Prehistoric Projectile Points
Found Along The
Atlantic Coastal Plain

Wm Jack Hranicky RPA

Clovis Point - McCary Fluted Point Survey® Number 852

Universal Publishers
USA • 2003
In Dedication To:

Arthur Robertson who was the first president of the Archeological Society of Virginia. He collected everything, but mostly prehistoric artifacts from Mecklenburg County, Virginia. His collection has been preserved at the MacCallum More Museum and Gardens in Chase City, Virginia. The collection has been a tremendous study-aid collection for the author.

Arthur Robertson’s Notes. He kept meticulous notes on all his finds.
Acknowledgements

The author thanks all the state archaeological societies that he has been associated with for the past 30 years. Their members have greatly assisted the author in learning projectile point types and distributions. Additionally, thanks to the professional archaeological societies for holding all those professional conferences from which the author managed to learn the professional attitude and requirements in studying artifact collections around the country. Special thanks to the National Park Service, Smithsonian Institution, San Diego Museum of Man, Jefferson Patterson Museum Park and Museum, and various state archaeological agencies for their assistance in finding study materials for this book and other previously published books.

For prehistoric information, the author thanks all the state societies for their quarterly journals on archaeology. The Society for American Archaeology’s American Antiquity, the American Anthropological Association’s American Anthropologist, and the Eastern States Archeological Federation’s Archaeology of Eastern North America were valuable tools in researching projectile point typology.

Foreword note: Wayne E. Clark ... a long time friend, who back in the 1970s was a graduate student with me at American University in Washington, DC. We studied under the great Dr. Charles McNett. McNett’s students hold numerous archaeological positions in eastern archaeology.
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Adena (Robbins)
Point from Delaware.
It is made from Knife
River flint which is
found in the Dakotas.
It shows long-range
travel for both a
technology and its
material (see Thomas

From North Carolina, this is John
White’s drawing from which
Theodore de Bry made this
engraving in 1590. It has become a
classic illustration in the Middle
Atlantic area.
Foreword

Fifty years ago John Witthoft (1953) applied names to formal projectile point types and started a process in Eastern Atlantic archaeology of defining the great diversity of bifacial styles manufactured over thousands of years by a variety of American Indian societies. With each successful detailed site excavation, regional survey and comparative studies, new types from throughout the Gulf and Atlantic Coastal Plain province have been defined, debated, accepted or left to wither from lack of professional or popular acceptance. William Jack Hranicky has contributed to this process by defining new point types, publishing regional point guides, and expanding his analysis to include assessments of stone tool technologies, and lithic types from the Potomac River basin.

This new publication expands his projectile point typology summaries to the entire Atlantic and Gulf Coastal Plains from Florida to Maine/Canada. The analysis bridges the traditional culture areas of the Southeast, Middle Atlantic, and Northeast. As our understanding of the complexity and cultural diversity of the archaeological record has evolved, professional archaeologists have become increasingly specialized by focusing research within each of these culture areas or time periods. But as pointed out by the author, Indian interaction along river drainages and along the ocean coast spread style, manufacture and functional attributes as well as actual points that can stump the best experts when viewed from a local perspective. This publication is a useful reference tool, a cheaters guide really, for anyone looking at a collection containing a confusing variety of point styles and attempting to assign those points to particular types.

This new summary provides the reader with critical citations to the literature defining original type descriptions or regional type summaries. This is a visual reference, providing you with a picture of a standard type point's shape, sharing some key attributes, and placing the type in a geographic and chronological perspective. It does not provide metrical or other formal type description attributes as such analysis is beyond the stated purpose of providing a subjective approach to typology.

The publication is aimed toward advocational archaeologists and collectors, but it does have ramifications in the professional community. The introductory section provides you with analysis of the various aspects of the coastal area, Paleo-Indian period, blade technology, fluted point surveys, and general aspect of projectile point collections. As he points out, by recording the context and attributes of these early points, numerous interested citizens have greatly contributed to the literature on the important Paleo-Indian period. With the advent of a new century, the challenge of looking for evidence of Pre-Paleo-Indian period occupations has begun in earnest. Advances into understanding the "new" earliest occupation of the continent will probably come from the continued cooperation of sharing new discoveries between advocational and professional archaeologists.

