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A REPORT ON THE
SHENKS FERRY AND SUSQUEHANNOCK COMPONENTS AT THE FUNK
SITE, LANCASTER COUNTY, PENNSYLVANIA

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Abstract

This paper describes the preliminary results of the Pennsylvania Historical and Museum Commission's public excavation program in 1974 at the Funk site in Lancaster County, Pennsylvania. Over 50,000 square feet (4,646.84 m²) of horizontal exposure was achieved and 269 features excavated. Two major components were defined: Shenks Ferry and Susquehannock. The earlier Shenks Ferry component is represented by three overlapping villages roughly circular in ground plan. The Susquehannock component is represented by two intrusive cemeteries that relate culturally and temporally to the nearby Susquehannock Shultz site. These components and the findings are discussed.

Introduction

The Funk site (36 La 9) is located in what has been traditionally described as the Washington Boro Basin (Fig. 1). This basin occupies the western portion of the gently rolling Lancaster Plain and encompasses the rich farmlands in the area from just north of Washington Boro, Manor Township, Lancaster County, south three miles (4.83 km) to the base of Turkey Hill. The Susquehanna River borders the basin to the west, while a series of limestone hills provides a somewhat arbitrary eastern boundary.

This small but fertile area embraces perhaps the highest concentration of archeological remains to be found anywhere in Pennsylvania. Ten thousand years of prehistory are represented by the sites and artifacts which can be discovered in fields along the terraces and on the hilltops. A 17th century Susquehannock component of nearly 10 acres (4.04 ha) represents the largest single village site in Pennsylvania. Several other Susquehannock as well as Shenks Ferry villages may be found in the area. The majority of these sites have already been excavated. This report concentrates only on explorations at the Funk site including the late prehistoric Shenks Ferry and Susquehannock remains found there.

The Funk site is situated along the eastern bank of the Susquehanna River, south of Witmer's Run, on one of two adjoining knolls representing the dissected surface of an extensive terrace system (Pl. I). Donald A. Cadzow

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first explored the site for the Pennsylvania Historical Commission in 1931 and 1932 (Cadzow 1936). John Witthoft (1959) later conducted a series of test excavations and concluded that the site represented a "captive" Shenks Ferry village under domination of the Susquehannocks occupying the Shultz site (36 La 7) on the adjacent knoll. A field school from the Pennsylvania State University probed the site for a third time in 1968 (Casselberry 1971). The following year an archeological team directed by the senior author exposed the western edge of the Funk site while excavating 72,000 square feet (6,691.45 sq. m) on the nearby Shultz site (Smith 1970).

Throughout the years there has been a tendency by archeologists to make reference in their research to either a Shultz site (originally spelled "Schultz") or a Funk site (originally spelled "Funck"), to a Susquehannock village or a Shenks Ferry village, or to a Susquehannock knoll or a Shenks Ferry knoll when referring to the same subject. This diversification finally resulted in the formal definition of two sites: the Shultz site (36 La 7) which has been equated with a Susquehannock village and the Funk site (36 La 9) which has been equated with a Shenks Ferry village.

In light of more recent excavations, the physical separation between the two sites is no longer as distinct as it was originally thought to be. While it would be more accurate and probably more understandable to refer to a Shultz-Funk site and define a Susquehannock and a Shenks Ferry component, the authors of this report will continue to follow the dichotomy set by historical precedent.

Methods

Field work at the Funk site was conducted by the Pennsylvania Historical and Museum Commission during a 10 week period from June to August, 1974. Six college students provided the teaching and working nucleus for the project. Their effort was supplemented by high school students participating in training semesters, and by the general public (see Appendix).

Excavations were confined to horizontal exposures amounting to roughly 50,000 square feet (4,646.84 sq. m). In general, the procedure was to remove deposits comprising the plow zone with the aid of heavy machinery. At this point, the underlying subsoil surface was scraped clean with flat shovels to reveal subsurface features. After a limited area had been cleared in this manner, it was partitioned off into a series of 10 by 10 foot (3.04m by 3.04m) squares to facilitate the mapping of features. Subsequently, the contents of features, including a random selection of postmolds, were removed by trowelling. In various instances, the fill of pits was processed by flotation through fine mesh screen to maximize the recovery of small-scale organic remains.

Detailed records were made on standard forms of archeological findings including descriptions of features and burials. All measuring, aging and sexing of skeletons was done in the ground, and the skeletons were then re-buried. An extensive photographic record was maintained of these same finds as well as work in progress. Toward the end of the field season, the

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Pennsylvania National Guard provided a helicopter, pilot, and photographer. Black and white photographs, 35mm color transparencies, and infrared pictures were taken of the site and a large portion of the Washington Boro Basin.

Shenks Ferry Component

The Shenks Ferry tradition was initially described by Witthoft on the basis of his work at two sites in Lebanon County and re-analysis of the materials recovered by Cadzow in Lancaster County (Witthoft and Farver 1952). This study was the first to focus specifically upon the tradition since components discovered prior to 1952 were largely the by-product of Susquehannock related investigations. Four ceramic types were defined at this time including Shenks Ferry Cordmarked, Shenks Ferry Incised, Lancaster Incised and Funk Incised.

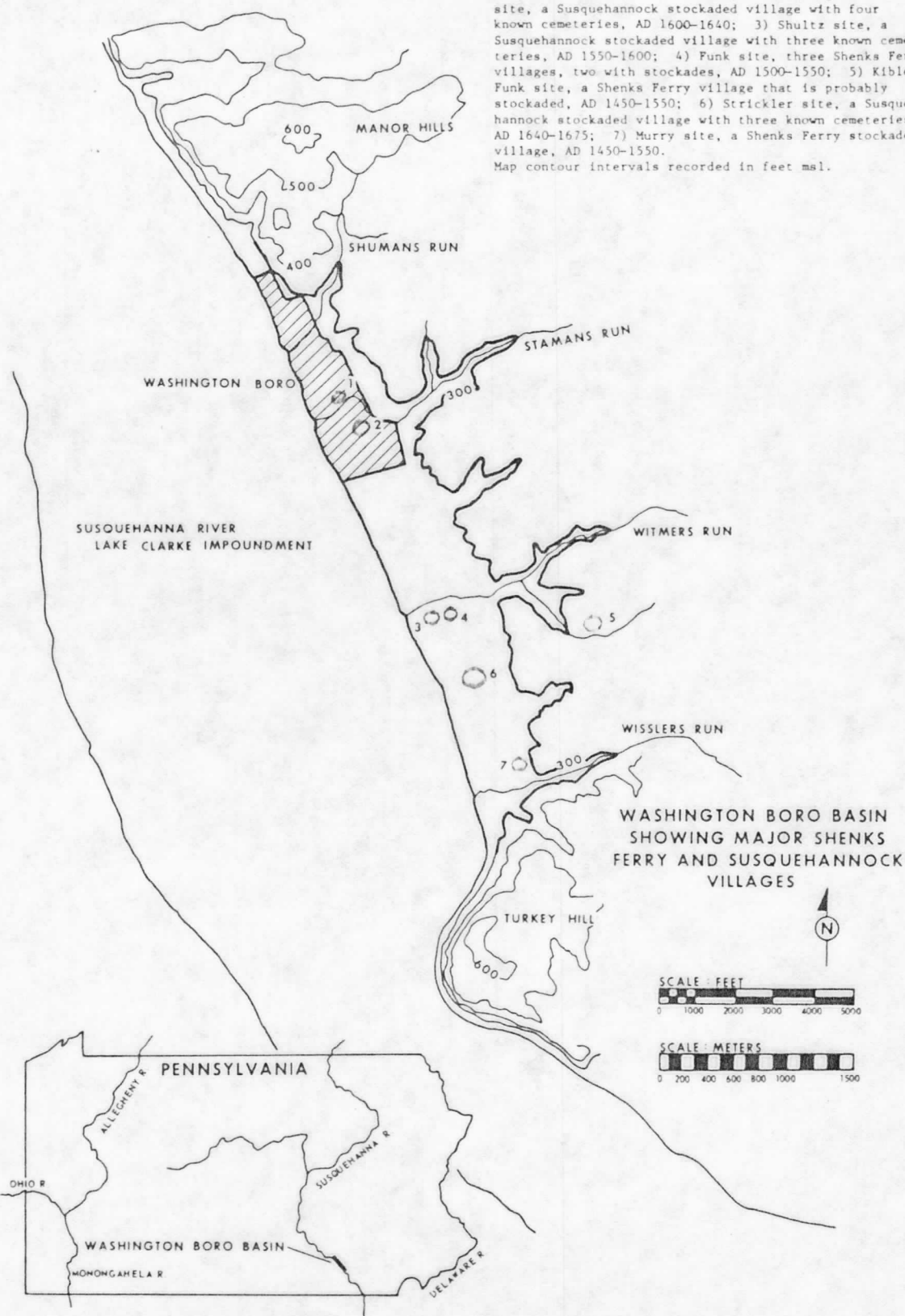
Heightened archeological activity beginning in the 1960's made a tighter definition of the spatial-temporal dimensions of the Shenks Ferry tradition possible. In terms of chronology, it has proved convenient to identify three subdivisions which include, from earliest to latest, the Blue Rock, Lancaster and Funk phases (Kinsey, Heisey and Graybill 1971:2). Although absolute dates cannot be specifically assigned to any of these phases, a combined temporal span of about 300 years (AD 1300-1580) is indicated. Geographically, the tradition is confined to central Pennsylvania, specifically to the Lower Susquehanna drainage system. A high density of sites has been reported for an area circumscribed by York, Lancaster, Lebanon and Dauphin counties (Kinsey and Graybill 1971:30-37). It is significant that the earliest components are distributed throughout the area, while later components are generally confined to the Lancaster Plain.

