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Bulletin of the Archaeological Society of Delaware

Number One, New Series

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Content And Bibliographic Note

H. Geiger Omwake's "The Mispillion Site, 7-S-A1," published in this issue of the Bulletin, intends to conclude the record of site investigation first reported by Henry Hutchinson, et al (Report On The Mispillion Site, 7-S A1", Archeolog, Vol.9, No.2, April, 1957), and supplements Julius Lopez' "Pottery From The Mispillion Site, Sussex County, Delaware, And Related Types In Surrounding Areas," (Pennsylvania Archeologist, Vol. XXXI, No.1,April,1961)

This issue of the ASD Bulletin is the first in a new series of regular but unscheduled numbers, and supplants the original Bulletin series which included:

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Volume 2.	No.1 (March,1935); No.2 (October,1935); No.3 (March,1936); No.4 (October,1936); No.5 (October,1937); No.6 (June,1938); No.7 (October,1938).
Volume 3.	No.1 (May,1939); No.2 (October,1939); No.3 (February,1940); No.4 (February,1941); No.5 (May,1942).
Volume 4.	No.1 (May,1943); No.2 (May,1945); No.3 (February,1946); No.4 (November,1947); No.5 (January,1949).
Volume 5.	No.1 (December,1952).
Volume 6.	No.1 (April,1954).
Volume 7.	No.1 (December,1955).
Volume 8.	No.1 (November,1957).
Volume 9.	No.1 (March,1958).

Charles F. Kier, Jr.
Editor
June, 1962

THE MISPILLION SITE

7-S-A1

H. G. Omwake*

OVERVIEW

The Mispillion site extends for a known distance of more than fifteen hundred feet along the south bank of the Mispillion River, which forms part of the boundary between Kent and Sussex Counties, Delaware. Beginning at a point approximately 1-1/2 miles east of the City of Milford, the area of archaeological interest consists of a

ERRATA

P.20, Table IV, fourth vertical column, bottom: should read, "Total Triangular - 41."
P.20, Table IV, fifth vertical column: "Total Triangular - 87.3," should be qualified by parenthetic phrase "(excluding unclassifiable)"
P.20, Table IV, ninth vertical column, bottom: "Total Triangular" should read 44 instead of 59.
P.20, Table IV, tenth vertical column, "Total Triangular - 74.5," should be qualified by parenthetic phrase "(excluding unclassifiable)"
P.25, third full paragraph, line 5, refers to "Table VIII," but should refer to Table VII.
P.27, fourth paragraph, last line: reference should include T.D. Stewart as co-editor.
P.31, first paragraph, first line: should refer to Table IX.
P.34, "Appreciation": Note - H.G. Omwake, Jr., and Julius Lopez are now deceased.

eastern Delaware, and a small pit, later ... exploratory examination. Through Mr. Welch, limited permission to excavate was granted to Omwake and Vandegrift who established permanently marked base lines, recorded the locations of all known pits, and began their investigation. P. S. Flegel, a former president of the Sussex Archaeological Association, was invited to participate and became responsible for the excavation of Phillips pit 7.

As work progressed there was much speculation among the diggers about the possibility that the site might extend both east and west, along the river, into the properties adjoining the Phillips land. Occasional surface inspections of these fields, then covered with soybean stubble and weeds, yielded chips, projectile points of both the triangular and stemmed varieties, (Plate 1A), and pottery sherds of at least two distinct kinds; the shell-tempered ware common in the refuse pits and the

*H. G. Omwake, Governor Bacon Health Center, Delaware City, Delaware

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The aboriginally occupied area generally coincides with the 8', 9', and 10' elevations above the river, the most heavily concentrated portions lying between 100' and 200' from the river bank. The surface of the land undulates gently, the higher contours curving and recurving around lower areas. Because of this characteristic of the land, aboriginal occupation was most heavily focused in three areas, one on each of the separate properties.

The soil in the region of the site has been described (Snyder, Barton, Dunn, et al., 1924, p. 1546) as the Deep Phase of Sassafras Sandy Loam. Surface soil of sassafras sandy loam is a light brown to brown loamy sand, or a mellow sandy loam, with a depth of 8'' to 10'', underlain by a reddish yellow or yellowish brown heavy sandy loam, varying to clay loam, which, at a depth of 16'' to 18'', passes into reddish yellow to yellowish red friable sandy clay, which, in turn, at depths from 22'' to 30'', passes into dull red or yellowish red sandy loam, coarse sandy loam, or loamy coarse sand. Small flakes of mica are present locally in the soil and subsoil.

Credit for discovery of the site is given to Mr. Harold Welch, a young Milford businessman, who, having collected projectile points from the surface, invited the writer to inspect concentrations of oyster and clam shells which he had noted on the Phillips property. Accompanying Welch and the writer were H. G. Omwake, Jr., and Roger Vandegrift. Probing revealed the presence of a number of the shell refuse pits which characterize many of the Late Woodland period coastal sites of southeastern Delaware, and a small pit, later designated as Phillips pit 1, was opened for exploratory examination. Through Mr. Welch, limited permission to excavate was granted to Omwake and Vandegrift who established permanently marked base lines, recorded the locations of all known pits, and began their investigation. P. S. Flegel, a former president of the Sussex Archaeological Association, was invited to participate and became responsible for the excavation of Phillips pit 7.

As work progressed there was much speculation among the diggers about the possibility that the site might extend both east and west, along the river, into the properties adjoining the Phillips land. Occasional surface inspections of these fields, then covered with soybean stubble and weeds, yielded chips, projectile points of both the triangular and stemmed varieties, (Plate 1A), and pottery sherds of at least two distinct kinds; the shell-tempered ware common in the refuse pits and the

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coarser, grit-tempered and cord-marked ware suspected of indicating an earlier cultural period. A broken slate gorget (Plate 1A:32), a finely ground celt, and, wonder of wonders in mechanically cultivated land, a nearly complete, crudely made pottery pipe (Plate 2A:2) were added to the collection. From the muddy bed of the river was retrieved a well-pecked, undamaged pestle.

Spring plowing and harrowing confirmed the much larger archaeological area. After the first rains fell on the newly turned ground, concentrations of oyster shells showed up like beckoning beacons, and the probes quickly verified the presence of many shell refuse pits in both the Robinson and Benson-Bridgeham lands. To the east of the Phillips property the evidence was less exciting. There were no concentrations of shells and within less than 300' along the river bank all traces of projectile points, chips, and pottery disappeared.

The Robinson property, later sold to Mr. George Stokes of Milford, a triangular point of land reaching toward the river, was separated from the Phillips property by a thorny hedgerow and from the Benson-Bridgeham holdings on the west by a farm lane, the midline of which was the boundary between the two. Probing had revealed the presence of seven refuse pits, one of which lay immediately beneath the farm lane. On the Benson-Bridgeham land the probes confirmed the existence of twenty additional pits. It was decided that a second base line, traversing the Robinson and Benson-Bridgeham properties and paralleling that previously established for the Phillips portion of the site, should be established, permanent markers placed, and the locations of all the newly discovered pits recorded, each to receive its own number. Having secured permission to dig on the Robinson property, later generously extended by Mr. Stokes, the new owner, Vandegrift and Omwake were able to explore six pits, leaving the seventh, under the farm lane, untouched, before planting season put an end to activities at the site.

In Delaware soybeans are not harvested until after frosts arrive in the late fall and work on the Benson-Bridgeham land was, therefore, out of the question. The pits of the Phillips and Robinson sections of the site had provided only inconclusive evidence of a suspected occupation antedating that of the makers of the shell-tempered pottery. Tantalizingly, the grit-tempered, cord-marked sherds were sparsely scattered across the surface of the Benson-Bridgeham land, and it seemed most likely that if there really had been an earlier occupation, it would be revealed only by removal of the top soil and careful examination of the exposed subsoil between the shell refuse pits. Vandegrift and Omwake approached the members of the Sussex Archaeological Association (now the Sussex Society for Archeology and History) to determine their interest in undertaking that kind of activity at the site. The Association agreed and a committee to supervise the project was appointed. Mechanical removal of the top soil was effected and the exposed subsurface disturbances were investigated. Omwake's request that a small portion of the site known to contain five shell refuse pits clustered within a limited area be reserved to him for hand-troweling in the hope of discovering a suspected house site was granted. The S.A.A. phase of the investigation has been published elsewhere (Hutchinson, et al., 1957). This report and the recently published pottery study (Lopez, 1961) are intended to complete the record of the inquiry into the Mispillion site, 7-S-A1.

THE SHELL PITS

The aboriginal peoples who occupied the southeastern coastal regions of Delaware depended upon the tidal streams, the Delaware Bay and, undoubtedly, the Atlantic Ocean for much of their food. From these sources they gathered oysters,

clams, conchs, crabs, turtles, and fish, the shellfish in great quantities, and mussels, scallops, and other palatable foods in lesser amounts. Literally, millions of oysters, clams and conchs were carried to the villages, prepared, and eaten. Disposal of the refuse from these shell fish must have constituted a major problem for every Indian household.

On the coastal sand strip which lies between the present Lewes-Rehoboth Canal (the Hoornkil of the early Dutch colonists and the Lewes River of the later English settlers) and the Delaware Bay the Indians made great heaps of shells, scattered evidence of which may still be seen. Except at the Moore Shell Heap Site (Weslager, C.A., 1939, pp. 3-8) on the canal, there seem to have been no permanent settlements immediately adjacent to these shell heaps. It may be assumed that the people, having gathered their food suplies from the bay and river, built their fires on the spot, roasted, or otherwise prepared, the oysters and clams, piled up the shells and departed, carrying the extracted seafood back to their homes on the landward side.

At the inland villages, situated on high, fast land along the tidal streams near the bay or ocean, wherever a supply of fresh water was available, a different system seems to have prevailed. To these villages the people brought the oysters, clams, conchs, and other shellfish in the live state. Whatever preparation was necessary before they were eaten was accomplished right in the villages, and disposal of the discarded shells became a major problem. The solution lay in the digging of holes of appropriate sizes into which the shells and other refuse could be thrown, covered over with a little earth, perhaps to kill the odor, and forgotten. These holes became the repositories for broken pottery and other cultural wastage and offered irresistibly convenient places for the burial of relatives and friends. Today, easily detected because modern agricultural machinery disturbs the top layers of the shells and brings some of them to the surface of the ground, they are prime targets for inquisitive archeologists, yielding most of the cultural secrets of the people who dug them. The Mispillion site was no exception.

On field maps of each of the three sections of the site the locations of all the known pits had been plotted with respect to the established base lines. At a later date these maps were made available, at his request, to the chairman of the S.A.A. committee who consolidated them for the purposes of his report and recorded the various features discovered during the S.A.A. phase of the investigation. Inasmuch as this amended version of the basic maps has been published (Hutchinson, et al., 1957, Plate I), reproduction here would serve no vital purpose.

