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Fig. la

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# PRELIMINARY REPORT ON A SHELL DEPOSIT IN THE WOLFE'S NECK

## ARCHEOLOGICAL COMPLEX (7-S-D10)

by

D. Marine, H. H. Hutchinson, O. H. Peets and J. L. Parsons

This shell deposit as determined by probing and excavation is 26' x 107' and covers an area of approximately 2,780 square feet. Of this total area only one large plot (30' x 12') and 7 test plots (4' x 5') or about 18% of the total deposit has been examined (fig. 2).

examined (fig. 2). Location (figs. 1 & la). This possibly rectangular deposit is located on the northwestern side of a small, marshy, permanent and nameless branch of Lewes Creek about 2 miles southwest of the Town of Lewes, Delaware.

Its long axis is oriented in a southwestern-northeastern direction. The southeastern edge parallels this nameless stream at a distance of about 135 feet, of which 115 feet are nearly flat, wet, humus rich, spongy silt, but covered with fresh-water brush and grass to the stream. The brushless, at present salt marsh, begins approximately 150 feet down stream from the northeastern edge of the shell deposit. The distance from the northeastern edge of the shell deposit down the nameless stream to the line of Lewes Creek bank is 212 feet. The old farm house site (Jacob Moore) is 357 feet from the northwestern edge of the shell up a gently sloping cultivated field to the northwest.

There is evidence (fig. 3) that this nameless branch of Lewes Creek was a much larger stream in the early 19th century and may have been a tidal stream 400 years ago and navigable for canoes to the shell deposit described in this article (see Discussion). There is also evidence (figs. 1 & la) of 5 other shell deposits and extensive indications of Indian occupation in this area of Wolfe's Neck between Pot Hook Creek on the northwest, the nameless stream on the southeast, the farm house site on the southwest and the bank of Lewes Creek on the northeast. Weslager & la (1941), has reported the excavation of an oval shell deposit 30' x 60' with a maximum depth of the shell layer of 16 inches located on an elevation in the salt marsh on the west bank of the Lewes and Rehoboth Bay Canal (completed in 1913) to the northeast of the Jacob Moore house site. This shell deposit could have been located on the west bank of the nameless stream before its lower reaches were destroyed in digging the Canal and C.C.C. ditching. It was in the site of this shell deposit described by Weslager, but at a lower level, that Peets and Sloan<sup>2</sup> (1951), found a large shell-tempered cord-marked caldron. Weslager<sup>3</sup> (1944), also reported finding about 50 circular fireplaces in the recently plowed field to the north of the Moore house site and this field (approximately 700 x 200 yards) has been a very fertile area over the years for surface hunting Indian artifacts.



Fig. 1. Topographic map of Cape Henlopen quadrangle showing an outlined area in Wolfe's Neck (enlarged as fig. 1a on cover) and the relative locations of (1), shell deposit on canal bank; (2), fire places; (3) and (4), old shell deposit areas; (3), snell deposit on small island; (5), old shell deposit area; (X), the shell deposit described in this article all in relation to the J. Moore house site.







Fig. 5. Beginning the examination of the shell deposit from the field side of the  $30' \times 12'$  area. Note the 3'embankment of erosion soil which the men are facing.

Also in the field to the north of the Moore house site and about 20 feet back of and parallel with the bank of Lewes Creek marsh there is located the remains of a second shell deposit (figs.1&1a. No. 3). This is now a sharply defined area in the field approximately 25' x 150' composed of very dark gray soil containing large quantities of disintegrated shell. Also there is another (fig. 1, No. 4) similar, but smaller, area in this field and near a notch in the bank of Lewes Creek, through which a small stream entered the marsh and joined our nameless stream, to the south of that just mentioned and almost due east of the Moore house site. Also



Fig. 3. Tracing from Chart 27, U. S. Coast Survey, 1869, showing Cape Henlopen-Lewes Creek area. X marks approximate site of the shell deposit. Note the relative prominence given the nameless stream on which this shell deposit is located.

a 4th thin shell deposit (fig. 1, No. 5) on a small island in the marsh about 75 yards east of the last mentioned shell deposit (No. 4) was partially examined by Peets and Marine in 1956 (not reported). (See fig. 1a, Front Cover, for the location of the 4 shell deposits referred to above.)

Thus there is abundant evidence of intensive Indian occupation in the area between Pot Hook Creek on the northwest, Lewes Creek on the east and the nameless small stream on the southeast. This area has been designated "The Wolfe's Neck Archeological Complex" because we feel that what has so far been found is inadequate, even if one assumes a long Indian occupation and a very productive hunting and fishing economy, to formulate a working hypothesis of the Indians' activities and their duration in this area.

Preliminary probing with a steel rod showed the shell deposit we are reporting was covered on the field side, with 3 feet of erosion soil. This gradually decreased over the 26 feet wide shell deposit to an average of 14 inches on the opposite edge (stream side). The last 10 feet or more of the overburden was wet marshlike silt on the stream side (southeastern), and it seemed best to begin our examination of the shell deposit by opening a sampling and drainage trench across the deposit beginning at the southeastern edge of the shell and extending it in a straight line toward the field or north western edge (fig. 2). This trench divided the shell deposit into nearly equal northeast and southwest halves. In digging this trench we encountered a deposit of white man's trash mixed with silt and sand for approximately 11 feet. We later were able to outline this rubbish area and found it covered a roughly rectangular area of about 220 square feet (fig. 2), but it has offered no problem as the trash is entirely on top of the shell layer. From the types of articles encountered, paregoric-like bottles, a well bucket wheel. hub of a carriage wheel. paint buckets and a white glass ointment jar, - the trash seems to date from around 1850 to 1900. It was in this rubbish deposit that Jacob Moore, Jr. found the brass spangles while digging postholes for a pig-pen in the late 1930's. He turned them over to Mr. C. A. Weslager. Orville Peets recently obtained three of the spangles from Mr. Weslager for study<sup>4</sup>.