Noel Justice (1987) has become a classic, detailed typological reference for a portion of the point types presented in this publication. His work is focused on well-defined typologies from solid archaeological contexts that have withstood decades of archaeological testing and refinement. In the process, a number of lesser-known point types of importance
to culture area studies, were not included in his summaries. Jack Hranicky has included a
greater diversity of published point type summaries from different regional studies. Some of
these types are critical to placing archaeological sites in the proper regional and
chronological context. Their inclusion is a welcome addition. Others have not yet been
lionized in the professional hall of fame of point typologies, nor is there a juried process for
accomplishing such a lofty goal! This report provides you with the classic typology
publications that are commonly accepted. It also provides you with less well-known types
because these may become the standards of the new century.

Knowledge is cumulative, expands through cooperation and mutual respect of those
interested in the past, and changes as new data is shared and published. The dedication of
this work to Arthur Robertson, first President of the Archeological Society of Virginia,
stresses the importance of archaeological state societies to advancing our understanding of
America's Indian past. Jack Hranicky is dedicated to promoting cooperation and
communication between collectors, advocational and professional archaeologists. So enjoy
this publication as a tool for identification and a platform for greater research. The future of
our archaeological heritage is in your hands now and for generations yet unborn.

Wayne E. Clark,
Chief, Maryland Office of Museum Services
Maryland Historical Trust

The Maryland Archaeological Conservation Laboratory (MAC Lab) is a state-of-the-art
archaeological research, conservation, and collections storage facility located at the Jefferson
Patterson Park and Museum in southern Maryland. Nearly 4 million artifacts are curated at the
MAC Lab. Almost all of these collections were recovered from archaeological sites in Maryland
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The MAC Lab serves as a clearinghouse for archaeological collections recovered from land-
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the Maryland Historical Trust. All of these collections are available for research, education, and
exhibit purposes to students, scholars, museum curators, and educators.

For more information on the MAC Laboratory, call 410-586-8550 or send email to:
raftery@dhcd.state.md.us
Preface

This publication was written to provide a source for archaeological projectile point typology for a region of the U.S. that over the years has been traditionally divided into:

- Northeast culture area
- Middle Atlantic culture area
- Southeastern culture area.

These divisions are based primarily on lithic technology and settlement patterns. While this focus tends to serve archaeological investigations, most of the prehistoric Indian habitation/occupation requires greater definition and appraisal from other sources within the archaeological community. Even among artifact collectors, there is a tendency to parcel these areas into the classic culture area concepts.

This publication makes no attempts to refocus archaeology, but show the vast overlaps of numerous point technologies. This is especially true over time; so that, for lithic point technology in general, there is a Panindian focus that can be applied to almost every tool type along the Atlantic Coast.

This publication will become part of the author’s national publication which will list most of the type names and their references from the last century. As of major importance, this publication describes eight pre-Clovis point types. And, it provides insights to blademaking technologies of early Native Americans living along the Atlantic coast.

In accessing a typology for a specific set of artifacts or artifacts within a given geography, there are no published standards within archaeology. The collector world does have a system of evaluating artifacts, namely the dollar value assigned to each type. Even then, both of these processes rely on subjective appraisals for time, culture, artifact condition, and tool function.

The major source for projectile points in this publication is private collections. While often lacking in site-specific data, they provide distributions, frequencies, and morphological variations within type populations. Additionally, metrics are easier to obtain than going to museums and checking out specific collections. However, if the private collector does not maintain accurate and complete records on his/her collections, the value of the collection is lessened in both terms of its monetary and knowledge values.

This publication provides most of the published types from along the Atlantic seaboard. Each type has a basic description and the illustration is an ideal point for that type. There is always variation within each type, so the reader should consult other point book references in order to obtain a basic consensus of the type’s morphology. A set of point references is provided; these make excellent (and needed) sources for the study of projectile point studies.

Wm Jack Hranicky RPA
Introduction

The projectile point, commonly called the arrowhead, is among the most numerous artifacts from prehistoric America. Its variety, beauty, and style attract collectors, is popular in museum displays, and of course, a major topic in American archaeology. Each projectile point tells a history of someone who lived, in some cases, 10,000 years ago. When each point story is combined using scientific methods in archaeology, a history can be composed about early Americans. These people migrated into the Americans around 18,000 years ago, and through the eons, migrated to all parts of this continent. Regardless of the entry date, these early Americans developed into the Indian culture which was found by early European explorers. Within this culture, while overall it is Panindian, there are regional variations that are basically tied to environmental adaptations (Figure 1). When this culture is coupled with linguistic variations – there is the Indian and there are Indians.

