

VAS newsletter...

A PUBLICATION OF THE VERMONT ARCHAEOLOGICAL SOCIETY, INC.

PLOWED FIELDS: Diminishing Archeological Resource

Plowed fields are a diminishing archaeological resource. Although plowing is perhaps the major source of disturbance to prehistoric sites in Vermont, plowed fields also open the ground to us, allowing a view that would not be possible without a tremendous amount of subsurface testing. Our present work in Middlebury, on the proposed Route 7 bypass, has given us another chance to consider settlement pattern models in the Champlain Valley. We were fortunate in having a large number of plowed fields within the project area. Our ability to detect sites on these fields was so superior to subsurface testing procedures that we concentrated on acquiring as much information as this resource could provide. In the process, it became clear that controlled surface hunts could provide us with information on site distribution that would be unattainable with our present manpower and time constraints. The constant loss of agricultural land to development, along with the increasing use of graders to reshape active farmland, makes a pressing case for us to consider how we wish to use the information we have gained. A controlled approach to surface collecting will allow us the greatest amount of information with the least expenditure of effort. The major requirement is uniform control.

In general site survey, test pitting is a necessary, if not a preferred method. This is often so because the ground we want to look at is not exposed, or the soil conditions are such that there is potential for buried occupation zones. On the majority of New England soils, however, if there is an occupation level, at least some of the material will show up in the plow zone. The following discussion is based on the results of a contract survey. A more general approach to utilizing plowed fields in Vermont might be applied for area surveys as the fields become available.

On a large survey such as the Middlebury project it is unavoidable that the sampling technique will be loaded with biases. Highway projects especially cover huge amounts of land. Somehow the decision must be made on where to place the allotted 300 one foot

SPRING MEETING MAY 10

Shelburne Farms, an agricultural estate established in the late nineteenth century, will be the site of the Society's Spring Meeting. A tour of the buildings and grounds of the estate, which has been nominated to the National Register of Historic Places, is included in the meeting program. This promises to be a most enjoyable, informative gathering, and reservations are limited, so get yours in soon!

SEE PAGES 3 and 4 FOR MEETING PROGRAM AND RESERVATION FORM!

PETERSEN'S CERAMICS MONOGRAPH TO BE MAILED TO ALL MEMBERS

James Petersens' long-awaited "Middle Woodland Ceramics of the Winooski Site, A.D. 1-1000" has just been published as Vermont Archaeological Society New Series Monograph Number 1. This publication was made possible by a generous matching grant from the Heritage Conservation and Recreation Service through the Vermont Division for Historic Preservation.

As previously announced, this monograph is being distributed free-of-charge to current VAS members. If you've already paid your 1980 dues the publication is enclosed with this issue of the Newsletter -- if not, you have until the Spring Meeting to submit your dues. Copies of the monograph will be available at the meeting; members joining or renewing after that date will be charged \$3.00 per copy. Non-members will be charged \$3.75 (by post-paid mail order and in bookstores).

HOW TO GET TO SHELBURNE FARMS

Shelburne Farms is located in the town of Shelburne, adjacent to Lake Champlain just south of Shelburne Point. From the blinking light next to the Harbor Hide-A-Way Restaurant on U.S. Route 7 (2.8 miles south of the interstate 189 interchange and 1.9 miles north of the village of Shelburne) travel southwest across the intersection into the estate's driveway and follow signs to the Shelburne House.

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square test pits on a swath of land 300 feet wide by twelve miles long. One would like to test all environments equally in order to discover the "hidden truths" of settlement patterns. As with many ideals, we cannot approach it...especially in a contract situation. At best, we can try to keep open eyes and minds for those unsuspected insights we characteristically stumble over. In the meantime we had better do our best with the knowledge and intuition we have at picking places of high potential. The sampling procedure is, of necessity, based on the biases of the investigators, hopefully with the expectation that those biases will be carefully defined.

When Peter Thomas and I started in Middlebury my model of "high potential" areas was pretty simple; being based on proximity to water, levelness, and drainage. Therefore I concentrated on the tops of low knolls near some source of water. (It wasn't actually that simple.) I had, however, never before worked in the "Valley of Vergennes Clay". I gradually learned that level clay areas hold water, so that level tops are often wetter than gentle slopes. Also, the drainage pattern on clays produces numerous streams and springs all through the bedrock-divided valleys. Sites were occurring on the sides of knolls and there were so many excellent locations that few were particularly special. Hence occupations were thinly scattered throughout the valleys. Although the obvious was generally true, and more sites did cluster around the Otter Creek, a large number of sites were more thinly scattered miles from the river. This situation of thinly dispersed abundance is particularly frustrating for test pitting, and ideal for surface collecting.