Returning to the trench work, for the first 10 feet we encountered a layer of soft wet silt about 14 inches thick above the shell layer. This layer of mud was removed by shovel and pail in extending the trench back toward higher and drier ground. This overlying silt layer gradually changed to a mixture of sand and silt, to sandy soil, which deepened to 2 feet at 12 feet from the field edge of the shell deposit and to 3 feet at the field edge (fig. 4). It was at this point we decided to hire a ditch digger to remove this overburden in a sample area of 12' x 30' or 15' on each side of the trench, without disturbing the shell deposit. By accident rather than plan the machine removal of this erosion soil overburden also exposed the field (northwestern) edge of the shell deposit.

We next removed the 26 foot shell layer at the bottom of the trench down to yellow or white sand, and at once a steady stream of ground water flowed down the slope which averaged about one inch to the foot but was greatest at the field end. This trench (16" wide) provided sufficient drainage for 2-3 feet on each side. The water table completely covered the shell layer to within 17 feet of the field edge and partially covered it to within 13 feet (fig. 4). The ground water level (water table) as it affects the entire shell deposit is indicated by a line of dashes in the "Plot of the Shell Heap" (fig. 2). This water level has not varied perceptably in the four years it has been under observation despite the very dry summers of 1963 and 1964. As shown on the 20 foot line of the plot (fig. 2) where seven nearly equally spaced 4' x 5' test areas have been excavated, both the northeastern and the southwestern ends of the shell deposit have been free from ground water during the 3 year period (Test areas Nos. 1, 2 and 3) indicating a shallow cove involving the 4 more central test areas. Whether the ground water level has changed since the shells were deposited will be discussed later in this paper.

Excavation of the 30' x 12' area: Parsons, Hutchinson, Marine, Tull, Austin, Bell and Riley worked in this area (fig. 5). The final 4-6 inches of overburden was removed with hand shovels and the examination began on each side of the drainage trench at the field edge with the spoil being thrown into the field. The northwestern edge of the shell layer was found to be nearly in a straight line throughout the 30 feet. As indicated in the Plot (fig. 2) the southwestern and northeastern limits of the shell beyond the 30 foot excavation are estimates. This entire 30 foot area (15 foot on each side of the drainage trench) was found to be covered with shell varying from 2-3 inches to as much as 15 inches (average 9 inches) in thickness. This is in part due to irregularities of the sand layer on which the shell rested.

Shell: Despite the effective drainage through the trench the entire shell mass was wet and in the southern 6 feet of the 30 foot section ground water handicapped our examination. The most striking feature was the advanced fragmentation and decomposition of the clam and oyster shells while the conchs, scallops and edible snails (Littorina irrorata) are much better preserved. Broken clam (quahog) shell was the predominant type present, but they were not uniformly distributed. In some areas the remains of oyster shell were greater than the clam. There were also 2 areas in which sea snails (Plate I, fig. 1) (Littorina irrorata) were quite numerous. Sixteen knobbed conch shells were recorded. Also the clam, scallops and conchs were quite variable in size. These variations in size and variety of shells is usually less pronounced or absent in the typical camp midden of this region and suggests that the shell fish were gathered up from a tidal flat or shallow water and unsorted. At least one cause of the fragmentation of the clam shells was cracking them with hammerstones. Six otherwise intact clam shells either had holes broken through or broken fragments still holding together over the greatest convexity of the shell (Plate I, fig. 2).

Bone. Eighty-nine fragments of bone were recovered, of which 66 were considered deer, 1 fragment of deer antler, the humerus and femur of a large bird - swan or goose - and 20 small unidentified fragments. In the northeastern half of the area the well preserved lower jaw and most of the left scapula of a small dog together with parts of the upper maxilla, temporal and occipital bones were concentrated in a small area (Plate III, fig. 6). No worked bone was recognized.

Pottery. A total of 145 small, mostly thick walled (3/8"-1") fragments were recovered. Many sherds were water soaked and soft and despite attempts to remove them whole they frequently crumbled. Of these sherds 27 were shell tempered; 67 were tempered with granular quartzite; 14 were pottery tempered; 6 contained large granules of quartz in a fine sand matrix - the sand giving the sherd the feel of medium fine sand paper on both surfaces (Plate I, figs 3 & 4). There were no decorations on either side except brush marks. This thick (3/8"-1/2") sand grit tempered type was also encountered in several of the 7 test areas. We have not encountered this sandquartz tempered pottery in this region except at the Townsend Site as reported by Blaker'. Thirty-one pottery fragments were not classified. The predominant decoration in both the shell and grit tempered sherds were cord, net and knot6 impressions identical with the predominant types reported by Holmes 7 at the Pope's Creek, Maryland, shell deposit (Plate II, figs. 1,2, 3 and 4). Most of the net and cord impressed sherds were of a tan or light brown color, while the sand-quartz tempered sherds were unusually hard and of a reddish brown color. No fabric impressed sherds, the most frequently occurring decoration in this region, were found in any area



Plate I. No. 1, 2 views of sea snail (Littorina irrorata) shell; No. 2, illistrates a type and position of a common hammerstone injury of clam shells; No. 3, external surface of sand-quartz tempered sherd; No. 4, internal surface of No. 3; No. 5 bottom sherd to show thickness.