Their culture started with a nomadic lifestyle and came down to a sedentary village lifestyle. Their food sources started with hunting megafauna and changed to stable food supplies via horticulture. Their culture became complex and multilingual. No country in the world has more prehistoric languages than found in the United States. Within this culture, they invented the axe and celt, bow and arrow, and numerous tools which they used for their daily livelihood. The atlatl (spearthrower) was brought into the New World. This tool is found all over the prehistoric world and was used against the Spanish in their first invasion of Mexico. Furthermore, the tool/weapon was present at Contact for the Atlantic coast.

This publication discusses and illustrates one form of Indian technology – the projectile point. The point, which is basically a biface, is only one tool found in the prehistoric toolkit. Other tools include scrapers, axes, drills, celts, perforators, shavers, mauls, hammerstones, knives, etc. These tools are generally divided into:

- **Microtools** – small tools, such as drills, knives, scrapers, etc.
- **Macrotools** – large tools, such as axes, celts, hammerstones, etc.

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1 This entry time varies among archaeologists, but sites in Virginia and Pennsylvania have produced radiocarbon dates which argue for this entry date. On the other hand, South America has dates of 20,000+ years for human occupation.
<table>
<thead>
<tr>
<th>Projectile Points as an Artform in Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="YADKIN (NC)" /></td>
</tr>
<tr>
<td><img src="image4" alt="PALMER (NC)" /></td>
</tr>
<tr>
<td><img src="image7" alt="SUSQUEHANNA (MD)" /></td>
</tr>
</tbody>
</table>

2 Point was named after Smithsonian archaeologist, William Henry Holmes, who worked in the Potomac River valley during the late 19th and early 20th centuries.
As a microtool, the point was incorporated into every phase of culture. It was used not only for all utility functions, but also was used ceremonially. The point ranges from high-quality to crudely-shaped specimens that might not be recognized as tools. Generally, all stone tools have a natural lifecycle from initially manufactured to expended (throw away) tools. The expended tool is referred to as the process of expention – the cultural process at which the tool was considered useless by its owner. In some cases, a point would be discarded when it resharpened down to 75 mm (example, Savannah River points) and others would continue to use the point down to 25 mm (example, LeCroy points). One of the finest expended points is Clovis, which averages for the East around 50 mm (Figure 2). Archaeologically, large partially used points are found. Naturally, stone tool breakage was common in the Indian’s toolkit and constitutes the majority of found artifacts.

![Clovis Point](image)

Point expention is the process of determining when a point no longer served its user. When this stage occurs, the user discards the point and starts the process of manufacturing its replacement (Hranicky 2002).

<table>
<thead>
<tr>
<th>McCary Fluted Point Survey Point Number 1002 (Face A)</th>
<th>Figure 2 - Expended Clovis Points</th>
<th>McCary Fluted Point Survey Point Number 1002 (Face B)</th>
</tr>
</thead>
</table>

*Metrics: L = 30 mm, W = 21 mm, T = 4.5 mm. Flute A. H = 25 mm, W = 12.5, Flute B. H = 22 mm, W = 12.5. It is made from blackish flint.*

Lithic material was always a consideration among the various populations in prehistory. Some groups would travel great distances to obtain high-quality flints and cherts. Other groups simply used field and river cobbles to make their various tools. Material usage and determinations varied over time and space. Still, it was always a variable in their tool lifecycles and curation. Raw material is not a major concern in flintknapping; all skilled knappers can work with any metamorphic or igneous stones found on the East Coast. For example, there is a Clovis basalt point found in Virginia (Hranicky and McCary 1995).

Due to the high number of point types found along the Atlantic coastal plain, the only logical organization for them is an alphabetical listing. Each published type contains:

1. Name
2. Namer and source of name
3. Short description
4. General type date and distribution
5. Quote by a specialist or namers
6. Major attribute

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3 An official report will be published in the Quarterly Bulletin of the Archeological Society of Virginia (ASV). The Survey has published 999 fluted points.
All point descriptions are considered by the author to be valid types. However, some of them may still be conditional types in archaeology. No scale is used; illustrations are shown as representative samples and are not intended to show range or variation of a type. The reader should consult other publications for definitive point type discussions and illustrations. Also, projectile point references are listed in the back of this book. If the reader is intending on becoming involved in archaeology, actual copies of these references should be added to personal libraries.