A paucity of archeological remains for several centuries prior to the Shenks Ferry tradition suggests that the tradition did not develop locally. Several hypotheses have been advanced to account for its historical antecedents, but as yet they remain untested (Witthoft and Farver 1952; Heisey and Witmer 1964; Kinsey, Heisey and Graybill 1971). In addition, the often assumed historical relationships with the more northerly Stewart complex remain to be substantiated (Witthoft 1954).

In the 1952 and subsequent papers, Witthoft (1959) postulated that the Shenks Ferry tradition (people) became acculturated by invading Susquehannocks at about AD 1550-1600. The material basis for this interpretation was essentially twofold: 1) an admixture of components at several locations suggesting interaction and contemporaneity, and 2) Funk Incised ceramics indicating an effort on the part of the Shenks Ferry potters to mimic Susquehannock styles. The accepted hypothesis was to view this set of circumstances as indicating the captivity of Shenks Ferry indigenes by the invading Susquehannocks. In this regard, the Funk site was specifically cited as "the product of a large number of captives" (Witthoft and Farver 1952:6). With the acquisition of additional data, this hypothesis has been disconfirmed (Smith 1970:28-30). Current evidence reveals that Funk Incised ceramics generally predate the earliest known Susquehannock components in the area. Further, systematic explorations

Fig. 1. Washington Boro Basin.

1) Frey Farm-Haverstick site, a Shenks Ferry village with no stockade, AD 1350-1450; 2) Washington Boro site, a Susquehannock stockaded village with four known cemeteries, AD 1600-1640; 3) Shultz site, a Susquehannock stockaded village with three known cemeteries, AD 1550-1600; 4) Funk site, three Shenks Ferry villages, two with stockades, AD 1500-1550; 5) Kibler-Funk site, a Shenks Ferry village that is probably stockaded, AD 1450-1550; 6) Strickler site, a Susquehannock stockaded village with three known cemeteries, AD 1640-1675; 7) Murry site, a Shenks Ferry stockaded village, AD 1450-1550. Map contour intervals recorded in feet msl.



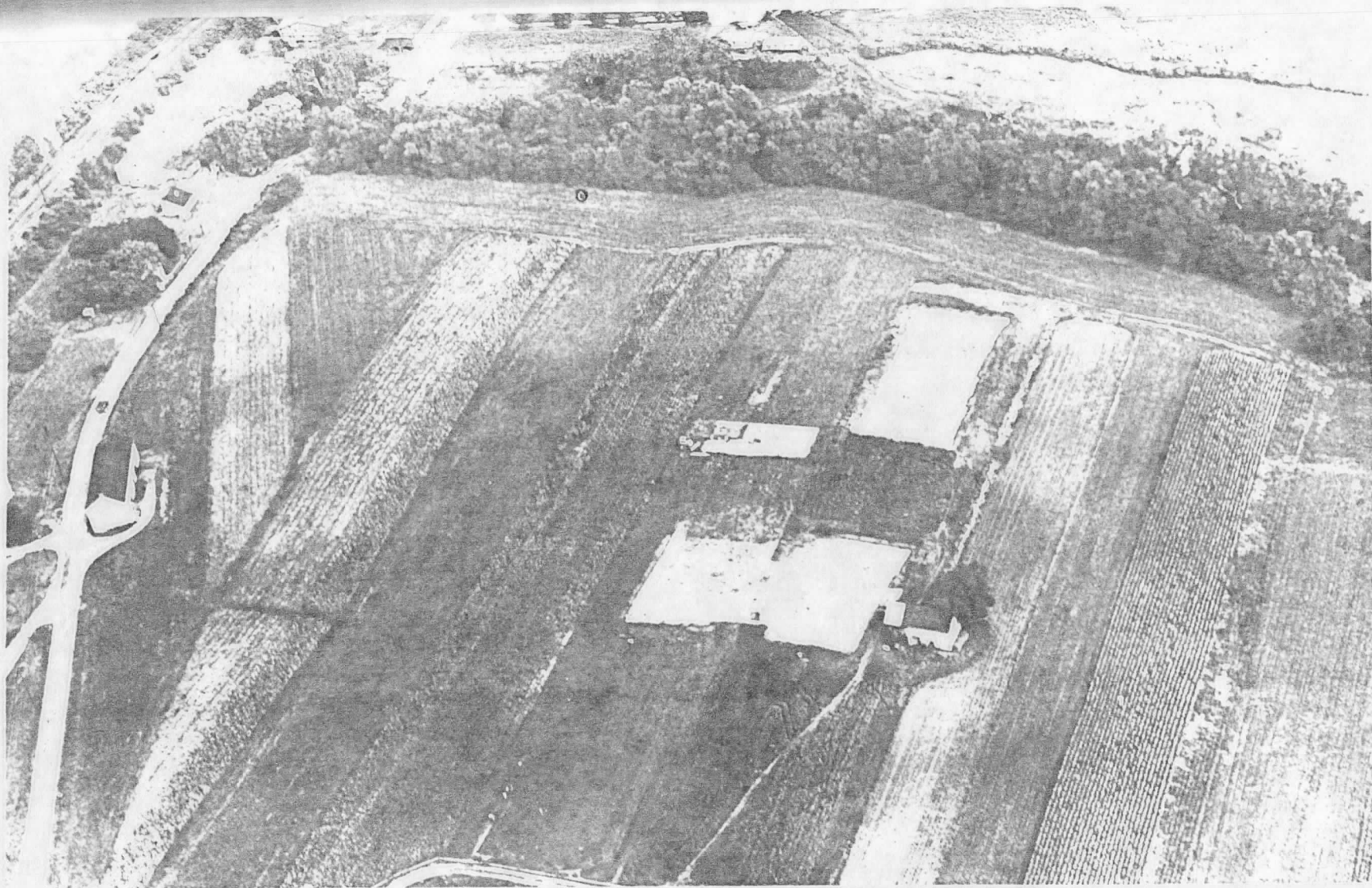


PLATE I. The Funk site is situated to the left and slightly north of the tobacco shed on a Pleistocene terrace overlooking the Susquehanna River. The Lake Clarke impoundment behind the Safe Harbor Hydroelectric Dam has inundated the lower land where early farmers may have once cultivated the agricultural staples that permitted them to establish permanent year around villages.



PLATE II. Shenks Ferry Burials. The Shenks Ferry dead were laid out in slit trench graves in extended supine position with the head oriented to the east.

