Bulletin of the Archaeological Society of Delaware

Number Four, New Series *Spring, 1965*

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1964 - 1965

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Bibliographic Note

This issue of the ASD Bulletin is the third in a series of regular but unscheduled numbers, supplanting the original Bulletin series which comprised nine volumes with a total of twenty-seven issues, continuing from May, 1933 to March, 1958.

Bulletin Number One of the New Series (Spring, 1962) contained H. Geiger Omwake's "The Mispillion Site, 7-S-A1".

Bulletin Number Two of the New Series (Fall, 1962) contained the "Preliminary Report on the Harlan Mill Steatite Quarry (18 Ce 5)," by Elwood S. Wilkins, Jr., and Arthur G. Volkman's "Excerpts from Works of Henry David Thoreau."

Bulletin Number Three of the New Series (Spring, 1964) included "The Layman and The Library," by Richard C. Quick, and "Historical Archaeology: A Brief," by Allen G. Schiek.

The Bulletin is indexed in the American Indian Index, and in Abstracts of New World Archaeology.

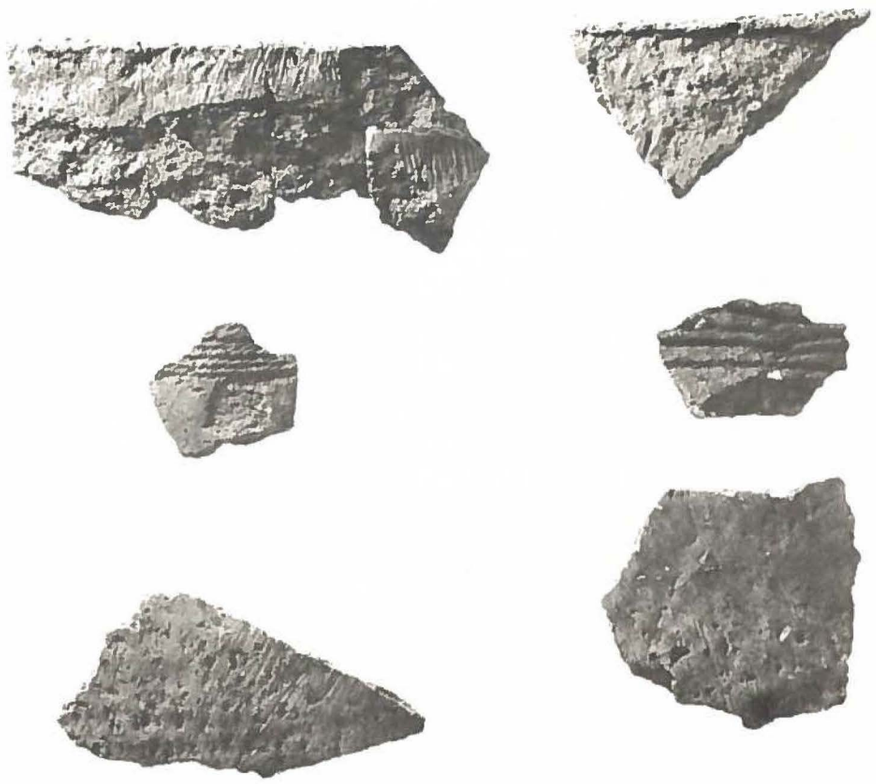

Plate 1. Typical examples of Chickahominy (Townsend) series body and rim sherds from shell-filled refuse midden at the Lighthouse Site. (Photo by United States National Museum)

The Lighthouse Site, 7-S-D22, Cape Henlopen, Lewes, Delaware

H. G. Omwake

Credit for discovery of the Lighthouse Site belongs to Clayton M. Hoff, Delaware conservationist and naturalist, whose interest had led him to explore on foot the sand dunes of the Cape Henlopen area. Walking across the dunes and "blowouts" near the promontory on which had stood the old Cape Henlopen Lighthouse, Hoff had come upon a concentration of oyster and clam shells and had observed a number of pottery sherds which he recognized as being of Indian manufacture. He reported this find to his friend, C. A. Weslager, former President of the Eastern States Archaeological Federation, who, in turn, advised the present writer. These men subsequently excavated three features of the site which seemed to hold promise; a shell refuse midden, and two circular areas of distinct brownish color, near the center of which lay a number of sherds.

The site was located about one hundred yards beyond the fence which encloses the southern side of the Fort Miles Military Reservation, and an equal distance west of the spot on which the Lighthouse had stood. Access was through the Fort Miles refuse dump.

The sand dunes within the Reservation had been stabilized by the planting of grasses which seem to thrive on such soil. Dunes beyond the fence, unprotected by cultured vegetation and subject to the forces of wind and water, are said to "march;" that is, grains of sand, cascading before the wind, are snagged on some obstruction, swirl around its base, and pile up on the windward side to such a height that they ultimately engulf it completely. A sudden change in the direction and velocity of the wind may reverse the process. Many of the moving dunes are small; others are quite extensive. After the passing of the spring storm in 1962, the stumps of an entire stand of scrub pine, of which there was no previous knowledge, were revealed. Wind and rain had removed the dune which, years before, had smothered the trees. Similarly, the Lighthouse Site had come to light after a small dune had moved on, leaving behind it a "blowout." Within a few months after its discovery the site was again buried and no one walking the area today would have reason to expect its existence.

Attention was first directed to the two brownish colored circular areas, each about a yard in diameter. The sherds which lay on the surface exhibited such similarities of texture, "feel," color and thickness as to suggest that within each discolored circle might be discovered the remains of a single pottery vessel. In order to determine whether or not the two features had been fully revealed by the passing

winds, the sand was removed to a depth of 8" around the perimeter of each, after which the sand within each was carefully trowelled. No additional sherds were recovered and it was determined that the superficial discoloration was the result of impregnation of the natural sand by thousands of tiny flecks of pottery clay. It is easy to theorize that in their haste to evacuate the site in the face of a howling storm its erstwhile inhabitants had abandoned the pottery vessels which then were virtually disintegrated under the force of the grains of sand driven against them by the violent winds. The vessels had been literally sand-blasted away and only the few sherds found on the surface remained.

The shell refuse pit did not differ significantly from many which have been excavated at the Townsand, Mispillion, Slaughter Creek and other sites in lower Delaware and adjacent Maryland. It contained a shallow saucer-shaped deposit of oyster, clam and conch shells mingled with black, greasy earth and small pieces of animal bone, most of which were deer. Its surface was approximately round and about seven feet in diameter; maximum depth at the center was 12". Aside from garbage, the pit yielded only a collection of pottery sherds.

A small, disturbed area of white sand beneath the shell refuse was found to contain 20 body and 5 rim sherds of a different character than those recovered amid the refuse above.

All recovered sherds were submitted to Dr. Clifford Evans, of the Bureau of American Ethnology, Smithsonian Institution, for examination and accession in exchange for a report and photographs. For the record Dr. Evans' report is here entered verbatim. Catalog numbers indicated are those assigned by the B.A.E.:

> Cat. #429906 - From shell midden. 23 bodysherds, three rim sherds. These are of the Townsend Ware of Margaret Blaker or the Chickahominy Series of Evans. Largely Chickahominy fabric-impressed, but surfaces are badly eroded. 2 sherds are Chickahominy cord-marked; 2 are Potts Scraped, and 1 is Sussex Plain. Due to small size of sherds and spalled off surface, no detailed observations possible. Refer to Evans, Bulletin 160, B.A.E., p.40-49. The one good rim sherd is identical to the lower row far right profile in Figure 4 of this report. Body wall thickness 8-10mm. All tempered with crushed shell leached out in varying degrees (Plate 1)
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> Cat. #429908 - From shell midden. 1 body, 1 rim sherd. Badly eroded so that surfaces are missing, but suggest net-roughened. Clay-sherd tempered.

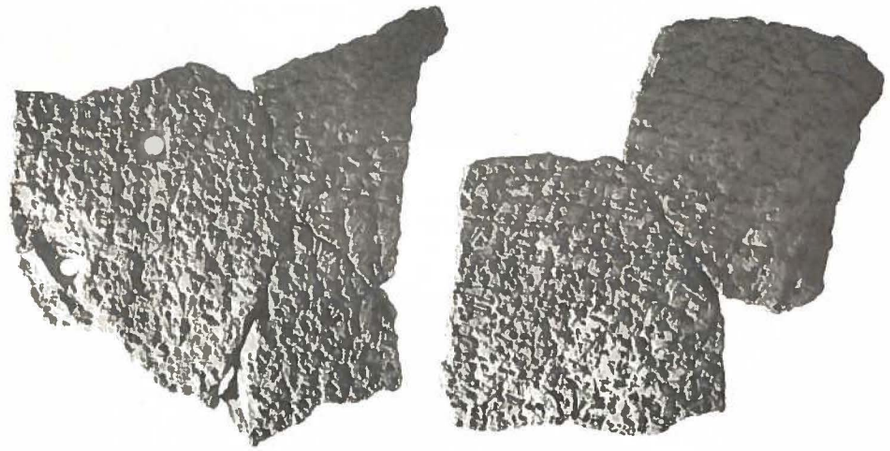

Plate 2. Rim sherds from net-impressed, knot-roughened Clay-sherd Tempered Plain pottery vessel recovered from disturbed area beneath shell-filled refuse midden at the Lighthouse Site. Note crack lacing holes drilled from outside only. (Photo by United States National Museum)