In 1941, Dorothy Cross’ *Archaeology of New Jersey* set the groundwork for naming eastern point types. Within her arrowpoints and spearpoints divisions, she defines numbered types. They were simply called Type 1, Type 2, and so on. John Witthoft’s (1953) *Broad Spearpoints and the Transition Period Cultures in Pennsylvania* started naming points. This would be followed by William Ritchie’s (1961) *A Typology and Nomenclature for New York Projectile Points* which set standard typology for the Northeast. And, this would be followed by Joffre Coe’s (1964) *The Formative Cultures of the Carolina Piedmont* which set standard typology for the Southeast. Other typologies would follow, but these publications are the classic references for Atlantic coastal plain typology and have withstood the test of time. For an overview of point types, see Justice (1987) and Dragoo (1991 and 1993).

**Atlantic Geography**

The geography covered in this publication is a generalized area from the eastern piedmont to the ocean, namely the coastal provenance. The northern limit is Maine and to the south, Florida (Figure 3). During the early prehistoric years, the Atlantic coast line was approximately 12 miles further east than it is today. Quite literally, this area was a super highway that ran north/south on the eastern part of the continent.

From Paleoindian to Woodland times, the Atlantic coast shows cultural diversity, but at the same time, the total time period shows a Panindian continuity. Paleoindians used
the corridor to move northward. Ceramic technology also spread northward from the Florida coast.

Another set of corridors was the riverine systems that provided drainage from the mountainous areas that created geographical boundaries. While uplands were accessible in prehistoric times, their environmental conditions often restricted human migrations and long-term habitations. As for the Atlantic plains, the north/south path offered a free wing of technology influences, from which technology then spread inland. A classic example is the early ceramic dates in coastal regions versus later dates for the same technology in the mountainous areas.

The map shown here defines a true coastal plain for the U.S. The northern states were added to complete a coast line study. The interior mountainous areas are applicable when shoreline types are found (or originate) in the uplands areas. The Gulf Coast states are used only if their types extend into the Atlantic coastal plain.

**Divisions in Prehistory**

Archaeologists divide prehistory into time periods based generally on environmental and technological conditions and toolkits as found among the Indians over time. The East Coast prehistory is divided into three general periods:

- **Paleoindian** 10,000 BC to 8500 BC
- **Archaic** 8500 BC to 2000 BC
- **Woodland** 2000 BC to Contact.

These time periods vary regionally and by archaeologists using them. They are used here as a general reference in order to place the list types in a chronological perspective. There are numerous radiocarbon-14 corrections in archaeology. Until some type of consensus and standards are established, the traditional dates are used (see Boyd 2003 for a calibration discussion).

The end of the Paleoindian Period usually corresponds to the end of the Pleistocene; however, this varies. Also, the initiation (invention) of point notching is technologically the end of the period; thus, the ending date has a range of 500 years. These years have also been referred to as a transition period which leads to the Archaic Period.

The beginning of the Woodland Period usually corresponds with the beginning of pottery which is around 1600 BC in the Potomac River valley but perhaps as early as 3000 BC along the Georgia coast. Another focus is steatite containers which date around 2000 BC. Finally, as is suggested in Hranicky (2002), the beginning of horticulture (2000 BC) should be used to start the Woodland Period; thus, the 1000-year range. All archaeological

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5 Clovis technology is argued here, as elsewhere, as originating in the Southeast.

6 Pre-10,000 years for human occupation is assumed here for the East; however, the classic archaeological time period divisions are used.
periods are relative and not necessarily based on real culture and history of the Native Americans (Hranicky 2002).

Coastal Adaptation from early to onward…

Most archaeologists fail to accept that Early Americans had watercraft and used it extensively. The Atlantic coast offered a super water highway for literally several thousand miles and distances are increased when riverines are added to this wetway. For the Paleoindians and Archaic Indians, it was an access to known regional lithic materials and local gameherds. Their connectivity to them was unrestricted when the boat plays a role in their habitation sites, namely seasonal camps. Once gameherds were exhausted in an area, they simply moved to another area. With changing environments, gameherds moved northwards; so did Paleoindians. As wooded area became part of the environment, the waterways still offered the best way to traverse the continent.