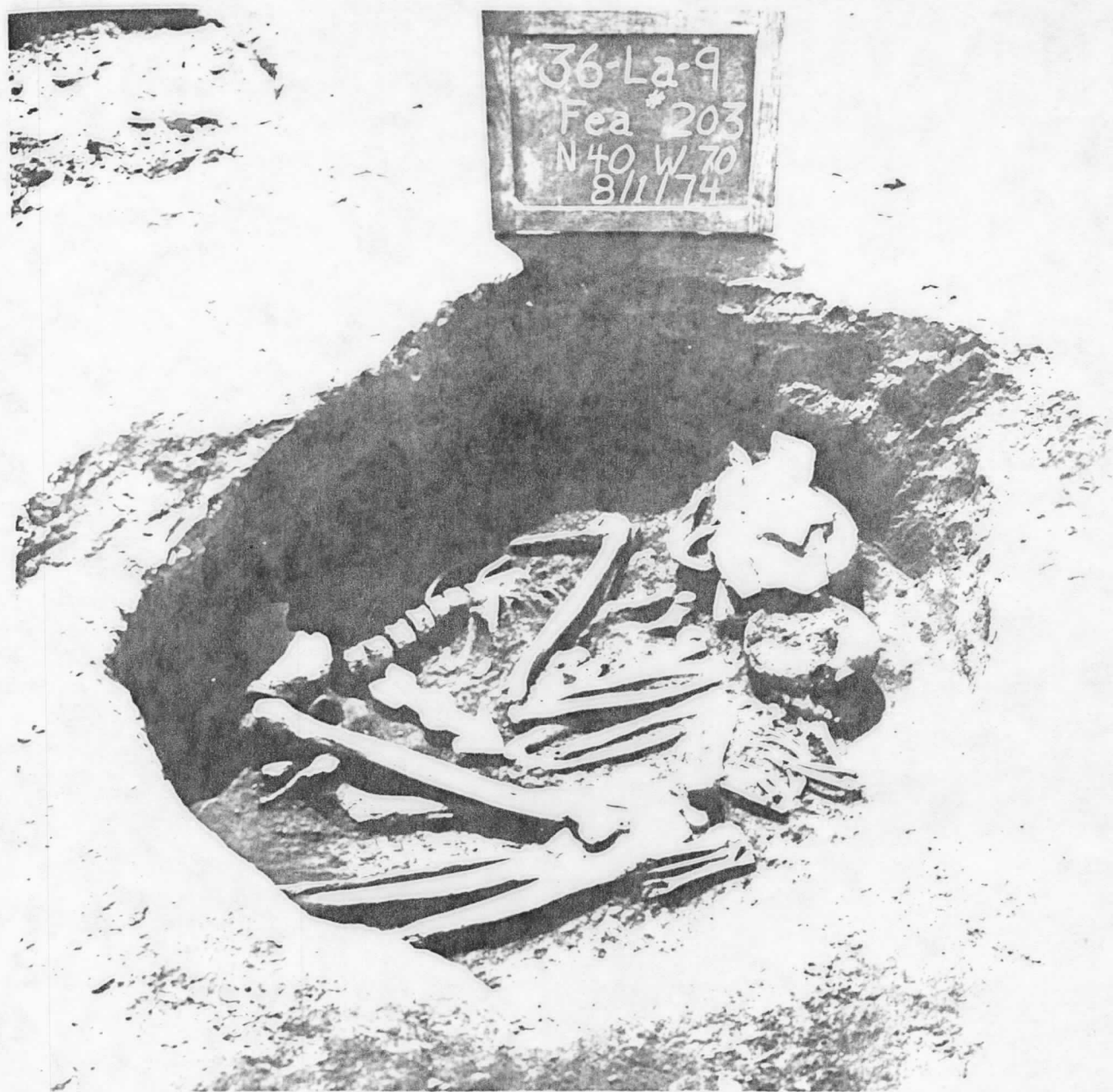


PLATE III. Susquehannock Burials. Susquehannock interments were made in deep oval pits. The bodies were customarily laid out in a fetal position with the head oriented toward the west and were usually accompanied by a wide assortment of mortuary offerings



PLATE IV. Susquehannock Cemetery.

Unlike the Shenks Ferry who buried their dead throughout and around the village, and sometimes under house floors, the Susquehannocks confined their dead to cemeteries located outside the village. White lime was used to indicate the graves at the perimeter of Cemetery II.

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at the Shultz site have disclosed a sequential arrangement between Shenks Ferry and Susquehannock components.

The 1974 excavations at the Funk site emphasized the physical and temporal relationships between Shenks Ferry and Susquehannock remains. A further objective was to obtain some insight into the seasonality and community pattern of the Shenks Ferry component. To this end, horizontal stripping disclosed a large sample of features including pits, graves, middens, postmolds and semisubterranean structures. The ensuing description is based upon a preliminary analysis which represents the Shenks Ferry component in its entirety, except for scattered items recovered from the fill of Susquehannock graves and those obtained by water screening.

All of the 25 graves attributable to the Shenks Ferry component were rectangular in floor plan with perpendicular walls and flat bottoms. In most instances, grave fill was relatively sterile, consisting of varying amounts of topsoil and clay subsoil removed in the construction of the grave. A single grave in the series departed from this standard by virtue of incorporating several limestone slabs into the fill.

In terms of burials, 3 graves lacked skeletal remains, 21 graves were single interments, and 1 grave contained two skeletons (Pl. II). The double burial provided the only indication of violent deaths since each skeleton had a triangular projectile point lodged in the vertebral column, with a third point high in the chest cavity of the younger of the two individuals. Among 19 instances for which burial position could be discerned, all were fully extended with heads oriented in an easterly direction. The age composition of 20 individuals for which this factor could be assessed includes: 0-2 years (1 ind.), 2-12 years (7 ind.), 12 plus years (12 ind.). Due to poor bone preservation, sexing was accomplished in only a few instances. From a sample of eight interments, six were identified as females and two as males.

Only three graves were accompanied by mortuary offerings. A single burial yielded 1 smoking pipe, 1 drill, 2 small celts, and 3 triangular points in conjunction with an adult male. An infant burial produced a single elk tooth pendant from the vicinity of the head. Finally, one of two skeletons constituting the double burial had 6 cylindrical shell beads in the vicinity of the head.

A total of 44 midden filled pits appeared as dark discolorations in contrast to the surrounding clay subsoil. They exhibited intentionally constructed edges, being roughly circular in floor plan, saucer-shaped in profile, and relatively shallow with a maximum depth of 20 inches (.50m). These midden filled pits are to be distinguished from eight plow-truncated midden accumulations that occupied natural depressions. This latter class of features was characterized by amorphous edges and irregular bottoms. In several instances, there were indications that constructed pits intruded into midden accumulations, although detection was made difficult in the absence of distinct soil contrasts.

