VAS Annual Meeting on November 7

The 1992 Annual Meeting of the VAS will be held on Saturday, November 7, in Burlington, possibly at the Econolodge. Joe Popecki, Vic Rolando, and Bob Sloma are working on the site selection and program. The final announcement plus the slate of candidates for the Board will be mailed in early October.

Bridge Footings Slip

by Bernie Noble
Mount Independence Coalition

On July 28, 1991 at the northern end of Mount Independence, a log was found floating near the shore. It was examined by members of the Division for Historic Preservation, officials from the Fort Ticonderoga Association, various re-enactors and citizens who were present for the special weekend event called "Soldiers' Celebration." The features of the log indicated that it had been fashioned by hand and constructed in such a way as to interlock with other pieces of similar design. In other words, it resembled a very large Lincoln log. Speculation among those who viewed it ran high as to the origin and purpose of this log. The consensus was that it could well be a log from the sunken piers that had supported the twelve-foot-wide bridge that had connected Mount Independence with Fort Ti in 1777. Jeduthan Baldwin directed the construction of twenty-two caissons which had been built on the ice of Lake Champlain during the winter of 1776-77. In the spring, each of them sank to the bottom of the lake to form piers upon which the bridge rested.

The log was approximately twenty-three feet in length, pointed at one end and notched in the middle on one side. Both ends were deeply notched, leaving only a very thin layer of wood between the notches in the log. Obviously, this timber had been used in some sort of construction designed to interlock with other pieces. The log was secured to the shore until a boat could be brought to tow it to a safer location. Eventually, it was brought to Teachout's Point where the Ticonderoga Ferry operates from and secured there in the water. It remained there until the late fall of 1991, when it was removed to Chimney Point by the DHP. At this time it still is at the Chimney Point site, but there are plans to move it to Plymouth, Vermont, and store it under cover there until such time as it is determined how to preserve it and exhibit it.

Meanwhile, Bruce Hedin, a Board member of the Mount Independence Coalition, realized that he had seen another log of similar configuration the previous October in Catfish Bay. He brought this to the attention of the President of MIC, Bernie Noble. Both of them went to Catfish Bay in September of 1991 to examine the second log more closely.

Measurements were done on the log, detailed drawings were made, and photographs were taken in order to document the artifacts. The Catfish Bay log was quite different from the one which floated ashore in July. Although of approximately the same length (23' 2"), it had been notched in a very different fashion. Both ends of the log had been worked. The northern end had been pointed like a sharpened pencil. It showed some signs of having been burnt. All four sides had been hewn flat. On the western face of the north end, there is a notch approximately 2" deep by 10½" wide containing two squarish peg holes. Each hole is about 2". The first peg hole is 6½" deep and contained a peg which could be removed. The second hole went clear through the log and still contained the original peg in it. Near the middle of the log there were two notches cut on opposite sides of the log. One was slightly offset from the other by about 4". The west face of the middle notch revealed another peg hole 8½" deep. This one did not go all the way through the log. This notch was fairly shallow, being only about 1" deep. The notch on the east face of the log opposite this one was deeper (4") and was wider (15½"). The southern end of the log was badly rotted. Yet it showed similar workings as the northern end. It appeared to be pointed, was worked on at least two sides, and had two peg holes, one of which went clear through the log and the other which did not. On both ends of the log, it was noted that the inside peg hole goes all the way through the log. This log remains secured in place at Catfish Bay. The DHP and MIC
are discussing plans for its removal and transport to Plymouth along with the July log.

Since the discovery of these two logs, a third one has surfaced on the shores of Lake Champlain on the New York side near Fort Ti. This particular log has not been studied and documented by MIC as have the other two logs. Officials of the Fort Ticonderoga Association say that it very much resembles the Catfish Bay log in its construction.

Without more study and more sampling, nothing can be determined for certain about how these two logs were used to build the cribs for the floating bridge. They do raise some interesting questions about the construction of those footings for the twelve-foot-wide bridge that connected Fort Ti with Mount Independence. This summer, Art Cohn from the Lake Champlain Maritime Museum made a number of dives on those cribs in order to gather additional data on their construction, and, with the three timbers which have surfaced and been studied recently, we can begin to piece together just how the bridge caissons were constructed.

