifacts have been found on numerous sites in the Delaware Valley, but bone and antler artifacts have survived only rarely, as on Minisink Island, Staten Island, the Abbott Farm site, and the Island Field site. Link to illustration p 193 (Figure 5.64 and 5.65, 5.66, 5.67, 5.68)

- \* by the end of the Middle Woodland period, horticulture, or garden farming, had finally come to the attention of the people in the Delaware Valley. Gardening provided a measure of control over nature. Crops deliberately planted and nurtured could yield a bountiful harvest, some of which could be stored for use in the winter. Horticulture compelled people to settle down for at least part of the year, and it demanded a measure of cooperation from those who wished to benefit from the harvest. Forests had to be cleared, the earth had to be hoed, and plants had to be tended and watered before the yield could be harvested. Gardening contributed to settled communities and to the emergence of the Lenape people.

## Late Woodland Period (ca. 1000 – 400 Years Ago)

- \* Seven centuries, more or less, from Middle Woodland times to the coming of European explorers and settlers, comprise the Late Woodland period. During this time, Lenapehoking was inhabited by people that we can confidently identify as Lenape Indians, a people who likely developed from predecessors already there in Early and Middle Woodland times. The presence of these ancestral Lenape is fairly certain, as there is no discontinuity in the archaeological record to suggest an invasion or any displacement of former residents.

### ENVIRONMENTAL CONDITIONS:

- \* In Late Woodland times the coastal plains, ridges and valleys, and mountains were largely covered by dense forests. Mixed forests of scrub oak and pine characterized large areas of the Coastal Plains, and oak-chestnut forests blanketed the northern sectors. The edible American chestnut (*Castanea dentata*) was one of the most common trees at that time. Unlike oaks, which drop plentiful nuts one year and few the next, the chestnut produces bumper crops of nutritious nuts almost every year. Indians consumed these nuts, which also provided mast foods for the wild turkeys, deer, elk, bear, and squirrels that the Indians also ate. Fig. 6.2 p.209

- \* Forests were a major source of building materials, particularly saplings and bark for the construction of houses and canoes, and other needs.

### HUMAN ACTIVITIES:

\* The Late Woodland period was a time of innovation and change. It is distinguished from earlier archaeological periods by the introduction or possibly expansion of horticulture, or garden farming, which provided new foods including maize (corn), beans, and squash that supplemented the nutrients obtained by hunting, fishing, and gathering. Despite this apparent benefit, it appears that horticulture was not universally practiced, particularly on the Coastal Plain. Fig 7.31 p.279 Fig 7.34 p.281

\* Ceramic cooking vessels, although known from earlier times, were in this period being made in new shapes, and with distinctive decorative designs – a boon for archaeologists, since pottery is relatively abundant, enduring, and sensitive indicator of time and change.

\* Corn or maize was prepared for eating in various ways. Freshly-picked ears of corn were eaten green, directly from the cob, boiled in water, or roasted in hot ashes. Corn was cooked together with beans to make succotash, and with other vegetables, meat, or fish. Dried corn, pulverized in a mortar by means of a stone or wooden pestle or ground on a milling with a hand-held muller was sifted through a fine mesh basket to separate the flour used for making bread from the coarser meal that was made into gruel or sapan (cornmeal mush). Fig 7.38, p.285 7.40 p. 286

\* By Late Woodland times Indians along the entire Atlantic coast had replaced spears and lances as hunting equipment and were using bows and arrows instead.

\* The language spoken by the native peoples of Lenapehoking is classified by linguists as “Delaware.” This was itself part of a larger Algonquian language stock, or family of languages that extended from eastern Canada to the Carolinas. Not all people of Lenapehoking spoke this language in the same manner. Those who resided in the northern parts us a Munsee or M-dialect; those in the more central and southern areas spoke a Unami or U-dialect. From the archaeological and ethnohistorical perspective there can be no doubt that these people were socially and politically distinct as well. Despite the cultural-linguistic dissimilarities, however, the peoples of Lenapehoking acknowledged a common bond, and sensed a relationship. But like kin, individual bands were not always friendly and cooperative.

\* The Lenape lived in bark lodges or wigwams constructed on farmsteads or hamlets located on fertile bottom land or along the shores of rivers, lakes, and bays, with the hinterland divided into individual land units for hunting, fishing, and gathering. Fig 6.14, 6.15 p.220, 221 6.17, 6.18, 6.19

## TOOLS AND EQUIPMENT:

\* The Indians had no saws and used only stone axes, which in Late Woodland times consisted of sharpened celts, or ungrooved axe heads inserted into stout wooden handles. Fig 6.3 p.211

\* Projectile points or arrowheads, were generally triangular in shape. Fig 7.2, 7.3 p.258

\* The arrowshafts to which the triangular points were attached were carefully fashioned from fine-grained wooden rods or canes. These shafts were skillfully straightened by soaking the wood, heating it over a fire, and bending and reshaping it appropriately. Once straight, the shaft was shaved to a uniform diameter. The shaft was then “sanded” and received its final form and smooth finish by being drawn back and forth in a shaft smoother. Fig 7.10 p.261

\* Nets made of plant fibers were frequently used for fishing. Stone netsinkers are among the most frequently found artifacts associated with fishing. These are especially abundant on the floodplain sites in the upper Delaware River Valley. Most netsinkers were easily made from flat river pebbles notched on opposite sides. They were also made from thin, flat, carefully trimmed and notched rectangular stone slabs. Fig. 7.17, 7.18 p.268, 269 7.21 p.271

\* Canoes were essential for fishing and travel. The dugout canoe was the most common type, but bark canoes seem to have been made as well. Dugout canoes were fashioned out of pine, oak, sycamore, and chestnut trees, but the best dugout canoes were made by hollowing out the trunk of the yellow poplar or tulip tree. Fig. 7.22 p. 272

\* Canoes, fishweirs, houses, and other constructions made of wood required the use of heavy woodworking tool, notably the celt. Fig 7.24 p.274

\* Hunting and fishing tools were also made of bone Fig 6.4 p. 214

\* Every woman and girl knew how to make pottery vessels, though some were more skilled than others. Clean, tacky clay was the essential ingredient, and this could usually be obtained from a lake bed, riverbank, or lacustrine deposit. Fig. 7.65 7.68 p.302, 304

\* Pottery vessels and potsherds are among the most useful and time-sensitive diagnostic artifacts found on late prehistoric archaeological sites. Changes in the shape and design of ceramic vessels have enabled archaeologists to establish chronologies and determine culture contacts, directions of influence, migration pattern, and other significant data. Pottery is durable, and even when shattered the potsherds survive: whereas wood, bark, basket, and leather containers decay. Given the decorative motifs on most ceramic vessels, we can only imagine how Indian women must have adorned their baskets, bark container, and leather wares, and how the makers of wooden spoons, ladles, and dishes may have ornamented these objects. Fig. 7.60, 7.61, 7.66