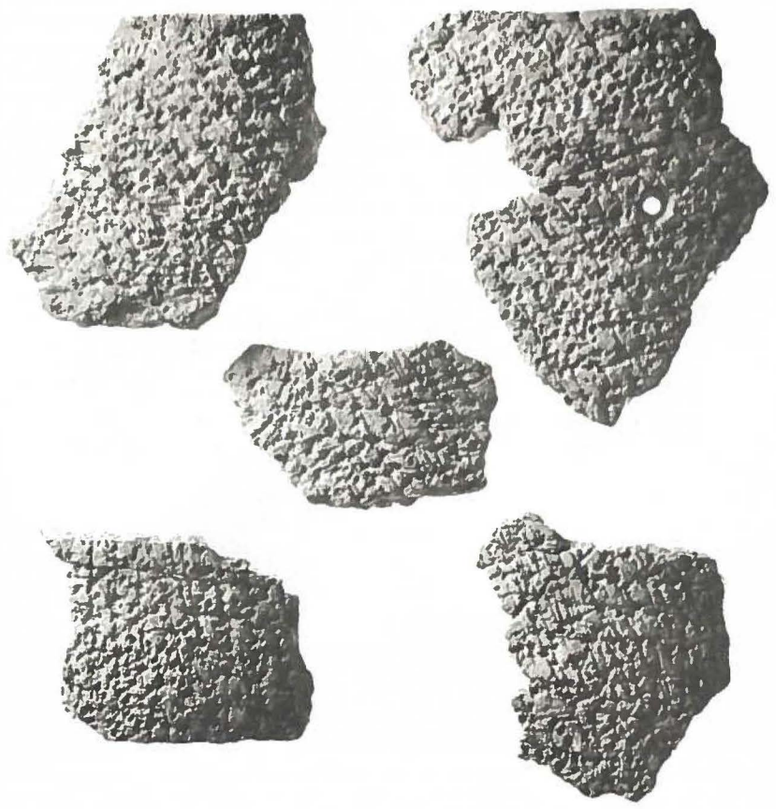

Plate 3. Rim and body sherds from net-impressed, knot-roughened Clay-sherd Tempered Plain pottery vessel recovered from disturbed area beneath shell-filled refuse midden at the Lighthouse Site. (Photo by United States National Museum)

Cat. #429907 - From disturbed white sand beneath shell midden. 20 body, 5 rim sherds. Looks like one vessel. Exterior surfaces in fair condition. In every way conforms with Clay-sherd Tempered Plain with one exception. Refer to Evans, Bulletin 160, B.A.E., p. 75-76. All these are coil made without any doubt and the sherds are slightly thicker. Texture, paste, etc., fit the description perfectly. Exterior surface net-roughened. Crack lacing holes drilled from exterior inward only, diameter 1.0 cm at top of hole, 7 mm at bottom. Interior gourd scraped (clam shell edge?), leaving overlapping striations. Mouth diameter 30 cm. Rim identical to description in Evans' pottery type and can be compared with rim profile, Fig. 8, p. 60, number 3 from left, and rim on far right. Same vessel has very irregular rim. Body wall thickness 1.0 - 1.2 cm. (Plates 2 and 3)

Cat. #429909 - From "blowout" refuse. 3 body, 2 rim sherds. Too bad condition and too few sherds to permit classification. Very sandy paste. Similar to Stony Creek Series, but not exact. 1 sherd had uneroded traces of cord marking. Refer to Evans, Bulletin 160, B.A.E., p.69-74.

Cat. #429910 - Circle No. 1. 12 body sherds. All good examples of Prince George Series. Refer to Evans, Bulletin 160, B.A.E., p. 60-64 for details. Thickness 1.2 - 1.3 cm. Surfaces badly eroded; some show traces of fabric or net roughening, others are without any doubt net-roughened. Interior has deep scraping marks, probably from scalloped shell edge.

Cat. #429911 - Circle No. 2. Very poor stuff. Probably all from 1 vessel. Badly eroded and crumbly. Definitely clay-sherd tempered pottery. Not enough of surface left to determine treatment. Body wall thickness 1 cm.

Discussion

There is little need to elaborate upon the pottery recovered from the shell midden. The Chickahominy Series of coastal and southeastern Virginia is the same as Townsend ware which undoubtedly may be ascribed to the Late Woodland period and represents the highest level of pottery development in lower Delaware and at some sites in nearby Maryland counties. Townsend ware from the Townsend Site has been

fully described and discussed by Blaker and elements of the Townsend Series pottery recovered from the Mispillion Site at Milford, Delaware, have been identified and discussed by Lopez (1961: 1-38). Sussex Plain and Potts Scraped are minority wares contemporary with the Chickahominy Series of coastal and southeastern Virginia (Evans 1955: Fig. 16, p. 93).

To the person who attempts comparative analysis of pottery other than Townsend ware recovered from sites in lower Delaware relatively few source materials are available. One must rely almost exclusively on Evans' "A Ceramic Study of Virginia Archeology," (Bulletin 160, Bureau of American Ethnology), in the preparation of which he considered not only the limited published treatises, but also the pottery collections and unpublished reports deposited with the Smithsonian Institution. Because it is felt that the conclusions drawn for coastal and southeastern Virginia are very probably valid for the lower Delaware area, and because the pottery from the Lighthouse Site was submitted to Evans for study, the subsequent discussion will draw heavily upon his work.

Clay-sherd tempered plain pottery similar to that recovered from the disturbed areas beneath the shell refuse pit occurs only in the deeper levels of the Potts stratified site near Lemaxa, Virginia, and is described as "an intrusive ware -- an external influence coming in and amalgamating itself into the local cultural traditions," (Evans 1955: 86-89). It is found in association with Prince George Series ware. In the sequence of ceramic trends in the coastal Virginia area, Prince George Series pottery is the oldest.

It has been noted that the clay-sherd tempered pottery achieved its highest popularity in the Lower Mississippi Valley south of Cairo, Illinois, spreading, in a lesser degree, up the Ohio River and into the lower Wabash, and, at the Hopewellian level, up the Mississippi into the St. Louis, Missouri, area. A few clay-sherd tempered sherds have been identified from the Townsend Site and others from a village site near Plymouth, North Carolina (Evans 1955: 137). The association of clay-sherd tempered pottery with the Prince George Series ware in coastal Virginia, dominant in the Early Woodland period and diminishing during the early part of the Middle Woodland period, marks it as very old. The inference is clear: the Cape Henlopen area of lower Delaware was host to at least two groups of people separated in time by many years, probably on the order of 2,000, and the clay-sherd tempered ware from the Lighthouse Site may be presumed to be representative of a stage of cultural development which occurred there during the Early Woodland period or early in the Middle Woodland period.

The 3-body and 2-rim sherds (Cat.#429909) which were collected from the surface of the "blowout" surrounding the two discolored circular areas have been said to resemble pottery of the sandy paste Stony Creek Series which, in coastal Virginia, has been assigned to the Middle Woodland period (Evans 1955: Chart 1, p. 144). Five sherds do not justify their assignment to a similar period of cultural development in the lower Delaware area, although their very presence might encourage such presumption. In coastal Virginia, Stony Creek ware existed side by side with a diminishing amount of Prince George Series pottery during the Middle Woodland period. Its occurance, therefore, at Cape Henlopen on the surface of an area adjacent to a spot from which were recovered clay-sherd tempered sherds, already shown to have been contemporary with Prince George Series ware in coastal Virginia, should not be surprising.

The twelve body sherds recovered from the surface of the first of the two discolored circular areas have been identified as good examples of the Prince George Series. It has been pointed out that in the coastal Virginia area this pottery was dominant during the Early Woodland period, diminishing in frequency during the early part of the Middle Woodland period. On the basis of present knowledge, it is reasonable to assume that in the lower Delaware area such sherds may also be assigned to these periods of cultural development.

In respect to the 6-body sherds recovered from the surface of the second discolored area little can be said because of their extremely fragmented condition and badly eroded surfaces. Suffice it to note that their clay-sherd temper suggests contemporaniety with the clay-sherd tempered sherds found beneath the shell refuse in the midden, and with the sandy paste sherds recovered from Circle #1.

Conclusion

Because clay-sherd tempered pottery occurs at the Hopewellian level in the Upper Mississippi Valley and is associated with pottery which is found at the lowest levels of a stratified site in Virginia, an assumption that it represents a very early stage of cultural evolvement in lower Delaware is suggested. Carbon 14 dates for its introduction and duration are not available, but there is an oblique method by which its placement in cultural and absolute time in lower Delaware may be estimated.

A carbon 14 date of 1985 BP has been obtained for the Adena site located at the sand and gravel pit near Lebanon, Delaware (Dragoo: 1963). The Adena people are generally presumed to have been displaced from their territories in the Mississippi and Ohio valleys by the bearers

of the Hopewellian culture. It is logical, therefore, to assume that the Adena outpost at Lebanon was established by refugees fleeing the Hopewell invasion. The 1985 BP date must mean that the eastern migration of Adena groups took place almost 2,000 years ago. Clay-sherd tempering had its greatest popularity in much the same region which the Adena and Hopewell peoples occupied, and occurred there at the Hopewell level. That would mean that it flourished about 2,000 years ago. How much time was required for its dispersal to such isolated places as the Potts Site in Virginia, the Plymouth Site in North Carolina, and the Townsend and Lighthouse sites in lower Delaware is presently a matter of conjecture, but because the trait was found to diminish in frequency at the Potts Site during the early part of the Middle Woodland period, probably no very great amount of time was involved. Any more accurate determination must await the obtaining of radiocarbon dates for this pottery type at other sites.

Until it is proven otherwise, it may be assumed that clay-sherd tempered pottery was among the earliest of wares developed in the lower Delaware area.

November, 1963

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PRELIMINARY REPORT OF THE ARCHAEOLOGICAL SURVEY ALONG THE RIGHT-OF-WAY OF FAI-1. STATE OF DELAWARE

Jacob W. Gruber

When the Federal Highway Construction Act of 1955 was enacted into law, provisions were incorporated, largely through the efforts of those active in the archaeology of the western states, to insure the effective salvage of prehistoric and historic sites which would be destroyed by the newly constructed roads. When, therefore, plans were drawn for the construction of a federally supported, interstate highway across the northern part of Delaware (FAI-1), the Delaware Archaeological Board engaged me, late in the spring of 1958, to make a survey along the proposed right-of-way. The objective of the survey was to discover and to certify for salvage operations any prehistoric or historic site whose destruction would seriously hamper the acquisition of knowledge concerning the past.

As soon as arrangements were completed, the survey was begun and continued through the summer and fall of 1958. Survey activities consisted of field investigations designed to discover surface indications of prehistoric occupation, interviews with local residents and collectors to discover to what extent such evidences had been found in the past, and test excavations in those areas which were both promising and available.

