

SPA 2001 Annual Meeting

**May 4 - 6, 2001
Bartonsville, PA**

**hosted by
The Forks of the Delaware Chapter #14**

ABSTRACTS

Affleck, Richard M. *For Those Who Pay Our Way: The Site Report, the Narrative Approach, and Public Outreach.*

For some time now, archaeologists working in the CRM field have been aware of the need to make the results of their work accessible to the people who fund them—in other words, the American taxpayer. “Public Outreach” has, in fact, become the new mantra of contract archaeology, and rightly so. The question, of course, has always remained: how do we inform the public, satisfy regulatory requirements, and keep our colleagues from looking askance at our work? Over the years, we’ve produced numerous brochures, pamphlets, and “popular” reports, and led countless site tours; some projects have been featured in videos, others as part of interpretive museum displays—all useful ways of reaching our various publics. For all of that, the principal product of our labors has always been the site report. Here, we cover in detail the prehistory and history of the site, pose the questions that we hope to answer, and relate the results of our investigations. Unfortunately, and for various reasons, the principal audiences for these often weighty documents have been the reviewers and others in the archaeological community. The public, when they can procure a copy, are often mystified by the language and put off by the organization; they may be impressed by the level of effort involved, but can be alienated by the failure to draw them into the process of archaeology. Recently, however, some CRM firms have employed a more narrative approach to try and address this imbalance and to produce reports with broader appeal. The King of Prussia Inn site report, produced for and in cooperation with the Pennsylvania Department of

Transportation, District 6, is one example of this kind of document. This paper, like others in this session, aims to stimulate discussion on finding more effective ways to inform our financial supporters about what we do, what we find, and what we think it means.

Baird, Ted A. *Tribute to Dawn Griffiths.*

A brief presentation outlining the accomplishments, influences, and interests of Dawn Griffiths, deceased President of the Frances Dorrance Chapter SPA.

Baker, Joe and Mary Pat Evans *Science and History, The City Island Excavation 36Da12: A Student Run Archaeology Field Laboratory.*

In 1999 and 2000, middle school teachers and students from the Londonderry School in Harrisburg ran the field laboratory for the City Island Project excavations, sponsored by the PHMC at City Island Park in downtown Harrisburg. The students were responsible for processing and cataloging the artifacts, and even assisted their teachers in presenting the results of their work to site visitors and other students. The students were joined by Imaging Scientists from Rochester Institute of Technology who assisted the student with electronic imaging and image enhancement technology as part of the on-site curriculum. Numerous award-winning science fair projects resulted from this unique collaboration of archaeologists, teachers, and students, most of them involving the application of cutting edge technological analyses to archaeological data and artifacts. The presentation will describe the goals, history, and accomplishments of this collaborative approach to research and education.

Blomster, Jeffrey P. and Kira M. Presler *What Lies Beneath: Historic Structures and Prehistoric Sites.*

Investigations at an 18th century structure in Egypt, Lehigh County, Pennsylvania, have yielded data on both the prehistory and history of the region, as well as information on site preservation and destruction. The Troxell-Steckel House was built in 1755/1756 on a tract of land near Coplay Creek, a location attractive to both the historic and prehistoric occupants of this area.

Archaeological research was conducted as part of an effort by the Leigh County Historical Society to replace and conserve the largely rotted floor joists by excavating and removing the soil atop of which the floor boards rest.

Archaeological testing was performed on both the exterior and interior of the house, revealing a different stratigraphic sequence on either side of the walls. Significant disturbance and landscaping were evident on the exterior of the house, with scattered structural and domestic refuse collected. Inside the house, a sequence of relatively in-situ strata was recorded. The upper levels, although heavily impacted through bioturbation, yielded information concerning room use

as well as construction and renovation. Underlying these upper historic strata, artifacts from a range of prehistoric periods were recovered, and a prehistoric occupation level was identified. The Troxell-Steckel structure protected these underlying strata from the types of soil disturbance that occurred on the exterior of the house. This research indicates that, in addition to providing details on early American life, historic structures may also play a role in protecting information about the prehistoric past.