In order to understand the effectiveness of test pitting, it is necessary to create models of the kind of evidence being looked for. For example, if we are using one-foot-square test pits, what is the probability of locating a lithic scatter 25 feet in diameter with a minimum flake density of 20 flakes per square meter? (Note the ambidextrous use of measuring systems!) It is relatively simple to calculate probabilities based on such models. It might be, for instance, that a given testing interval would allow finding 20% of such flake concentrations. That sounds nice, but say there were only 4 such concentrations in a valley measuring 1000 by 3000 feet. A grid of 300 test pits would be required to give an 80% chance of finding one concentration. If there is only time for 30 test pits, the probability falls to an 8% chance of finding anything. If those pits are intuitively placed on tops of knolls when the sites are on the slopes, the chances of success still are less. With that record, sites would only be found in one out of twelve similar valleys, having missed 47 concentrations. This is actually as good as might be expected with small, thinly scattered sites. But who

is to say that the size and density of the concentration here defined is a "significant" standard size at all? Might they be larger-- or smaller?

To test the observation power of test pitting versus surface hunting, we tried counting all of the pebbles recovered in the sifter compared to all those we could pick up off the surface on a given soil type in an equal amount of time. In one test, surface hunting yielded 10 times the quantity of "observed lithics" (the pebbles in this case) in the same amount of time, and over a much wider area.

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It may be reasonable to assume that when surface hunting a well-washed field where the furrows are nearly levelled, the lithic debris left pedestalled on the surface may represent 5% of the total lithics in the plow zone. A newly plowed field that has not been washed may produce only a fraction of this percent. It depends on the type of soil and field conditions. Using the 5% figure, we could reasonably assume that with careful surface hunting we would find evidence of concentrations as small as a meter square having a density of 50 flakes per square meter.

Our smallest site in Middlebury was found in a surface hunt of an area measuring 50 by 2000 feet. At the edge of a swamp were found 2 flakes within 10 feet of each other. Both were retouch flakes under 1 centimeter in length and were of the same fine quality chert. No other flakes were found within 800 feet. The closeness of our search and the nature of the flake distribution enabled us to suggest that the activity involved was likely a short stop to sharpen a used or broken tool, this being about the smallest lithic activity imaginable. In another case we found a complete triangular projectile point with no flakes or occupational debris within 1000 feet. This may well represent a "lost point" during hunting, another example of non-occupational remains. These two finds represent the extreme of the small-sized activity areas that are discoverable in a surface hunt, but are nearly impossible to detect by test pitting. The definition of such activity areas depends on the accurate recording of the locations of the finds, with confident identification of the empty spaces around them.

It is precisely the empty spaces which give surface hunting its potential. In environments similar to Middlebury's, where thinly scattered occupation areas are most frequent, the probability becomes very low that individual occupations will overlap. This means that all of the debris found with-

VERMONT ARCHAEOLOGICAL SOCIETY SPRING MEETING

SHELBURNE FARMS, SHELBURNE, VERMONT

SEE DIRECTIONS TO SHELBURNE FARMS ELSEWHERE IN THIS ISSUE

SATURDAY, MAY 10, 1980

AFTERNOON PROGRAM

- 1:00 - 2:00 PM REGISTRATION at Shelburne House (follow the signs from the entrance.)
- 2:00 - 3:30 PM AFTERNOON SESSION, Shelburne House
WELCOME: William Bayreuther, VAS President
A LOOK TO THE WEST: ARCHEOLOGICAL FIELDWORK IN MONTANA, James Petersen
STATE ARCHEOLOGIST'S REPORT: Giovanna Neudorfer
PROJECT OUTREACH SLIDE PRESENTATION: Lauren Kelley
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- 4:00 - 5:30 PM GUIDED TOUR OF SHELBURNE FARMS' BUILDINGS AND GROUNDS.
- 5:30 - 7:00 PM CHICKEN BARBECUE SUPPER, Shelburne House
One half chicken, macaroni salad and cole slaw, relish tray, potato chips, roll, coffee or iced tea, and brownie. (Non-drinkers of coffee or tea may bring their own soft drinks.)