**Mount Independence Coalition Conference set for October 17**

The Mount Independence Coalition (MIC) has scheduled a Conference for Saturday, October 17, at the Orwell School, in cooperation with VAS and the Community of Orwell. Registration from 9 to 9:30 will open the Conference, followed by a plenary session titled “New Findings—Under Water and Under Ground” from 9:30 to Noon. The session will start with an overview and purpose of the conference by MIC President Bernie Noble. Following will be David Starbuck with “Under Ground—Latest Investigation”; Art Cohn with “Under Water—Latest Discoveries” and Don Wickman with “New Historical Evidence.” Lunch will be Noon to 1:15 p.m.

The afternoon program will consist of two 1-hour discussion groups (1:15 to 2:15, and 2:15 to 3:15) in which three presentations will be scheduled simultaneously: “A Soldier’s Life on the Mount” by Dennis Howe, William Murphy, and Michael Barbari; “Significance of the Natural History of Mount Independence” by Everett Marshall; and “Long Range Planning for Mount Independence” by Eric Gilbertson and Bruce Moseley. Participants will be asked to choose one of the three presentations for each session.

A closing plenary session to summarize the conference and discuss the goals of MIC will be held from 3:15 to 3:30, followed by walking tours of the Mount and a boat trip (weather permitting).

Advance registration is suggested but not mandatory. Contact Louise Luchini at (802) 658-0879 or Louise Ransom (802) 878-2522 for further registration or program information. The Orwell School is located in the village of Orwell on Route 73, about a half mile east of Route 22A.

**Attempted Salvage of the Sara Ellen Thwarted**

*by David Skinas*

Vermont Division for Historic Preservation

Art Cohn, director of the Lake Champlain Maritime Museum, called me on August 3, 1992 to report that a submarine and two support vessels were spotted anchored over the shipwreck named the *Sarah Ellen*. The *Sarah Ellen* is a schooner that went down in December of 1860 near the Four Brothers Islands while transporting stone from Willisboro Bay to Burlington. Six persons lost their lives. The shipwreck lies in approximately 300 feet of water and is virtually intact. Our immediate concern was that artifacts were being removed from the historic shipwreck. The State Police were notified and asked to investigate the vessels and determine the nature of their work and whether artifacts were being illegally removed. The boats were boarded and searched but no artifacts were found on deck. The submarine operator and salvor, Harold Maynard of Elmira, New York, stated that they were searching for and had found a plane that crashed in the Lake in 1970. The State Police and Coast Guard maintained surveillance of the boats that evening and the following day.

Early the next morning I made contact with the salvor and asked him to meet with me and Art Cohn at the Lake Champlain Maritime Museum to discuss his salvage operation. We examined the footage that Mr. Maynard took of the alleged plane and then compared it with Art’s footage of the *Sarah Ellen* that he took during an underwater survey conducted in 1990. The name of the vessel and its home port of Isle
LaMotte were clearly visible on the stern of the boat. Upon examination of both videos we all agreed that the salvor's interpretation of the wreck as the plane they were looking for was erroneous. What the salvor had located and was attempting to raise was, in fact, the Sarah Ellen.

The salvor became concerned because he had impacted the vessel with his submarine. Mr. Maynard also reported that additional damage probably occurred to the Sarah Ellen because his crew had set approximately six 50-pound grappling hooks into the vessel in order to raise the wreck, thinking that was the plane they were trying to recover. Art and I then decided that another remote-operated survey of the Sarah Ellen was needed to document the extent of damage that resulted from the aborted salvage operation. Mr. Maynard agreed to leave the site but would continue searching for the plane wreck in other areas of Lake Champlain.