Bream, Jonathan W. *Digging down on the Farm: the Archaeology of a Pennsylvania German Farmstead in Lehigh County.*

The excavations at the Koch/Schmoyer Farmstead site (36LH242) provided information about certain aspects of farmstead layout on a Pennsylvania German farm in the late 18th through early 20th centuries and about the lifeways of its residents. This information included the evolution of the farm in terms of its size, construction, and the general layout of the buildings, as well as indices of how the property was affected by the adoption of modern farming practices. Farmsteads were not static entities that were constructed and remained constant for decades on end. As the farmer increased or diversified his herd, more and more often different structures were needed to house and manage the animals. As crop production increased, technology changed; new agricultural machines were invented, and specialized structures were needed to work and store these machines. The prosperity of this farm has been studied through the trash midden and garbage dump. This paper synthesizes the archival and archaeological documentation related to this Pennsylvania German Farmstead.

Carr, Kurt W. and James T. Herbstritt *Preliminary Analysis of the Eel Skin Rockshelter Artifact Assemblage.*

This presentation summarizes the analysis of artifacts from the Eel skin Rockshelter (36Bu59) located along Neshaminy Creek, Bucks County, Pennsylvania. The presence of temporally diagnostic projectile point/knife forms and a series of discrete native-made ceramic types indicate that the rockshelter was visited by Middle Archaic (Bifurcate Tradition) through Protohistoric (Susquehannock/Munsee) groups. A common activity at the rockshelter was the reduction of large argillite flakes into late stage bifaces including broadspears. Based on the preliminary results of the analyses we hypothesize that the Eel skin rockshelter experienced short term use by human groups exploiting the Neshaminy drainage for food and lithic sources. Quarry and subsistence procurement models explaining rockshelter use are presented on the basis of quantifiable artifact content. The paper concludes with a generalized overview of rockshelter site distribution in the Piedmont with specific emphasis on the recorded rockshelters of southeastern Pennsylvania.

Chiarulli, Beverly *Archaeology Is...*

As part of efforts at public outreach and education sponsored by the Society for American Archaeology and the Pennsylvania Archaeological Council, a new approach targeting both teachers and students emphasizes the multi-disciplinary nature of archaeology. Since the discipline requires at the very least familiarity with a variety of earth sciences, biological and physical sciences, mathematics, history, and numerous other subjects, archaeology is an ideal vehicle for a multidisciplinary approach to teaching and learning. This presentation will explain the goals and expectations of this new approach to public outreach.

Cowin, Verna *FA's and RCA's : Carnegie Museum's Unsung Heroes.*

The success of Carnegie Museum of Natural History's Upper Ohio Valley Archaeological Program has, from its beginning in 1950, depended on the enthusiasm and depth of knowledge found within the avocational community. This paper traces the history of two programs sponsored by the Section of Anthropology, namely, groups of volunteers who serve the Museum as Field Associates and Regional Conservation Archaeologists. Differences between the two categories are outlined and examples of the many contributions made by these individuals are offered. The paper concludes with descriptions of various volunteer efforts currently in place in Anthropology and assesses the prospects for future interactions between professional and para-professional archaeologists.

Diamanti, Melissa *Spatial Patterning in an Industrial Town.*

Examination of Braddock, Pennsylvania c. 1900-1925 revealed patterning in the spatial distribution of resources in an urban, industrial setting at the turn of the twentieth century. Different patterns of distribution were observed for different types of sites, including residences of different statuses, wholesale businesses, retail businesses, shops that sold foodstuffs, services, and industries. These patterns were shaped by consumer purchasing behavior and the availability of transportation, as well as the physical and infrastructure requirements of site location.

Duncan, Richard *Imaginary Sites in Virtual Space: GIS Predictive Modeling for CRM.*

Geographic information systems (GIS) are providing archaeologists with a powerful and efficient tool for accessing, analyzing, and interpreting the spatial data associated with archaeological remains. GIS software and data, once the realm of "cutting-edge" gurus and digital wizards, can now be obtained from the Internet and easily used on a standard home PC. For the archaeologist, the potential use of these new tools is limited only by the accuracy of the data and

breadth of the imagination. This paper will focus on one facet of the widening use of GIS within cultural resources management (CRM) archaeology, the prediction of “imaginary” (or expected) archaeological sites within the virtual landscape of the GIS. Several examples of CRM projects involving archaeological site predictive modeling will be explored, with discussion including the nature of the spatial data, spatial pattern analysis, and the prospects for future research.