EVENING PROGRAM

- 7:00 PM- BILLEE HOORNBECK, USDA FOREST SERVICE ARCHEOLOGIST:
Management of Archeological Resources in the Green and White Mountain National Forests

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in a well-defined concentration was likely deposited during one occupation by people within a particular social unit, whether it be a family, a hunting party, etc...Though the material is mixed within the plow zone, it still may be more intact and definable than almost any rich, undisturbed, multicomponent site where numerous activities overlap. There is the potential, therefore, for answering numerous tricky questions through surface hunting alone.

For example, in the Champlain Lowland it is

unclear what the relationship is between the Late Archaic Otter Creek, ground slate Vosburg, and Brewerton projectile points. Although different combinations are known to occur together, they at times occur separately. What is the tool kit associated with each of the combinations? Do they represent temporal, spatial or functional differences? When single occupations can be defined, what is the relationship of the artifact concentrations to each other? Do they occur in clusters? What are the differences in tool kits with clustered concentrations versus single occupation units? What are the lithic material

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1980 SPRING MEETING RESERVATION FORM

YOUR RESERVATION FEE INCLUDES REGISTRATION, TOUR OF
SHELburnE FARMS AND BARBECUE SUPPER.

Please accept reservation(s) for _____ individual(s)
@ \$7.50 per person. Enclosed is my check for \$ _____

IF YOU ARE ALSO PAYING DUES FOR CALENDAR YEAR 1980,
PLEASE FILL OUT THE DUES FORM BELOW AND SEND ALONG
WITH YOUR MEETING RESERVATION FORM AND CHECK. Make
checks payable to: VERMONT ARCHAEOLOGICAL SOCIETY, INC.
and mail to VAS, Box 663, Burlington, VT 05402.
RESERVATIONS SHOULD BE MAILED NO LATER THAN APRIL 30.

NAME OF PERSON MAKING RESERVATION _____

NAMES OF OTHERS IN PARTY _____

ADDRESS _____

BEFORE YOU TEAR OFF THIS PAGE TO MAIL YOUR MEETING RESERVATION AND/OR DUES,
YOU MAY WANT TO PHOTOCOPY THE ODYSSEY PROGRAM ON THE REVERSE OR ANNOTATE
YOUR CALENDAR.



APPLICATION FOR MEMBERSHIP OR RENEWAL

NEW
 RENEWAL

1980

NAME _____

DUES SCHEDULE

ADDRESS _____

Life.....	\$100.00
Contributing.....	25.00
Sustaining.....	12.00
Institutional.....	8.00
Family.....	8.00
Individual.....	5.00
Student (under 18).....	3.00
Senior Citizen (over 65).....	3.00

CITY OR TOWN _____

STATE _____ ZIP _____

PHONE NUMBER _____ DATE _____

AGE _____ (If student or senior citizen)

Make checks payable to The Vermont Archaeological Society, Inc., and mail to:
Vermont Archaeological Society, Box 663, Burlington, VT 05402.

ODYSSEY SERIES FILLED WITH INTEREST FOR ARCHEOLOGISTS

Michael Ambrosino, creator of the award-winning science series NOVA, has developed another television series called ODYSSEY, which has been produced by Public Broadcasting Associates. ODYSSEY comprises twelve 60-minute documentaries focusing on anthropological topics, and is currently being aired on most public television stations (including Vermont ETV) at 8pm on Sundays through June 22. Repeat showings of programs are slated for 8pm on the Saturdays immediately following their initial airings.

The first program in the series, Seeking the First Americans, was televised before this writing. It was an excellent documentary on archaeological investigations aimed at the identification and analysis of artifactual remains associated with the earliest human inhabitants of the Western Hemisphere. If subsequent programs are of similar quality the entire series will be tremendously successful.

Five programs which have yet to be aired will be of particular interest to archaeologically-oriented viewers; these include program numbers 104, 105, 107, 109 and 111, as listed below:

#101 - Seeking the First Americans,
Sunday, April 6

#102 - N'ai, the Story of a !Kung Woman,

Sunday, April 13

#103 - Franz Boas (1858-1942),
Sunday, April 20

#104 - Shipwreck: La Trinidad Valencera,
Sunday, April 27

#105 - The Incas,
Sunday, May 4

#106 - Ongka's Big Moka,
Sunday, May 11

#107 - Other People's Garbage,
Sunday, May 18

#108 - Maasai Women,
Sunday, May 25

#109 - The Chaco Legacy,
Sunday, June 1

#110 - Cree Hunters of the Mistassini,
Sunday, June 8

#111 - Key to the Land of Silence,
Sunday, June 15

#112 - The Sakuddei,
Sunday, June 22

ODYSSEY is made possible by grants from the National Endowment for the Humanities, the Corporation for Public Broadcasting, and Polaroid.