Plate II. Nos. 1 and 2, net impressed (No. 2 is a rim sherd); Nos. 3, 4 and 5, cord impressed; No. 6, scarified interior of sherd with external net impressions; No. 7, reproduction of Plate LXXXVIII from W. H. Holmes' article (ref. 7a) describing Pope's Creek pottery; No. 8, internal scarification, externally cord impressed.





Plate III. No. 1, basal fragment of a thin, non-fluted, dark slatecolored arrow point (Plain view?); No. 2, side-notched thick, reddish point; No. 3, end scraper of jasper; No. 4, basal fragment of a cornernotched square base arrow point of jasper; No. 5, "Knotted net" (Evans ref. 6) impressions with internal scarification; No. 6, lower jaw and left scapula of a dog.

Ta	<b>b</b> 1	e	1

BONE		BONE	-	+	SHERDS					ART	IFAC	TS	+	SPECIAL FEATURES
Area Escavated	Deer	Bird	Misc.	Grit tempered	Shell "	Sand "	Pottery "	Not Classified	Chips (flakes)	Rejects	Arrowheads	Hammerstones	Conchs	
Trench		1.8-8		2	1				2	1		1	1	
12' x 30'	66	3	20	67	27	6	14	31	293	12	3	10	16	Part of dog skeleton, 1 piece ant- ler, concentration of stone chips
Test area #2	6	118		5	1	1	23	3.1	3	1		1	4	
Test area #1	4	251		23	1	7	1		4	2				
Test area #4	6	238		9	7	2			13	3		1		l scraper
Test area #7			Der Ka	8		1		5	4					4 fire cracked stones
Test area #5	3			32		2		353	36	11			6	pipe fragment
Test area #6	19	4		21		31		4.69	15	9	1		3	l premolar tooth
Test area #3	11			5	3			19	1				3	
TOTALS	115	7	20	172	40	19	15	55	371	39	4	13	33	

so far examined in this shell deposit. Also, no sherds with incised decorations have been found.

<u>Stone</u> artifacts were very scarce. Twelve rejects (pebbles from which one or more flakes had been struck); 2 basal fragments of arrow points, 1 thin and dark gray with a deeply concave base and the other, jasper and corner-notched (Plate III, figs. 1 and 4); 10 hammerstones and 293 flakes. It is of interest to note that 184 of these flakes were found in the extreme eastern edge in a somewhat half circular area with a radius of about 3 feet. It is probable that many more flakes were present beyond the line, but we confined our search to the prescribed 12' x 30' area.

<u>Charcoal</u> fragments were scattered over the area but no concentrations were noted. The shell mass was too decomposed to recognize partially burnt shell.

Examination of the 7 test areas on the 20 foot line. The location of these test areas was determined arbitrarily by establishing 2 points 20 feet back from the field (northwestern) edge of the shell deposit - one at the eastern edge and the other at the western edge of the 30 foot excavated strip, then connecting these two points with a straight line from the extreme eastern edge to the extreme western edge of the shell deposit. Seven test areas, each 4' x 5' and nearly equidistant, were staked out with their long axis centered on this line, which we have designated "The 20 foot line" (fig. 2). These 7 areas were numbered in the order in which they were excavated and this in turn was determined partly by the ground water level. Unfortunately the ground water level changed very little over the 10 months (December 23, 1961 to October 15, 1962) period over which we purposely spread the work, and this proved to be a considerable handicap, particularly in test areas Nos. 4, 5, 6 and 7, where we had to bail out the water at frequent intervals. This probably caused the loss of some small objects as well as the relative positions of those recovered. The material recovered from each of the 7 test areas and also that found in the drainage trench and the 12' x 30' area has been brought together in table No. 1.

Instead of presenting a general description of each of the 7 test areas we have decided to publish the daily running notes of one of the most interesting of these areas - test area No. 6.

September 4, 1962 - Laid out No. 6 and took off about 14 inches of nearly black, sticky. wet silt down to the shell layer but water began to well up and we quit.

September 8, 1962 - Went out alone (Marine) and dug a hole about 12" x 24" in the southeast corner in order to use a bailing bucket. The shell here is about 8 inches thick. Found 3 sherds - thick walled and grit tempered with scratch marks (Plate II, fig. 6; and Plate III, fig. 5) on the inside and cordmarked on the outside.

Plate III, fig. 5) on the inside and cordmarked on the outside. September 22, 1962 - Worked alone. Water just about even with the top of shell layer. Bailed the water from the hole made September 8 and removed the rest of the shell layer down to and including some soft sand along the eastern wall back to the northeastern corner to the same width as the hole made September 8. This made bailing easier. Working from this trench I took down a shell layer about 1 foot wide across the width (4 feet) of the test area. Recovered 12 pieces of thick walled pottery from a small area near the southeastern corner, 8 pieces of worked stone - one of which is 1-7/8" long, chipped to a point at one end and to a convex cutting edge at the other and shaped like a thick, elongated arrowhead (Plate III, fig. 3), 5 flakes. Also recovered 10 pieces of bone mostly fragments of the shafts of deer bones. Also recovered 2 conchs - 1 with only the central stem and the other a large knobbed conch with a hole in the great whorl and 2 or 3 coils of the spire broken off. One has to bail water frequently. The shell layer varies from 12 inches to 4 inches in thickness. This is due to the uneven, soft, water soaked, sandy bottom. In one area (southeastern) the shell mass is separated into 2 layers by a thin seam of sand. Found the usual large number of pebbles and snail shells.