The mechanical facts, and some speculations, relative to the pits, recorded in Table I, indicate that:

1) the general tendency seems to have been to dig a pit of oval shape;

2) there was no particular directional orientation of the longer axis;

3) size of the hole was merely a matter of the convenience of the digger;

4) no particular depth was preferred or customary, although the average depth was just under 30";

5) bottom contours seem to have borne some relationship to horizontal surface size, the larger pits generally having flattened bottoms, the smaller rounded;

6) in most instances the sidewalls were inclined toward the vertical;

7) in the absence of stone hoes, it must be assumed that digging was accomplished by clawing into the relatively light ground, shells or, perhaps, some type of wooden instrument, having been used as spades;

8) the initial excavations frequently had been partially refilled with discolored sandy earth containing many flecks of charcoal, chips, occasional random shells, etc. The presence of such foreign inclusions mixed with the sandy earth suggests that the refill may represent sweepings from the habitation area. It is further suggested that the fresh earth taken from the holes was promptly exchanged for the used and dirty earth on the cabin floors, just as a matter of cleanliness, and that this primary exchange accounts for the initial deposit of discolored, charcoal-bearing soil in the pits;

9) the deposits of shells and other refuse in partially refilled pits were usually saucer-shaped in vertical profile and often represented only a relatively small portion of the total refill of the original excavations;

10) occasionally dog burials were found in the refill beneath the shell overburden and in one instance, Benson-Bridgeham pit 9, a human.

SPECIFICS OF THE PITS

TABLE I

Mechanical Facts and Pertinent Observations About Each Pit

Pit No.	Surface Diameters	Maximum Depth Below Top Soil	Horizontal Profile	Inclination Of Sidewalls	Contour Of Bottom	Observations
PHILLIPS AREA						
1	Exploratory Pit		Almost round	Slanting	Rounded	Stained, sandy earth beneath shell deposit. Cultural evidence negligible
2	N-S 8' E-W 8'	38"	Round	Slanting	Rounded	Charcoal throughout. Crab and Drumfish remains noted. Restorable pot.
3	N-S 6' E-W 5'	23"	Slightly oval	Rounded, skewed	Rounded	Very damp, black, greasy earth mixed with the shells
4	N-S 7' E-W 7'6"	21"	Almost round	Slanting	Rounded	3" layer of sandy stained earth below shell overburden.
5	N-S 3' E-W 3'	14"	Round	Slanting	Rounded	Primarily for burial of dog - 8" deep in subsoil.
6	N-S 7' E-W 5'8"	48"	Oval	Almost vertical	Flat	Shell deposit 1' 6" below top soil except on west side where refuse was banked along pit wall and protruded into top soil. Shell deposit conical.
7	NW-SE 16' NE-SW 10' 4"	30"	Oval	Gently curving	Gently rounded	Shell refuse covered by layer of stained soil 12" - 30" deep.
8	NW-SE 6' NE-SW 3'	10"	Slightly oval	Almost vertical	Almost flat	Not of aboriginal origin.
9	N-S 6' 8" E-W 7' 4"	33"	Slightly oval	Almost vertical for 22", then gently sloping.	Rounded	Shell deposit covered by layer of stained soil 15" deep at center.
10			NOT EXCAVATED			

TABLE I (cont'd)

Pit No.	Surface Diameters	Maximum Depth Below Top Soil	Horizontal Profile	Inclination Of Sidewalls	Contour Of Bottom	Observations
	ROBINSON AREA					
1	N-S 5' E-W 6'	40"	Slightly oval	Vertical	Almost flat	Stained, sandy earth 11" deep at center, containing fire-cracked stones and restorable pottery vessel, lay beneath saucer shaped deposit of shells over which was 8" fill of stained soil.
2	N-S 6' E-W 9'8"	38"	Oval	Slanting, then vertical	Almost flat	Thin layer of shells covered entire bottom. 4" layer of shells at top of pit. Alternating layers of blackish and brownish soil intervened.
3	N-S 3'6" E-W 3'5"	36"	Round	Sharply slanting	Conical	Few oyster shells at bottom were covered by 26" fill of stained soil above which was an 8" layer of shells. Many fire-cracked stones.
4	N-S 3' E-W 3'	22"	Round	Vertical for 16", then gently sloping	Rounded	Shells mixed with black, greasy earth filled entire hole.
5	N-S 2'6" E-W 2'	36"	Slightly oval	Vertical	Slightly rounded	Hour-glass shaped shell deposit expanding to 42" diameter at depth of 30".
6	N-S 3' E-W 3'	22"	Slightly oval	Vertical	Almost flat	Charcoal and burned shells. At 8" depth was layer of brownish clay.
	BENSON - BRIDGEHAM AREA					
5	N-S 5'6" E-W 4'5"	27"	Oval	Almost vertical	Almost flat	4"-9" stained soil at bottom, covered by 4"-16" layer of loose shells, over which 0"-9" layer of soil had washed (?). Shell layer 0" at edge to 10" at center of pit.

TABLE I (cont'd)

Pit No.	Surface Diameters	Maximum Depth Below Top Soil	Horizontal Profile	Inclination Of Sidewalls	Contour Of Bottom	Observations
6	N-S 6' E-W 4'8"	51"	Oval	Almost vertical on N & W; gently sloping on E & S	Flat and circular, having 2' diameter.	Saucer shaped deposit of shells on top of pit. 8" thick mass of oyster shells 35" deep on west side. Balance of pit filled with stained earth. Pit intruded into disturbed area on west side.
9	N-S 10'6" E-W 6'2"	17"-18"	Oval	Gently curving	Gently rounded	Human burial at center of pit and dog at north end in layer of stained soil, capped by saucer shaped shell deposit 12" thick at center.
	OMWAKE RESERVED AREA					
10	NW-SE 13'6" NE-SW 8'6"	50"	Oval	Almost vertical	Almost flat	Bottom covered with 7" of greasy black earth over which was a 4" layer of conch shells. Dog in disturbed earth on west side under shell deposit.
11	N-S 7'3" E-W 6'6"	34"	Oval	Almost vertical	Flat	Layer of oyster shells covered bottom. Pit filled with stained earth containing charcoal. Deposit of shells capped stained soil
12	N-S 7'8" E-W 7'8"	31"	Round	Almost vertical	Rounded	Pit almost entirely refilled with stained soil, capped with saucer-shaped deposit of shells 4'x4'x6".
13	N-S 2'4" E-W 3'6"	5"	Oval	Gently curving	Rounded	Sterile of cultural evidence. Many mussel shells.
14	N-S 3' E-W 3'6"	21"	Slightly oval	Slanting	Conical	Stained soil 7' thick underlay conical shell deposit.

TABLE I (cont'd)

Pit No.	Surface Diameters	Maximum Depth Below Top Soil	Horizontal Profile	Inclination Of Sidewalls	Contour Of Bottom	Observations
WHITE MAN'S GARBAGE HOLE						
19	N-S 8'6" E-W 10'	27"	Slightly oval	Gently curving	Rounded	Excavation had intruded upon three Indian pits, virtually destroying two and damaging the third.

Notes On Table I:

Phillips pit #5, dug primarily for the interrment of a dog, yielded no cultural material other than a few unrelated sherds of shell-tempered pottery in such crumbly condition that they were discarded.

The actual cultural materials excavated from Phillips pit #7 were retained by Flegel who, however, made full scale drawings of all significant artifacts and pottery sherds available for study.

No pottery was present in Robinson pit #3.

UNUSUAL ASPECTS OF CERTAIN PITS AND FEATURES

Detailed descriptions of all the Mispillion pits and features would not be particularly significant and would overburden this report. Consequently, only those will be described which, it is felt, offer especially interesting evidence.

(Phillips Area)
Pit 6

Trenching and testing in the Phillips area had indicated a subsurface disturbance which, after exposure, was suspected of having been the floor of a small shelter. Clearly delineated was an oval area of deeply stained sandy earth, roughly 9-1/2' by 7-1/2', oriented slightly in the NE-SW direction, containing many particles of charcoal. The top soil was carefully removed from the surrounding area in a search for post molds, and a series of small (1''-2'' diameter), dark, circular, mold-like disturbances circumventing the stained soil was found. These mold-like remains penetrated the subsoil to depths ranging from 3'' to 15'', some tapering to nothing, others trailing off in irregular oblique directions, a circumstance which immediately made doubtful their status as the remains of supports for some sort of structure. The problem was quickly resolved when test trenching in adjacent areas revealed many similar disturbances, obviously root molds, randomly spaced and in no pattern. The very close resemblance of their color to that of the large stained area had undoubtedly caused the failure of the investigators to note the presence of others therein.

Investigation of the disturbed area was carried on by removal of the earth in six inch levels. No cultural disparities were observed, the materials from all levels being quite homogenous. On the western edge of the disturbed area a small accumulation of shell refuse protruded into the top soil. As the discolored earth was removed, level by level, it became obvious that these few shells were part of a much larger deposit which was encountered at a depth of 18''.

From the shell refuse itself were recovered a ''toy'' pottery vessel in perfect condition and sufficient sherds to permit restoration of the largest vessel found at the site and of three smaller pots. Charred hickory nuts were present in the shell deposit.

Throughout both the discolored earth and the shell refuse were scattered many concoidally flaked chips of pebble jasper, the total aggregating 326. Additionally there were 13 flaked pebbles, 9 fragments of fire-cracked sandstone, numerous flakes and smaller pieces of the same material, 3 unworked field pebbles, and 1 end-battered sandstone hammer. Finished and unfinished triangular arrowheads were recovered from both the disturbed overburden and from the refuse deposit.

The presence of a true post mold, 3-1/2'' in diameter, penetrating the disturbed soil to a depth of 9'', and having a rounded base, was noted near the southeastern side of the pit. Directly beneath the mold was a single fragment of fabric-impressed, shell-tempered pottery. Along the eastern wall at a depth of 36'' were found two small, matching fragments of a thick-walled steatite vessel.