Eight additional features consisted of relatively large pits with

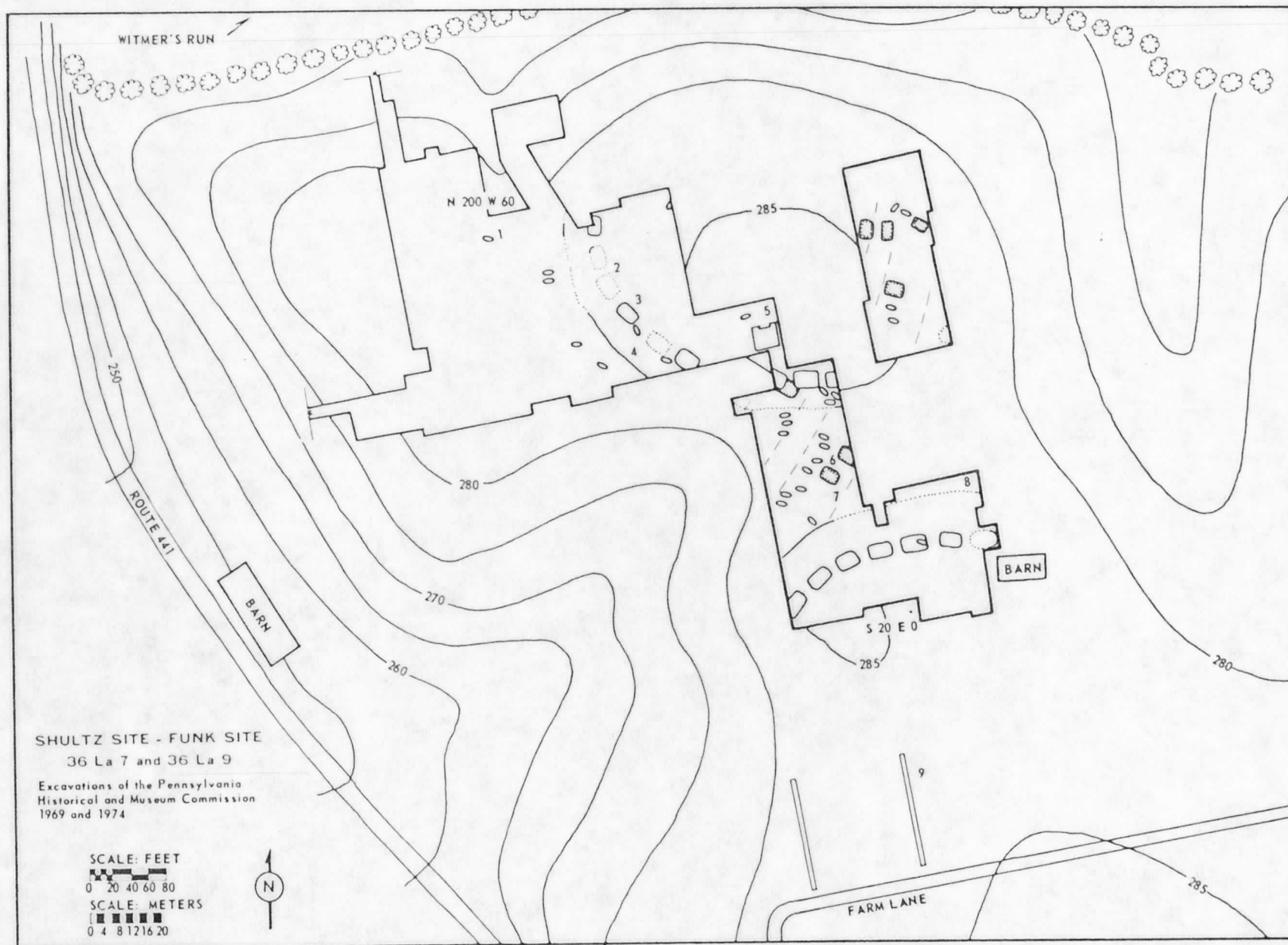


Fig. 2. Idealized Site Map of the Shenks Ferry Component.

- 1) single grave pits; 2) actual house patterns; 3) projected house patterns; 4) projected stockade line; 5) 19th C. house foundation; 6) semisubterranean structures (shapes and orientation approximate); 7) common...

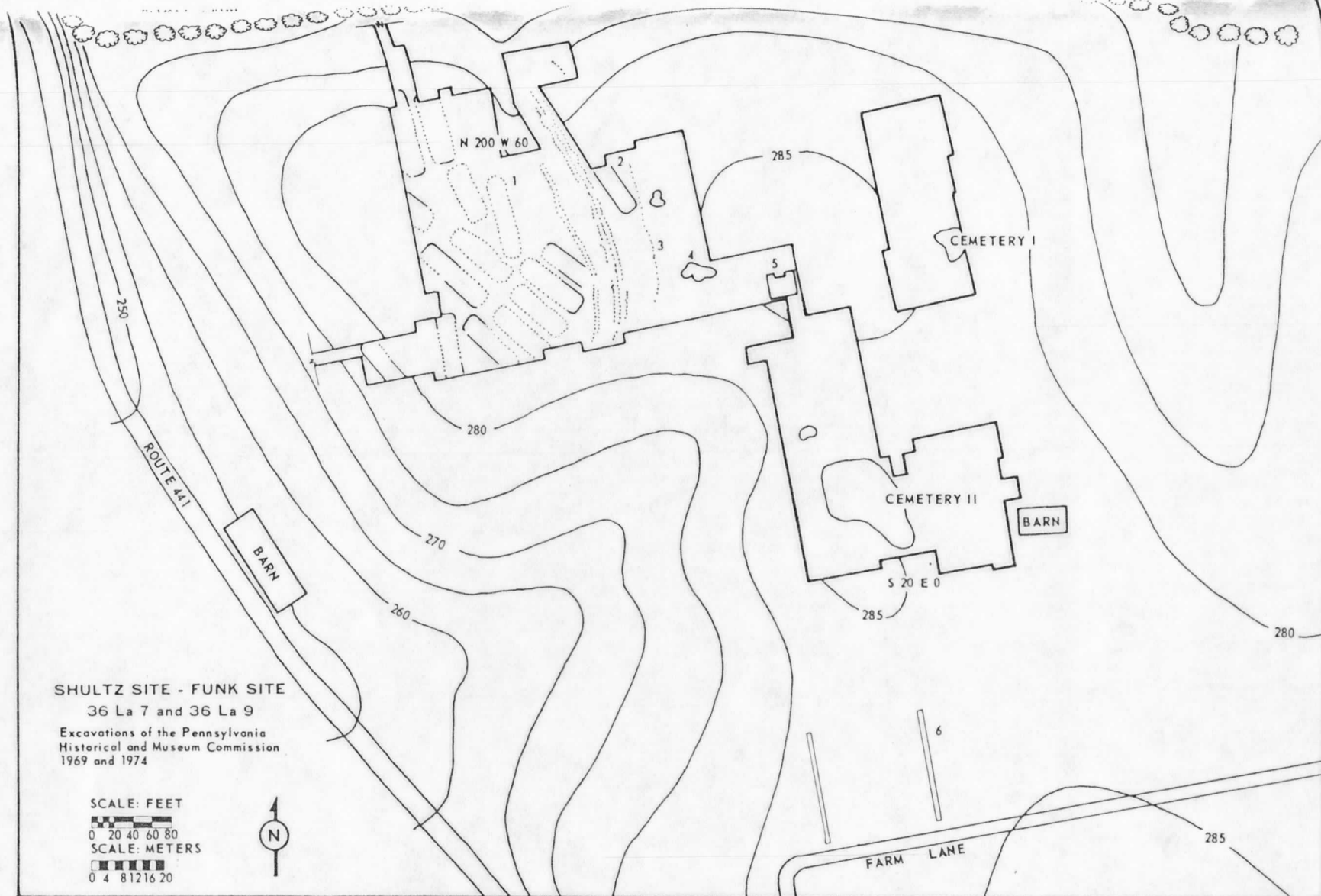


Fig. 3. Idealized Site Map of the Susquehannock Component.
 1) actual longhouse pattern; 2) projected longhouse pattern;
 3) actual stockade line; 4) cluster of graves; 5) 19th C. house
 foundation; 6) test trenches. The Funk site excavations of 1974 are
 delineated with a heavy line.
 Map contour intervals are recorded in feet msl.

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irregular edges. In floor plan, the better preserved examples were highly variable in form, exhibiting margins of dark soil with clay filled interiors. Heavy concentrations of postmolds around the perimeters of several constructions indicated that they may have functioned as semi-subterranean structures. Although these features are ascribed to the Shenks Ferry component, this assessment is a tentative one. In three cases, associated hearths produced minor amounts of grit-tempered ceramics of Shenks Ferry affiliation.

By far the most abundant features encountered were postmolds (Fig. 2). In several instances, high density zones produced overlapping arcs and lines or segments of house patterns that suggested a series of adjacent dwellings in conjunction with extensive rebuilding. Beyond these concentrations, the only clearly defined house configuration was sub-rectangular in form with a width of 13 feet (3.90m) and an unknown length. Two linear arrangements of postmolds with relatively large diameters were segments of palisades.

With reference to contents, the several classes of features (exclusive of graves) showed a high degree of variability in artifact density as well as ratios of ceramic, lithic, and organic refuse. Lithic materials included 1 pendant, 1 piece of worked steatite, 1 celt, 4 discs, 6 hammerstones, 3 scarified anvils, 10 hoes, 75 triangular projectile points, 34 triangular preforms, 2 ovate knives, 19 broken bifaces and an unquantified amount of lithic waste (at least some of which displays use-wear). A diverse inventory of bone, shell and antler items included 1 drilled turtle humerus, 1 drilled deer tooth, 1 shell bead, 28 bird bone beads, 1 fishhook, 12 fishhooks in process, 7 antler tines, 2 beaming tools, 2 worked beaver incisors, 5 splinter awls, 1 deer ulna awl and 2 turtle shell cups along with numerous fragments.

The ceramic inventory exceeded 5,000 sherds from broken vessels, with elements of two areally distinct traditions represented. A large sample of grit-tempered pottery was of Shenks Ferry manufacture and comprised the dominant tradition. The following types were indicated for a sample of 283 rims: 86 (30.39%) Funk Incised, 163 (57.60%) Lancaster Incised and 34 (12.01%) undecorated. A second tradition was represented by shell-tempered ceramics that suggests contacts with cultures to the immediate west and perhaps south. The following types were noted for a sample of 18 rims: 1 (5.56%) Monongahela Plain, 9 (50.00%) Monongahela (or Keyser) Cordmarked and 8 (44.44%) McFate Incised. A final type was comprised of 17 untempered rims from so-called "toy" pots. Other ceramic artifacts included a wide assortment of baked clay fragments, 2 sherds reworked into discs and 13 fragments of smoking pipes, some of which exhibit roulette-decorated motifs.