September 23, 1962 - Water has risen overnight to the top of shell mass. Bailed it out and started taking down another foot-wide strip across the area. Recovered the following: <u>Pottery</u> - 3 pieces of the same type and decoration as yesterday's. <u>Stone</u> - 9 chips, some large, all jasper and 1 side-notched arrowhead (Plate III, fig. 2). <u>Bone</u> - 10 fragments - 4 bird and 6 deer, one of the deer bone fragments may have been worked. <u>Shell</u> - 1 knobbed conch. I may have missed some of the artifacts, as the water came in fast and the rotten shell mass scratched down soon became thin mud and shell flakes; had to bail water every 5 minutes.

September 25, 1962 - Worked alone. The excavated area (eastern half) is filled with water about 10 inches deep. Bailed it out and made a trench along the northwestern wall from which most of the water appears to be coming, to divert the water into the excavated eastern section from which it could be bailed without much risk of losing artifacts and finished excavating area No. 6. Exposed the remains of an old tree stump on the southwestern edge but only about half of the stump area is included within the bounds of this test area (probably black willow (Salix nigra)). There is no shell in the stump area - only black humus-rich mud. Fragments of the yellowish brown thin bark of two large roots in the sand appeared to radiate from the stump area. All evidence of rotten wood had disappeared only the root bark remains. The whole test area was excavated to a depth of 23 inches below the present ground surface, of which on the average 9 inches was badly fragmented and rotten shell mixed with very dark silt, but not more decomposed than in other areas below the ground water level. The findings today include 5 sherds representing 2 pots - all grit tempered, thick walled and cord marked. Also 2 chipped pebbles, 1 flake. 1 pre-molar tooth (probably deer) and 3 fragments of bone were recovered. It should be noted that all artifacts were in the soft yellow sand just below the shell layer.

# DISCUSSION

This is the first shell heap our Society has undertaken a systematic investigation of despite the facts (i) that shell heaps are the most numerous remains of Indian occupation in this area and (ii) that the first recorded archeological investigations in southern Delaware were those of Prof. Joseph Leidy<sup>8</sup>, who partially examined two of the largest shell deposits in the Cape Henlopen area. This is also a preliminary report since only about 18% of the total deposit has been examined.

The question arises whether any portion of this shell heap has been removed for road building or agricultural lime, both of which have frequently occurred - the largest and most notable being the Pope's Creek (Md.) deposit to which a branch railroad was built in 1868. We do not think so, despite the thinness of the deposit, for the following reasons. First, there is no major difference in the thickness of the shell layer in the drier area where the shell is buried under 2 to 3 feet of erosion soil and where it is covered with more than a foot of dark gray, wet silt. Secondly, the shell deposit is no thicker under the area of the white man's trash than elsewhere. Thirdly, the advanced state of shell decomposition and fragmentation, while somewhat less in the drier northwestern edge of the deposit, suggests that dissolution of the shell was far advanced before the first settlers arrived. Fourthly, the relative thinness of the deposit is due to the advanced disintegration.

Of greater interest are the geographic and geologic conditions existing at the time this shell deposit was made. First, it is difficult for us to believe that so large a portion of the shell was deposited below the ground water level. We prefer to believe that the shell was deposited on the shore of a tidal stream above the then existing water table. Secondly, if 2 to 3 feet of erosion soil could cover the shell in 250 years of cultivation of the adjacent land, the stream could have been navigable for canoes and what is now the tidal marsh (1-12 miles wide) of Lewes Creek could have been a shallow arm of the sea capable of supporting shell fish of the types (clam, oyster, conch and periwinkles) found in the shell deposit. Thirdly, the gradual and continuing rise, possibly 12 feet in the last 500 years, in the ocean level rather than a sinking of the land area over the centuries<sup>9</sup> could have caused a rise in the water table as fresh water flowed down the inclined aquifers of the Coastal Plain and backed up against the pressure of a rising sea level. Fourthly, the opening of the Lewes and Rehoboth Bay Canal (canalization of Lewes Creek) in 1913 and ditching by the Civilian Conservation Corps in the 1930's have greatly increased the drainage in the Lewes Creek water shed. Among others, may be mentioned the elimination of Gordon Pond. Very little accurate information regarding surface water levels is available before 1913. The first U. S. Coast Survey map of the Cape Henlopen area I have found was made in 1869. The Gillis Hossett<sup>10</sup> map made in 1629 and used by DeVries in his attempt to establish a Dutch colony at Swanendael in

1631 is of interest archeologically as well as historically. This crude map shows <u>Bloemaert's</u> Kil (Lewes Creek) as a wide estuary or arm of Godin's (now Delaware) Bay with several islands or shoals, and our Society has found it valuable and relatively accurate in our work on the DeVries Fort Site, the West India Trading Post Site and the nearby Indian camp (Russell Site). W. H. Holmes<sup>11</sup> (1907) raises the same question when, in describing the Pope's Creek (Md.) shell deposit on the Potomac River 60 miles below Washington and 40 miles above the mouth, states that the inlet of Pope's Creek was originally 1000 feet wide, but today it is only a marsh through which the creek makes a winding passage.