Although FAI-1 extends between the Delaware Memorial Bridge and the Maryland State line, west of Iron Hill, the area selected for actual survey was restricted to that section west of the Churchman's Marsh. Such a restriction was made because the marsh itself, and the intensive alteration of the surface topography through a long period of urban, suburban and industrial development, gave little promise for any significant preservation of prehistoric remains east of this point.

The section to be surveyed included the right-of-way strip, 300 feet wide, and the four immediately proposed interchanges; i.e., Churchman's Road, east of the marsh formed by the junction of the Red Clay Creek with the Christiana; Route 7, between Stanton and Christiana and immediately west of Churchman's Road; Pine Swamp Corner, between Ogletown and Christiana; and Iron Hill, on Route 896, south of Newark and adjoining the upper reaches of Christina Creek.

Except for its western portion, as it crosses Iron Hill, FAI-1 traverses the coastal plain whose surface materials consist mainly of unconsolidated and easily eroded marine clays, sands, and gravels and which, with the tidal marshes in the eastern portion, is intersected by

meandering streams whose shifting channels carry the waters to the sea. It is an area of erosion rather than deposition; erosion which has been intensified during the historic period by intensive agriculture. These geological and cultural factors, when combined with the apparent sparseness of prehistoric settlement, make for survey conditions quite different from those which prevail in the western states where surveys and salvage operations have proved unusually successful.

The area encompassed by the roadway itself is so small as to suggest an analogy between the search for significant occupational sites there with the proverbial search for the needle in the haystack. For this reason primary stress was placed upon the interchange areas, each of which comprised some 50 to 70 acres. Where accessible and where determined, however, the proposed road bed was searched for surface indications.

Because of the already existing knowledge of numerous surface collections made from the Clyde Farm, bounded by the Red Clay Creek, Route 7, Churchman's Road and Churchman's Marsh, the survey was begun at this point, at various times alone, with the aid of a student crew, and in association with Mr. Ronald J. Mason who was engaged by me for a short period to assist in the survey. Test pits were opened on the right-of-way west of the Marsh in an attempt to discover whether subsurface features in this area would reinforce surface discoveries made to the north outside of the restricted survey area. These test excavations proved uniformly negative and indicated that a very thin surface soil overlay a heavy, compact, sterile clay. Questioning of residents produced information leading only to the conclusion that the area was barren. Moving west, we searched the cultivated portions of the proposed Churchman's Road and Route 7 interchanges for some surface indication of prehistoric occupation. Nothing was found. Informants indicated that in addition to the known collections made in the field immediately south of Red Clay Creek, Indian materials had occasionally been found in the heavily wooded areas between the Route 7 and Pine Swamp Corner Interchanges. Attempts were made to investigate this area but were aborted by the density of the ground cover and by the fact that the right-of-way was not sufficiently marked in this area. Where possible, both interviews and surface surveys were made between Pine Swamp Corner and Iron Hill Interchanges, but again without success. Because of its availability and its cultivated state, the area just north of Cooch's Bridge, although outside the survey area, was surveyed intensively for surface indications. Nothing was found on the ground nor could residents in the area recall any finds in the past.

Aside from the promise which the previously collected surface finds from the Clyde Farm gave for positive results at Churchman's Road Interchange, greatest optimism was entertained for the area around the Iron Hill Interchange. The occupant of the land to be absorbed by this section of the highway showed me a small collection of some five miscellaneous projectile points which it was said had been collected during farming operations. The surface of this and neighboring areas was, therefore, searched intensively on two different occasions in the hope the area would yield materials suggesting the need for further test excavations. Unfortunately no material ascribable to human workmanship was encountered.

Because the exact right-of-way of the highway west of Iron Hill Interchange had not yet been determined, the Iron Hill section was not surveyed, although local history has it that an Indian trail led across this easternmost extension of the Piedmont; and since this short stretch has as yet not been investigated, this report must necessarily be considered preliminary and incomplete.

In general, then, for the purposes for which the survey was inaugurated, the conclusions of this report must be considered negative. More specifically, there does not appear to be any prehistoric or historic site which requires salvage because of the threat raised by the construction of FAI-1.

I cannot conclude this report without a few general observations - some of them speculative - and recommendations. If these be considered not pertinent, this section may be eliminated from the report itself.

As regards the survey itself, I am personally disappointed that no evidence of sites worthy of further excavations were found. My disappointment is the greater because the enthusiasm and vision of the Delaware Archaeological Board led it to an attempt to conserve, for the future, what knowledge we can derive from the past, to protect this from the necessary depredations of the present. In this respect, to my knowledge, Delaware has set an example for the states along the Eastern Seaboard. The negative conclusions to which this report has come do not, of course, suggest that there was no significant prehistoric occupation in the area, nor, may I add, of the particular areas surveyed. Unless we were to sink test excavations every hundred yards or so along the right-of-way, it would be impossible to reach any but probable conclusions. There can be no doubt that an important settlement existed-and probably at more than one period - on that elevated portion of the Clyde Farm which borders Red Clay Creek. Despite the extensiveness of former collecting activities and despite the undoubted erosion that has occurred, it seems to me that this is a site well

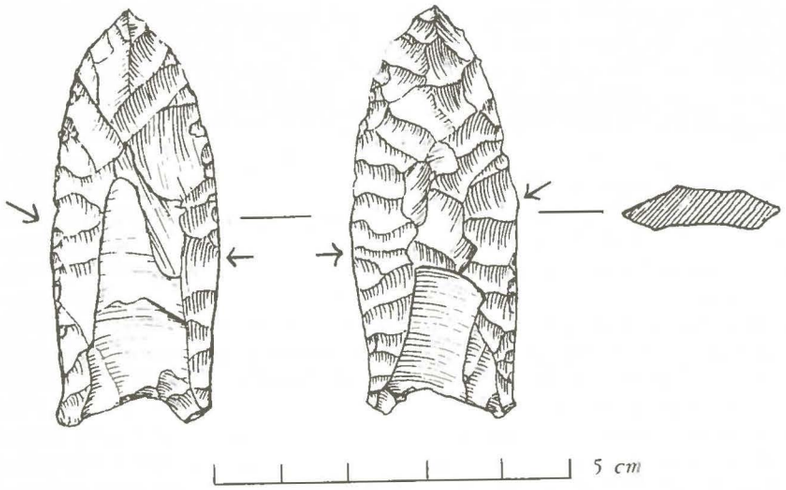
worth digging under controlled archaeological conditions. It is possible - and I think probable on the basis of the present topography of the area - that some portion of this site has been destroyed by the southerly movement of the creek channel; nevertheless, enough of the site still exists, I think, to warrant systematic excavations. Although the data are far less manifest, I think there may have been some significant occupation in the general area of the Iron Hill Interchange along the upper reaches of the Christiana as it passes east of Iron Hill. The movements of the creek channel here and subsequent cultural alterations of the topography may well have eliminated any remains of such occupation, but the area may repay more extensive investigations.

If further highway surveys are planned, I would suggest one or two steps which might aid in the efficiency of the surveys: (1) Inauguration of the survey by the Board should, if possible, be delayed until the exact right-of-way has been agreed upon and options placed upon the properties acquired. Difficulties were encountered in the present survey because of the indeterminacy of plans (notably in the Iron Hill section) and because of the resistance of the land owners who had not yet been notified, other than by rumor, of the absorption of their properties by the highway. Such a situation makes for extremely difficult relations between the surveyor and the local residents (whose cooperation he requires) and impedes the possibilities of making test excavations where such be desired. (2) Some stimulus should be given, either under official or semi-official sponsorship, to the construction of a master site survey for the State. While these are made by County chapters or societies, the results of such surveys should be localized so as to be immediately available to the Board or its representative in the event of contemplated topographic disturbance either through highway or industrial construction. (3) Attempts might be made to procure from the Highway Department copies of the aerial photographs which are usually made (from an altitude of 800 feet) prior to the planning of highways. Examinations of such photographs are much more rewarding than contour maps alone in the selection of promising site locations.

A Fluted Point Found Near Sandtown, Delaware

Reported By

George M. Reynolds



Length: 57mm
Width: 23mm
Material: Grayish black chert
Found, and in possession of, Henry W. Rogers, Wilmington, Delaware.
Drawing natural size by Margaret Day Dilks. Arrows denote extent of smoothing.

This point is confirmed by W. Fred Kinsey III, Director of the North Museum at Franklin and Marshall College, as a Clovis type point a little smaller and a little less robust than the more typical Clovis points. There is evidence of multiple fluting on both sides, and on one side the flute terminates in a hinge fracture. Fluting is shallow on both sides, and part of the prepared striking platform for removal of the channel flutes still remains. The lower edges of the point, as well as the basal concavity are ground smooth. There is a small chip broken from both ears. Kinsey suggests that this type point is a bit later in the fluted point tradition than the more typical Clovis points.

Editor's note: Since 1962 Margaret Dilks and George Reynolds have conducted a survey of fluted points found in Maryland. It is desirable that the survey should now be extended to include Delaware, and it is hoped that persons in Delaware with a knowledge of local finds will forward such information to George M. Reynolds, RD #4, Box 373, Elkton, Maryland.

ARCHEOLOGICAL SURVEY OF THE HERCULES POWDER COMPANY PROPERTIES NEAR LEWES, DELAWARE

Bert Salwen

INTRODUCTION

This report will cover the archeological survey conducted by the writer during December, 1959, and February, 1960, on a tract of approximately 812 acres recently acquired by the Hercules Powder Company near Lewes, Sussex County, Delaware. This tract is located on the southeast edge of the Great Marsh and extends from the Lewes-Rehoboth Canal at Roosevelt Inlet as far inland as the Black Oak Gut. The work was sponsored by the Hercules Company, and was conducted under the supervision of the Delaware Archaeological Board.