The distribution of artifacts and the spatial arrangement of features suggests that at least three overlapping Shenks Ferry villages roughly circular in horizontal plan existed at the Funk site. Two settlements were physically separated by single walled palisades, while one settlement lacked a palisade. A segment of the palisade enclosing the most northern village was partially uncovered during the 1969 excavations at the Shultz site (Smith 1970, Fig. 2). Several house configurations also

disclosed at that time are comparable in size and form to a single instance belonging to the same settlement at the Funk site. Although no well defined house patterns were discerned for the southernmost village, a heavy concentration of postmolds paralleling the interior of its palisade suggests the locus of a series of houses. A third settlement occupied an intermediate position with respect to the two palisaded villages as indicated by a linear arrangement of pits and graves intersecting both walls.

The relative duration of occupation of the villages may further be inferred from the intensity of associated artifacts and features. A dearth of features in conjunction with sparse contents indicates a brief occupancy for the southernmost settlement. In contrast, a more lengthy habitation of both the intermediate and northern villages is suggested by a substantially higher incidence of pits, graves, middens and refuse. In terms of seasonality, the three settlements are poorly understood, although it is anticipated that the analyses of small scale organic remains will assist in clarifying this matter.

Attempts to determine the temporal relationships among the three settlements on the basis of extant historical classes have been unsuccessful. These efforts have been hindered by several factors, including the inability to assign some features to specific villages, the insufficient sample sizes for features that could be assigned to specific villages, and the paucity of artifacts for the southern village. The near contemporaneity of the intermediate and northern settlements is indicated by the distribution of ceramics since stylistic variability within each village is about as great as variability between villages.

Susquehannock Component

The Susquehannocks originated in what is today the area of northern Pennsylvania-southern New York presumably as an offshoot of the predecessors of the Cayuga. They lived at first in small hamlet-like settlements until in the 16th century they began to consolidate and move south through the Susquehanna Valley. Evidence of interaction and conflict with the indigenous cultures is sufficient to indicate that the Susquehannocks were a significant factor in the disruption and dissipation of these cultures.

Initially the Susquehannocks consolidated at the Shultz site in the Lower Susquehanna Valley about AD 1550-1575, then established other villages and dominated that area until the Maryland colonists and Seneca Indians joined forces to destroy them as a significant political entity 100 years later. Those who survived both warfare and disease left Pennsylvania to settle briefly at an abandoned Piscataway Indian fort along the Potomac River.

By 1700, refugee Susquehannocks had begun to return to Pennsylvania to settle on William Penn's land at Conestoga Town in Lancaster County. It was at this site in 1763 that the remnants of a once dominant group, completely acculturated and dependent on neighboring European colonists for practically all of the necessities of life, were massacred by the Paxton Boys for Indian atrocities committed along the Pennsylvania frontier.

	ARTIFACT	CEMETARY II TOTALS	CEMETERY I TOTALS
IRON	AXE (Complete) AXE (Incomplete) ADZE DAGGER KNIVES (Fragmentary) TRIANGULAR POINT BRACELET CHISEL MISCELLANEOUS	3 1 1 1 4 1 1 1 8	1 1 1
BRASS	BEADS EAR SPIRALS CONES KETTLE LUG KETTLE (Miniature) BRACELETS PENDANTS RINGS TUBES SHEET RING BUTTON MISCELLANEOUS	138 23 25 1 1 12 34 11 5 1 10	8 2 1 17 1 1
GLASS BEADS		2920	104
LITHIC (Functional)	TRIANGULAR POINTS SCRAPERS HONING STONES HAMMERSTONES BOILING STONES PAINT STONE PEBBLE FLINTS, QUARTZ AND CHIPS	62 12 6 4 6 1 X	6 X
LITHIC (Ornamental)	COAL BEADS COAL FRAGMENTS CATLINITE BEADS CATLINITE EFFIGY HEAD CATLINITE EFFIGY TURTLE STEATITE EFFIGY TURTLE STEATITE BEADS OCHRE & SPECULAR HEMATITE	26 11 12 1 1 1 2 55	 13
BONE & ANTLER	DOG REMAINS TURTLE SHELL RATTLES BEAVER INCISOR CHISELS ANTLER PUNCHES AWLS COMBS ANTLER LADLES BEAR TEETH RACCOON BACULI (Polished) ANTLER HUMAN EFFIGY ANTLER BEAVER EFFIGY DRILLED ANIMAL TEETH	3 7 7 2 3 2 1 3+ 1 2 4	 2 7 1 1
SHELL	BEADS PENDANTS MISCELLANEOUS	1348 4 7	
CERAMIC	POTS PIPES POTTERS CLAY	150 1 X	12 1

Fig. 4. Artifact Inventory, Susquehannock Component, Cemeteries I and II, Funk Site (AD 1550-1600).

Two Susquehannock Indian cemeteries that are related in time (AD 1550-1600) and culturally associated with the nearby Susquehannock Shultz site intruded into the Funk site and were excavated in 1974 (Fig. 3).

Cemetery I

The smaller of the two cemeteries, containing 18 graves, was only partially exposed along its western perimeter. Soil discolorations in this cemetery were indistinct and the oval-shaped graves were barely distinguishable from the surrounding subsoil. Twelve graves contained a few fragmented bones and a variable number of enamel teeth caps. The remainder contained no skeletal remains whatsoever. Where age assessments were possible, the composition was as follows: 0 - 5 years (3 ind.), 5 - 10 years (3 ind.), 20 - 30 years (2 ind.), 30 plus years (1 ind.).

A flexed posture was noted in three or four instances when sufficient bone remained to make this determination. Enamel teeth caps and/or ceramic burial offerings located in the western portion of a number of graves indicated that the dead were interred with the head oriented in a westerly direction. Flexed inhumations oriented to the west are typical of Susquehannock burial practices (Witthoft and Kinsey 1959; Heisey and Witmer 1962).

Two cremations in this cemetery were not representative of the normal mode of Susquehannock burial. One oval-shaped pit contained the partially cremated remains of an adult and a child deposited beneath three large sandstone slabs that had been transported onto the site. A variety of artifacts--an iron chisel, 2 triangular stone projectile points, red ochre, specular hematite, 3 unmodified flint pebbles, 2 beaver incisor chisels and 7 antler punches--were cached in close proximity to each other and might originally have been contained within a leather or bark pouch. A second cremation was more completely consumed. Four triangular stone points and an iron knife accompanied this interment.

The numbers and types of European trade objects, which began to increase in popularity and availability at about this time, and artifacts of native manufacture are presented in Fig. 4. Shell-tempered, incised-collared pottery characteristic of what is herein referred to as the Shultz phase (AD 1550-1600) of Susquehannock cultural development was the most universal offering. Several graves contained more than one pot, often one packed inside another, while many pots contained fish remains or occasionally the bones of larger mammals. Artifacts of bone, stone or shell occurred with surprising infrequency relative to the rich inventory of native-made tools and ornaments found in 1969 at the nearby Shultz village site. Most native-made objects of these materials in the cemetery were deposited with one or the other of two caches.

Thirteen of the 18 graves had burial offerings. Ten of these contained either iron or brass artifacts or glass beads. This means that 77 percent of the graves with artifacts contained objects of European origin. Iron

cutting tools were recovered from both cremations and a third iron artifact was found in another grave. It is significant to note that very little iron was previously found in the Shultz village. It was a valuable commodity that received intense utilization and then was carefully saved to accompany the dead. Brass was more plentiful than iron in the cemetery and in the village and was used mostly for ornamental purposes. Glass beads, typed and tabulated in Fig. 5, were virtually nonexistent in the more than 450 refuse pits excavated in the Shultz village, but were numerically the most common European object deposited in the graves.

Cemetery II

The second cemetery is the larger of the two and represents the single most completely documented, undisturbed Susquehannock cemetery excavated in Pennsylvania (Pl. IV). This cemetery, situated like the first one along the edge of a local high relief topographic feature, consisted of an elongated cluster of graves oriented in a general east-west direction. The discolorations of 166 pits, 121 of which contained material culture remains, were generally darker and more readily visible than in the smaller cemetery.