(Robinson Area)
Pit 2

After the thin, saucer-shaped deposit of shells, oval in shape, had been exposed, it became evident that the refuse mantle occupied only part of the pit, coinciding, on the eastern edge, with the perimeter of the original hole. On the western side the discolored earth extended 2-1/2' beyond the shells.

the northern side and quickly there were revealed, on the
nells, alternating layers of black, greasy, sandy earth and
sand which contained many small flecks of charcoal. In
vertical face of the fill, excavation was carried immedi-
e pit, which was found to have been lined with a layer of
ls approximately 4'' thick. There were seven alternating,
ck and brown earth which varied in thickness from 2'' to
ach layer were found occasional oyster and clam shells.
of the pit in the uppermost layer of brownish sand and
e topmost layer of black earth was a circular bed of char-
k at the center, obviously the residue from a large fire.

ratigraphy suggested by the alternating strata, a careful
evidence, jasper chips excepted, was kept as excavation
face being maintained, with the following results:

ler	10'' deep, in first brown layer
sherd	15'' deep, in second black layer
	19'' deep, at bottom of second brown layer
asper	22'' deep, in third black layer
ottery clay	24'' deep, in third brown layer
	28'' deep, at bottom of third brown layer
r jasper	29'' deep, in fourth black layer
y sherd	30'' deep, in fourth black layer
y sherd	33'' deep, on top of shell lining of pit
rim sherds body sherds basal sherd	38'' deep, in shell lining of pit

ll-tempered sherds, of uniform character, from the shell
it to its topmost levels, eliminated the possibility that the
ck layers represented cultural stratigraphy. The logical
at the black layers were probably the result of decayed
ccumulated in the pit during intermittent periods of inac-
layers were formed by sweepings or soil-drift from the

The occurrence of argillite chips at various levels requires consideration. Argillite, a nonnative material, is thought to have been little used, if at all, by the Late Woodland peoples of Delaware, especially those who inhabited the southeastern coastal regions, remote from all possible sources of supply. There are those who believe it to have been associated with a culture period which predated the Late Woodland. Some support for this view may be derived from the fact that a cache of 179 crudely shaped argillite blanks was discovered at a nonceramic site in Kent County, Delaware (Omwake, 1955, pp. 5-7). It is possible that the argillite chips which occurred in several levels of the pit, down to 28'', represented surface wastage from an earlier occupation of the site, accidentally swept into the later period pit during the intervals of its lifetime.

(Benson-Bridgeham Area)
Pit 5

Guests of Omwake for part of the excavation of this pit were C. A. Weslager, then President of the Eastern States Archeological Federation, outstanding Delaware archaeologist and historian, and his son, Clinton.

Noted elsewhere (Hutchinson, et al., ibid., p. 9) as being nothing at all, pit 5 deserves brief notice. Again the intriguing layer of stained soil appeared in the bottom of the pit. Above it was a mass of loosely packed oyster shells, piled to a depth of 16'' on the north side and tapering to a mere 4'' on the south. There were no burned shells and no charcoal particles among this initial deposit, composed of oysters, clams, and a few large conchs. Obviously the food had been prepared elsewhere and fire had not been the direct agent by which the shells were opened.

Next had come a period of temporary disuse of the hole, during which sandy earth and bits of charcoal had drifted into it, or a violent rain had washed into it discolored earth from the habitational area nearby, building up in the hole a deposit of dirty soil as deep on the south side as the original shell deposit was on the north and leaving a shallow depressed area in the center. Subsequently this was filled with tightly compacted and badly burned shells, particles of charcoal, and burned earth. Conclusively the final seafood dinner had been prepared over fires built right in the pit.

Pit 6

After a thin, saucer-shaped mantle, which consisted almost entirely of finely pulverized oyster and mussel shells, 6'' deep at the center, had been removed, a huge oval area of stained earth was revealed. On the northern, eastern, and southern sides the fill earth was clearly defined against the surrounding yellowish subsoil, but on the western side it blended, almost imperceptibly, into an area of previously disturbed earth of a color slightly lighter than that of the fill itself. Here, indeed, was an instance of the intrusion of one feature into the area of another, and the vision of some type of cultural stratigraphy, suspected but not clearly revealed in any other part of the site, reappeared.

In the shell mantle itself, at a depth of only 4'', a fragment of a gorget was recovered. The 3'' long remnant was diagonally fractured and had a single, bilaterally drilled hole exactly 1'' from the end. Made of a tightly-compacted, fine-grained sandstone, it measured 1.6'' wide and was .5'' thick at the point of fracture. All edges had been ground flat and both faces rubbed smooth but not polished (Plate 1B:23). Although two small pendants were recovered from a badly disturbed area of the Townsend site some years ago, not to the knowledge of this reporter has any

other gorget ever been recovered from a shell refuse pit in coastal lower Delaware. The refuse contained characteristically late, shell-tempered, fabric-impressed pottery.

The fill beneath the shell cover was removed by vertical slicing from top to bottom, care being exercised not to infringe upon the lighter colored disturbed earth outside the western side of the pit. At a depth of 11", near the southern sidewall, was found an unfinished arrowpoint of general trianguloid shape made from a whitish material of jasper-like texture (Plate 1B:21). Not far from this item was a large mass, something less than a quart, of charred hickory-nut shells. A little farther removed from the southern wall of the pit, at a depth of 35", was found a circular bed of charcoal and burned earth, 3" thick and almost 32" in diameter. No pottery was directly associated with the fire bed but immediately beneath it, at a depth of 40", was a single, thick, crude, heavily grit-tempered, cord-marked sherd. Beyond the fire bed and a little toward the western side of the fill, at a depth of 42", was an 8" thick circular mass of oyster shells about 2' in diameter. No cultural material accompanied these shells.

After the pit had been emptied, a section of top soil along its southwestern side was cleared away. It was noted that the subsoil disturbance continued in both north and south directions. Vertical trowelling of 6" levels led to the recovery of five sherds of fabric-impressed ware, tempered with fine sand, quite distinct from the usual shell-tempered pottery found in the pits. Here appeared to be possible evidence of an earlier occupation!

Personal illness compelled suspension of the author's examination of the disturbed soil for a period of several days, during which time the S.A.A. removal of the top soil of the surrounding area by mechanical means was continued. As a result of this activity, the disturbed soil immediately adjacent to the pit was so badly mangled as to render useless its further minutial excavation.

In the S.A.A. report it was noted that Feature #5, a series of post molds, curved gently in the direction of pit 6 (Hutchinson, et al., ibid., p. 5 and Plate II), and the authors postulated that the molds may have represented the remains of part of the vertical framework of some kind of structure. It is submitted that this conjecture was probably correct and that the disturbed earth bearing the sand-tempered sherds, into which the original digging of pit 6, at a later date, intruded, may actually have been part of the floor of such a structure.

Pit 9

The excavation of this typical shell refuse pit was a sort of community project executed by archeologists from Baltimore and Washington, guests of the Sussex Archeological Association. After the top soil had been removed, all hands participated in the search for cultural evidence hidden among the shells. The isolated skull of a dog, some shell-tempered pot sherds, and other testimonials of the lives of the prehistoric people were recovered.

With so many trowels and shovels mounting the attack, the deposit of discarded shells was soon removed from the pit and there remained only the task of exploring the discolored soil beneath. Tentatively the trowels made vertical slices. Soon the presence of bones was discovered and a couple of the experts bent low for a closer look. "Human," they agreed. The pace of trowelling was slowed and the soft-bristled brushes went to work. At last there lay exposed the very disarticulated skeleton which has been described in the S.A.A. report as Burial #1 (Now on exhibit in the Delaware State Museum, Dover).

Late afternoon was approaching and the guests, facing the long drive back to Baltimore and Washington, took their leave. Yet there remained more of the discolored earth to be explored. The local men finished the task, finding, curled against the northern wall of the original excavation, the well-preserved skeleton of a medium-sized dog. The interment of the dog and the human skeletal remains at the same level in the disturbed soil, though they were separated by approximately three feet, gave rise to conjectured but unresolved association between the animal and the man.

Pits 10, 11, 12, 13, 14

The locations of these five pits within the area reserved to Omwake had been plotted in reference to the coordinates established for the area leased by the S.A.A. Neither the pits nor the reserved area requires lengthy comment. Initially it had been hoped that removal of the top soil and careful examination of the subsoil might yield evidence of some sort of shelter served by these clustered pits. The investigation disclosed, in addition to the pits, only three isolated and unrelated post molds and a disassociated bed of charcoal at the edge of which lay a large, broken rhyolite point.

Specifications of the five pits have been recorded in Table I. In the disturbed earth which underlay the southwestern portion of the shell deposit in pit 10 was found the skeleton of a large dog which had been buried on its stomach in a sprawled position. At the bottom of the pit was a large flat stone, one of whose faces was considerably battered, which could have served as a platform on which to smash open the oysters and clams. Pits 11 and 12 had been heavily refilled with disturbed, culturally sterile earth before the shell refuse had been deposited. Pit 13 was the smallest pit encountered at the site and pit 14 contained the usual refill of discolored earth beneath its shell burden.

Exploration of the adjacent area produced several projectile points clearly distinguished by shape and material from most such implements recovered from the shell pits (Plate 1C:1,2). These will be discussed in paragraphs which follow.

Pit 19

Located about 300' west of the S.A.A. area was a huge pit, on and around the surface of which were observed many fragments of bricks, red-ware vessels, and animal bones. Excavation proved it to have been a white man's garbage pit and dating of wine glass stems and various kinds of English pottery recovered from the refuse indicated that it had been used c. 1715-1740 (Watkins, 1956).

Of interest was the fact that in digging his garbage hole the white man had intruded upon and partially destroyed three pits of aboriginal origin. The remains of the first, beneath the southeast side of the garbage hole, measured 15" in diameter and extended 18" below the white man's pit. The hole was filled with dark brown sand. In the top 2" were found one shell-tempered sherd, one chipped jasper pebble and two jasper chips. At the bottom of the pit were found one argillite chip, one sherd of crushed, grit-tempered, smoothed over, net-impressed pottery, and a broken sandstone pestle 9" long, 2-3/4" wide, 1-1/4" thick, flattened on two faces, having both edges shaped by pecking and one end rounded by use.

The remains of the second aboriginal pit consisted of a beautifully outlined oval bed of jet black, greasy earth, 47" long by 30" wide and 3" thick. Examined by vertical slicing, the black sand yielded four brown jasper chips, two bits of quartz-like pebbles, two sherds of pottery from which the shell temper had leached out, two small, sand-tempered sherds having a roughened exterior, one grit-tempered sherd having both surfaces smoothed, and two tiny sherds of indeterminate classification.

The digging of the garbage hole had only partially destroyed the third aboriginal pit, the E-W diameter of which was 48", and it was estimated that a little less than half the pit remained. It had a slightly rounded bottom and achieved a maximum depth of 22" below the top soil. The fill consisted of a dark brown, sandy soil barely distinguishable from the surrounding top soil. At a depth of 18", near the center of the pit, occurred an unfinished triangular knife and a quartz arrowpoint of unclassifiable shape. At minus 12", below the top soil on the northwest side, was found an eared, rhyolite projectile of lanceolate shape having a slightly incurvate base (Plate 1C:4). Throughout the pit, both above and below this significant find, were sherds of mixed types, fabric-impressed and tempered with shell which had leached out, net-impressed with grit temper, cord-marked with grit temper, and fabric-impressed with grit temper. As a whole, this pottery appeared older than the shell-tempered ware recovered from the shell-filled refuse pits.