The Lewes area is rich in aboriginal remains. Members of the Sussex Society of Archeology and History have excavated many sites in this area. Two of these, the Ritter No. 1 site (Omwake, 1953) and the Ritter No. 2 site (Omwake, 1952 & 1954), are on the Hercules tract itself. Another, the Russell site (Marine, 1957), is just beyond the limits of the property. The large and important Townsend site (Omwake and others, 1950) is about three miles southeast.

All of these sites were culturally similar. All were groups of shell- and refuse-filled pits. The pits contained shell-tempered, fabric-impressed ceramics of the Townsend Series (Blaker, 1950 & 1958; U.S. National Museum, 1954), projectile points, most of them triangular, other stone and bone artifacts, and occasional burials. Presumably, they are attributable to a late prehistoric and early historic occupation. (Pit No. 68 at the Townsend site, which yielded only crude, grit-tempered sherds, was the single exception. It may represent the only excavated evidence for an earlier ceramic horizon in the Lewes area.)

This late occupation is known archeologically only from the contents of these pits. No occupation floors or postmold patterns indicating habitations have yet been found. (Again, there is one possible exception at the Townsend site, where a ring of postmolds seems to indicate "a roughly circular structure, approximately 17 feet in diameter." (Omwake and others, 1950:33).)

The present survey was conducted with a threefold purpose:

1. To locate possible additional shell pit sites on unexplored portions of the Hercules property.
2. To locate occupation floors, postmold patterns or other features, in association with the shell pit sites, whose excavation would widen our knowledge of this late horizon.
3. To ascertain whether indications of earlier cultural horizons are present on the Hercules property.

It must be reported that, within this framework, the results were essentially negative. Although some additional undisturbed shell deposits were located at the Ritter No. 2 site area, no completely new shell pit complexes were found. One postmold was exposed in a test pit adjacent to a shell deposit in one of the Ritter fields, but follow-up work failed to reveal a pattern of molds, and no occupation floors were located. Some of the artifacts found on the surface are typologically older than the materials reported from the shell pit excavations, and bear witness to the fact that there were one or more occupations in the area before that of the shell pit users, but no concentration of these materials was found great enough to warrant major excavation.

In general, it appears that the occupation zones that once existed were very shallow, and have long since been destroyed, and their contents scattered by post-contact farming activities.

The best source for new information about the aboriginal occupants of the Hercules property lies in a fresh approach to the shell pits themselves. These pits extend below the plow zone and have thus escaped destruction. The contents of a few of these can be completely excavated, and subjected to thorough qualitative and quantitative analysis. Newly developed archeological methodologies, using techniques borrowed from geology, zoology, physics and other sciences, should yield much new information about the subsistence patterns and ecological background of this prehistoric group.

The following sections of this report will cover in detail the procedure followed and the results obtained, and will make complete recommendations for future work.

FIELD INVESTIGATION

A preliminary trip was made to the Lewes area in November, 1959. Mr. H. Geiger Omwake and Mr. Harold W. T. Purnell of the Delaware Archaeological Board very kindly accompanied me to the site, and pointed out the areas in which the previous work had been done by members of the Sussex Society of Archeology and History.

The actual survey was conducted in two field sessions. The first of these was begun on December 27 and continued through December 31, 1959. The writer was accompanied by Mrs. Sylvia Armbruster, a graduate student at Columbia University, whose assistance made it possible to accomplish more than had been hoped for.

The second field session lasted from February 18 to 23, 1960. Mrs. Milly Salwen assisted during the first two days, and Mr. Charles L. Bryant and Mr. Bell, of Federalsburg, Maryland helped out one afternoon. (Mr. Frank Donovan and his son, of Milford, Delaware, came out to the site on Sunday morning but the frozen ground made work impossible at that time.)

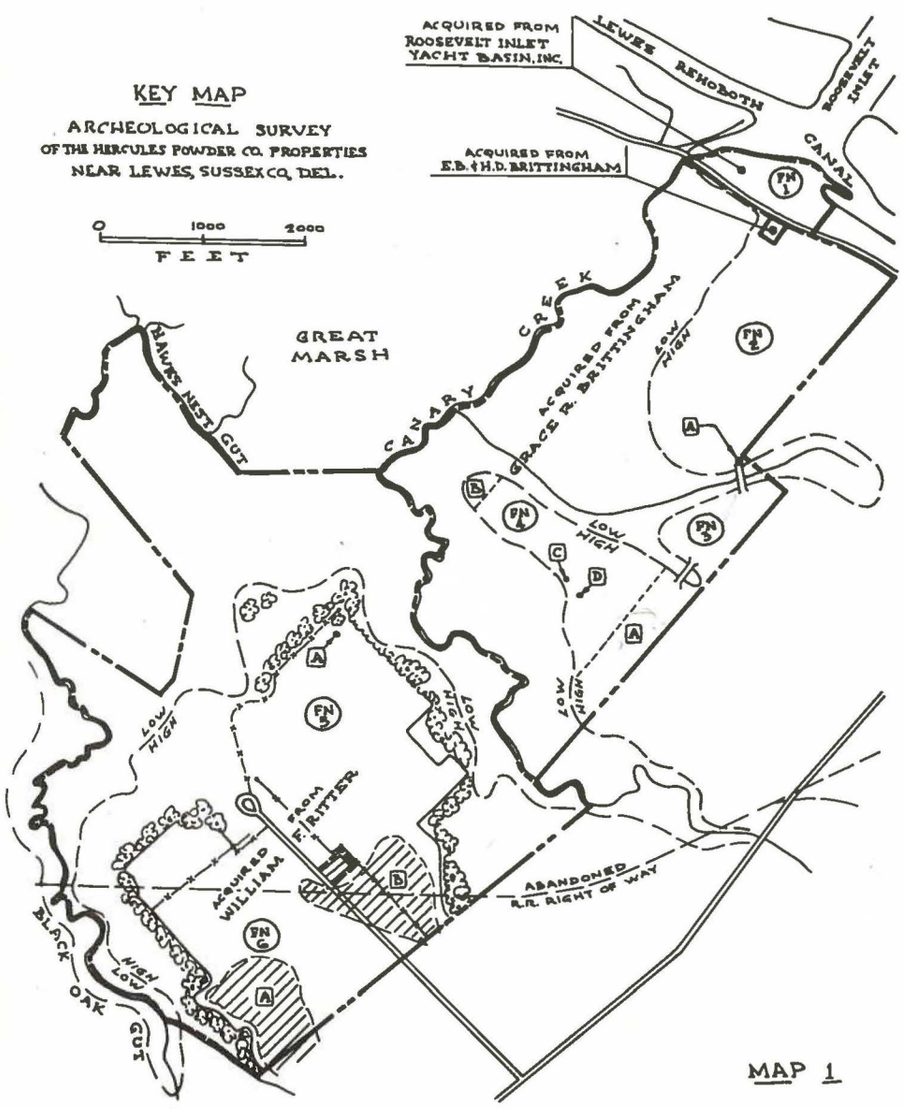
The artifactual materials recovered during the survey were catalogued and studied in the Archeology Laboratory at Columbia University, where Professors William Duncan Strong and Ralph S. Solecki provided work space and generously loaned field equipment.

Before beginning the on-the-spot survey, aerial photos of the Hercules property were studied for possible leads to productive locations. The U.S. Dept. of Agriculture, Commodity Stabilization Service map ANH-4N-5, dated 1954, enlarged to a scale of 400 feet to the inch, shows the area very clearly, but no signs of aboriginal occupation are visible. (Professor Solecki confirmed this interpretation of the map.)

Consequently, the field work included a careful "walking survey" which covered all the high ground on the Hercules land. All surface concentrations of shell were tested by probing, and all unusually heavy surface occurrences of chips or artifacts were noted. Test pits were dug at the most promising locations, and two larger excavations were made in an effort to locate postmold patterns.

The attached key map of the site (Map 1) has been prepared to allow easier reference to specific locations. The field numbers (FN) and area letters used below refer to locations shown on this map.

Field No. 1: No trace of aboriginal material was found here. This was to be expected, since the area has undoubtedly been considerably



MAP 1

disturbed in the course of dredging the canal and inlet. Dr. David Marine, of Rehoboth Beach, reports that local collectors have not found artifacts in this area.

Field No. 2: This field had been planted with a cover crop shortly before the survey, but in spite of excellent conditions for observation, absolutely no aboriginal material was found on the surface. Nor were there heavy shell concentrations. There was more shell than usual, together with European sherds, glass, etc., in the part of the field adjacent to the Pilottown Road, but this is obviously attributable to post-Indian occupation.

In the extreme southwest corner of the field, at location "A", there was more shell than usual on the surface. Probing encountered a hard layer about 6" below the surface, and a small test pit was dug to investigate. There does not seem to be a pit here, but rather a thin layer of shell on an older ground surface. Large pieces of roofing slate and pieces of modern bottles were found just above the shell. The character of the material, as well as its location near the built-up causeway leading from Field No. 2 to Field No. 3, indicates that this is a fairly recent dump area and not an aboriginal feature.

Field No. 3: Like Field No. 2, this field had recently been planted in cover crop, and conditions were good for observation. A careful survey of the entire field yielded 1 side-notched projectile point and 2 small potsherds. No shell concentrations were found. In fact, there was very little scattered shell. Probing failed to reveal any sub-surface features.

Field No. 4: This field had also been recently planted, and conditions were good for observation. No major shell concentrations were located. Probing in areas where there was some shell proved fruitless. All artifactual materials came from the areas marked "A","B", "C" and "D" on the key map.

In area "A", 1 grit-tempered potsherd, 1 small jasper stemmed projectile point, 4 chips and 1 core were found on the surface.

Area "B", the extreme northwest end of the field, was investigated twice. On the first visit the surface yield was relatively large. Two small potsherds were found, one shell- and one grit-tempered. Neither is large enough to permit determination of the surface finish. The stone material consisted of 1 stemmed jasper projectile point (or knife?), 2 bases of points (or knives?) -- one of jasper, the other of rhyolite, 1 sandstone discoidal, and 9 chips, two of them of red shale.

This concentration was not really very heavy, but it was greater than at most other parts of the field. Further, the general character of this material seemed different, and probably older, than most of the materials reported from the Lewes area. Accordingly, the area was re-visited during the second field session. This time nothing at all was found, either on the surface or in the small sub-surface test. The ground was very wet and water was encountered just below the surface.