This is only a preliminary report. We know approximately the extent of the shell deposit and have excavated only a little over 18% of it. Whether shell has been removed by early settlers or whether the now thin layer (varying from 2-3 inches to over a foot in depth) of shell in an advanced state of decomposition represents the total original deposit is still unknown. The white man's rubbish deposit is confined to a small area, and as it was coarse and placed on top of the shell offers no problem in evaluation. However, certain recent geological problems remain: For example, we have not solved the problem of the erosion overburden, nor the possible effects of the rise in ocean level on the present water table which now submerges about 1/3 of the shell deposit even in the driest (August 15-October 15) period of the year. The present state of the shell (advanced decomposition) is only slightly less in the portion above the present ground water level than in the area below the water table. Much more data, particularly along the lower border of the shell and beyond (toward the nameless stream) must be obtained before one can express an opinion on how the oysters and clams were brought to the site (whether by canoe or by hand). The present stream (about 12 feet wide) may have been much larger before the land was cleared and runs in a ditch-like gorge averaging about 2 feet deep cut in a deposit of silt that came from the water shed, for the greater part, after the land was cleared for agriculture (about 300 years ago).

#### SUMMARY

Five hundred square feet of an estimated total 2780 square feet comprising this shell deposit have been excavated. The present depth of the shell layer varies from 2 to 15 inches, and no vacant spaces have been noted except at the southwestern edge of test area No. 6, where a mud filled crater of a large tree and fragments of the brownish yellow bark of two large roots (probably black willow) were still present.

The shell is composed principally of fragmented and decomposed clam (Venus mercenaria) and oyster (Ostrea virginica) with clam predominant in most areas. There is also a significant number (33) of conchs (Busycon caricum), periwinkles (Littorina irrorata) and scallops (Pecten irradians?). These types were more concentrated in some areas than in others. Very few of the clam shells were intact. Six clam shells were recovered that had holes or localized cracks in the shells over the greatest convexity just in front of the hinge somewhat comparable to the well known holes over the great whorl so often reported in the conchs found in middens. These holes and cracks were undoubtedly made with hammerstones, and this we believe accounts for the relatively large number of such stones found in shell deposits along the Atlantic Coast as pointed out by Holmes<sup>7</sup> (1899).

Intact stone artifacts were very scarce, as was also pointed out by Holmes. However, there were two small areas, one on the extreme northern eastern edge of the 12' x 30' area, and the other on the southwestern edge of test area No. 5 containing greater concentrations of stone chips, indicating that the production of chipped articles at least was quite active.

<u>Charcoal</u> was observed in all areas examined, but no concentrations were encountered. Undoubtedly the extensive fires on the shells account in part for the present thinness of the deposit and their decomposition. Undoubtedly also, fresh water seeping through the shell mass over long periods of time further contributed to their decomposition and shrinkage. That a farmer should select this area for a trash dump and a pig-pen is quite understandable.

Parts of one dog skeleton (lower jaw, left scapula and parts of the upper jaw and temporal bone) were recovered near the center of the northeastern half of the 12' x 30' section. Also the humerus and femur of a large bird (swan or goose) were recovered from this area. Fragments of the long bones of animals like the deer were fairly numerous in all the areas examined.

Pottery fragments were scattered throughout the area excavated but were relatively more numerous in test areas Nos. 1,5,6 and 3, and in one small area of the southwestern half of the 12' x 30' area near its southern border. Particularly in the test areas below the water table all of the pottery fragments were recovered from the soft sand below the shell, suggesting the possibility that they had been discarded before the shells were deposited. The pebbles, fire cracked and worked stone fragments were also in the sand. This was to be expected because the soft, wet, decomposing shell mass could not support them. This may also be the explanation for the location of the pottery fragments. Excavations in front of the edge of the shell deposit should aid in deciding this question. Approximately 70% of the classifiable pottery fragments were from crude thickwalled caldrons tempered with coarse quartzite granules and the predominant decorations were net or cord impressions. The few identified rim sherds have no constrictions of the necks nor a flare of the rim and carry the same decorations as the body sherds. Not a fragment of fabric impressed or incised pottery has been found. Thus the pottery resembles that found at Pope's Creek as reported by Holmes 7 & 7a except that the Pope's Creek pottery was shell tempered. A very hard sand-quartz tempered pottery was encountered in significant amounts.

This is a preliminary report on the 18% of the shell deposit thus far excavated. Examination of other areas in and adjacent to the shell mass has been planned that might change or modify our present interpretations. They are: (I) The four corners of the supposedly rectangular shell mass and (II) a series of test areas in front of and along the southeastern edge of the known shell deposit to find out whether any artifacts were discarded into this area. A positive finding would provide additional information on why all of the artifacts found in test areas Nos. 4, 5 and 6 on the "20 ft. line" are in the sand below the shell layer.

The evolution of the geophysical changes in this coastal area over the past 2000 years is poorly understood but certainly not altogether natural.

As regards the age of this shell deposit, our opinion is only a guess based largely on the pottery which is identical with that found at the Pope's Creek and Accokeek 2, Md. Sites, the advanced decomposition of the shell deposit and the geographic and geologic setting. We would hazard the opinion that the deposit dates from the early centuries of the Middle Woodland period (300 A.D. - 1200 A.D.).

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Acknowledgments. We wish to thank Mrs. Margaret C. Blaker, Archivist, Bureau of American Ethnology for help in classifying the several types of potsherds. The photographic work was done by Col. R. E. McGarraugh, Orville H. Peets and Henry H. Hutchinson.

# REPORT ON AN OUTLYING SHELL MIDDEN OF THE REHOBOTH CITY SITE (7S-G3)

by

# D. Marine, J. L. Parsons and Kermit Hill

This refuse pit was called to our attention by the owner of the lot, Mr. James Maloney, who discovered it by encountering shells while digging a trench for a drainage pipe. He called his brother-in-law, Mr. Kermit Hill, who after a preliminary examination, got in touch with D. Marine and J. L. Parsons. We outlined the shell deposit by probing and obtained Mr. Maloney's consent to excavate it.