This coastal migration with inland river sources continued well into the Woodland Period. From this point onward, habitation became permanent in various habitable areas. These were preferably below the piedmont – they occupied the coastal plain and used the interior for special resources and seasonal maturation of foodstuffs. Riverines provided easy access to upland natural resources. While all major Atlantic-bound rivers have river fall zones which inhibit boat travel, it is not impossible to get around them and continue travel up river. Of course, there was cross-country travel throughout prehistory.

Technology, as well as social communication, moved with the waterway travels along the eastern coastline. All major forms of lithic technology are found in various places and times on the coastal plain; it represents a Panindian tool design and usage.

The Paleoindian lanceolate form was probably developed in Florida, namely the Simpson and Suwannee (Hranicky 2001 and 2002). This form may even have South American origins. Around 9500 BC, a Paleoindian band in the Carolinas added the flute which became Clovis. Some groups accepted it; others did not, for example the Quad (nonfluted) and Cumberland (full-face fluted) points.

Another lithic technology is the Woodland triangle. The Northeast appears to be the inventive source (3500 BC). It moved southward to the Southeast. Pottery is also associated with the Southeast. It had its origins in South America, entered into Florida, and hopscotched along the water highway. Throughout the Atlantic coast, movement of the technologies into the interior sometimes took 300 years. Upland areas are always the last to receive innovative technologies.

This picture presents a technology-based settlement pattern which offers partly a lithic determinism model for natural resources and a cultural model for exploiting gameherds all of which is based on high mobility. While a touch of Binford’s (1982 a&b and 1979) base camp model and Anderson and Hanson’s (1988) residential model are popular in archaeology, this model emphasizes high mobility by utilizing water transportation for extreme distance travel. The Native American boat has a long history with humanity (Figure 4). Numerous canoes have been found in nearly pristine condition, some of which date 4000
years ago (Figure 5). The author’s *Lithic Technology in the Middle Potomac River Valley of Maryland and Virginia* argues that the waterways were communication avenues for Native Americans. Boat travel was extensive and covered great distances.

**Figure 4** - Toy boat carved by a Mattaponi living on the reservation in King William County, Virginia. Received by Fred Morgan, a past ASV President, on March 15, 1957. It is now in the author’s collection. The boat has always played a role in their cultural activities. For the toy, one should note the European form as opposed to the Indian canoe.

**Figure 5** - Archaeological recovery of a dugout canoe. Canoe being loaded onto a Corps of Engineers truck which transported it to the Underwater Branch at Ft Fisher, North Carolina.

It started with a blade technology …

A blade is a piece of lithic material that is struck off a parent core. It is relatively easy to produce and always has sharp edges and is usually pointed. The blade is a simple knife, or better, a multifunctional tool.

In working stone, removing the blade (also called a flaking technology) is the first operation in what is called stone reduction in archaeology. Once removed, the knapper (toolmaker) can work both sides and shape it into numerous forms and styles – stone tool morphology. Basically, the blade is only one facet of prehistoric stoneworking. The basics are core technology, blade technology, and biface technology.

Numerous nationally-known archaeologists are arguing that blade technology came into eastern North America via transatlantic migrations of Europeans who were practicing the Solutrean technology in France (Figure 6). During the last Ice Age, large parts of the north Atlantic were covered with ice. Thus, a shoreline trip from Europe to America was approximately 900 miles. This ice coast was similar to Antarctica. It has sea-faring
mammals, fish, and the ice provided fresh water. The crossing was not intentional, but accidental. Numerous groups made the crossing.

At this time, was North America free of human occupation? Yes, the European populations left little genetic evidence in subsequent Indian populations. To what degree is there technology ruminants – this is, of course, the popular discussion in contemporary archaeology.

Three archaeological sites, Topper (South Carolina), Cactus Hill (Virginia), and Meadowcroft (Pennsylvania), provide at least some proof of the transatlantic migration of early people in the Americas. Each site has a blade technology. As heard from Dr Bruce Bradley (Clovis and Beyond Conference), *Being a coastal and water-oriented people they are strong candidates for the progenetors of Clovis.*

![Figure 6 – Solutrean versus Clovis: Both are fine stoneworking biface technologies (photograph by Tony Baker). Left is the classic Solutrean bipoint. #1 shows flaking, and #2 show Clovis similarity. (Art from Tony Baker.)*](image)