Area "C" indicates the find spot for ten sherds found close together on the surface. They are small and badly eroded, but 6 are definitely cord-marked and the others appear to be the same. All are tempered with grit and clay. Two chips, one argillite and one jasper, and 1 broken flint projectile point which was either stemmed or side-notched, were also found here. Careful search on two separate visits failed to produce more material.

The first visit to area "D" yielded 32 potsherds and 6 chips from a relatively limited area. All but three of the sherds were shell-tempered and fabric-impressed. (The remaining three were too eroded for accurate diagnosis.)

This heavy concentration seemed to warrant further investigation, and on the second visit a test pit (Test Pit No. 4) was put down at the point where most sherds had been found. The pit measured 3 feet by 5 feet, and was dug by horizontal slicing through the plow zone and into the light-colored sandy soil beneath. The plow-disturbed zone extended down to 8" below the surface, and yielded a total of 3 potsherds. The test was taken down an additional 6" into the sandy soil below the plow zone, but this level was completely sterile.

During this second visit further search on the surface produced 2 chips, 1 jasper core and 10 more potsherds.

All of the sherds, from both the surface and the test pit, are quite similar and may well be from the same vessel. The heavy sherd concentration in area "D" probably marks the spot where a pot was accidentally broken and discarded. If there was a permanent occupation here, or in other parts of Field No. 4, the evidence for it has been completely destroyed by modern farming activities.

Field No. 5: This field was walked over carefully in search of both surface material and signs of shell pits. Surface finds comprised 5 small points, point fragments and rejects, 1 large stemmed shale "Archaic-looking" point, 1 quartzite knife, 2 scrapers, 1 core, 16 chips, 1 kaolin pipestem fragment and 9 small potsherds. Six of the sherds are too badly eroded to determine the surface treatment or

temper. The other three are shell-tempered. All of these finds were made in the southeast half of the field, but there was no particular area of concentration. In addition, twelve subsurface shell deposits were located.

The Ritter No. 2 site, excavated by Omwake and Parsons (Omwake, 1952 & 1954), is located on part of this field. At the time of their excavation a map was made giving the locations of eleven shell pits found on the site. The map baseline was marked with two pipes driven into the ground. Efforts to find these pipes, in order to tie in our map with theirs, were unsuccessful. It is likely that the pipes were removed or covered in the years since they were placed. However, layout work at the drafting board has made it possible to correlate the two maps. Seven of the pits located in our survey are almost surely ones previously excavated by Omwake and Parsons. The other five are new finds. Four of these are in the general area of the earlier work at Ritter No. 2, but a little further south. They indicate that the site has a greater areal extent than had been known previously (See area "B" on the key map). These pits have been mapped anew, using the permanent concrete monument on the northeast side of County Road No. 266A where the Ritter and Brittingham properties meet as the datum point. (See Map 2.)

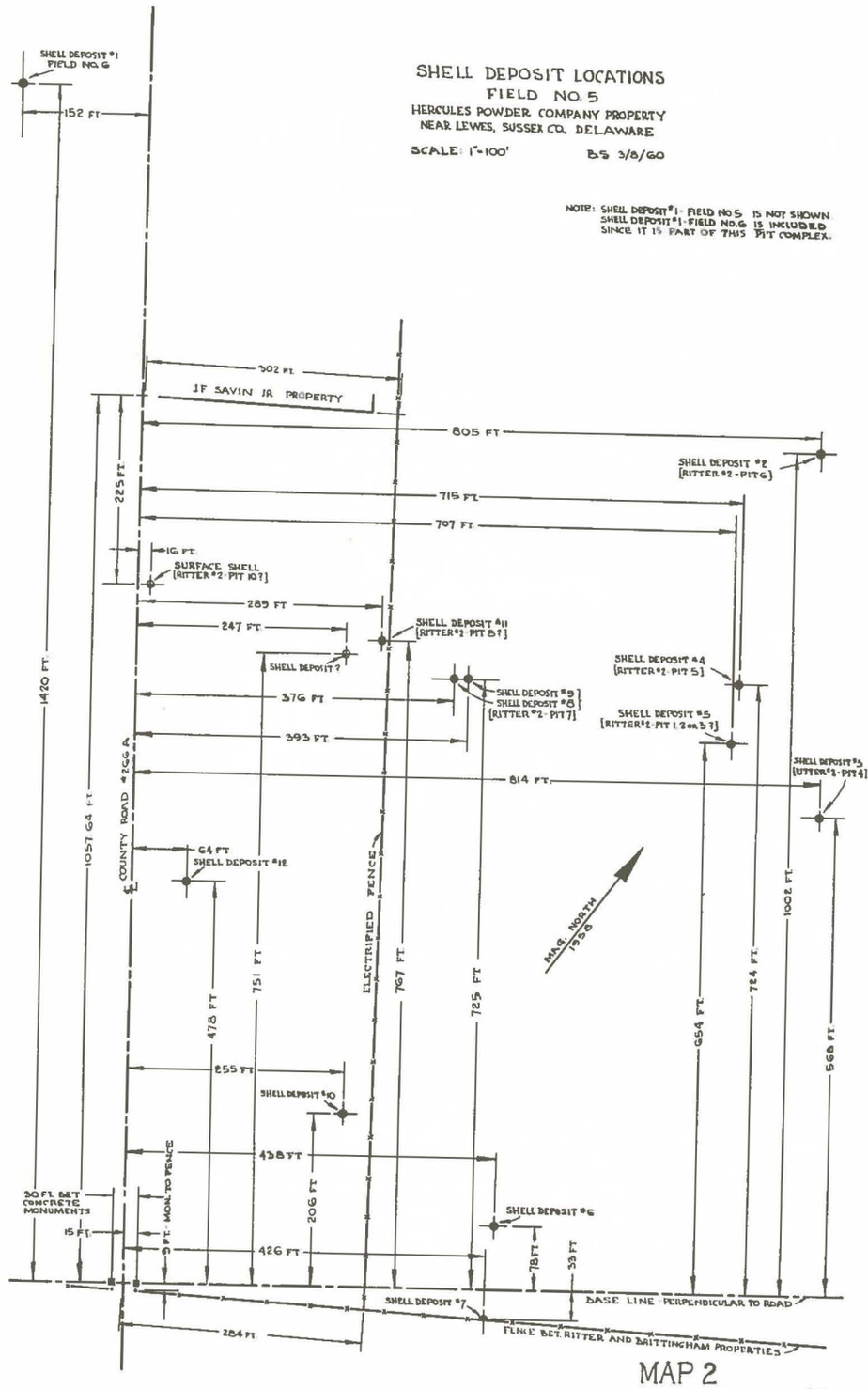
The fifth shell deposit is in the extreme north corner of the field (Location "A" on the key map).

Omwake and Parsons' pits No. 9 and No. 11 could not be relocated.

Three test pits and one more extensive excavation unit were dug in Field No. 5 to explore the nature of three of the shell deposits and the ground adjacent to them.

Test Pit No. 1 (Feature Data Sheet No. 1), measuring 2 feet by 3 feet, was dug at Shell Deposit No. 1 (Location "A"). It was placed to cut the edge of the shell deposit, in order to expose some of the shell as well as the surface next to it.

The bottom of the plow zone was reached at 6" to 7" from the surface. Below this was a zone of dark, charcoal-flecked soil which covered the edge of the shell deposit and extended horizontally beyond it. This zone contained 10 sherds of shell-tempered, fabric-impressed pottery. At the northeast side of the test pit--the side furthest from the shell deposit--the bottom of the dark zone was reached at about 10" from the surface. Below it was sterile light-colored sandy soil. From this point, the bottom of the dark layer sloped downward as it approached the shell deposit. Tight-packed shell, almost all oyster, was reached at about 12" from the surface in the south corner of the test pit.



MAP 2

One postmold was encountered in the northeast profile, 2 feet from the edge of the shell deposit. It was 4" in diameter, and extended from the plowline down through the bottom of the test pit.

The full significance of the dark soil zone-- whether it represented an occupation level over the shell deposit or simply the mouth of the shell pit itself--could not be determined from the small test excavation. Accordingly, further work was done here. First, Test Pit No. 1 was extended by 18" on its northeast side (Feature Data Sheet No. 1A). Later, the test area was enlarged to form Excavation Unit No. 1, consisting of three five-foot squares (Feature Data Sheets 1B & 1C).