VERMONT ARCHAEOLOGICAL SOCIETY, INC.

BOX 663. BURLINGTON, VT 05402

FIRST CLASS

TO

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ranges of all flakes and tools in the unit? If patterns are repeated enough, can we say something about the number of family units that might travel together? These may be high hopes, but the only way of finding out is by having large volumes of data on numerous valleys to see what patterns are formed. Sub-surface excavations provide the ideal control, but they cannot provide the volume of data. Nor can they as confidently confirm the empty spaces. Besides, the great majority of sites have already been plowed.

Once clusters have been defined by surface hunting, in some cases it would be an easy matter to do controlled excavations, especially in cases where all material is already in the plowzone. It may be sufficient to excavate the plowzone by rapid one-half-meter blocks to define horizontal distribution. Care must be taken, however, to identify hearth remnants or other features below the plowed levels. This may prove particularly critical because developments in radiocarbon dating have recently made it possible to date single fragments of charcoal only one-eighth-inch square. If several samples of documented charcoal, even minute quantities derived from remnant features, were carefully stored, significant samples could later be chosen and dated. The new process will allow highly accurate dating of sites where sufficiently large or well controlled charcoal samples could not previously be collected.

With a large crew, surface collecting is time efficient enough to be possible on a large scale. On the other hand, a few individuals can methodically hunt a field over a long period of time, just as many have been doing anyway. It is necessary only to establish a baseline that can be relocated year after year. Simple procedures can be devised so that recovered materials may be recorded within one meter or 5 foot grid squares. Since no pits need be opened, there are no time constraints, nor is there fear of vandalism. The end result will be a map of pre-historic and historic activity areas. This was done at Vt-Ad-244, a site we discovered in Middlebury. This site has numerous concentrations and has been heavily plowed, but there is still enough integrity to the distributions to clearly show concentrations of different lithic types.

The field was in six-foot-tall corn when we surface-hunted it. We did it in 100-foot sections, so that one person on the outside could record the distance from the end of the section, while the person finding the artifact would shout out what row of corn he was on and that would be multiplied by 2.5 feet per row to give the distance in from the field's edge. In this way we plotted every flake over an area the size of a football field while it was in corn. The job took 5 people 10 hours, cumulatively crawling 5 miles on

their hands and knees along every row of corn. They enjoyed it immensely. It is not necessary to go to such extremes, but we feel we can confidently say we have nearly a 100% coverage of this field and fairly good definition of the artifact limits, with only one day of work required. A less heavily occupied site might show more distinct clusters.

As farming techniques change and crops are rotated, different pieces of land are available for surface hunting at different times. Increased ditching makes new pieces of land accessible for cultivation. There are still pieces of land that are either unplowed, or

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little plowed, that if caught at the right time might provide higher concentrations of tools, with better definition. One such site was recorded in Middlebury by Gordon Nielson. He collected the site for several years, keeping the artifacts separated by different site loci. It would be informative indeed if such a site had been gridded and totally collected of all its lithics. This site, however, was graded only a few years ago. After the grading Gordon noted there were still concentrations, but not where they had been before. Although the site may still have some potential, it is likely that Gordon's collection and maps will provide most of what we will ever know about it. Fortunately in this case, that is quite a bit.

The focus of this paper has been on the potential of surface hunting with sufficient control. It must be noted that such control will take good planning, as well as time commitments in the field, and will possibly involve numerous visits. As such, it is necessary to schedule our visits with the farmer's work. With cooperation it might be possible to enlist the aid of farmers and agencies like the Soil Conservation Service. It is also necessary to inquire of the farmer or landowner if the land has ever been graded as it is not always easy to tell from appearance. It might prove rather disappointing to have produced a nice map of redistributed concentrations.

It is certainly not a new idea, but here in Vermont an organized attitude towards the resource of plowed fields would add greatly to our knowledge; not only because it would save some information on those sites which will inevitably be destroyed, but because it would provide information that controlled excavations will be unable to give. The land is too big to excavate it all. The earth may not mind wait'n, but us people...at present... don't wan'na let it be.