Location. The pit is on high ground, completely within the boundaries of Mr. Maloney's lot and about 150 feet northwest of the present water level of Lake Comegys (one of the two natural fresh water lakes adjacent to the Rehoboth City site) (fig. 1). It appears to have been located on an older bank of the lake when it was much larger, but a real estate developer has had the old lake bank immediately to the southeast of Mr. Maloney's property bulldozed into the old lake bed to increase or enlarge the lots (fig. 1), and any middens in the bulldozed area could have been destroyed.

History. The first written report of an Indian encampment in this area is that of Francis Jordan<sup>1</sup> in 1880 under the title "The Remains of an Aboriginal Encampment at Rehoboth (City),

Delaware." He defined the area of more concentrated Indian occupation as beginning on the southern bank of Lake Newbold (now Silver Lake) and extending east to the ocean beach and south about 400 yards (to the property now designated as the Rodney Sharp land) with a depth of up to 500 feet, including the eastern end of Lake Comegys. He clearly described refuse and burial pits and recorded finding arrowheads, celts, axes, copper beads and pottery



fragments (largest about "hand size"). He also accurately prophesized that "the time is close when this site will be swallowed up by cottages."

J. Wigglesworth<sup>2</sup> in 1933 reported finding an ossuary 9'2" long, 6'8" wide and 3'4" deep containing 15 skeletons - one of which was partially exposed in the cliff facing the ocean. In 1930 Clark Hill<sup>3</sup> and 4 exposed 4 burial pits in this area while grading a new highway (King Charles Avenue extended) between Silver Lake and Dewey Beach. Mr. Hill did not report his find at the time because he feared the same debacle that occurred after he had found the Slaughter Creek Site. It is highly pro-bable that many other unreported findings have been exposed by loot hunters, grading operations, foundation and cellar diggings since the intense development of this seaside area began about 1930. This Rehoboth City site was without doubt one of the three largest so far found in Sussex County - the other two being the <u>Slaughter Creek</u> and <u>Townsend</u>, and we have adequate records of only one - Townsend<sup>5</sup>. For this reason we are presenting a report on the excavation of this seemingly outlying and isolated refuse pit which we tentatively consider a part of the Rehoboth City Indian camp site (7S-G3).

The pit as outlined by probing measures overall 7'4" x 11'0" and is somewhat pear shaped (fig. 2). The long axis is oriented

in a northeast and southwest direction with the narrower and shallower neck end to the northeast. We began our excavation at the northeastern end on each side of the 10" wide trench previously dug by the owner. This trench had been dug parallel with the back line of the owner's property and by accident nearly traversed the long axis of the shell midden. The surface soil was quite level and averaged about 9" deep over the entire shell deposit. The top surface of the shell deposit was correspondingly level, which may have been due to plowing as this general area had been cultivated farm land until approximately 20 years ago, but there was no concentration of shells noted in the top soil as it was removed.



In removing the shell mass we maintained a vertical front watching closely for artifacts and evidence of stratification. The first 3 feet proved to be quite barren but artifacts - particularly pottery and bone fragments - became more numerous and



<u>PLATE I.</u> No. 1, tusiform fragment of clay pipe stem. No. 2, soapstone pipe. No. 3, polished spindle-shaped artifact from stem of conch. No. 4, portion of left lower jaw of a squirrel. No. 5, portion of left lower jaw of a raccoon-like animal. widespread throughout the remaining 8 feet. The shell mass at its deepest part was 17" and hard packed with the interstices filled with dark gray soil to a depth of 9"-10" while in the lower 7"-8" the soil had not infiltrated and the individual shells could be removed easily by hand. The uniformity of the shell mass and the absence of any suggestion of sand or silt layers suggest either that there had been no heavy rainfalls while the shells were being deposited or that the rain water had been diverted. The soil for the entire depth (27") of the pit was a sandy loam.

Material recovered: Small fragments of charcoal were widely scattered. Several fragments of burnt bone; 3 fragments of burnt hickory nut shells and a few partially burnt oyster shells were noted.

The shell mass was composed of approximately 2/3 oyster and 1/3 hard clam (quohog) with a few scallops but no conchs. Some of the oyster shells measured over 10" in length (fig. 3). <u>Stone</u>: 40 broken or fire cracked; 8 worked jasper pebbles (from which one or more flakes had been struck); 2 flakes and one much used hammerstone, roughly rectangular, measuring 2-7/8" long by 2-1/4" wide by 1-1/2" thick. A depression for the thumb had been pecked on one side. No other local stone artifacts were found. <u>Bone</u>: Turtle, 18 fragments; bird, 9; deer, 59 including fragments of the long bones, ribs, 2 scapulae and 2 acetabula, suggesting that possibly all the fragments were from a single deer; the left half of the lower jaw of a squirrel and a fragment of the left half of the lower jar of a raccoon-like animal (Plate I, figs. Nos. 4, 5). No worked bone was recovered.