In Europe, the outrepassé (cross the medial axis) flake is generally associated with the Solutrean tradition (17,500 to 19,500 BP) of the Upper Paleolithic. The later Solutrean (18,000 BP) is even more famous for its exquisitely thin bifaces (artifact on the left in the image) that were created with the same soft hammer percussion technique that is found in Clovis technology (Hranicky and McCary 1995). Similar to Clovis, the Solutrean tradition also seems to appear from nowhere and interrupts the gradually evolving toolkit of the Upper Paleolithic. Even though it was and remained a blade tradition, it represents sudden changes in that toolkit that suggest the Solutrean had some connection back to the Middle Paleolithic. For example, there were sudden increases in bifaces and end scrapers, a decrease in retouched blades, and the appearance of the leaf-shaped flint point with one plane face and the other retouched (Bordes 1968:158). This technological change process is paralleled in the eastern U.S. during the early phases of prehistory.

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7 While many years later, this flaking technique occurs on western Paleoindian and Early Archaic points.
For archaeology, did this technology make it to the Americas and, more importantly, was it a factor in the development of Clovis technology? To answer this question, an examination of the artifacts found in southern Virginia and North Carolina offer evidence that, until now, had been largely ignored by archaeologists. While blade technology was present at the Williamson site in Dinwiddie County, Virginia and reported in the literature, blades outside the site’s influence are largely unreported. And, if reported, are usually assigned to the Archaic Period.

After Cactus Hill stirred the archaeological pot, interest in looking for additional non-site-specific materials was undertaken by the author; however, pre-Clovis artifacts had been suggested years earlier, for example Hranicky and Painter (1989). Hranicky and McCary (1995:31) argue that Virginia Paleoindian period = Pre-10,000 ? to 8000 BC. This postulation implies that the Clovis point is not the floor technology in Virginia. The antecedents should be there.

Regardless of prior discussions, there is a blade technology on the lower Atlantic Coast that predates the Clovis toolmakers. If we place an openly-wide date on Clovis of 10,000 to 9000 BC, we should be allowed to estimate that blade technology in this area was practiced between 11,000 and 10,000 BC. As suggested here, blade technology leads to Clovis blade technology, including the development of the biface-lanceolated point.

While the total technology source and history of blade technology remains to be defined, the people living along what became the Virginia-Carolina border were striking blades of cores (Figure 7). While a subjective estimate, these blades ranged from 25 mm to 200 mm in length, and they were narrow blades seldom exceeding 20 mm in width. The blade made was hafted, and it made an excellent multipurpose tool. Figure 7 shows point specimens. The basal area was ground and at least the rhyolite specimen shows an attempt at fluting. Once used, the distal end becomes rounded or semipointed; thus, the lanceolate form.
The tensile strength for the blade is very low which may have justified development of a biface form.

The blade projectile point, named here the McCary Blade Point, was made directly off a blade which was removed from a Levillouis-type core (Figure 8). It has a flat face and the side with the medial ridge has a small flute. The base is ground which suggests it was hafted. While few metrics exist, the maximum length was approximately 60 mm. The point does not exceed 4 mm in thickness. The stone is fine grained, namely rhyolite, jasper, and quartz. There is no evidence to argue that it was a standalone type; the suggestion here is that it pre-dates the classic Clovis point, or… lead directly to the development of Clovis technology.

Figure 9 shows more blade point examples; several Hardaway points also occur as blade points. The blade point was first illustrated as the Ely Ford type (Bushnell 1935) and later as the Crowfield and McCary types. Also, some Angelico, Lerma, Limeton, and Palmer points show a blade technology – all are called here the Ely Ford class of points. They represent the earliest form of lithic technology along the Atlantic coast.

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8 A blade is flat, and a flake has a taper to it; a point made off a flake has a slight taper to it.
Technology as a biface…

According to the American Indians, there are hundreds of ways to make a projectile point. The Indian way at specific places and times can be defined and replicated by using experimental methods in archaeology. Basically, the projectile point starts with the manufacture of a biface. Once a knapper starts making a point, the biface is called a preform (Figure 10⁹ and Figure 11).