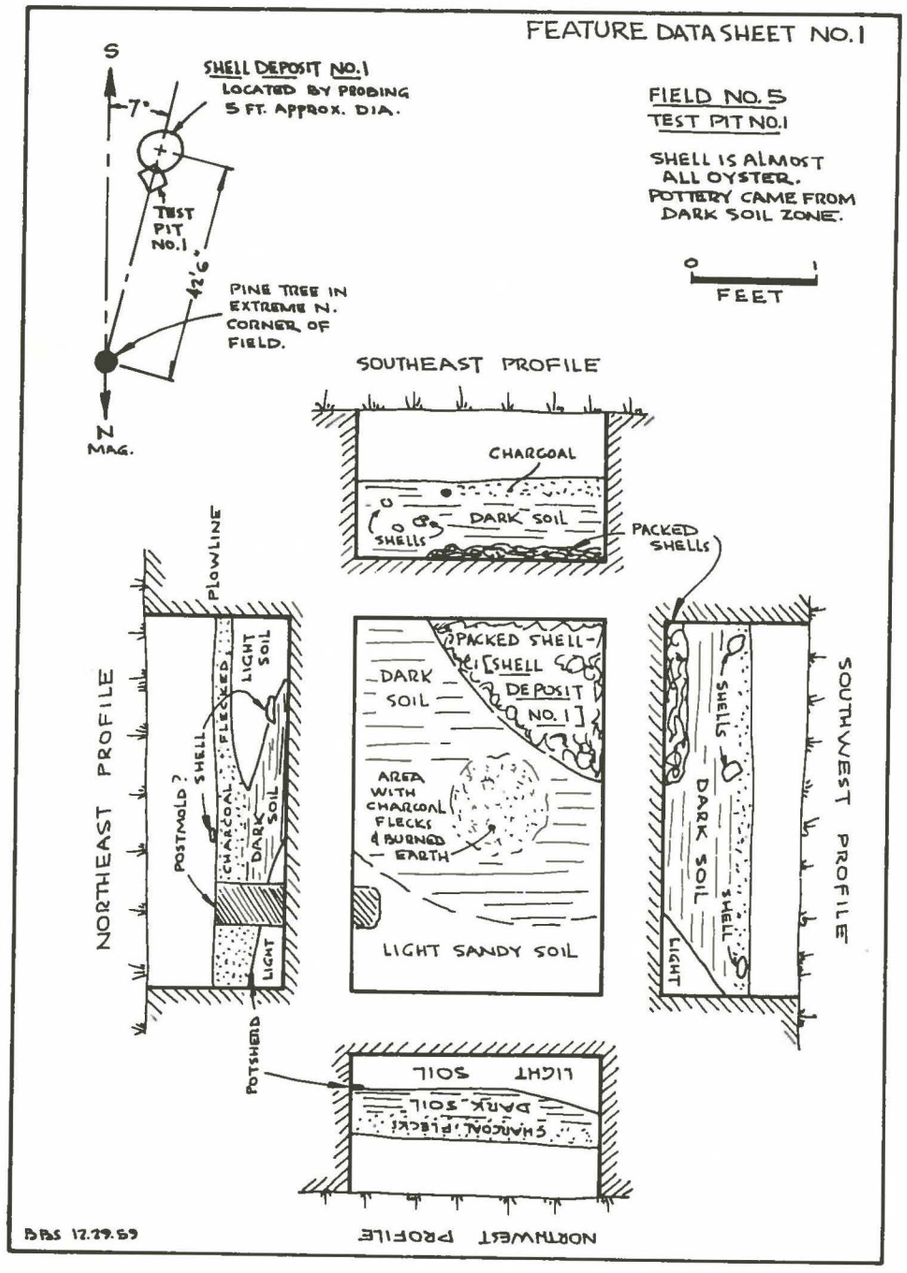
This more extended excavation showed conclusively that the dark soil zone consisted of the fill at the mouth of the shell pit. When exposed at about 7" from the present surface, just below the plow zone, it covered an irregularly-shaped area never extending more than 2-1/2 feet beyond the shell deposit proper. (The narrow band of dark soil shown in the drawings, extending northeast from the shell deposit, exactly parallels the direction of the modern plow furrows and is very probably the result of recent farming.) Furthermore, the dark soil zone covered only the edge of the shell deposit, which rose higher near its center, coming right up to the plowline. No additional postmolds were found.

Ninety-four potsherds were found in Excavation Unit No. 1. Five were found on the surface. Seven came from the dark soil zone at 8" below the surface. The great majority (82) came from the very edge of the shell deposit, between 8" and 12" from the surface, in a small extension of the excavation just west of the southwest corner of Square No. 2. They were near the top of the deposit but partly covered by shell.

All of these sherds are shell-tempered and fabric-impressed, and all, together with the 10 sherds from Test Pit No. 1, are apparently from the same vessel, a fairly large, partially reconstructable, Rappahannock Fabric-Impressed pot (Blaker, 1958:6) with a direct rim.

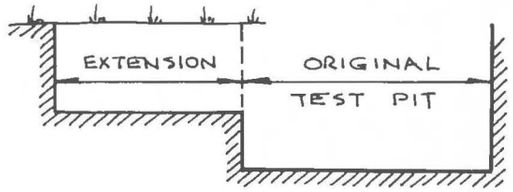
Shell Deposit No. 1 is an undisturbed aboriginal shell pit, which might be profitably excavated. However, no occupation level was found in association with it.

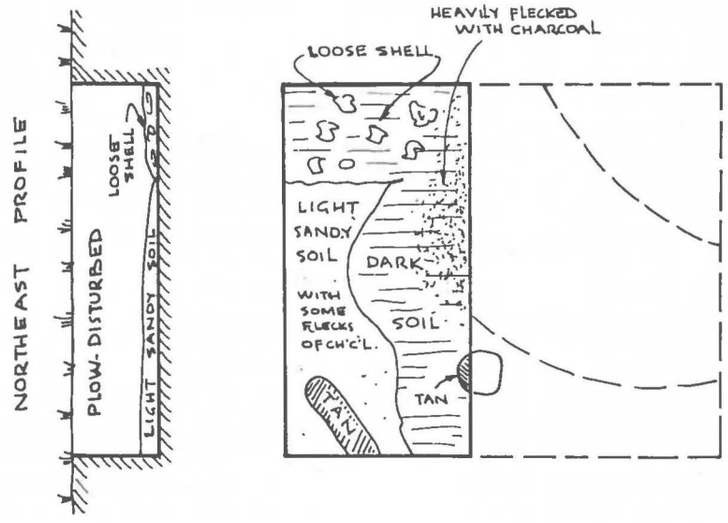
Test Pit No. 2 (Feature Data Sheet No. 2), measuring 2 feet by 3 feet, was dug at Shell Deposit No. 2. This shell pit had already been excavated by Omwake and Parsons (Ritter No. 2, Pit 6). The test was made to determine the character of the area surrounding the shell deposit, and the test pit was placed so as to cut the edge of the shell and to expose some of the adjacent surface. The bottom of the plow zone was



FEATURE DATA SHEET NO. 1A

FIELD NO. 5
EXTENSION OF TEST PIT NO. 1





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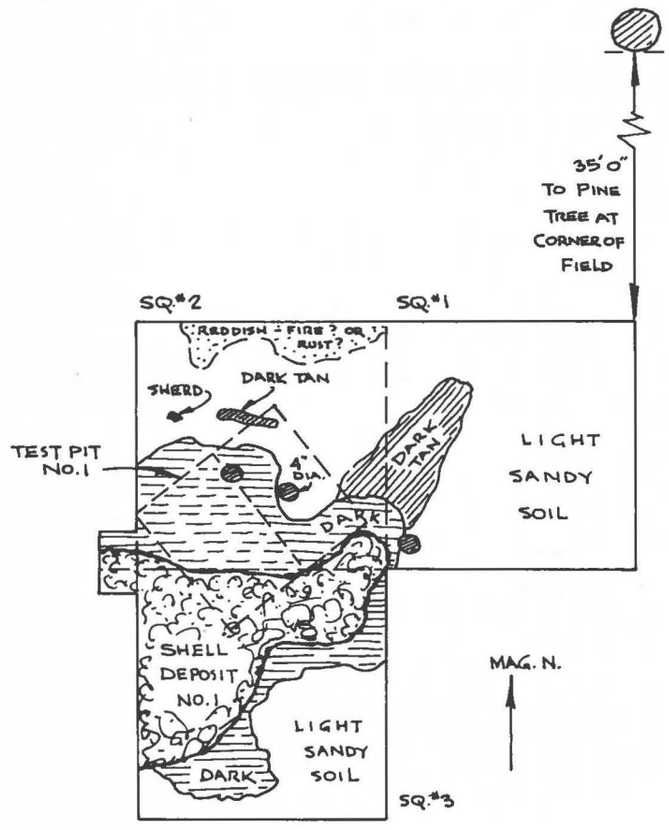
FEATURE DATA SHEET NO. 1B

FIELD NO. 5
EXCAVATION UNIT NO. 1

PLAN VIEW - JUST BELOW PLOW ZONE - 7"-8" BELOW SURFACE.



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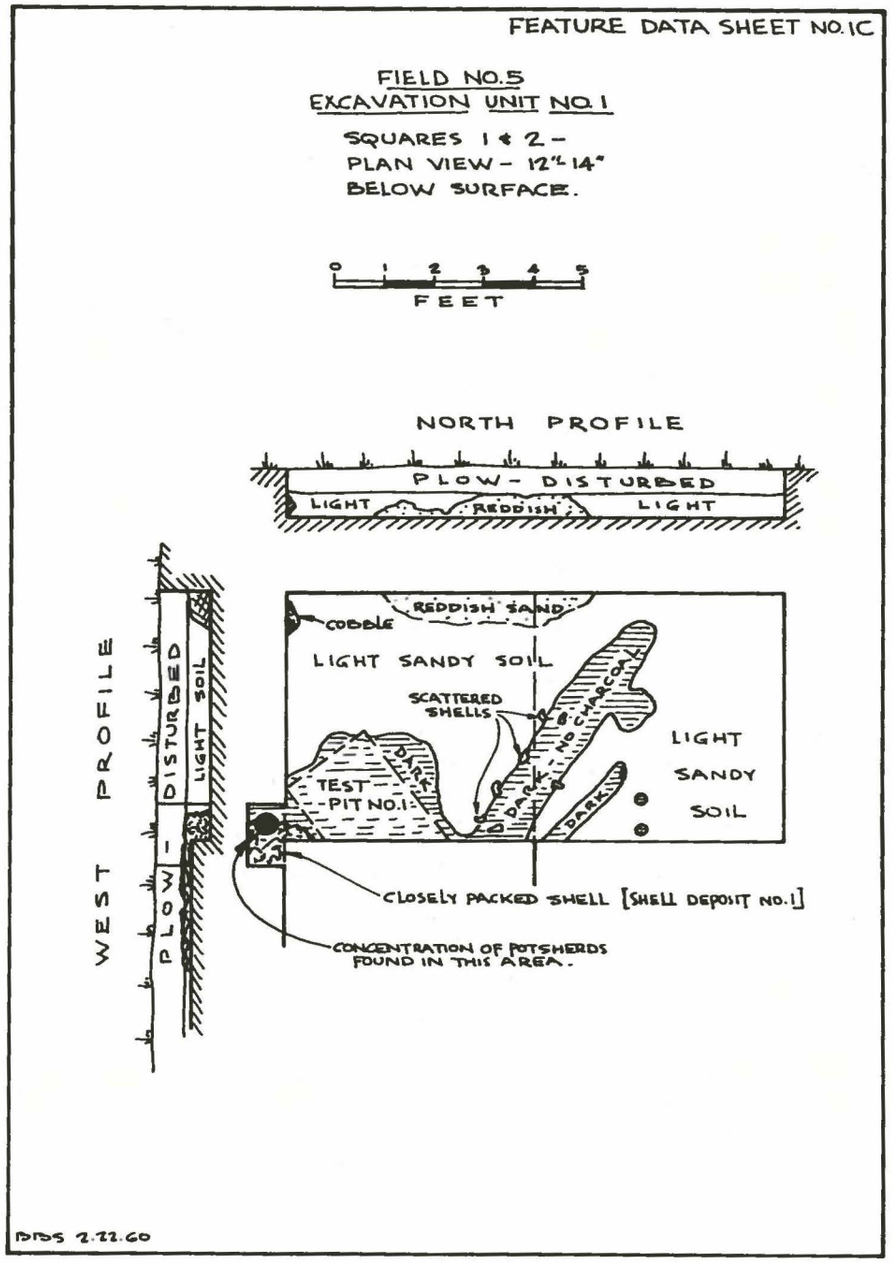


reached at 7" below the surface. At this level, tightly packed shell appeared in the south corner of the test pit. A narrow zone of dark, charcoal-flecked earth, varying from 2" to 14" in width, surrounded the shell. Beyond this was sterile light-colored sandy soil. One small, shell-tempered sherd was found on the surface of the test pit. No other cultural material was found.