<u>Pipes</u>: A fusiform fragment of a pipe stem, nearly circular made of untempered clay (Plate I, No. 1) measuring 1-5/16" long by 1/2" at the proximal and 5/16" at the distal end with a slightly off center hole, having a diameter of nearly 3/16". Another pipe (Plate I, No. 2) fragment highly polished and carved from soapstone was recovered. About 1/3 of the top part of the bowl has been broken off irregularly, as was also the distal end of the laterally flattened stem. Attempts to round off the broken edges of this stem seem to have been made. Certainly the pipe was used after the stem was broken as is shown by the teeth prints on both its upper and lower sides. The roof of the drilled off-center stem hole was much thinner than the basal portion and has broken through for a distance of 5/16". The overall length of the bowl and stem is 1-11/16". The maximum present height of the bowl is 1-1/16". The broken edges of the bowl wall vary in thickness from 1/16" to 1/8" and the nearly circular cavity is 11/16" in diameter and is nearly at a right angle to the stem. There are very shallow vertical striae or grooves on the inner wall of the bowl but despite these striae the inner wall of the bowl is relatively smooth and symmetrical.

Worked Shell: We recovered a somewhat spindle shaped rounded section of the stem of a conch 1-7/8" long and 7/16" thick at the center and tapering to squared ends (Plate I, No. 3). The spiral groove of the conch stem is still prominent although the entire surface of the artifact is highly polished. We have recovered



# Fig 3.

beads in other Indian sites made from sections of conch stems but no attempt to drill a hole through this spindle could have been made because the ends are too small. We have no idea what use the Indians made of this artifact.

Pottery: 248 small sherds were recovered containing 21 rim sherds and representing at least 5 pots. 19 fragments of one pot, of which 3 were non-matching flared-rim sherds, but not enough sherds matched to determine its size. These sherds were fabric impressed on the outside (Plate II, No. 1) and rubbed horizontally on the inside with, we believe, the same cord-wrapped stick that was used on the exterior (Plate II, No. 2).

Every sherd was heavily tempered with shell and none had incised decorations. In thickness all sherds were thin walled varying from 1/4" to 3/8" except the two bottom sherds, one of which was 3/4" thick but the thin walled (1/4") was greatly predominant. There were several fragments that had separated along the coil lines. Of the rim sherds, some showed no constriction at the necks and no flare of the rims. One rim sherd showed a mending hole (Plate II, No. 3) that had been drilled from the outside. In general 90% of the pottery can be classified as thin



PLATE II. Four shell tempered rim sherds from different pots. No. 1, external fabric impressions rather carelessly applied. No. 2, internal surface of No. 1. No. 3, soot blackened sherd with mending hole. No. 4, diagonal and No. 5, horizontal fabric impressions below rims. walled Townsend fabric impressed (Plate II, Nos 4, 5) and therefore Late Woodland in time. The 19 sherds referred to above as belonging to a single pot were salmon colored, but all the others were of a dark gray color when not blackened by soot.

<u>Summary and Conclusions</u>: This seemingly isolated shell midden is considered to be an outlying part of the Rehoboth City site (7S-C3) - the first Indian campsite to be systematically investigated and reported (Jordan, 1880)<sup>1</sup> in Sussex County. The Rehoboth City site was, as Jordan pointed out, an ideal one for a sea side encampment and implies thought in its selection: Ideal, in the summer months because it was on high ground and near the ocean beach; ideal, because it was adjacent to 2 fresh water natural lakes; ideal, because it was near a major supply (Rehoboth Bay) of easily obtained sea food.

No other Indian midden has been reported in this immediate vicinity and as the building lots are now about 2/3 occupied by summer or year around residents, the outlook for further discoveries in this area is not hopeful. This is mentioned only to emphasize the importance of sensitizing the public to archeological values - in this instance by a member of our Society, Mr. Kermit Hill, brother-in-law of the owner of the lot.

The outstanding features of this midden were the relatively short period of occupancy - probably by one family for one season as indicated by the lack of silt or sand layers in the pit; scarcity of stone artifacts or evidence of their manufacture and the partial remains of only one deer.

The soapstone pipe was the only piece of steatite found, although many fragments of soapstone bowls have been found on Thompson's Island in the head of Rehoboth Bay less than a mile distant, and the nearest natural source of this material is the Piedmont section and adjacent Blue Ridge Mountains at least 100 miles to the west.

Pottery fragments were relatively numerous (248) but small, and we have been unable to restore any of the possible 5 pots as determined by color, thickness of walls and decorations of the sherds. As to age, the pottery belongs to the fabric impressed group of the Townsend Series and therefore the Late Woodland period but prior to contact with Europeans.

#### Literature

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This Bill appears as Chapter 401

Volume 54 aws of Delaware

SENATE BILL NO. 333 Approved by the Governor 12/2/64

AS AMENDED BY

SENATE AMENDMENT NO. 1

A SUPPLEMENTARY APPROPRIATION ACT FOR THE FISCAL YEAR COMMENCING JULY 1, 1964 TO THE DELAWARE ARCHEOLOGICAL BOARD FOR SALARIES, EQUIPMENT AND EXPENSES.

BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF DELAWARE: Section 1. The sum of \$22,150.00 is hereby appropriated out of the General Fund of the State of Delaware from monies not otherwise appropriated to the Delaware Archeological Board for the following purposes:

Salary of Archeologist	\$	7,500.00
Wages & Salaries of Emp	loyees	4,400.00
Travel		500.00
Contractural Services		7,150.00
Supplies & Materials		600.00
Capital Outlay		2,000.00
A State of the second	Total \$	22,150.00

Section 2. This Act is a supplementary Appropriation Act for the fiscal year ending June 30, 1965 and any funds remaining unexpended as of that date shall revert to the General Fund of the State of Delaware on the aforesaid date of June 30, 1965.

(This copy furnished by Senator Eugene D. Bookhammer.)