A preform is a lithic piece that has been shaped first into a generalized and oversized form that can be finished into a desired tool by finalizing flaking techniques (Hranicky 2003). Preforms were manufactured at quarry sites for transport to another camp or back to the village site. Or, the preform was made from field and riverbed cobbles (Hranicky 1986). It is also a trade item. According to Crabtree (1972):

Preforming denotes the form. Also, it is an early step in the manufacture of points; first shaping; also, a blank which can be used to produce a point. Preform is an unfinished, unused form of the proposed artifact. It is larger than, and without the refinement of, the completed tool. It is thick, with deep bulbar scars, has irregular edges, and no means of hafting. Generally made by direct percussion. Not to be confused with a blank.

And according to Bradley (1975):

...any piece of lithic material that has been modified to an intended stage of a lithic reduction sequence in a specified assemblage. It must be demonstrable that it is not a finished implement and that it is intended for further modification. Furthermore, it must have the morphological potential of being modified into only one implement type within the assemblage. The method of its manufacture is not important to its initial identification.

And, according to Collins (1999):

...a partially formed, chipped-stone tool suitable for further flaking to completion.

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⁹ This biface was found on Haldeman’s Island in Dauphin County, Pennsylvania.
These bifaces were probably rejected by their makers. However, they show various techniques and styles in producing bifaces. Each point type had a specific setup biface, preform, or blank that was known and practiced regularly by flintknappers. Parts of the biface are shown in this drawing which represents a stylized shape.
This presentation is a *what-is-it?* book, not a how-to make publication on stone points. If the reader wishes to go further with this topic, John Whittaker’s (1994) University of Texas Press publication *Flintknapping – Making and Understanding Stone Tools* is an excellent starter. A summary of percussion and pressure flaking is presented in Appendix A.

![Diagram of parts of a projectile point](image)

**Figure 12 - Parts of a Projectile Point**

**Basics of an Arrowhead**

All projectile points, which will be argued, were not used on arrows exclusively but served a variety of tool functions used in daily living. The basic parts are:

- **Blade** – part of a projectile point that is above the stem/shoulder area. The distal end of a point. Edge shape can be excurvate, incurvate, recurvate, or straight.
- **Stem** – hafting part of a projectile point. The proximal end of a point. Shape can be constricted, expanded, straight-sided, or concave-sided.
- **Shoulder** – bottom corners of a blade. Stem starts below the shoulders. Shoulders are not always present.
- **Notch** – indentations on the stem or bottom of the stem. Notching facilitated hafting.
- **Base** – Bottom of the stem. Shape can be round, convex, concave, or straight.
- **Tang** – outer part of a shoulder. Shape is a protrusion that is upward, expanded, or hanging.
- **Tip** – distal part of the blade; the pointed end of a biface.
These are basic definitions; certainly, with all the projectile point variations in style, numerous shapes occur and there is a set of nomenclature for every part (Figure 12). Hranicky 2003a and 2003b provides terminology and definitions for American prehistoric tools.

**They were all knives ... ?**

While commonly called arrowheads or scientifically projectile points, most were never used as projectiles ... they were primarily knives (Figure 13), and also served other functions, such as drills, scrapers, shavers, perforators, etc. As such, several knife and drill forms are presented in the text along with *projectile points*.

Very few points were hand-held for usage. Archaeologically, points were generally hafted to straight shafts or to curved handles made from wood, bone or antler. Additionally, very few projectile points show impact fractures. This type of breakage is the result of spear throwing or arrow shooting. Regardless of the cause, there is a high percentage (>35%) of broken points found in archaeological site contexts and recovered from surface surveys that suggest they were hand-held hafted tools. From the remaining nonbroken inventory, most points show continuous resharpening by the Indians.

Within all point types, there are evidences that function was modified after its initial manufacture. The blade was modified to perform a different task, such as scraper, graver, drill, punch, knife, spokeshave, etc. Figure 14 shows example of blade modification.
These specimens suggest that the projectile point was a multifunctional tool and was probably the primary implement in the Indian’s toolkit. While knives are dominant in prehistoric inventories, the projectile point easily served numerous functions, including the knife. This blade modification process starts with Clovis points and continues to the Woodland triangle. As an example, Clovis points are found in Virginia that have their blades modified into drills. By analogy with points always being hafted, these tools (drills, punches, etc.) are assumed here as always being hafted (Figure 15); however, function is not always obvious as these points may be narrow-bladed knives.

Figure 15 – Left: Kirk Drill, Right: Big Sandy Drills.