BONE, TURTLE SHELL, AND ANTLER

In the following table are recorded the frequencies with which various types of implements made from bone, turtle shell, and antler occurred in the several refuse pits.

TABLE II

Bone, Turtle-shell and Antler

Implements of the Mispillion Site.

Areas	Phillips						Robinson			Benson-Bridgeham					Totals
Pits	1	3	4	5	6	9	1	5	6	5	6	8	9	10	
Fishhook, bone						1									1
Awl, splinter			2		5	7	1		1	2	7			5	30
Awl, birdbone					1	1	2								4
Awl, fishbone					1										1
Awl, ulna					1								1	1	3
Needle			1		1										2
Bone, worked		1	3		3					1					8
Bone, reject						1					1				2
Birdbone, reject					1	1								1	3
Turtle-shell, snapping, vessel (?)				1											1
Turtle-shell, box, cup							1								1
Turtle-shell, box, reject	1						1								2
Flaker, antler		1			1					1					3
Tine, antler, worked		1	1		2	1			2						7
Antler, sectioned														1	1
Antler, reject			1												1
Notched implement												1			1

Only six clearly recognizable types of implements of bone or bone-like materials and two presumed types, worked antler tines and the sectioned antler (Plate 2B), appear in Table II.

To the best knowledge of this author the single fish hook of bone represents the sole example of this class of implement ever found in a shell refuse pit in coastal lower Delaware.

The occurrence of so many awls suggests that these sharply pointed tools might have served as a kind of fork for removing roasted or steamed oysters and clams from their hot shells, as well as for the purposes usually assigned them.

While the shell of the common box turtle is known to have been used for the manufacture of spoons or ladle-like cups, no other instance of the use of the scooped-out carapace of a snapping turtle as a presumed vessel is known for the southeastern Delaware area.

A unique object was a seven inch length of small antler which had been carefully divided into eleven sections by equally spaced cut-marks. Antler beads are unrecorded in Delaware but their manufacture is certainly suggested by this object.

The notched, awl-like implement (Plate 1D) was recovered from the refuse displaced from pit 8 of the Benson-Bridgeham area after a heavy rain had deluged the site.

STONE

Availability of Materials

Discussion of the stone implements, chipped and otherwise, should, perhaps, begin with a brief survey of the resources on which the inhabitants of the Mispillion site could draw.

In lower Delaware there are no known quarries of any kind, a fact which must have placed a severe handicap on the aboriginal stone workers. The surface of the ground, even under the open conditions resultant from intensive present-day agricultural operations, yields few pebbles of appreciable size, and without doubt, during aboriginal times when most of the land was presumably carpeted by forest and undergrowth, this source of supply was even more restricted. It is likely, however, that the Indians were aware of places from which surface drainage had washed away the overburden, revealing the underlying, pebble-bearing gravels. Additionally the tidal action in the various streams eroded their restrictive banks and exposed the gravel deposits, to which the stone workers had access. From the ocean beaches were available pebble-type materials. These, then, constituted the resources of the stone workers.

The materials obtainable from both the gravel beds and the bay shore consisted, principally, of pebbles of sandstone of varying consistencies, pebbles of quartz or quartzitic stone in lesser frequency, and pebbles of chert, jasper, and chalcedony in relative abundance. Argillite, rhyolite, quarried jaspers and flints, quarried quartzite and the various steatites are not native to lower Delaware, and whenever implements manufactured from any of these types of materials are recovered from an Indian site, it may be assumed either that the implements themselves were imported or that the raw material was brought to the site.

Chip Counts

During the investigation an accurate chip count for at least one pit in each section of the site and in four of the five blocks of the reserved area was maintained. The numerical and percentage values of the various types of stone are shown in Table III. The jaspers, jasper-like cherts and chalcedonies and the quartzes and quartzites have been lumped together in this report into two general categories, jasper and quartzite.

While there appears to have been much fluctuation in the number of chips from pit to pit and block to block, interest lies in the percentages of occurrence of each type of stone. At first glance one might conclude that the Indian preference overwhelmingly favored the jasper type stones for the manufacture of chipped implements and that quartzitic pebbles ran a poor second. The more probable explanation is that the percentage figures reflect, by and large, the approximate ratio of the pebble types in the gravel beds and that the Indians were just doing the best they could with the materials available.

TABLE III

Numerical and Percentage distribution

of Chips by Kinds of Materials and Locations

SELECTED PITS

Area	Pit	Jasper	Quartzite	Argillite	Rhyolite
Phillips	6	326	0	0	0
Phillips	9	65	2	0	0
Robinson	1	17	0	0	0
B - B	10	124	4	0	0
Totals		532	6	0	0
% of total		98.9	1.1	0	0
RESERVED AREA					
Block	Sq. ft.				
I	280	422	7	2	1
II	400	238	8	0	0
IV	168	96	2	3	0
V	35	30	0	0	2
Totals	883	786	17	5	3
% of total		96.9	2.1	.6	.4

The appearance of a very few chips of argillite and rhyolite in the top soil and their complete absence from the pits seems significant. While the evidence is slim, the inference is that the Indians who filled the shell refuse pits had no access to supplies of these materials, either because the sources were unknown to them or because they had little, if any, intercourse with the peoples who did. If this inference is correct, then it follows that the argillite and rhyolite were either brought to the site by wandering people(s) from outlying areas or that a group or groups of people travelled to and from, or had trade relationships with, other groups who had access to these materials. It may be implied that the Mispillion site sometimes witnessed visits by peoples of differing cultural traditions.

Chipped Implements

In his study of the ceramics of the Mispillion site Lopez (1961) identified both the Mispillion site and the Townsend site near Lewes, from which the principal pottery series recovered from both sites derives its name, as being of the Late Woodland period. The presence of far greater quantities of one member of the ceramic series, Rappahannock Fabric Impressed, at Mispillion, he wrote, (ibid., p. 14) implied a shift in popularity of pottery types within the series, preference for one or another member presumably occurring earlier, but did not resolve the question as to which site was the older. Examination of the chipped implements from the Mispillion site, particularly the small projectile points, the principal nonceramic cultural evidence, may offer clues to the relative chronological position of the site in the Late Woodland period and comparison of the Mispillion inventory with that of the Townsend site may throw a little light on the question raised by Lopez.

No searching examination of the projectile points recovered from a Delaware site has ever, to the knowledge of this writer, been attempted. It is believed worthwhile, therefore, to consider the Mispillion evidence in some detail. The techniques employed in the following paragraphs are admittedly exploratory but are believed to be valid as applied, beginning with a consideration of projectile point classification.

No attempt to establish and publish a general typology of chipped implements for the Delaware area is known. In nearby Virginia, however, within recent years, an effort was made to systemize the classification of projectile points in a clear, simple and effective way (Holland, 1955, p. 165 et seq.), and on this basis to seriate, in relative time, a group of sites from which collections had been made. Because all of the classifiable projectile points recovered from the Mispillion site could be fitted into the Holland categories, detailed descriptions of which may be found in the work cited, the Virginia seriation may be a useful yardstick by which the chronological status of the site may also be estimated.

Three of the large blade types found at Mispillion, however, are at variance with the Holland classifications, apparently because they are not typically Virginian. Somewhat similar examples of these types have been reported, however, from the Stobbe and Koens-Crispin sites in New Jersey (Cross, 1941, pp. 31-34, 81-90, and Plate 26, second from left, bottom row) and from the Jenkins Farm site in Chemung County, New York (Ritchie, 1944, p. 313 and Plate 163, fig. 19). Descriptive comments, while suggesting interrelationships, yielded no agreeable terminology. Blades of comparable shapes were found in an Ohio mound at site 46BR31 (Mayer-Oakes, 1955, pp. 132-142, and Plates 76, 77) and tentatively named "Steubenville Lanceolate" and "Steubenville Stemmed." Lopez, author of the complementary pottery study, has pointed out (ibid., p. 32) that similar blades have been found at the Pelham Boulder site in Bronx County, New York. "Steubenville" projectiles may have had a wider distribution than has been heretofore realized.

Examples of all three of these large blade types have been personally collected by the author from the surface of other sites in Delaware. Because stratigraphic evidence is, to date, lacking, it does not seem admissible at the present time to assign specific classificatory names to them. Rather, it may be best temporarily to extend application of the terms "Steubenville Lanceolate" and "Steubenville Stemmed" to two of the types and to regard the eared, lanceolate-shaped specimen having an incurvate base as a variant of the former, in each case prefixing the limiting adjective "Delaware." The Holland classification of large blade types, otherwise applicable to the Delaware scene, has been modified, therefore, to include these types.

Projectile Points

The distributions of projectile points and large blades, in terms of the Holland classification, arranged to permit distinction between the pit and surfaces collections, are detailed in Table IV, to which, for the record, has been added an accounting of the other chipped tools. The immediate impression conveyed by the table is that the stone industry of the Mispillion site was poorly developed, for what reason or reasons there can presently be only conjecture. Perhaps the easy availability of tremendous quantities of food from the sea rendered unnecessary the production of large numbers of chipped implements.

More significant, perhaps, than the paucity of projectiles and large blades are the frequencies with which the several types did occur. The large blades, however, except for those of the triangular form and those of "Steubenville" character, were so few that deductions based on their percentages of occurrence would be unreliable. Instead, in paragraphs which follow comment will be made upon specific large blades.

For the present, attention is directed to the projectile point types. Consideration is first given to the surface collection into which have been incorporated the few specimens recovered from the top soil and the two from the river shore. It is felt that because all of the projectile point types present at the Mispillion site can be neatly fitted into the type categories defined by Holland and because the sites from which he derived his materials are geographically not far removed from Delaware, comparison of the Mispillion site with sites within his seriation is quite legitimate. Concerned with determination of the preferences of the Virginia Indians for quartz, quartizite, chert, etc., Holland included unclassifiable projectiles and all large blade types in his tabulations of percentages. The materials available at the Mispillion site have been discussed in preceding paragraphs and too few large blades occurred there to influence diagnostic inferences significantly. In order, therefore, that valid comparisons might be made, the percentages of occurrence of the various types of projectile points at the selected Holland sites have been refigured, eliminating both unclassified projectiles and all large blade types. In this consideration of the Mispillion surface materials the selection of sites from the Holland seriation has been limited to those at which the materials were collected from the surface, including the plow zone, further to insure the validity of comparisons. Holland's Clarksville site, which appears at the very top of his seriation, has been eliminated from the tabulations which follow because the material upon which its position was determined was a mixed collection obtained both from the surface and by excavation.