Fritz, Brian *Archaeology on the Web.*

The Internet and World Wide Web have become powerful tools for disseminating and distributing archaeological information. This paper will discuss how the web is being used to advance the goals of archaeology and what this new technology may offer us in the future.

Gamble, Dynisha, Mary Pat Evans, and Kurt W. Carr *Use Wear Patterning and the Analysis of Experimentally Reproduced Onondaga Chert End Scrapers: Implications for the Functional Analysis of Stone Tools.*

This presentation will describe experiments we conducted in the production and identification of use-wear patterns on stone scrapers made from Onondaga chert. The procedure involved scraping hard wood, fresh deer bone, and fresh deer hide. Each material was scraped approximately 4000 times. The damage was observed with a scanning electron microscope and analyzed using a National Institute of Health image processing software. This software used false color to facilitate the analysis of the wear patterns. These were compared to experiments conducted by Tringham et al (1974) and Keeley (1980) and the patterns were found to be similar. Each of the materials exhibited a distinctive pattern and these results have obvious uses in the analysis of prehistoric stone tools. The senior author has entered this project into the Patriot News Capital Area Science and Technology Fair - Social Sciences category.

George, Richard *Monongahela Houses with Separate Walls and Roofs; Perhaps, Perhaps Not.*

Historical, environmental, and archaeological evidence are used to refute the hypothesis that some upland Monongahela houses had separate walls and roofs like those recorded in southeastern United States. Rather, it is suggested that the vertical structural posts of some Monongahela houses were slanted outward to counter forces that occurred when the poles' opposite ends were bent inward and secured to form the wigwam roof.

Harris, Matthew D. and William J. Chadwick *Predicting the Spatial Distribution of Prehistoric Archaeological Sites as Related to Water Resources*

Using GIS Analysis in the Lehigh Valley, Pennsylvania.

Geographical Information Systems (GIS) spatial analysis related to the distribution of running water, bedrock fractures related to groundwater, and prehistoric archaeological sites is a useful tool in prehistoric occupation site prediction. This GIS analysis produced a map showing three zones of probability for prehistoric archaeological site occurrence. The map displays a high correlation between a test set of known prehistoric sites and the high and medium probability of occurrence areas. The test results show that 85% of 46 test sites in the 200 km² study area in the Lehigh Valley section of the Great Valley physiographic province, Pennsylvania, fell within high to medium probability zones. A total of 72 prehistoric sites are known within the study area. A sample set of 26 sites is used to create the predictive model. The remaining 46 sites are used to test this model. GIS is used to correlate the sample set of 26 prehistoric sites to mapped surface water and bedrock fractures related to groundwater resources. The spatial relationship between the location of bedrock fractures, surface water, and prehistoric archaeological sites, is used to synthesize a statistical equation ($Wb=P * Sd$) to predict the probability of prehistoric site occurrence in 100 m² grid cells. These variables are chosen because the availability of water is the most important predictor of site location. The bedrock lithology of the study area includes Upper Cambrian to Upper Ordovician limestones, siltstones, argillites, and conglomerates. The validity of these probability zones proves that GIS spatial analysis is a useful tool in prehistoric archaeological site prediction.

Herbstritt, Jim *Experimental Archaeology on City Island.*

As part of the annual Archaeology Project on City Island, the PHMC has incorporated an experimental archaeology component to this award-winning program, beginning with some early attempts at stone boiling and fire cracked rock production in 1995. The experimental archaeology component has proven to be one of the most successful public outreach efforts of the entire program, and has generated a considerable amount of new and useful information on a variety of prehistoric technologies. This presentation will focus on the goals and accomplishments of the experimental archaeology component of the City Island project, and on the future of this important effort at public outreach and replicative experimentation.

Johnson, David *The Correlation Between the Lines of Nasca and Subterranean Water Resources.*