Located at the center of this cluster was an open area measuring 20 feet (6.09 m) by 30 feet (9.14 m). There were no interments here or subsoil indications of distinctive surface structures. Since a scattering of postmolds from the earlier Shenks Ferry component were visible, it can be assumed that Susquehannock postmolds would also have been preserved had they been present. The area appears to have been devoid of Susquehannock features.

Bone preservation in this cemetery was poor but better than in the smaller one. Many graves contained only enamel caps, fragments of bone preserved by verdigris, and/or ceramic offerings in the western end of the pit. The following ages of 102 individuals were noted: 0-5 years (31 ind.), 5-10 years (23 ind.), 10-15 years (6 ind.), 15-20 years (5 ind.), 20-30 years (14 ind.), 30 plus years (23 ind.). This breakdown is not particularly reliable because of the disintegrated nature of the remains. At best, it indicates a high infant-juvenile mortality rate and a low mortality among individuals ages 10 to 30. The many small, sterile pits that could only have been used to bury infants or juveniles increases even more the abnormally high percentage of young people interred in this cemetery.

There was a sufficient amount of preserved bone to determine that 71 inhumations were flexed with the head oriented to the west (Pl. III). Burials varied from those that were tightly flexed to others that were more loosely flexed. A case might possibly be made to show a general change in Susquehannock burial character from tightly flexed, to loosely flexed, to extended through time and in response to the increase in European material culture influence and accompanying social and religious changes.

Four cremation burials were found in this cemetery. Two were especially significant. The first contained a large quantity of partially burned bone together with a burial pot and a cache of objects which included a triangular iron projectile point, fragment of a large glass chevron bead,





TYPE	SHAPE	VAR DESIGN	CEM II TOTALS	CEM I TOTALS	SURFACE COLOR	DESCRIPTION
TUBULAR		10	167		WHITE	OPAQUE WHITE, THIN TO THICK WALL, 7-15mm LONG, 2-5mm DIA.
		11	133		BLUE (NAVY)	TRANSLUCENT BLUE, THIN WALL, 9mm LONG, 2mm DIA.
		29	71		AMBER	TRANSLUCENT AMBER, THIN WALL, 15-17mm LONG, 1.5-4mm DIA.
		45	1		BLUE GRAY	OPAQUE BLUE-GRAY, THICK WALL, 8mm LONG, 4mm DIA.
		50	2		BLACK	OPAQUE BLACK, THIN WALL, 9-18mm LONG, 3mm DIA.
		51	13		PURPLE	TRANSLUCENT PURPLE, THIN WALL, 12-14mm LONG, 2mm DIA.
		14	1		BLUE (LIGHT)	OPAQUE BLUE, THICK WALL, CLEAR CORE, 2mm LONG, 3mm DIA.
		17	5		BLUE (NAVY)	OPAQUE BLUE, THICK WALL, BLUE/WHITE/BLUE CORE, 21-30mm LONG, 6mm DIA.
		49	1		BLUE GREEN	OPAQUE BLUE-GREEN, THICK WALL, BLUE-GREEN/WHITE/BLUE-GREEN CORE, 12mm LONG, 5mm DIA.
		12	6		BLUE (NAVY) WITH WHITE STRIPES	OPAQUE BLUE, THICK WALL, BLUE/WHITE/BLUE CORE, 11-25mm LONG, 6-9mm DIA.
OVOID		41	1		WHITE WITH BLUE STRIPES	OPAQUE WHITE WITH GROUPS OF 3 TWISTED BLUE STRIPES, THICK WALL, PALE BLUE CORE, 9mm LONG, 5mm DIA.
		1	9	1	AMBER	TRANSLUCENT AMBER, SOLID, AVG. 7mm LONG
		2	169	3	BLUE (NAVY)	TRANSLUCENT BLUE, SOLID, AVG. 7mm LONG
		3-8	796	39	NILE GREEN VARYING TO WHITE	OPAQUE NILE GREEN (PALE JADE) TO WHITE, SOLID, 5-13mm LONG
		4	44		PURPLE	TRANSLUCENT PURPLE, SOLID, AVG. 7mm LONG
		20	10		BLACK	OPAQUE BLACK, SOLID, AVG. 7mm LONG
		43	4		TRANSPARENT	TRANSPARENT, SOLID, AVG. 7mm LONG
		44	6	1	BLUE (COBALT)	TRANSLUCENT BLUE, SOLID, AVG. 7mm LONG
		65	51	7	BLUE (NAVY)	TRANSLUCENT BLUE, SOLID, 11-21mm LONG ... LARGE VERSION OF VARIATION NO. 2
		23	11		BLUE (NAVY) WITH WHITE STRIPES AND DOTS	OPAQUE BLUE WITH ROWS OF WHITE DOTS ALTERNATING WITH WHITE LINES, SOLID, 15mm AVG. LENGTH
		46	5		BLUE (NAVY)	TRANSLUCENT BLUE ELONGATED AND DISTORTED OVOID, SOLID, 10mm LONG (SEE VARIATION 2)
		52	2		TRANSPARENT WITH WHITE STRIPES	TRANSPARENT WITH UNDERLYING WHITE STRIPES, SOLID, 5mm LONG

Fig. 5. (Part I) Glass Bead Typology, Susquehannock Component, Funk Site (AD 1550-1600).



















TYPE	SHAPE	VAR DESIGN	CEM. II TOTALS	CEM. I TOTALS	SURFACE COLOR	DESCRIPTION
	 	59	7		RED WITH BLUE AND WHITE STRIPES	OPAQUE RED WITH SINUOUS BLUE STRIPES ON WHITE BACKGROUND. ELONGATED AND DISTORTED OVOID, SOLID, 10mm LONG
SUBSPHERICAL (SEED) 0.3mm	 	13	152		BLUE	TRANSLUCENT BLUE, SOLID, 2mm MAX. DIA.
		47	7		LIGHT BROWN VARYING TO PURPLE	TRANSLUCENT LIGHT BROWN TO PURPLE, SOLID, 2.5mm MAX. DIA.
	 	48	107		BLUE	TRANSLUCENT BLUE, WHITE CORE, 2mm MAX. DIA. (WHITE CORE NOT ALWAYS OBVIOUS, SIMILAR TO VARIATION 13)
	 	58	2		RED	OPAQUE RED, CLEAR CORE, 2mm MAX. DIA.
	 	15	17		BLUE WITH RED STRIPES	OPAQUE BLUE WITH RED STRIPES, CLEAR CORE, 2.5mm MAX. DIA.
	 	16	4		BLUE WITH BLACK STRIPES	OPAQUE BLUE WITH BLACK STRIPES, CLEAR CORE, 2.5mm MAX. DIA.
SUBSPHERICAL (MEDIUM) 3-6mm	 	9	17		BLACK	OPAQUE BLACK, SOLID, 4.5mm MAX. DIA.
		33	227		BLUE	OPAQUE BLUE, SOLID, 5mm MAX. DIA. (COUNT INCLUDES LARGE EXAMPLES VARIATION 5)
		34-54	74	44	BLUE (SKY)	OPAQUE BLUE, SOLID, 3.5mm MAX. DIA. (VARY FROM SUBSPHERICAL TO SPHERICAL)
		37	2		BLUE GRAY	OPAQUE BLUE GRAY, SOLID, 6mm MAX. DIA.
		39	20		WHITE	OPAQUE WHITE, SOLID, 4mm MAX. DIA.
	 	7	39		BLUE-GRAY	OPAQUE BLUE GRAY, CLEAR CORE, 4mm MAX. DIA.
	 	53	50		BLUE	OPAQUE BLUE, CLEAR CORE, 4mm MAX. DIA.
	 	21	3		RED WITH WHITE STRIPES	OPAQUE RED WITH WHITE STRIPES, BLACK CORE, 4.5mm DIA.
SUBSPHERICAL (LARGE) 6-9mm	 	6	6		BLUE GRAY... DETERIORATED	TRANSLUCENT BLUE, SOLID, 7.5mm AVG. DIA.
		36	21		BLUE (NAVY)	TRANSLUCENT BLUE, SOLID, 8mm AVG. DIA.
		40	9		BLUE (SKY)... DETERIORATED	OPAQUE BLUE, SOLID, 7.8mm AVG. DIA.
		60	1		BLUE (COBALT)	TRANSLUCENT BLUE, SOLID, 8mm DIA.
		70	31		BLACK	OPAQUE BLACK, SOLID, 8mm AVG. DIA.
	 	22	5		BLUE (NAVY) WITH WHITE STRIPES	OPAQUE BLUE WITH BROAD WHITE STRIPES, BLUE/WHITE/BLUE CORE, 8-10mm DIA.
	 	24	1		BLACK WITH WHITE STRIPES	OPAQUE BLACK WITH GROUPS OF 3 SINUOUS WHITE STRIPES, SOLID, 7mm DIA.