This test showed that further work was not warranted here.

Test Pit No. 3 (Feature Data Sheet No. 3), measuring 2 feet by 4 feet, was dug at Shell Deposit No. 3, a large area, about 30 feet in diameter, in a low, poorly drained part of the field. There was a heavy concentration of surface shell, and considerable shell below the surface, but probing failed to locate any pit boundaries.

Omwake and Parsons excavated Ritter No. 2, Pit 4, in this general area, and its contents indicated that it was a post-Indian feature (Omwake, 1952:6). Our test confirmed this conclusion. The bottom of the plow zone was reached at 5" below the surface. Below this, and extending down to 18" from the surface, was a zone of closely packed oyster shell. Mixed with the shell were pieces of soft red brick, with a concentration of larger pieces of brick at between 11" and 15" from the surface. At the 18" depth, sterile dark loamy soil was reached. No aboriginal material was found.

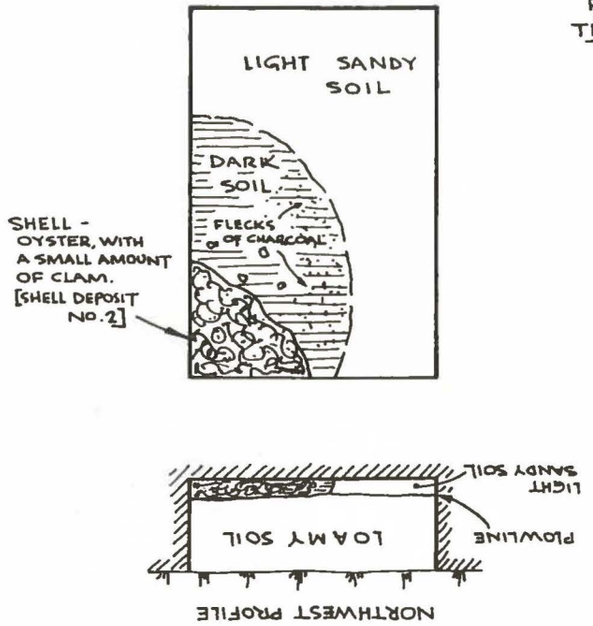
Time limits prevented test pitting at the newly discovered shell deposits on the Ritter No. 2 site--Shell Deposits No. 6, No. 7, No. 10, and No. 12. But there is no reason to believe that results would differ from those obtained at Shell Deposit No. 1. While these are aboriginal shell pits that have presumably escaped major disturbance, probing has shown that their tops are only a short distance below the surface-- just below the plow zone--and it is extremely likely that plowing has shaved off some of their upper portions, and erased any occupation layers that may once have surrounded them.

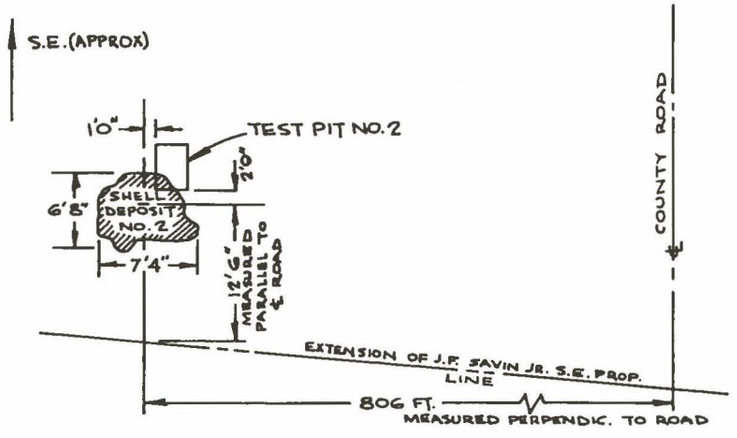
Field No. 6: This field had not been plowed as recently as the others, and conditions were only fair for surface observation.

In the northeast half of the field six surface concentrations of shell were located, but only one of these yielded a sub-surface shell deposit. This is shown on Map 3 as Shell Deposit No. 1-Field No. 6, and is considered to be part of the Ritter No. 2 site shell pit complex. Surface finds in this half of the field consisted of 1 small chert triangular point, 1 chert point fragment, 1 keeled end-scraper of jasper, 15 chips of flinty material, 1 kaolin pipestem fragment and 7 small and badly eroded potsherds.

FEATURE DATA SHEET NO. 2

FIELD NO. 5
TEST PIT NO. 2





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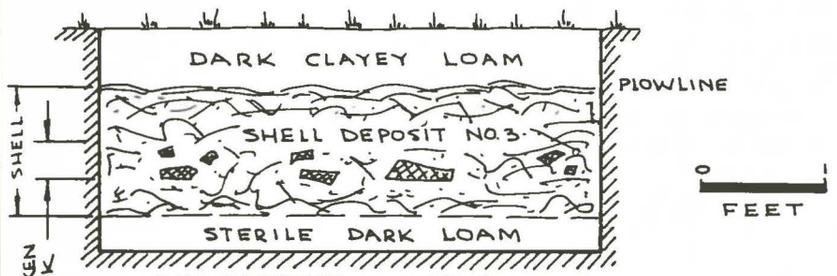
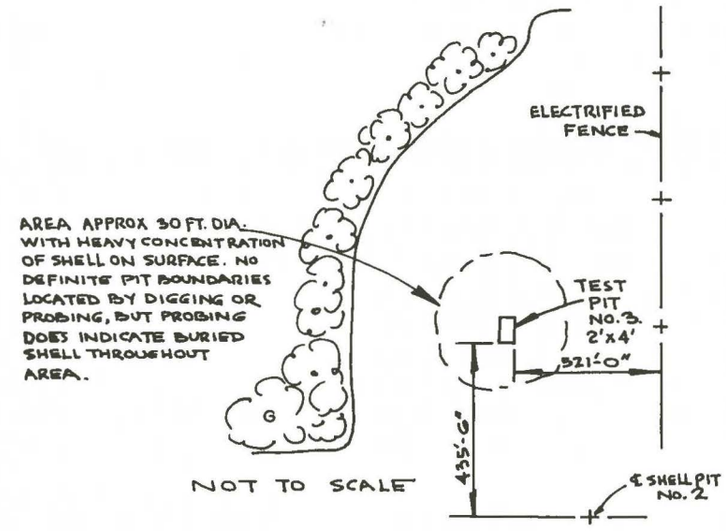
FEATURE DATA SHEET NO. 3

FIELD NO. 5
TEST PIT NO. 3

NORTHEAST PROFILE



SHELL SCATTERED ON SURFACE.
CONCENTRATED SHELL [ALL OYSTER] FROM 5" TO 18" DEEP.
BITS OF RED BRICK FROM 5" DOWN.
MUCH RED BRICK FROM 11" TO 14½" DEEP.
NO ABORIGINAL MATERIAL.



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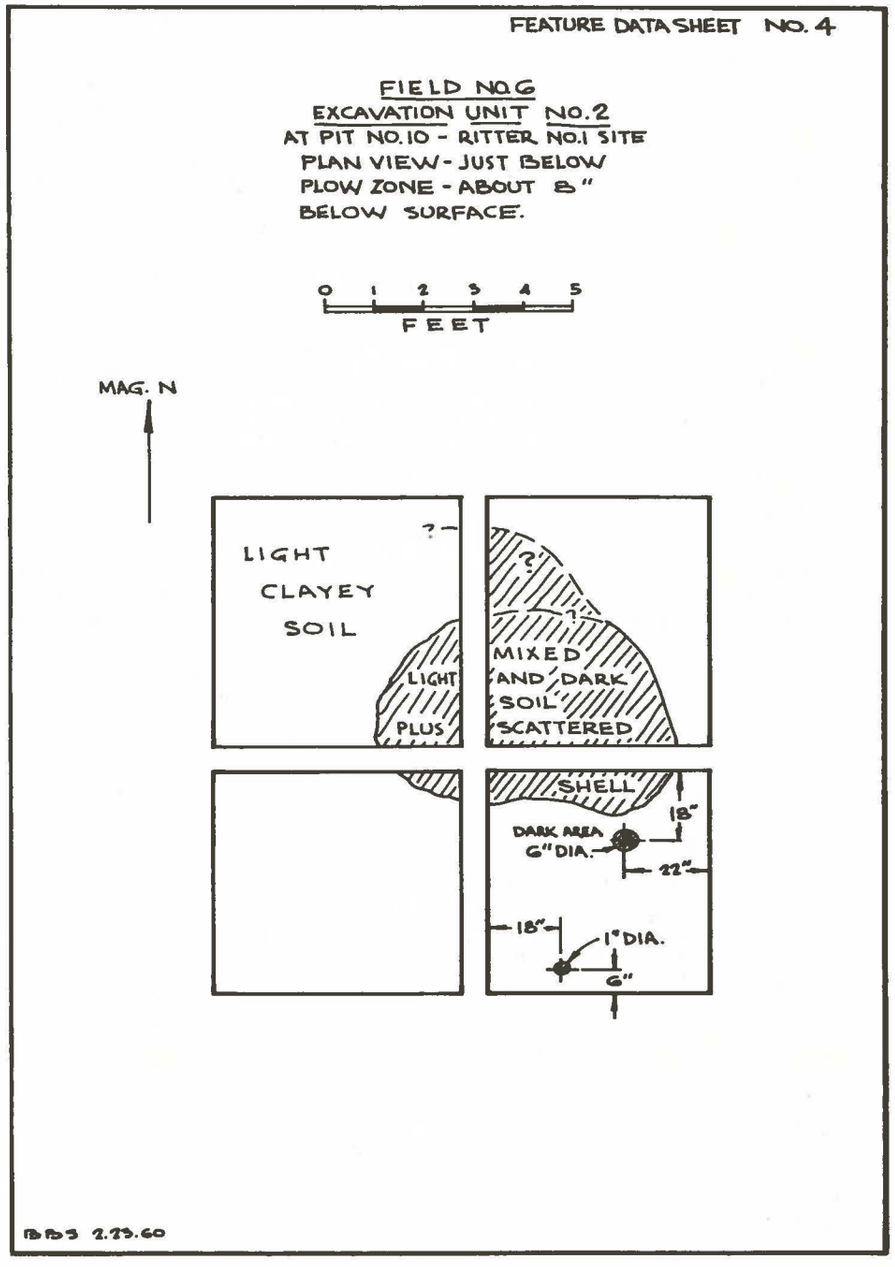