#### STATE ARCHAEOLOGIST

Since the State of Delaware has authorized (SB333,1964) the employment of a State Archeologist, it is of interest to our members and others to outline the duties of the State Archaeologist. The following statement of policy of the Delaware Archaeological Board will explain in some detail what the new State Archaeologist will be responsible for. We hope all members of the Society will give him their hearty cooperation in building up and recording the archeological history of the State.

# POLICY STATEMENT OF THE DELAWARE ARCHAEOLOGICAL BOARD ADOPTED DECEMBER 8, 1964

# I Authority of State Archaeologist

The State Archaeologist shall derive all authority from the Delaware Archaeological Board and shall be directly responsible to it. The position shall not be subject to the jurisdiction of any other Board, Commission or Department of the State of Delaware.

# II Responsibilities of the State Archaeologist

1. Professional

(a) The State Archaeologist shall utilize his professional knowledge, training, experience and skills to fulfill the purpose for which the Delaware Archaeological Board was created. To this end, he shall advise and seek the advice of the Board on any matter pertaining thereto. He shall represent the Board in all negotiations with other public agencies, with corporations, scientific or historical societies, and with private individuals in respect to archaeological matters of whatever nature.

(b) The State Archaeologist shall plan, develop and direct a continuing program of survey and research into the archaeological resources both pre-historic and historic, of the State of Delaware. He shall organize, direct and control such excavations as, in his judgment, are likely to increase knowledge and understanding of these resources, except that prior to the commencement of any major excavation project, he shall have the approval of the Board in respect to the expenses involved, the extent and nature of the contractual services required, and the extent and nature of the results expected.

(c) In the event of emergency situations which are likely to result in the destruction or loss of significant archaeological materials, the State Archaeologist may take whatever legal steps he deems necessary to prevent or minimize such destruction or loss. At the earliest practical time he shall advise the Board of his actions and the results achieved.

(d) The State Archaeologist shall prepare scientific reports of projects undertaken. He shall disseminate knowledge of Delaware's archaeology through publication in the appropriate journals, special publications, which, from time to time, may be undertaken by the Board, through news media and through attendance at and preparation of papers for professional meetings.

(e) The State Archaeologist shall organize a uniform system of site identification and recording, consistent with the national professional system, and shall urge its adoption and support by all groups and/or individuals.

# 2. Public Relations

(a) The State Archaeologist shall encourage the cooperation of individuals and associations in accomplishing the aims and purposes of the Board. He shall be free to address, advise, and assist such organizations or individuals as may seek the benefit of his special knowledge, experience and skills. In turn, he may seek the cooperation and participation of organizations and individuals in projects conducted by him for the Board.

(b) The State Archaeologist, upon invitation, may cooperate with, advise and assist the Public Archives Commission, The State Museum Commission, the Lewes Memorial Commission, the State Park Commission and all other Boards or Commissions of the State of Delaware in projects to the successful accomplishment of which his special knowledge and skills may contribute.

3. Administrative

(a) The State Archaeologist shall take charge of the combination office - laboratory of the Board and shall direct its operation. He shall recommend to the Board the purchase of new or replacement equipment and/or supplies and, following approval of the Board, shall act as its purchasing agent. He shall be privileged to purchase on his own authority items of equipment or supply which do not exceed a cost of \$50, within the limitations of the budget and in accordance with the rules and regulations prescribed by the Director of the Budget.

(b) The State Archaeologist shall serve as the nonvoting Secretary of the Board. As such, he shall be responsible for minutes of all meetings of the Board, distribute copies thereof to all members of the Board, maintain an accurate record of all receipts and expenditures in such form as may be required by the Director of the Budget, prepare the annual budget request of the Board, and prepare such regular or special reports as the Board may request. Additionally, he shall prepare and submit for approval of the Board all payroll and regular vouchers as required by the Laws of Delaware.

(c) The State Archaeologist shall have the right to recommend to the Board candidates for the positions of office secretary and laboratory assistant and shall prescribe the duties of these employees. He shall have the corollary right to recommend to the Board the dismissal of any employee under his direction for just cause.

(d) The State Archaeologist shall have the right to contract for the services of, and/or dismiss, without recourse to the Board, at hourly rates prescribed by the Board, such temporary employees as may be, from time to time, required for the tasks of his office, within the limitations of the budget.

(e) The State Archaeologist is authorized to charge to the travel account mileage and incidental expenses, at the State-approved rates, incurred in the discharge of his responsibilities, including attendance at meetings or archaeological or related organizations. Prior to any trip which will involve total mileage in excess of 500 miles, or require more than two days, he shall seek the approval of the Board.

(f) The State Archaeologist and other regular employees of the Board shall be entitled to vacation, holidays and sick leave in accordance with the State regulations therein provided.

4. General

(a) Until such time as it may be changed, the State Archaeologist shall abide by the Law which designates the Delaware State Museum as the repository for all archaeological materials recovered from State-owned or State-controlled lands. He may retain such materials as long as may be required for study, research or publication.

(b) The State Archaeologist may accept, in the name of the Board, gifts, bequests or loans of archaeological materials, books, records, maps, notes, photographs, etc., and shall make provision for their protection.

(c) The State Archaeologist is encouraged to cooperate with students and researchers in the advancement of archaeological knowledge, such cooperation to include the study, loan or use of archaeological materials and data which are the legal property of the Board, provided he shall first make proper provision that expenses for their handling insurance and return shall be borne by the borrower. Additionally, he may lend to the Delaware State Museum, the University of Delaware, the schools of the State, and to reputable organizations or institutions, for purposes of exhibition, such archaeological materials as may be available and are the legal property of the Board, provided that he shall first receive, in good faith, assurances of their protection and of their return within a reasonable length of time.

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