Projectile Point Types	P.	R	B-B	Total	% of Total	Top Soil	Surface	River Shore	Total	% of Total
B Medium Triangular	4		7	11	23.4	3	20		23	38.9
C Large Triangular	10	2	5	17	36.2	3	9	1	13	22.0
D Crude Triangular	6	2	5	13	27.7	1	7		8	13.6
F Lanceolate	1	1	1	3	6.4		3		3	5.1
H Stubby Barbed							1		1	1.7
I Notched Stemmed	1			1	2.1	1	2		3	5.1
J Ovoid Based							1		1	1.7
K Contracting Stemmed							2		2	3.4
L Parallel-Sided Stemmed			1	1	2.1		4		4	6.8
M Side Notched			1	1	2.1					
O Eared							1		1	1.7
N Unclassifiable	12	4	3	19		1	8	1	10	
Totals				66	100				69	100
Total Triangular				47	87.3				59	74.5
Large Blade Types										
Contracting Stemmed			1							
Side Notched			1				2			
Triangular	5					1				
Del. "Steubenville" Stemmed							1			
Del. "Steubenville" Lanceolate						1	1			
Del. "Steubenville" Lanceolate variant			1							
Unclassifiable						2	1			
Other Chipped Tools										
Thumbnail Scraper			3			1	4			
Modified Chip	2	1				1	2			
Hafted Bunt						1				

TABLE IV. Analysis of chipped stone implements recovered from the Mispillion site by locale, types and frequencies.

* P = Phillips; R = Robinson; B-B = Benson-Bridgeham

At the sites which appeared in the upper portion of Holland's seriation, i.e. most recent in time (Holland, ibid., p. 181), triangular types were heavily predominant (ibid., fig. 23), as they were at the Mispillion site, and at some Holland sites occurred a small triangular type not distinguished at Mispillion. In the Mispillion inventory were present seven of the other categories described by Holland. Selection of sites for comparison was, therefore, further limited to those at which triangular forms were in the great majority but with which the balance of the Mispillion inventory of types agreed most closely in respect both to the types and the percentages of each type present.

In Table V are presented the Mispillion percentages and the corrected percentages of the projectile types present at the most comparable of Holland's sites, five of which were situated in the North Central and Central area of Virginia and one, Cornett, in the Allegheny area (Evans, 1955, figs. 1, 14). The Holland sites have been arranged in descending order according to their respective positions in the seriation, Cornett being uppermost in point of time and Garth lowest.

Examination of Table V reveals that among the nontriangular types of projectiles the correlations between the Mispillion inventory and those of the Bear Garden and Whipporwill sites are closest, whereas there is considerable disagreement between the Mispillion inventory and those of the other sites. While there are discrepancies among the percentages of each of the individual triangular types and the small triangular form is absent from the Mispillion inventory, the combined percentages of the several triangular forms, indicated at the bottom of the table for convenience, sustain the general compatibility of the Mispillion site with the Bear Garden and Whipporwill sites.

Types	Mispillion	Cornett	Bear Garden	Bremo Creek	Whipporwill	Wingina	Garth
A. Small Triangular		8.8	2.8		4.7	1.0	
B. Medium Triangular	38.9	38.0	27.8	9.3	26.6	6.9	3.7
C. Large Triangular	22.0	7.2	16.7	56.1	37.2	50.4	45.3
D. Crude Triangular	13.6	1.7	27.8	6.9	5.7	10.9	32.1
E. Pentagonal		.7	2.8	2.3	7.0	1.0	1.9
F. Lanceolate	5.1	1.2	5.6	6.9	3.5	5.9	7.3
G. Notched Base		.7					
H. Stubby Barbed	1.7	9.9	5.5		1.2	1.0	1.9
I. Notched Stemmed	5.1	4.1	2.7	4.7	4.7	3.0	1.0
J. Ovoid Base	1.7	1.2		6.9		11.4	1.9
K. Contracting Stemmed	3.4	5.9	5.5		5.7	5.9	1.9
L. Parallel-sided Stemmed	6.8	7.1	2.8	6.9	1.2	2.0	1.9
M. Side Notched		13.5			3.5		
O. Eared	1.7						
Total Triangular Types	74.5%	55.7%	75.1%	72.3%	74.2%	69.2%	81.0%

TABLE V. Frequencies of occurrence, in terms of percentages, of surface collected projectile point types recovered from the Mispillion site and from selected sites of the Holland seriation.

If the crude triangular type, whose mere nature, Holland felt, made a trend in it improbable, (ibid., p. 175) may be ignored, the comparisons are even more striking.

All of the Virginia sites in Table V appear in the upper half of Holland's seriation (ibid., fig. 23) and all except the Garth site in the upper third. Most recent in time was the Cornett site. The Bear Garden and Whipporwill sites, with whose surface-collected projectile point inventories that of the Mispillion site most closely agrees, were somewhat earlier. It is observed, however, that at both Bear Garden and Whipporwill the small triangular point was present. The absence of this type from the Mispillion inventory may be significant. If Mispillion had been a site included in the Holland seriation, the absence of the small triangular type, the preponderance of the medium triangular type, and the small percentage of nontriangular types probably would have positioned it earlier in time than the Whipporwill site. Thus Mispillion would be ranked near the bottom of the upper third of the seriation.

Consideration may now be directed to the Mispillion pit collection.

In the Holland seriation only two of the sites which yielded high percentages of triangular projectile points, the Whitehall Shelter and the Henshaw Shelter, were excavated. Because it was felt that comparison of the Mispillion site inventory with those of only two other sites would not be very reliable, the archeological literature of the area geographically proximate to the Holland sites, as well as to the Mispillion site, was searched in an effort to find projectile point analyses in which the Holland seriation had been employed. The search yielded only the Sheppard site (MacCord, Slattery and Schmitt, 1957, p. 17) report, in which projectile point distributions for "Zone B", the main occupation, and for the site as a whole had been indicated.

In order that comparisons might be more valid, the large blade types and all unclassified specimens were again disregarded, and the percentages of frequency of the projectile point types were recalculated for both Holland sites, Shepard "Zone B" and the Shepard site as a whole. These calculations are indicated in Table VI.

It is immediately apparent that the total inventory of the Shepard site very closely matches that of the Whitehall Shelter and that the Mispillion inventory contains fewer of the nontriangular types than either of the former. In these categories, however, Mispillion appears slightly closer to Whitehall than to Shepard. Only in respect to the notched-stemmed type does Mispillion compare favorably with Henshaw, the general inventory of whose nontriangular types, like that of Shepard "Zone B", does not closely agree with those of either Whitehall or Shepard as a whole.

The small triangular type is absent from the Mispillion pit collection but is present in the inventories of Whitehall, Henshaw and Shepard and occurs with remarkable frequency in the Shepard "Zone B" collection. The total inventories of triangular types at Henshaw and in Shepard "Zone B" are at considerable variance with those of Mispillion, Whitehall and Shepard as a whole but in the medium and large triangular categories the agreement between Mispillion and Whitehall is remarkable and that between Mispillion and Shepard only slightly less impressive.

The Whitehall Shelter site is at the bottom of the upper sixth of the Holland seriation and the Henshaw Shelter site is at the bottom of the upper third (ibid., fig. 23). If the Shepard site collections were to be fitted into the seriation, the site as a whole,

TABLE VI. Frequencies of occurrence, in terms of percentage, of projectile point types excavated from the Mispillion site, the Whitehall Shelter, and the Henshaw Shelter sites of the Holland seriation and from the Shepard site as a whole and "Zone B" of the Shepard site.

Types	Mispillion	Whitehall Shelter	Henshaw Shelter	"Zone B" Shepard	Total Shepard
A. Small Triangular		4.7	.6	29.4	8.5
B. Medium Triangular	23.4	25.6	14.1	35.3	34.1
C. Large Triangular	36.2	37.2	55.1	2.6	21.0
D. Crude Triangular	27.7	5.7	11.8	2.6	5.4
E. Pentagonal		7.0	1.9		.3
F. Lanceolate	6.4	3.5	2.5		1.7
G. Notched Base					
H. Stubby Barbed		1.2			.3
I. Notched Stemmed	2.1	4.7	2.5	14.4	6.2
J. Ovoid Base			3.8		1.7
K. Contracting Stemmed		5.7		2.6	5.1
L. Parallel-sided Stemmed	2.1	1.2	7.0	8.8	4.6
M. Side Notched	2.1	3.5		2.6	11.4
O. Eared					.6
Total Triangular Types	87.3%	73.2%	81.6%	69.6%	69.0%

on the strength of the high percentages of the small and medium triangular types, would rank above the Whitehall Shelter, and "Zone B" would rank slightly higher because of the greater percentage of the small triangular type. Both may rank as high as Clarksville, which is thought to have extended into the Protohistoric period (Evans, ibid., p. 145 and Chart 1, p. 144).

Placement of the Mispillion site in the seriation is complicated by the absence of the small triangular type and by the high frequency of the crude category. If the latter may be disregarded, as Holland himself indicated, the site would rank below the Whitehall Shelter. In spite of the trace of small triangular points at the Henshaw Shelter, the far smaller frequency of the large triangular type would seem to place Mispillion above it. Thus it appears that the Mispillion site is slightly later than the Henshaw Shelter in point of time but antedates both the Whitehall Shelter and the Shepard site.

The high totals of the percentages of all triangular types at Mispillion and at the Henshaw Shelter would appear paradoxial. However, if the crude triangular type is eliminated from consideration, the totals of the medium and large triangular types are virtually equal at both sites and are smaller than the totals of the small, medium and large categories at both the Whitehall Shelter and the Shepard site. The suggested positioning of the Mispillion and Shepard sites in the Holland seriation appears thus to be sustained.

Because of the absence of clear-cut cultural stratigraphy, it was unnecessary for Holland, in arranging his seriation, to distinguish between surface sites and excavated sies, the inference being that none was demonstrably "pure" and all were probably mixed. From the text of Evans' study of the pottery assembled from these same sites it is possible to determine the distinction and in Table VIII those sites from which the material was surface-collected are indicated by an S in parentheses and those from which the material was excavated by an E. Thus it becomes possible to represent diagrammatically the relative positions of the Mispillion surface and pit collections and the Shepard "Zone B" and total site collections in respect to the Virginia sites. Summarization of the collections from both the Mispillion and Shepard sites permits an estimate of the approximate position each would hold if integrated into the Virginia seriation and indicates their relative temporal positions in respect to each other.

It is noted that the spans postulated for the Shepard "Zone B" and the total Shepard site, both based on excavated material, fall between the Clarksville site and some point above the Whitehall Shelter. "Zone B" was described as the main occupation of the Shepard site (MacCord, Slattery and Schmitt, ibid., p. 8), which implies that the materials from the site as a whole represent mixing of the cultural remains from two or more occupations. The higher percentage of small triangular points in the "Zone B" collection indicated that "Zone B" should be represented as more recent in time. In the diagram, therefore, the lower limit of "Zone B" is placed slightly above that for the site as a whole. Were an average of the postulated spans determined, the position of the Shepard site in the Holland seriation might approximate that of the Cornett site which may have extended into the Protohistoric period (Holland, ibid., pp. 178, 181).