One of the most enduring archaeological mysteries of ancient Peru are the Lines of Nasca or geoglyphs which consist of giant geometric forms (triangles, trapezoids, parallel lines) as well as images of birds, plants, and mammals etched

into the surface of the desert of southern Peru, especially near Nasca. Many speculative explanations have been proposed for the function of the geoglyphs including landing strips for visits by ancient astronauts, remnants of cultivated fields, ritual pathways leading to sacred locations and the flow of surface water. In 1996, Johnson proposed a new explanation of the function of the geoglyphs based on his fieldwork and observations in the Nasca drainage. This hypothesis argues that some of the geoglyphs mark the path of aquifers (underground water), which carry water through geological faults. Due to insufficient surface water in the river system, the ancient inhabitants of the drainage settled in locations adjacent to geological faults, which provided water from the aquifers. Thus, there is a strong correlation between archaeological sites, geological faults, aquifers, fresh water and the geoglyphs, which mark their location. This hypothesis differs significantly from other "water-related" explanations in that all earlier models were based on the location and flow of surface water, while Johnson's hypothesis recognizes the importance of subsurface water flow and the role of the structural geology and hydrology in understanding the mechanism of its transmission. The Pre-Columbian inhabitants of the drainage, through familiarity and a basic understanding of their environment, were able to use geoglyphs to mark the location and flow of the aquifers. A team of scientists and experts was assembled to test this new hypothesis. Although considerably more work needs to be done, preliminary results provide evidence supporting this new hypothesis. This presentation will include a brief summary of how the hypothesis was formulated, a description of the sites where it was tested, a statement of the methods used and the results of our findings.

Johnson, Janet *Where Have All the Artifacts Gone?*

The State Museum's, Section of Archaeology, was created in 1905 for the purpose of curating archaeological collections. As the section is a designated central repository for all federally funded and state assisted projects, the collections have grown in number to approximately two million artifacts. This paper will attempt to correct misconceptions of inaccessibility to collections by the archaeological community and to provide information regarding procedures necessary for access. Additionally, presentation of the criteria for acceptance of collections and the subsequent accessioning process will be discussed. The recent move of the section to a new facility has provided the ability to electronically access collection locations, and enhance availability of the artifacts. An overview of the wide range of collections available for research, exhibit, and loan will be provided.

Johnson, William C. *Cordage Twist Direction and Ethnicity in the Potomac River Basin: The Luray Complex Conundrum.*

It has traditionally been suggested that the terminal Late Woodland and Protohistoric Luray complex (ca. A.D. 1400-1625) in the Upper and Middle Potomac River basin represented an alien intrusion which supplanted earlier Late Woodland groups. Examination of the twist direction displayed by cordage preserved as negative impressions on Luray complex Keyser Cord-Marked sherds and those from earlier Shepard and Page ware sherds demonstrates that this complex was, indeed, intrusive. The predominant cordage twist direction displayed by Keyser Cord-Marked ceramics, however, also eliminates from consideration the two favored sources for the Luray migration (i.e., the Monongahela culture and the Fort Ancient Bluestone phase).

Kandare, Rick and Jack McLaughlin *Passport in Time.*

The USDA Forest Service's Passport in Time Program is one of the most successful public outreach and volunteer programs in American archaeology. The Allegheny National Forest has been an enthusiastic and successful participant in the program for some time, and volunteers are engaged in a variety of successful Historic Preservation projects. This presentation will discuss the goals and accomplishments of the Passport in Time program nationally, and on the Allegheny, and describe current and future opportunities for volunteers.

McKeever, Katie L. *Where in the World are the Iron Furnaces of Butler County?*

Through literature surveys and field investigations, the locations of the seven 19th century iron furnaces have been determined. The presentation includes a brief history of iron-making technology, a review of the seven iron furnace sites, an analysis of slag collected at these sites, and recommendations for future research.

Mohney, Ken, Benjamin Resnick, and Douglas H. MacDonald *The Coverts Crossing Project: A Public Outreach Model.*

Between 1998 and 2000, GAI Consultants, Inc. (GAI) conducted a HAER recordation and two archaeological data recovery investigations along the Mahoning River, Lawrence County, Pennsylvania, providing important information regarding the use of the Mahoning River Valley during the Late Woodland period. The work was conducted for Taylor Engineering and PennDOT, District 11-0, in association with the Coverts Crossing Bridge Replacement Project. Public outreach comprised a significant part of the overall project effort. This paper details the various steps taken to involve the public as part of a coordinated outreach approach involving site tours, lectures to school groups and local organizations, production of flyers and brochures, and a museum display prepared as part of a local Native American Cultures exhibit.