Fig. 5. (Part II) Glass Bead Typology, Susquehannock Component, Funk Site (AD 1550-1600).





























TYPE	SHAPE	VAR DESIGN	CEM II TOTALS	CEM I TOTALS	SURFACE COLOR	DESCRIPTION
	 	28	35		BLUE (NAVY) WITH WHITE STRIPES	OPAQUE BLUE WITH WHITE STRIPES, BLUE/WHITE/ BLUE CORE, 8mm DIA.
	 	55	5		GRAY WITH RED STRIPES	OPAQUE GRAY WITH RED STRIPES, SOLID, 7mm DIA.
	 	56	4		RED WITH BLUE AND WHITE STRIPES	OPAQUE RED WITH SINUOUS BLUE STRIPES ON WHITE BACKGROUND, SOLID, 7mm DIA.
	 	57	12		BLUE GRAY WITH RED AND BLUE STRIPES	OPAQUE BLUE GRAY WITH ALTERNATING RED AND BLUE STRIPES, SOLID, 9-10mm DIA.
	 	62	43		BLACK WITH RED AND WHITE STRIPES	OPAQUE BLACK WITH RED STRIPES ON WHITE BACKGROUND, SOLID, 12mm AVG. DIA.
	 	63	5		BLACK WITH RED AND WHITE STRIPES	OPAQUE BLACK WITH ALTERNATING BROAD RED AND WHITE STRIPES, SOLID, 10mm DIA.
	 	66	1		RED WITH WHITE STRIPES	OPAQUE RED WITH WHITE STRIPES, SOLID, 10mm DIA.
		67	1		TRANSPARENT WITH WHITE STRIPES	TRANSPARENT WITH UNDERLYING WHITE STRIPES, SOLID, 7.5mm DIA.
SUBSPHERICAL (CHEVRON)	 	25	21		RED, WHITE, AND BLUE STRIPED BENEATH TRANSPARENT COATING	TRANSPARENT COATING OVER ALTERNATING OPAQUE STRIPES, TRANSLUCENT GRAY/WHITE/RED/ WHITE CORE, 7-13mm DIA.
		26	37		RED, WHITE, AND GREEN STRIPED BENEATH TRANSPARENT COATING	TRANSPARENT COATING OVER ALTERNATING OPAQUE STRIPES, TRANSLUCENT GRAY/WHITE/RED/ WHITE CORE, 8-9mm DIA.
	 	27/30	80	5	BLUE (NAVY): WHITE RIDGES BENEATH TRANSPARENT BLUE COATING PRODUCES STRIPED EFFECT	TRANSPARENT COATING OVER ALTERNATING BLUE/WHITE STRIPES, CLEAR/WHITE/RED/WHITE CORE, AVG. 8mm DIA.
		31	2	1	BLUE (NAVY): WHITE RIDGES BENEATH TRANSPARENT BLUE COATING PRODUCES STRIPED EFFECT	TRANSPARENT COATING OVER ALTERNATING BLUE/WHITE STRIPES, WHITE/CLEAR/WHITE/BLUE/ WHITE CORE, 6-7mm DIA.
		32	121		BLUE (NAVY): WHITE RIDGES BENEATH TRANSPARENT BLUE COATING PRODUCES STRIPED EFFECT	TRANSPARENT COATING OVER ALTERNATING BLUE/ WHITE STRIPES, WHITE/RED/CLEAR/RED/WHITE CORE, AVG. 7mm DIA.
		61	5		GREEN: WHITE RIDGES BENEATH TRANSPARENT GREEN COATING PRODUCES STRIPED EFFECT	TRANSPARENT COATING OVER ALTERNATING GREEN/WHITE STRIPES, GREEN/WHITE/RED/WHITE CORE, AVG. 8mm DIA.
	 	35	69		BLUE (NAVY): WHITE RIDGES BENEATH TRANSPARENT BLUE COATING PRODUCES STRIPED EFFECT	TRANSPARENT COATING OVER ALTERNATING BLUE/WHITE STRIPES, FACETED, WHITE/CLEAR/ WHITE/RED/WHITE CORE, 8-23mm LONG
		68	1		BLUE (NAVY): WHITE RIDGES BENEATH TRANSPARENT BLUE COATING PRODUCES STRIPED EFFECT	TRANSPARENT COATING OVER ALTERNATING BLUE/ WHITE STRIPES, FACETED, TRANSLUCENT BLUE/ WHITE/TRANSLUCENT BLUE/WHITE/RED/WHITE, 24mm DIA., 37mm LONG
SUBSPHERICAL (FLUSHEYE)	 	18	26		BLUE WITH RED/WHITE SUNBURST FLUSHEYES	OPAQUE BLUE WITH FLUSHEYES, TRANSLUCENT COBALT BLUE/WHITE/BLUE CORE, 5-6mm DIA.
		19	3		BLUE WITH BLACK/WHITE SUNBURST FLUSHEYES	OPAQUE BLUE WITH FLUSHEYES, TRANSLUCENT BLACK/WHITE/BLUE CORE, 5-6mm DIA.
	 	38	2	2	NILE GREEN VARYING TO WHITE WITH BLUE/WHITE CONCENTRIC FLUSHEYES	OPAQUE WHITE OR NILE GREEN WITH FLUSHEYES, SOLID, 5-7mm DIA.
	 	64		1	WHITE WITH RED/WHITE ON BLUE SUNBURST FLUSHEYES	OPAQUE WHITE WITH FLUSHEYES, SOLID, 6mm DIA.
SPHERICAL	 	5	141		BLUE (NAVY)	TRANSLUCENT BLUE, SOLID, DIA. 3-5.5mm

Fig. 5. (Part III) Glass Bead Typology, Susquehannock Component, Funk Site (AD 1550-1600).

pottery clay, 8 triangular stone projectile points (2 rock crystal), 5 scrapers, 1 honing stone, red ochre clumps, chips and pebbles of raw material of flint, quartz and jasper corresponding to the finished points, 6 beaver incisor chisels, 2 antler punches, 3 bone awls, 10 shell beads, 2 shell pendants and various rodent incisors. The other cremation might be classified as an urn burial. One pottery vessel made especially for burial purposes and two larger village pots were placed in the grave. The largest of the pots contained the partially cremated remains of an adult and a modified iron axe. No other remains were discovered.

One hundred and fifty ceramic vessels or portions of vessels were recovered. Most represent variations of early Susquehannock pottery types: Shultz Incised (Witthoft and Kinsey 1959: 68-77) and Blue Rock Valanced (Heisey and Witmer 1962: 111). Five of the Shultz Incised vessels have raised curvilinear human heads modelled on high incised collars. This embellishment is reminiscent of very early Susquehannock pottery in northern Pennsylvania and undoubtedly represents the motif for the stylized geometric heads that characterize the later pottery of the succeeding Washington Boro phase (ca. AD 1600-1640). Two Susquehannock Washington Boro Incised pots were also found.

Bone and shell artifacts were better represented in the tool inventory of this cemetery than in Cemetery I. Seven turtle shell rattles were found. Three graves contained the remains of dogs. The lower left mandible of an adult animal was found in one, while in another a complete and well-preserved dog skeleton, two turtle shell rattles, a pot, and miscellaneous brass and glass items accompanied a poorly preserved human infant. Most of the bone and shell tools and ornaments and, for that matter, most of the lithic artifacts were contained in six caches in five different graves.

Sixty-two stone projectile points were recovered. Forty-five of these were associated with six caches. One flint projectile point tip was embedded in the lower mandible of an adult male skeleton and nine complete points were found in the body cavities of various other individuals. The remaining seven projectile points were found in the grave fill and are probably associated with the earlier Shenks Ferry component. Most of the scrapers and honing stones were also included in the caches.