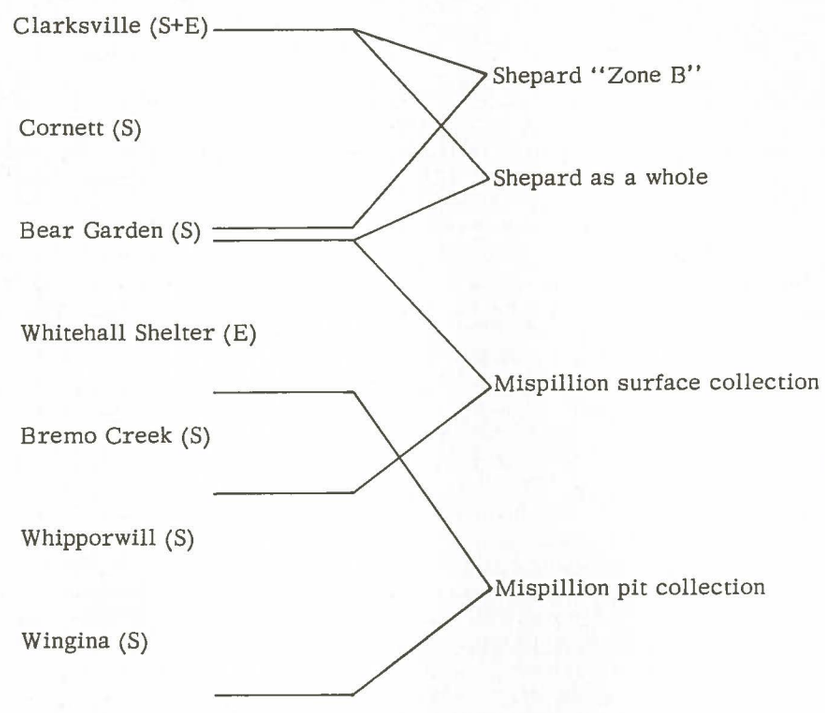

TABLE VII Relative positions of the Mispillion and Shepard sites in respect to sites in the upper third of the Holland seriation as suggested by the surface and excavated projectile point collections. The Clarksville and Cornett sites are the most recent in point of time and may probably be considered as belonging to the Protohistoric period (Holland, ibid., pp. 178, 181). Clarksville may be extended into the early Historic period (Evans, ibid., Chart 1, p. 144 and Table 8, p. 164). The Henshaw Shelter probably existed in Late Middle Woodland times and extended into the early Late Woodland period (Evans, ibid., Chart 1, p. 144; Table 1, pp. 150, 151). The Garth site may be assigned to the Middle Woodland period (Evans, ibid., Chart 1, p. 144, and Table 1, pp. 150, 151).

The upper limit of the diagramatic span of the Mispillion surface collection may have coincided with the lower limit of the Shepard site as a whole at some point above the Whitehall Shelter site, and its lower limit falls below the upper limit of the span postulated for the Mispillion pit collection and at some point below the Whitehall Shelter. The lower limit indicated for the Mispillion pit collection falls at some point above the position of the Henshaw Shelter site. Were an average of the postulated spans determined, the position of the Mispillion site in the Holland seriation might approximate that of the Bremo Creek site or that of the Whipporwill site, both of which may be assigned to the early part of the Late Woodland period (Evans, ibid., Chart 1, p. 150, pp. 146-147, 156-157). In temporal perspective the Mispillion site clearly predates the Shepard site.

On the basis of his study of the Townsend ware from the Mispillion site Lopez conjectured that Mispillion may predate the Townsend site, (Lopez, ibid., pp. 14, 15). Consideration of the projectile points excavated from the two sites appears to clarify the question in some degree.

A high frequency of occurrence of triangular points, not differentiated as to types, has been generally accepted by professional archeologists as indicative of occupation during Late Woodland times. Reports of excavations of other Late Woodland sites in the geographic area proximate to the Mispillion and Townsend sites provide data, in terms of triangular projectile points, on which their relative positions may be estimated.

Examination of the site reports immediately reveals that the Holland "crude triangular" points have been variously regarded by different authors as blanks or unfinished points and sometimes as crude knives or scrapers. In order, therefore, that comparisons of the frequencies of occurrence of triangular forms at Mispillion and Townsend with those at other sites may be valid, the percentage of projectiles classified as "crude triangular" at Mispillion must be disregarded. The adjusted total percentage of triangular forms at Mispillion thus becomes 59.6. At the Townsend site 73.3 per cent of the projectile points, exclusive of the crude type, were triangular (Stewart, Blaker, Omwake and Withoft, ms., unpublished, H. G. Omwake, editor).

At the Patawomake site in Virginia triangular points accounted for 89.5 per cent of all projectiles (Schmitt, Karl, ms., unpublished). At the Keyser Farm site in Virginia they constituted 86.6 per cent of the inventory (Manson, MacCord and Griffin, 1944, p. 399) and at the Shepard site in Maryland they accounted for 69 per cent of the projectile point totals (MacCord, Slattery and Schmitt, ibid., p. 17). The same authors noted (ibid., p. 26) that at the nearby Hughes site in Maryland more than 70 per cent of all the projectiles were triangular.

Holland has shown that as time went on, triangular projectile points increased in frequency. In order, therefore, to demonstrate the possible temporal relationships of these six sites, they have been arranged in Table VIII in the descending order of triangular point percentages.

Patawomake- - - - - - - - - 89.5

Keyser- - - - - - - - - - - - 86.6

Townsend- - - - - - - - - - 73.3

Hughes- - - - - - - - - - - 70.+

Shepard- - - - - - - - - - - 69.0

Mispillion- - - - - - - - - - 59.6

TABLE VIII. Percentages of triangular projectile points, exclusive of the crude form, present at various sites, arranged in order of descending frequency.

The Patawomake site is said to have extended into the Historic period (MacCord, Slattery, Schmitt, ibid., p. 26). The period of existence of the Keyser Farm site is postulated to have been from 1550 A.D. to 1650 A.D. (Manson, MacCord and Griffin, ibid., p. 413), its occupancy extending beyond that of the Hughes site (MacCord, Slattery and Schmitt, ibid., p. 28) into the early part of the occupation of Patawomake. The occupancy of the Hughes site is thought to have ended about 1600 A.D. (MacCord, Slattery and Schmitt, ibid., p. 28) and to have begun about the time occupancy of the Shepard site was ending early in the Late Woodland period (ibid., p. 29).

Occupation of the Townsend site appears to have paralleled those of the Hughes and Keyser Farm sites, beginning, perhaps, c. 1550 and ending, because of the absence of European goods, prior to 1631, the date at which the first efforts to establish a colonial settlement nearby were made.

It has been demonstrated in a preceding section of this discussion, in terms of the Holland seriation, that the Mispillion site antedated the Shepard site and may be assigned a temporal position in the early part of the Late Woodland period. The smaller percentage of frequency of triangular points sustains the postulated position and probably indicates that the beginning of its occupancy may have considerably antedated that of the Shepard site.

The projectile points from the Mispillion site appear to provide evidence that it preceded Townsend, perhaps by a long time, Townsend probably having been occupied during the latter stages of the Late Woodland period and Mispillion near its beginning. If these suggested temporal positions of the Townsend and Mispillion sites may have been correctly estimated, then, in answer to the question raised by Lopez, the Rappahannock member of the Townsend pottery series is older than the Townsend members, if, indeed, it should not be considered a separate type itself.

Large Blades

The single large blade of the contracting stemmed type, Table IV, was made from a very thin piece of ferruginous quartzite having a texture like that of sandstone (Plate 1B:22). Although the chipping and shaping were crudely executed, perhaps because the stone appears not readily workable, it is the general outline and the

material which are interesting. Ferruginous quartzites which have the granular appearance of sandstones are not found in lower Delaware. The only known material which is at all comparable appears in small ferruginous accretions which usually include a high content of very small, smoothed (water-washed?) pebbles. Near Newark, Delaware, however, have been located sources of the material of which this point was made (Wilkins, 1958, p. 15), and from sites in that vicinity many persons, including this author, have collected scores upon scores of projectile points manufactured from it. To the best knowledge of this writer, all examples are of either the contracting stemmed type or the more or less parallel-sided stemmed type, with or without ears. In the Holland seriation both represent early times.

The material of which the side-notched large blade (Plate 1B:17) was made appears closely to resemble the jaspers from the famed Vera Cruz, Pennsylvania, quarries. This specimen, placed among the projectiles and large blades obviously made of local pebble jaspers, stands out as distinctly different in character. Again, the combination of early form and nonlocal material may point to visitation of the site at an earlier time by people(s) who had access to quarried jasper.

Mayer-Oakes, describing the "Steubenville Stemmed" and "Steubenville Lanceolate" points recovered from the McKee's Rocks mound, pointed out that some doubt attached to the stratigraphic interpretation of the mound structure and, while favoring assignment of these projectile types to the "Archaic" period because of their occurrence at the East Steubenville site, did not close the door on the possibility that they were associated with the "early woodland" period (Mayer-Oakes, 1955, pp. 132-153). It must be pointed out that all but one (the variant) of the examples which occurred at the Mispillion site (Plate 1C:1,2) were recovered from the top soil or from the surface, and that other examples known from Delaware sites have been, invariably, surface collected. There is no stratigraphic basis, therefore, for attributing great antiquity to any of the Delaware specimens. However, if the shape of the eared, lanceolate specimen (Plate 1C:4) recovered from the pit under the white man's garbage hole were not alone sufficient to suggest an early horizon for it, the fact of its manufacture from a rhyolite material might, in the absence of local sources, prompt the thought. Additionally, this implement was associated with some problematically grit-tempered and cord-marked or net-impressed sherds, the "early" dating of which may be suspected.

Miscellaneous Chipped Implements

Among the other chipped stone artifacts, Table IV, a few deserve special notice. A large rhyolite scraper, two edges of which had been worked, was, perhaps, a knife (Plate 1B:26). The large parallel-sided stemmed "bunt" of argillite (Plate 1C:3) was found in the top soil of the reserved area along with the projectiles of "Steubenville" character. It may very well have been a large "Steubenville stemmed" blade reworked to serve as a hafted scraper. The jasper chips having one or more edges slightly retouched may have served as poor-quality scrapers or knives. The relative infrequency of scrapers of the thumbnail variety is in harmony with the generally poorly developed stone industry.

TABLE IX. Analysis of miscellaneous non-chipped stone implements, by types, frequency, and locale, recovered from the Mispillion site.