On August 11-12, 1992, Eric Gifford, of Benthos Undersea Systems Technology, Art Cohn, Fred Fayette, John Bratton and I conducted an underwater survey of the shipwreck Sarah Ellen. The goal of the survey was to evaluate the extent of damage that occurred to the historic shipwreck. A remote operated vehicle (ROV) was used to examine and video the shipwreck that lies in 300 feet of water. The survey found that the salvors were hours away from trying to raise the wreck. Several grappling hooks were observed, one was deeply set into the hull of the vessel, and another was set in one of the cargo hatches. Several other grappling hooks were probably set judging by the amount of line (over 1000 feet) that was discarded on the vessel. Not all of the grappling hooks were observed during the survey, however, because maneuvering the remote operated vehicle through the tangle of discarded lines or penetrating the wreck may have caused extensive damage or loss to the ROV.

Some damage was identified by the ROV survey. Approximately 30 feet of rail and several stanchion posts had been lifted out of position on the port side of the ship. The trestletrees (which joins two sections of mast) on the main mast was dislodged, and one broken trestle member was observed. One cleat on the main mast was also dislodged. The good news is that major destruction of the Sarah Ellen was avoided due to the fast action of the Lake Champlain Maritime Museum, willingness of the salvor to cooperate with the Division as well as the timely and prudent participation by the State Police and the Coast Guard. Art Cohn and I want to especially thank those ever-present "eyes" on the Lake that sighted the salvors over the Sarah Ellen and reported their activities to us. Without the help of those informants who truly care about the protection and preservation of Vermont's maritime heritage, the salvage attempt would have been made, and the Sarah Ellen would have suffered significant if not total destruction.

Green Mountain National Forest News: Long and Appalachian Trail CR Inventories
by David Lacy

This summer's range of projects on the Forest reflected both old and new approaches. As usual, we continued with our broadscale surveys; responded to project-specific requests from Forest Districts; conducted testing for prehistoric sites within proposed project areas; and nurtured our on-going relationship with the Abenaki Research Project. (A summary of the numbers and types of sites discovered over the course of the season will be found in this space in the Winter issue of the VAS Newsletter.)

In a departure from the "usual," we received special funding to initiate an inventory of sites along the historic Long Trail (LT) Corridor — a 1000' wide swath which buffers the LT as it winds its way from Massachusetts to Canada. At the same time, the National Park Service began negotiations for transferring its Appalachian Trail (AT) management obligations to the Forest Service — so we included the AT segments from Sherburne Pass to the Connecticut River as part of the project as well. Since the Corridors cross several political and ecological boundaries within the southern part of the state, they are effectively long transect samples of this area.

Our goal was to locate and map all historic sites and any visible prehistoric sites within the corridor, and to highlight those areas with prehistoric site potential (the project has not involved digging yet). A comprehensive sense of significant prehistoric and traditional use Native American sites along the corridor is a long-term goal which will be accomplished incrementally and, ideally, in partnership with the Abenaki Research Project. Our site inventory will be used to streamline the review of trail-related projects in the future, and pinpoint those areas which need more intensive survey or testing, or which would serve as good interpretive sites.

Eric Bowman, a member of the Green Mountain archaeology crew, has done the lion's share of the background and initial leg-work on this project. He's received welcome help during August and September from David Mayhew, a grad student in UVM's Geography Department. The project has also
benefited from the Green Mountain Club and Appalachian Trail Conference folks’ interest and input. If you know of site locations, or a lot about a particular site along the Trail(s) in our area, we’d love to hear from you to make sure that we’ve got ‘em all covered!

To date (early September), Eric has covered the stretch from Mt. Ellen south to Sherburne Pass, and Eric and Dave together have covered the AT from the Pass east to the Connecticut River. Both will spend time on the Trail south of Killington this fall (but we’ll be lucky to finish up before winter!). The range of sites documented includes historic farmsteads, with their orchards, outbuildings and stone fences; charcoal kilns; logging camps; mills; roads; LT/AT trail shelters, and more, including prehistoric lithic sites. Once we are out of the field, we’ll pull together a summary and provide a version of it for y’all in the next VAS Newsletter.

Meanwhile, the Green Mountain archaeology gang will be out in the Forest working on our “normal” range of projects ‘til the snow flies ... but it’s hard to believe that the summer is over: shouldn’t the field season just be starting?