The Ritter No. 1 site, which was excavated in 1951-52 (Omwake, 1953), occupies part of the southwest half of Field No. 6 (Area "A" on the key map). During the earlier work 26 shell pits were located here and 18 of them were excavated. Much of the area is still littered with shell from these excavations, a condition which would have made efforts to locate additional pits extremely difficult. Therefore, no systematic attempt was made to do so. However, a careful search was made for shell deposits and surface shell concentrations in the parts of the field surrounding the site, with completely negative results.

The only surface finds in the southwest part of the field came from the immediate vicinity of the excavated pits. These comprised 1 large broken flint triangular point, 1 small broken jasper triangular point, 1 chert blade tip, 3 jasper chips and 1 smoothed shell-tempered sherd.

In an effort to locate evidence of habitation structure, Excavation Unit No. 2 (Feature Data Sheet No. 4) was dug at Ritter No. 1, Pit 10. This pit had contained a large quantity of fire-cracked stone and it was hoped that evidence of a sweat lodge might be revealed around the pit.

The excavation consisted of four five-foot squares, forming a ten-foot square, which exposed the top of the pit and extended beyond it. The bottom of the plow zone was reached at 8" below the surface. At this level was sterile, light-colored clayey soil in which the pit itself showed up as an area of mixed light and dark soil containing scattered oyster and clam shells. No occupation zone was encountered. No artifacts were found. A 6" diameter circle of dark soil was exposed near the edge of the shell pit in the southeast square. This may possibly be a postmold, but it is more likely an animal burrow.

As in all other tests conducted during the survey, Excavation Unit No. 2 showed that any occupation layer that may once have existed has been destroyed by farming activities.

ARTIFACTS

Most of the artifacts found during the field investigation were picked up in the course of the "walking survey" of the Hercules tract. Their recovery was incidental to the main purpose of the survey, and too few were found to justify a lengthy analysis. They have been briefly described in the previous section of this report in connection with the field investigation. Here, for convenience, they are listed again in tabular form.

It should be noted that this small collection is significantly different from those obtained from the shell pit excavations at the two Ritter sites. In the latter cases all of the points were triangular and all of the pottery

	FN1	FN2	FN3	FIELD NO. 4					FIELD NO. 5				F.N.G	
				"A"	"B"	"C"	"D"		S.E. HALF	T.P.1	EXC. UNIT 1	T.P.2	N.E. HALF	S.W. HALF
			SURF.	SURF.	SURF.	SURF.	SURF.	T.P.4	SURF.				SURF.	SURF.
CHIPPED STONE														
PROJECTILE POINTS														
TRIANGULAR									2				1	2
STEMMED				1	1	1?			2					
SIDE NOTCHED			1											
UNCLASSIFIED					2								1	1
KNIVES									1					
SCRAPERS									2				1	
REJECTS									2					
CORES				1			1		1					
CHIPS														
FLINTY MATERIALS				1	4	1	8		14				15	3
QUARTZ & QUARTZITE				2	3				1					
SHALE, ARGILLITE, BASALT				1	2	1			1					
GROUND STONE														
DISCOIDAL				1										
POTSHERDS														
SHELL-TEMPERED														
FABRIC-IMPRESSED							42	3		10	94			
SMOOTHED														1
UNIDENTIFIABLE					1				3			1		
GRIT-TEMPERED														
CORD-MARKED				1										
UNIDENTIFIABLE					1									
GRIT+CLAY-TEMPERED														
CORD-MARKED						10								
UNIDENT. AS TO BOTH TEMPER & SURFACE			2						6				7	
KAOLIN PIPE STEM FRAGS.									1				1	
TOTAL			3	8	14	13	51	3	36	10	94	1	26	7

SUMMARY CHART
LOCATIONS OF ARTIFACT FINDS

was shell-tempered. Our surface collection contains 6 stemmed or notched points and only 5 triangles. No triangles were found in Fields No. 3 and No. 4, and 12 grit-tempered sherds came from Field No. 4.

This material would seem to indicate that there were one or more occupations on the Hercules properties before that of the shell pit users, by people with a somewhat different material culture. The evidence does not warrant a more definite conclusion.

CONCLUSIONS AND RECOMMENDATIONS

1. No new shell deposit complexes comparable to the Ritter No. 1 and Ritter No. 2 sites were found on the Hercules property. However, six hitherto undiscovered shell deposits were located on the Ritter fields. Since eight of the deposits located during the 1951-52 work at Ritter No. 1 were never excavated, these finds bring the total of known unexcavated shell pits to fourteen. Recommendations will be made below for work at some of these.

2. No occupation floors or patterns of postmolds were found in association with the shell pit sites. Test work has indicated that there are no surviving occupation levels. Every sub-surface test has shown that post-contact farming operations have destroyed these features. Since post-molds extend deeper into the ground, it is not impossible that some of these, or even patterned groups of them, still exist somewhere on the Hercules lands. But a search for them would involve the removal of the 6- to 8-inch thick plow zone from large areas of the fields, in an essentially random fashion, with luck or accident determining the outcome. This type of approach is not recommended.

3. The artifacts collected in the course of the survey indicate that there were occupations on the Hercules properties that pre-date the construction of the shell pits. However, no concentrated areas for these occupations were found. It is felt that further search is not justified at this time.

The following recommendations are made for future archeological work on the Hercules lands.

1. As noted above, there are at least fourteen unexcavated aboriginal shell deposits on Fields No. 5 and No. 6. It is recommended that two, or possibly three, of these be excavated in the near future.

Many similar pits have been competently dug and recorded by local members of the Sussex Society of Archeology and History, and there would be little point in duplicating their type of excavation. Instead, it is proposed that concentration be shifted to a very thorough quantitative

and qualitative analysis of the food remains which comprise most of the fill of the pits. Such an approach should yield new information of the following kinds:

a. Dates of occupation of the sites: While the shell pit occupation is generally considered to be a late prehistoric one, no archeological evidence has ever been used to arrive at absolute dates for it. Such dates can be obtained through radiocarbon (C14) analysis of shell and/or charcoal from the shell deposits.

b. Type of occupation: There has long been disagreement among Delaware archeologists as to whether the shell pit sites represent permanent year-round settlements, or only seasonal ones. Evidence to answer this question can be obtained from several lines of investigation. Pollen analysis of the midden earth may indicate the season of the year during which a pit was filled. Study of the bird bone may reveal migratory species, thus pinpointing the months when the pits were in use. Study of the bone of immature mammals can bring similar results.

c. Subsistence base: Complete quantitative analysis of the food remains (shellfish, bird, mammal, etc.) and calculation of their percentages can throw new light on the food-gathering patterns of this population. Pollen analysis may reveal which wild and domesticated plants were used. (At a later date, when similar information is available from other sites in northeastern United States, it should be possible to make comparative studies of changing subsistence patterns over time and space, studies which will have important bearing on anthropological work on the processes of culture change.)

d. Population size: Demographic inferences can be made through study of the nutritive values and total quantities of the food remains.

e. Health factors: The relationship of diet to the state of health of the population might be glimpsed by study of the skeletal remains previously excavated at the Ritter sites, as well as of any new material found during the proposed field work. Bone-lipping, dental caries, etc., might be partially correlated with nutritional factors.

It is estimated that the field work for such a project could be completed by two individuals in approximately two weeks. Shell Deposit No. 1 on Field No. 5 would be one of the pits chosen for excavation. The others would be decided upon after additional test work.

The laboratory analysis of the excavated materials would take considerably longer, and would involve much consultation with experts in other fields, and some use of commercial testing facilities.

2. While no additional search for either postmold patterns or concentrated evidence of early occupations is recommended at this time, it is strongly urged that such a search be made if and when construction work is begun on the property.

At that time, during the initial clearing and grading stages, earth-moving machinery will be working at the site, and a trained observer might be able to locate and record sub-surface features as they are exposed, without unduly interfering with construction activities. This type of salvage operation is not the most comfortable kind of archeology, but there are examples on record of its successful application (Swauger, 1955). If this recommendation is accepted, particular attention should be paid to those areas found to be productive during the survey, and noted in this report. One additional spot that should be watched during grading operations is the high wooded area just northwest of Field No. 5.

Bert Salwen
Dept. of Anthropology
Columbia University
New York, N.Y.
March 15, 1960

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