Types	Phillips	Robinson	Benson - Bridgeham	Top Soil	Surface	River Bed
Gorget			1		1	
Pendant					1	
Steatite, unclassified				1		
Steatite vessel sherd	2			1		
Hammerstone	1			1		
Celt					1	
Pestle			1			1
Abrader	1					
Anvil stone (?)			1			

Other Stone Implements

The Mispillion site, as indicated by Table X, was very barren of non-chipped types of stone implements.

Gorgets are extremely rare at any type of site in the area. The stone from which the pit example (Plate 1B:23) was made, a fine-grained, compact sandstone, which was rubbed but not polished, could have come from some local source, but the purplish slate from which the surface-found example (Plate 1A:32) had been made is unknown within the state.

The occurrence of two (matched) sherds of steatite in a pit (Phillips 6) and a single, drilled sherd in the reserved area was noted. No sources of this material are known in Delaware and these sherds must represent importations. At only one other shell refuse pit site (Slaughter Creek) has steatite been found--a single sherd personally collected by the writer from the surface of the site. Steatite vessels were not part of the culture of the people who dug the shell refuse pits.

MISCELLANEOUS ARTIFACTS

Pipes

A few fragments of pottery pipes (Plate 2A) were recovered from the pits of all three sections of the site and one very crude but nearly complete example (Plate 2A:2) was found on the surface of the field adjoining the Phillips area on the east. A section of stem recovered from pit 1 of the Phillips area almost duplicated the surface specimen.

Texture ranged from coarse clay of yellowish tan color, having inclusions of grit, to fine, untempered clay, shading from brownish black to black. Rubbing, semi-polishing, and incising were restricted to the pipes made of finer-textured material. Decoration, limited to the bowl areas, consisted of combinations of finely incised left to right and right to left oblique lines, deeply incised lines horizontally encircling the bowl, crossed by down-drawn left to right oblique lines less deeply incised, and a combination of deeply incised horizontal lines and rectangular zones, the centers of which bore patterns of left to right and right to left intersecting oblique lines. One interesting stem (Plate 2A:4) recovered from B-B pit 9 had, traversing its entire length, a deeply incised groove.

Tailings

One small piece of tailing from a pottery coil, fired, was found in the top soil. In Robinson pit 2 occurred a small marble-like ball of pottery clay, also fired.

Whirls(?)

Fragments of two shell-tempered pottery objects, restoration of one of which is shown in Plate 3A, of mysterious purpose, were recovered from Phillips pit 7. Specifications of the reconstructed specimen follow:

Diameter - - - - - - - - - -	2-3/4''
Thickness - - - - - - - - - -	1/4'' at center, tapering to 0'' at edges
Holes - - - - - - - - - - -	1/8'' diameter, bilaterally counter-sunk, spaced 3/8'' to 1/2'' from edges and 7/8'' apart
Shape - - - - - - - - - - - -	roughly circular
Color - - - - - - - - - - - -	dark greyish brown
Decoration - - - - - - - - - -	cord-wrapped stick impressions(?) but no incising

The second specimen, only a single fragment of which was recovered, was lighter in color, tending to brown, and was probably slightly larger in diameter. Otherwise it duplicated the first.

Conch Shell Hoe(?)

Shown in Plate 3B is the only object manufactured from shell which was recovered at the site, aside from the columnar bead previously reported (Hutchinson, et al., 1957, Plate VI). The major portion of the bell of a large conch shell had been cut away, leaving a section of sufficient size to serve, conjecturally, as the blade of a hoe(?). Both inner and outer surfaces of the cut had been smoothed, perhaps by wear.

SUMMARY AND CONCLUSIONS

The principal occupation of the Mispillion site, 7-S-A1, appears to have been by a sedentary people whose economy was based on the food resources of the Delaware Bay and its tributary tidal streams, notably the Mispillion River. The saline diet was supplemented by deer, small animals, a few birds and some nuts. Evidence of agricultural pursuits is lacking.

The easy accessibility of plentiful supplies of food which could be secured in nets or by hand-gathering may have made unnecessary the development of an extensive chipped implement inventory.

Other types of stone tools were restricted in both assortment and number. The sedentary type of existence probably contributed to this deficiency. Except for awls, few kinds or numbers of bone implements were fashioned. Sea shell, as a raw material, was virtually ignored.

Minimal evidence suggests that round shelters may have been constructed.

Vast quantities of fabric-impressed, shell-tempered pottery vessels and a few pottery smoking pipes were manufactured.

Throughout the foregoing discussions, various factors have been pointed out which gave rise to a suspicion that the Mispillion site had been occupied or visited by more than one group of people, an idea not entirely at variance with the occupancy suggested by the S.A.A. investigators who wrote: ''We believe it probable that this

site was occupied more or less continuously from the Middle Woodland times up to the historic period'' (Hutchinson, et al., ibid., p. 28). With this conclusion the writer disagrees in part.

The dubious basis for this estimate was the presumed, but otherwise unsubstantiated, rate at which shell weathers away and disintegrates. Furthermore, none of the associations of artifactual evidence justified the assertion that occupation continued into the historic period. The artifactual evidence suggests, instead, that occupation may have been at different times rather than ''more or less continuous''.

Attention is directed to the fact that shell-tempered fabric-impressed pottery overwhelmingly constituted the majority ware represented in the shell refuse pits, none of which yielded more than a small sample of cord-marked or net-impressed, grit-tempered sherds (Lopez, ibid., p. 3). It is generally conceded that in some areas these latter types preceded in time the shell-tempered wares. If this were also the case at the Mispillion site and the occupation of the site had been ''more or less continuous'', it would be logical to expect more substantial evidence of a transition from them to the shell-tempered pottery. It appears to this reporter that the presence of a very few cord-marked and net-impressed, grit-tempered sherds in the shell refuse pits may logically be attributed to accidental transfer from the surface of the surrounding ground. An abrupt change in the occupational history of the site is inferred. It has, in fact, been pointed out that the aberrant pottery sample suggests at least one and possibly two occupations prior to the principal one (Lopez, ibid., p. 3).

Clear occupational stratigraphy, culture upon culture, was totally lacking from the site. Intrusive stratigraphy, however, was noted during both phases of the investigation. It has been pointed out (Hutchinson, et al., ibid., pp. 26, 27) that: 1) shell pits were intrusive into features but features were not intrusive into pits; 2) all shell refuse pits had a great preponderance of shell-tempered sherds, the few grit-tempered sherds therein being small and unmatched; 3) while two features had both grit and shell-tempered sherds in the upper levels (accidental inclusion?), only grit-tempered sherds occurred in the lower levels; 4) in one feature which had an intrusive shell pit there were no grit-tempered sherds in the shell refuse pit but outside the shell pit were both shell and grit-tempered sherds; 5) two features had predominating grit-tempered sherds, many of which were matching. In addition to these examples, the intrusion of B-B pit 6 into a disturbed area which yielded sand-tempered sherds dissimilar from the pottery of the shell pit itself has been noted.

From the other shell refuse pit sites in coastal lower Delaware have been recovered several scores of burials but at no site has there been a clear instance of the implacement of grave goods with the deceased individual. Attention, therefore, focuses upon the non-shell refuse pit burial number 3, reported by the S.A.A. investigators, with which was found a pottery bowl, a fact at complete variance with the known customs of the people who used the shell refuse pits. Of further significance is the fact that the bowl was not made of shell-tempered clay but, rather, of clay tempered with ''rounded coarse sand or fine gravel'' (Hutchinson, et al., ibid., p. 18). Additionally, the S.A.A. investigators reported that their ''feature 6'' intruded into the burial area, a condition which presupposes interment of the dead at some time prior to the creation of ''feature 6''.

In the collection of projectile points obtained from the surface of the Mispillion site there is a far wider range of types than appears among the excavated materials, suggesting artifactual stratification, similar to that diagnosed in a study of lithic

materials from the Buri site in New Jersey (Gruber and Mason, 1956, pp. 9-22) in which two distinct projectile point "complexes", separated in time, were distinguished.

The predominance of triangular types among the projectile points recovered from the pits indicates that the principal occupation of the Mispillion site occurred during the Late Woodland period. Analysis of the pit and surface collections, in terms of the Holland seriation and by comparison with evidence obtained from other sites assigned to the Late Woodland period, suggests that this occupation took place near the beginning of the period.

The presence of specialized types of large projectile points, elsewhere attributed to early horizons, manufactured from materials not locally available and in disassociation with the shell filled refuse pits suggests that limited occupation(s) of the site, or brief visits to it, occurred at some period of time prior to that during which the pits were filled.

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Mr. Roger Vandegrift, who played a major role in the investigation of the Mispillion site, has read the manuscript and concurred with the conclusions of the writer.

Mr. Julius Lopez, author of the complementary pottery study, has offered numerous constructive suggestions and has been of tremendous assistance in this evaluation of the Mispillion site.

Finally, the writer's personal gratitude is expressed to his sister, Mrs. David Roderick, and to his secretary, Mrs. Shirley Jackson, who patiently typed, retyped, and typed again the several revisions of this report.

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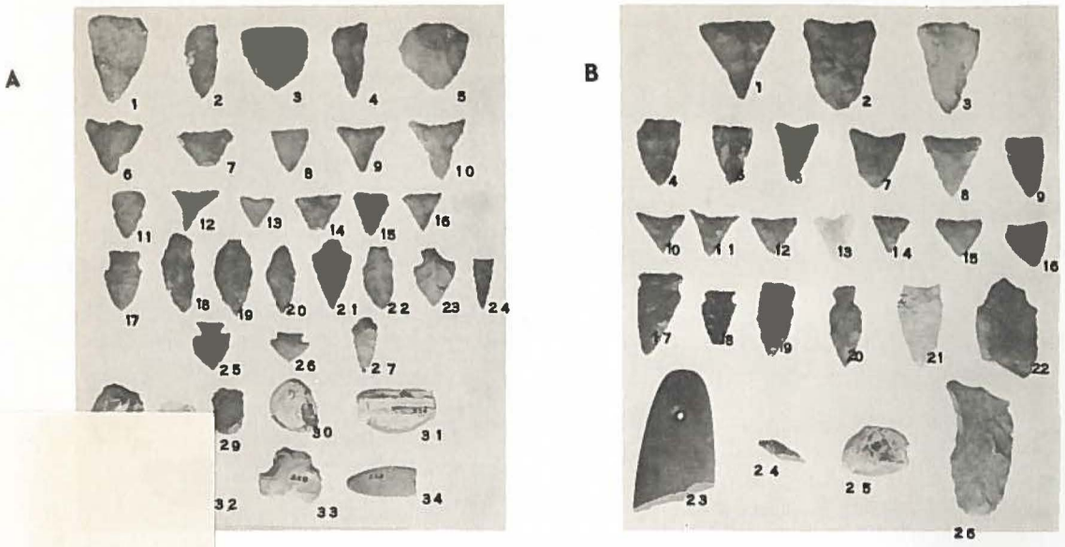
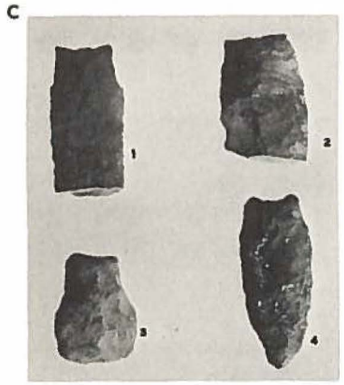