Seventy-six (63%) graves containing material culture remains contained either brass or iron artifacts or glass beads. Twenty-one iron artifacts were distributed in 17 graves. An iron axe and an iron knife accompanied two of the cremations. No iron gun parts which were to become prevalent in later Susquehannock cemeteries were present. Much of the brass was either wire brass modelled into ear spirals, rings, or bracelets or fragments of worn out and discarded brass kettles cut, drilled and reused as ornamental beads and pendants. With one exception, surviving whole brass kettles are nonexistent at this time period.

More important, verdigris, a greenish-blue pigment that results from the action of acetic acid on copper buried in the ground in many cases created a micro-environment favorable to the preservation of normally perishable organic remains. Fragments of matting, skin, and fur adhering to brass

SHENKS FERRY AND SUSQUEHANNOCK COMPONENTS

on the floors of various graves suggested that the earthen coffins were lined prior to interment. Occasionally large village utility pots were intentionally smashed and spread over and around the body to form a lining or covering.

Nearly 3000 glass beads were recovered. They were found as components of necklaces, as belts about the waists of infants, scattered around the body, or loose in the fill of graves as though sprinkled there as a last farewell gesture. One unusual beaded belt consisted of four parallel rows of Nile green ovoid beads. Lacking a sufficient number of glass beads to complete the belt, the maker produced replicas in shell and substituted these in place of glass beads.

Several factors suggest that this cemetery postdates Cemetery I. The organic deficient stains in Cemetery I possibly indicate a longer period of leaching activity. The presence in Cemetery II of a complete brass kettle and a kettle lug, two Washington Boro Incised pots, an iron dagger, and a variety of additional objects that characterize the Washington Boro phase support this contention. More important, however, is the number of bead types in Cemetery II that become more popular and characteristic in the succeeding Washington Boro phase. Tubular beads, increasingly more common as one approaches the latter part of the 17th century, are absent in Cemetery I, but make up 13.7 percent of the bead sample in Cemetery II. Subspherical bead types (small and medium sized) and especially the larger subspherical multicolored varieties that characterize the Washington Boro phase are found principally in Cemetery II. Chevron beads, star beads, and Nile green ovoid beads are good indicators of the Shultz phase and occur in both cemeteries.

Miscellaneous Components

A number of artifacts obtained from several features were unrelated to either of the major components at the Funk site. They included 2 basal-notched points, 1 stemmed point, 1 side-notched point, 3 badly eroded ceramic sherds containing mixed steatite/quartz temper, 2 steatite-tempered sherds with cord-marked exteriors, 1 net marked sherd with quartz temper, 3 Clemsons Island sherds and 1 rimsherd of the Shenks Ferry Incised type (Blue Rock phase). A portion of a wing from an atlatl weight and two broken gorgets complete the inventory. For the most part, the artifacts are indicative of sporadic occupancy beginning in about the 3rd millennium BC.

Summary and Conclusions

Excavations at the Funk site revealed two major components: Shenks Ferry and Susquehannock. In addition, items attributable to several minor components are indicative of still earlier occupations.

Several inferences or conclusions concerning the age, structure and intensity of the Shenks Ferry component and its relationship to other cultural traditions are made possible by the preliminary analysis. 1) Taken collectively, the artifacts and features constituting the component can be

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ascribed to the early part of the Funk phase (AD 1500-1550). 2) Three overlapping villages, two of which are enclosed by palisades and all of which are circular in horizontal plan, represent the component. 3) Efforts to establish a temporal sequence for the three villages have been unsuccessful. 4) Monongahela pottery found in Shenks Ferry features indicates contact with cultures to the west and perhaps south. 5) The absence of iron or brass artifacts or glass trade beads in Shenks Ferry features confirms the pre-contact nature of the component.

Several statements regarding the Susquehannock component are also possible. 1) Two cemeteries dating to the early period (AD 1550-1600) of Susquehannock occupancy of the Lower Susquehanna Valley constitute the component. 2) European trade artifacts are present in the graves and it is largely on the basis of the types and percentages of these artifacts that it is concluded that Cemetery I is older than Cemetery II. 3) The two cemeteries constitute one facet of a settlement system which also encompasses the adjacent Shultz site.

Finally, Witthoft's (1959) argument for the contemporaneity of the Shenks Ferry and Susquehannock components has not been borne out by systematic scrutiny. The spatial distribution of pits and graves at the Funk site confirms Smith's (1970) observations for the Shultz site that the two components physically overlap. In no instance were Susquehannock ceramics obtained from Shenks Ferry contexts, although Shenks Ferry ceramics were often incorporated into the fill of Susquehannock graves. This combined evidence indicates that the Susquehannock component is temporally later than the Shenks Ferry component and intrusive into it.

Acknowledgements

Financial support for archeological investigation of the Funk site originated with the Pennsylvania Power and Light Company, present owners of the property, as a gesture on their part to contribute to the efforts to preserve Pennsylvania's historic heritage. The authors are particularly grateful to the Funk brothers who farm the land on which the site is located for their assistance and cooperation. We would also like to acknowledge Mr. Donald H. Culp, artist for the William Penn Memorial Museum, who prepared the illustrations for this report.

APPENDIX

A Program in Public Archeology

Ira F. Smith III

The Pennsylvania Historical and Museum Commission, aided by a financial contribution from the Pennsylvania Power and Light Company, in 1974 conducted archeological explorations at two Indian village sites located on the Company's land in the Susquehanna River Valley, about 25 miles (40.32 km) south of Harrisburg, Pennsylvania. One site, the Funk

site, occupied by a late prehistoric Indian culture during the early part of the 16th century was investigated within the framework of a public archeology approach and advertised as "Prehistoric Archaeology: A Group Participation and Education Program" (Smith 1975).

The primary objective of the project for the professional archeologist was to learn as much as possible in the shortest amount of time about a prehistoric village that would in all likelihood be destroyed. At the same time, it was felt that this particular village provided a set of circumstances such as proximity to population centers, easy accessibility, potential for significant discoveries, security and the cooperation of landowner and farmer that were ideal in terms of involving the nonprofessional and the public, thus exposing them to the rigors of scientific archeology. A second objective was to impress upon that public the importance of and the care needed in preserving archeological information. In other words, the public was invited to become involved in the unique experience of the archeologist, the excitement of discovery, but under controlled conditions.

There were three levels of student and public involvement. Six college students were employed to form the teaching and working nucleus for the 10 week archeological program. Each student displayed a great deal of leadership ability and possessed respective skills in photography, surveying, drawing, construction and physical anthropology. The diversity of these skills together with the motivation demonstrated by each individual contributed greatly to the success of the project. Restricted publicity and a scheduled press day at the conclusion to the project were also factors of importance.

The project director carefully screened members of the Pennsylvania Federation of Junior Historians and selected 16 high school students from various parts of the state, awarded each a stipend, and invited them to attend one of two four week learn-by-doing training semesters. Evening lectures and laboratory sessions were required although on-job training and productivity were primary considerations.

Community groups were invited to attend, by reservation only, and participate in morning or afternoon sessions two days each week for seven weeks. Slide show, artifact exhibits, visitation to a nearby 17th century dig, and supervised excavations were featured. This opportunity for the layman to share in the experiences of the archeologist was the most unusual aspect of the program. Preseason publicity flyers were distributed and radio and television coverage was solicited to lay the groundwork. Tuesdays and Wednesdays of each week were designated as group days and divided into morning and afternoon sessions. Groups of from four to 12 individuals of junior high school age and older--scouts, teachers, lawyers, Junior Historians, inner city groups, church fellowships, historical and archeological societies--were encouraged to make reservations at which time they received directional maps to the site. Visitors were provided supervision and given personal attention on a one to two basis by the staff and student trainees.

This part of the program was the most popular. It was so popular,

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in fact, that by the second week of the project nearly every session for the entire summer, including many special Thursday sessions, was filled and two and three requests each day thereafter had to be turned away. Practically every group that did participate, regardless of age, showed a sincere interest, maturity, and desire to learn.

It is significant to note that over the 10 week period archeologists and nonarcheologists together exposed nearly 50,000 square feet (4,646.84 sq.m) of surface area, recorded and excavated 269 features, and discovered several important archeological surprises. There were eight large rectangular semisubterranean structures with clay floors that were unlike anything previously found in Pennsylvania. Three overlapping prehistoric villages were discovered instead of just one, and two intrusive early historic Indian cemeteries containing several hundred interments were explored. These two cemeteries, two of the three villages, and the eight semisubterranean structures were completely unknown and unexpected in one of the most intensely researched archeological areas of Pennsylvania. Scientific excavation undertaken within the framework of public archeology was in this instance successful.

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