Nevin, Paul A. *The Safe Harbor Petroglyphs Revisited.*

Big Indian and Little Indian Rock in the Susquehanna River below Safe Harbor were first visited by investigators from the Linnaean Society of Lancaster County in 1863. Nearly 70 years later Donald Cadzow mounted an impressive expedition to record petroglyph designs on the two rocks as well as carvings and occupation sites on other rocks and islands above Safe Harbor. Virtually no more significant field work took place at Big and Little Indian Rocks for the next 50 years. In 1982 I began visiting the sites and I have continued visiting them regularly since, sometimes finding bits and pieces of the story they have to tell. Between 1989 and 1993 four additional petroglyph sites nearby were located and recorded as well as previously unrecorded carvings on a rock adjacent to Little Indian Rock. Examination of the rocks themselves has brought to light inaccuracies in Cadzow's documentation of shapes and locations of carvings as well as the omission of many carved designs. While Cadzow's work documented 167 design elements on Big and Little Indian Rocks, in actuality they contain over 270 design elements. The previously unrecorded sites nearby contain over 170 more carved design elements, making this possibly the largest concentration of petroglyphs still in existence in the northeastern United States.

Rinehart, Niels and Philip A. Perazio *Life Away from the River - Creating a Site Typology for Upland Sites in the Poconos.*

The majority of archaeological work in the Delaware drainage has been focused on the floodplains and terraces that line the Delaware River. These alluvial settings present the opportunity for the excavation of deeply stratified sites. However, despite the artifactual richness of these sites, they only show a portion of the picture. Settlement pattern models that attempt to place the alluvial sites within a larger system, are often based on ethnographic work and lack archaeological correlates. In recent years, Kittatinny Archaeological Research, Inc. has looked at a number of upland sites in the Poconos. Although the majority of these investigations have been restricted to Phase I surveys, they have given us the opportunity to look at a broad sample of upland sites. From this, a more detailed picture for the variety of sites utilized away the rich alluvial terraces of the Delaware, is emerging. Previous research has created a predictive model for the area and has begun to place these sites within a larger ecological context. By looking at differences in artifact density, richness and evenness, raw material use, and the different artifacts present, the beginnings of a site typology is created for the Pocono Uplands.

Spohn, Cathrine A. *Tribute to John Shrader.*

Chapter 21 is giving this presentation to recognize the contributions of John

Shrader to SPA and to Pennsylvania archaeology over a period of over 60 years. We will begin with a look at John's background and education, and how as a youth he became interested in the native inhabitants of Pennsylvania. We will discuss John's participation in the establishment of SPA and his many contributions to the Society and to Pennsylvania archaeology over the years, with a special emphasis on his commitment to educating young people about Pennsylvania archaeology and his involvement with Chapter 21. Several members of Chapter 21 will discuss how John has influenced them and contributed to our knowledge about the native inhabitants of Pennsylvania. Members of the audience will also be invited to share any experiences they have had with John.

Van Rossum, Peter and Noel Strattan *PASS Forms, The PHMC & You.*

Over the past five years the Pennsylvania Historical & Museum Commission (PHMC) has been substantially revamping its archaeological site database. Thanks to the efforts of numerous professional and avocational archaeologists, the Pennsylvania Archaeological Site Survey (PASS) database has grown to contain data on over 18,000 archaeological sites in the state. Until this time all site submission forms had to be completed by hand and mailed into the PHMC for consideration. The focus of this talk is a discussion and demonstration of the PHMC's plans to allow future PASS form submissions to be entered via the internet.

Wall, Robert D. *The Mansfield Bridge Site (36Ti116): A Stratified Middle Archaic to Early Owasco Site in the Tioga River Valley.*

The Phase III data recovery investigation of the Mansfield Bridge site (36Ti116) resulted in the delineation of stratified occupations ranging from an initial Middle Archaic bifurcate component to an early Owasco household. The most extensive Archaic period manifestation on the site is early Brewerton and dates to ca. 4000 BC. Block excavations totaling 525 square meters have succeeded in exposing a series of hearths, pit features, post mold patterns, and associated activity areas. The entire excavation was mapped at a high spatial resolution resulting in clearly defined activity patterns, particularly in areas surrounding hearths. Given the extensive block excavation area exposed, community patterns are well defined for each component. The Archaic components seem to have been situated on what appears to have been the Tioga riverbank of ca. 7000 BC. The early Owasco occupants, 8000 years later, seem to have built their dwellings on the same well-drained surface used by the Archaic peoples. The site represents a new contribution to this little known headwaters area of northern Pennsylvania.