Projectile points and other small stone artifacts collected from the surface, Mispillion site 1, 2, 3, 4 triangular; 5 crude triangular; 6-16 medium triangular; 17 side-notched; 18 unclassified; 19 ovoid base; 20 lanceolate; 21, 27 contracting stemmed; 22 parallel-sided stemmed; 23, 25 notched stemmed; 24 eared; 26 stubby barbed; 28-31 scrapers; 32 fragment of purplish slate gorget; 33 odd shaped scraper; 34 problematical pendant
Scale: .25

Projectile points and other small stone artifacts escavated from the Mispillion site 1, 2, 3 triangular; 4-16 medium triangular; 17 large side-notched; 18 side-notched; 29, 21 triangular; 20 notched-stemmed; 22 contracting-stemmed; 23 fragment of fine grained sandstone gorget; 24 tiny piece of worked steatite; 25 scraper; 26 rhyolite knife (?)
Scale: .25

Delaware "Steubenville" projectiles and bunt from Mispillion site 1 "Steubenville" stemmed; 2 "Steubenville" lanceolate; 3 argillite bunt; 4 "Steubenville" lanceolate variant
Scale: .5

Unusual hafted bone tool from Mispillion site obverse and reverse views Scale: as indicated



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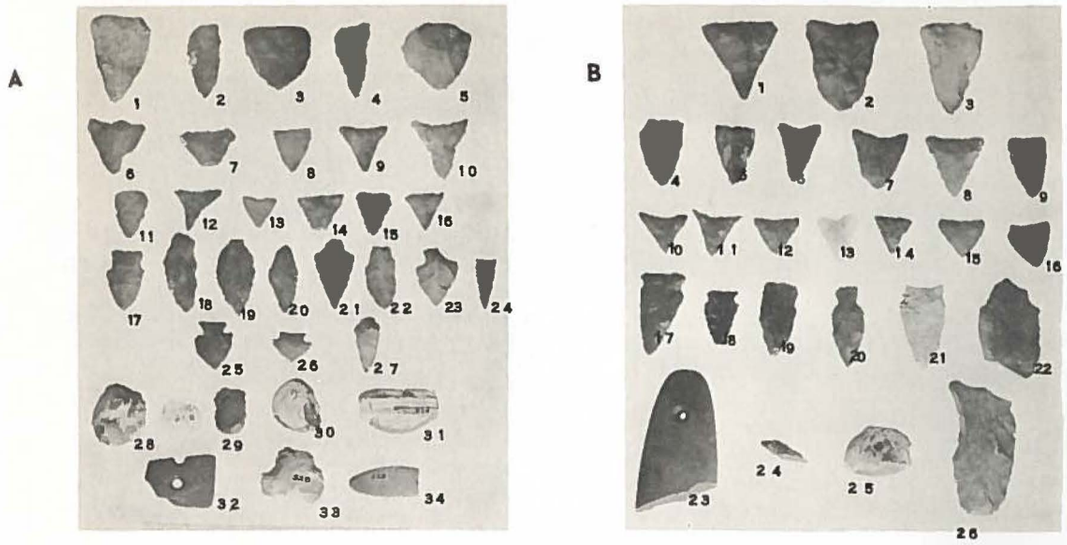
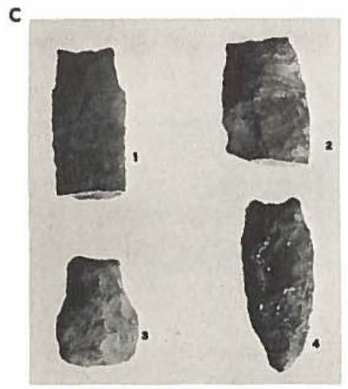


Plate 1 A Projectile points and other small stone artifacts collected from the surface, Mispillion site 1, 2, 3, 4 triangular; 5 crude triangular; 6-16 medium triangular; 17 side-notched; 18 unclassified; 19 ovoid base; 20 lanceolate; 21, 27 contracting stemmed; 22 parallel-sided stemmed; 23, 25 notched stemmed; 24 eared; 26 stubby barbed; 28-31 scrapers; 32 fragment of purplish slate gorget; 33 odd shaped scraper; 34 problematical pendant
Scale: .25

B Projectile points and other small stone artifacts escavated from the Mispillion site 1, 2, 3 triangular; 4-16 medium triangular; 17 large side-notched; 18 side-notched; 29, 21 triangular; 20 notched-stemmed; 22 contracting-stemmed; 23 fragment of fine grained sandstone gorget; 24 tiny piece of worked steatite; 25 scraper; 26 rhyolite knife (?)
Scale: .25

C Delaware "Steubenville" projectiles and bunt from Mispillion site 1 "Steubenville" stemmed; 2 "Steubenville" lanceolate; 3 argillite bunt; 4 "Steubenville" lanceolate variant
Scale: .5

D Unusual hafted bone tool from Mispillion site obverse and reverse views Scale: as indicated



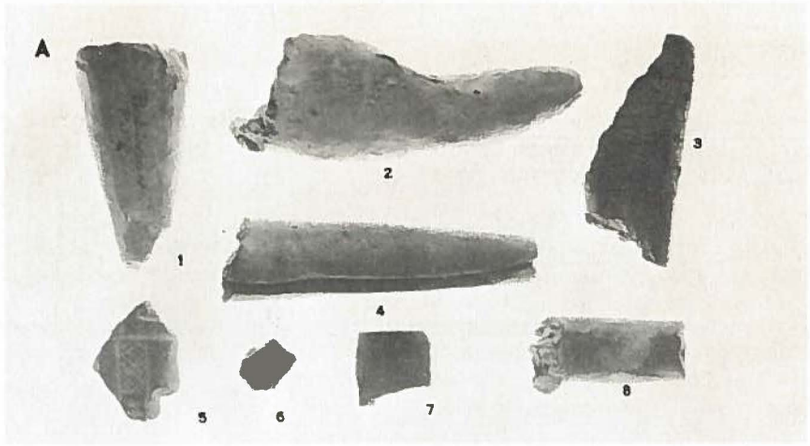
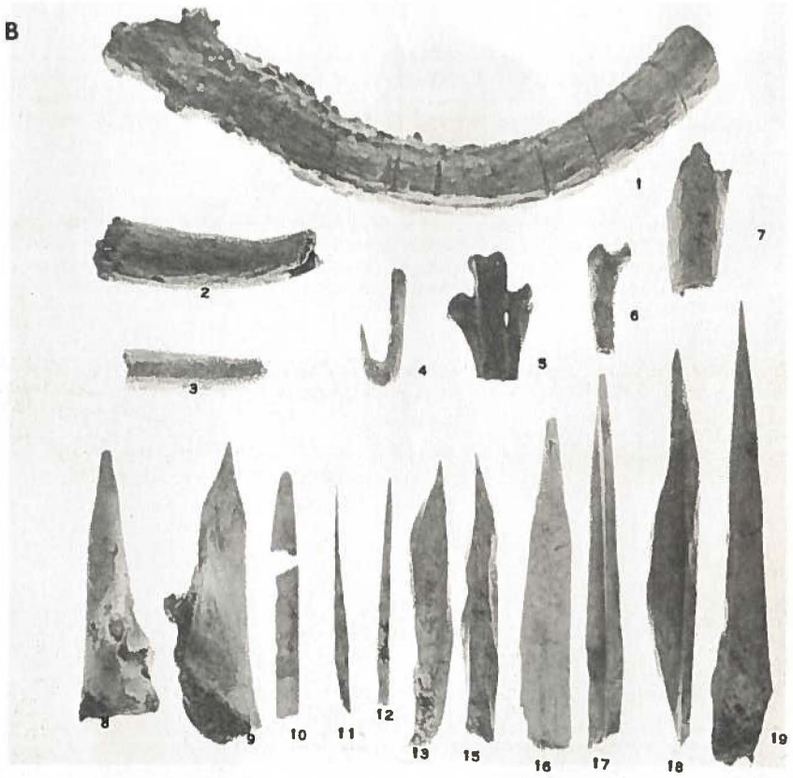


Plate 2

A Clay pipes from Mispillion site
1, 3-8 excavated; 2 surface find
Scale: circa .5



B Bone implements from Mispillion site
1 sectioned antler; 2, 3 worked antler (Flakers?);
4 fish hook; 5. 6 rejectage from leg bones of birds;
7 deer bone rejectage; 8, 9, 12-19 awls;
10, 11 needle fragments
Scale: circa .5

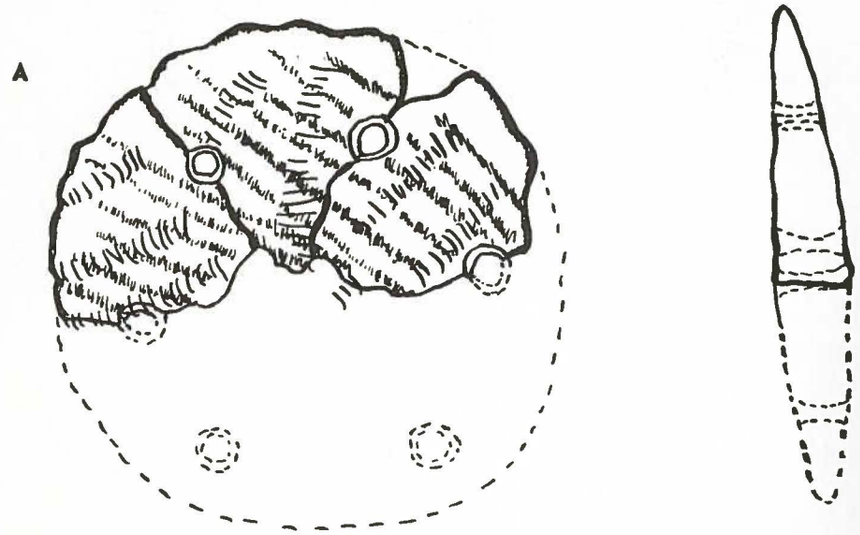


Plate 3

A Reconstructed whirl (?) made of shell tempered clay, Mispillion site scale: actual size

B Conch shell hoe (?), Mispillion size scale: circa - .66