Lifecycle of a Prehistoric Point

The projectile point throughout prehistory has served work-related functions. Constant usage meant resharpening the blade and periodically refitting it to its handle or shaft. This process is part of the point’s lifecycle. The lifecycle starts when either the former tools are expended or, better, when the Indian decides to make a tool. It is initiated in acquiring raw materials for the manufacturing process.

Acquisition of stone materials may have been a simple finding and using stream/field cobbles or, as in a lot of cases, travel to known stone outcrops where they were mined for tool usage. Large nodules or spalls were shaped into transportable preforms, which were worked later back at the campsite into tools.

Figure 16 - Lifecycle of a Projectile Point. Left: St Albans point at the FMS stage, Center: basic lifecycle model, Right: Expended St Albans points. The St Albans point is a classic knife. The left point was never used, but should it have been hafted and a put into service, over the years, the blade would have been resharpened until it was expended. The discarded point would resemble those on the right.
Upon completion of the blade, it was hafted and, at that stage, initialized as a tool into the workplace. This event has been called the Final Stage of Manufacture (FMS). The FMS starts the tool on its way to the final stage, which is the expended tool. Archaeologically, the majority of recovered tools are at, near, or in the last stage of the tool’s lifecycle.

The process of discarding the tool is called expention, which is the time in the lifecycle that the Indian considered the tool was no longer useable. Expention varies culturally. Blade length is a personal requisite, one that the user considers as adequate to perform a task. Once blade reduction passes this length, the tool is discarded (Figure 16). During the lifecycle, tool breakage automatically terminates the lifecycle. Retrofitting did occur, but most of the time, the Indian made a new tool.

One question that archaeologists are often asked is: how long was the original point. While any given point’s original length is, of course, impossible to determine, the entire class of points within a type can be statistically estimated. Hranicky and McCary (1995) developed a regression model for estimating the original length of a survey Clovis point.

The technique involves finding the longest and shortest point in the Survey. Next, all points are grouped by their length. By measuring a point’s length and applying it to a statistical scale, the original length can be estimated. This method is used on point populations by type, frequency, and distribution.

**Projectile Point Typology**

A type is a group of tools, in this case projectile points, which have similar attributes which form a recognizable style or shape of a specific tool class. It is an implement that meets a specific form from predefined criteria; clustering of attributes. For example, major point attributes are, but not necessarily present in all types, fluting, notching, blade beveling, cross section styles, tang types, stem shape, just to name a few. Appendices B and C summarized analytical techniques used in typology.

Typology is a basic unit of comparison and analysis of artifacts and is a subdivision of a specific artifact industry. Each type is a collection of attributes that presumably make an artifact type different from another type. Fowke (1896 and 1913) may have been the first to refer to a point type (Figure 17). His Smithsonian colleague Wilson (1888) was among the first to publish actual point styles. The typological concept is best defined in Krieger (1944), who advocated in his paper The Typological Concept:

*Any group which may be labeled a type must embrace material which can be shown to consist of individual variations in the execution of a definite constructional idea; likewise, the dividing lines between a series of types must be based upon demonstrable historical factors, not, as is often the case, upon the inclinations of the analyst or the niceties of descriptive orderliness.*

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Typology has no rules, and throughout the late 20th century there was a point naming-wave in archaeology. As in Hranicky (2003a), these principles should be followed in point typology:

1 - Same Indian point technologies do not necessarily mean that they are related in time or space. For example, all lanceolate points are not always Clovis points. Typology always involves:

- **Trait** - entities that are common to the technology of a point type, such as: fluting, shouldering, stemming, notching, etc. Same traits can be found on multiple types.

- **Attribute** - required entities that are common to a type, such as specific shoulder style, stem design, base shape, etc.

2 - Technology carriers (lithic material) are not a primary factor in typology. This carrier can be a required attribute, but for most cases, material was based on local stone utilization.

3 - Point type name usage should go to the first person who published a point type name and description. For example, Ritchie (1961), Coe (1964), and Broyles (1971) are the basic typologies for the Atlantic coast. All of whom first described and named numerous eastern point types. Their types have become standard timemarkers for both field surveys and site excavations. Their publications are found beyond the hands of the amateur and professional archaeologists.

Few laws exist in typing other than covering laws of Nature, but four generalizing laws can be applied to any authentic prehistoric artifact. These laws are always present and constitute the basic philosophy in typing. They are:

1 - All artifacts represent an exact time and space when they were manufactured, when used, and when discarded or lost.