[P.S. We welcomed Shelley Hight back to Vermont in late August after her 10-week assignment on the Toyaibe (California/Nevada) National Forest!]

### VAS Newsletters Indexed

VAS Newsletter issues 1 through 69, inclusive, have been indexed through the efforts of Vic Rolando, who started this project a few years ago, got sidetracked by the final writing and production of his book, but resumed the efforts this past summer. The 25-page index includes names of individuals mentioned in the Newsletters; reports of sites, meetings, book reviews, and events; and such subject headings as point types, site names, artifacts, underwater archaeology, etc. The index is profusely cross-referenced to aid in finding subjects mentioned in the Newsletters from many angles.

The index includes VAS Newsletters and “Special Number” issues for the 24-year period from June 1968 to April 1992 (68 issues). Monographs and other publications of the VAS have not been included. The June 1968 issue was the very first VAS Newsletter. It was more of an announcement than a Newsletter and had no initial identification numbers other than its date of publication, but it was definitely identified as being a Newsletter. It was written by the Secretary.

The Index includes an introduction that explains the format of the index, background on how the Newsletters were serialized, a list of abbreviations used in the Newsletters, and a list of all Newsletter editors and the issues they produced.

Copies of the Index are available for $2.00 each, which includes the cost of running the copy, mailing it, and some loose change for the VAS. Make checks payable to Mountain Publications, P.O. Box 1812, Manchester Center, Vt. 05255. Contact Mountain Publications for availability of back Newsletter issues.

### Barton’s Mill Hill - Brick Kingdom

by Robin Tenny

Crystal Lake Falls Park Chairperson

I am pleased to announce that the Crystal Lake Falls Historical Association has received a grant from the Vermont Council on the Humanities to build a topographic model of Barton’s Mill Hill - Brick Kingdom, with students from Lake Region building scale models of factories and mills that were there. We will be working with the schools on related historical events. The archaeological research of Douglas Frink and the architectural research of Thomas Visser of UVM add to the research materials available.

We hope that this project will also serve as a step to realizing a Crystal Lake Falls Historical Park on the Water Street site.

### Archaeology Day at The State House, 1992

by Vic Rolando

The VAS sponsored its second successful annual “Archaeology Day at The State House” in Montpelier on Thursday, April 16. Gordon Crandall (VAS) generously volunteered a day to drive up from Newfane to exhibit a part of his collection of prehistoric artifacts, much to the fascination and enlightenment of all (including yours truly). Gordon’s exhibit completely covered the top of a large table which was placed at such a strategic spot in the Card Room that few passing through could possibly avoid stopping, looking, and learning. Woven through Gordon’s explanations for the uses of the varied numbers of artifacts were reminders to Legislators to remember the Division for Historic Preservation come budget time. The exhibit ran from 9 a.m. to about 2 p.m. David Skinas assisted by arranging for the date.
Use of Ground Penetrating Radar on Native American Site
by Douglas S. Frink
Archaeology Consulting Team, Inc.

In June 1992, the Archaeology Consulting Team of Essex Junction, Vermont, was hired to conduct a Phase I site identification study along the upper Winooski River. As part of the environmental review permit process, under Act 250, Criterion 8, V.S.A., the Vermont Division for Historic Preservation (VDHP) had determined that a portion of the proposed project was archaeologically sensitive. The archaeologically sensitive area is located along the western edge of the project area, approximately 100 feet east of the Winooski River. This area encompasses parts of the T-3, T-4 and T-5 river terrace landforms.

The T-4 and T-5 terraces were evaluated through a plowed field surface walkover inspection. Nineteenth and twentieth century European-American material, originating from the nearby farm, was found throughout the field. Native American material was found in one section of the field on the T-4 terrace.

Preliminary deep shovel test pits and a backhoe trench had revealed a deep and complex stratigraphy for the T-3 terrace. Because of the large number of buried organic horizons in the soils of the T-3 terrace, each having the high potential for being living floors, the plowed field surface inspection procedures were inappropriate.

It was recommended that the T-3 terrace be examined for the presence of potentially significant archaeological materials through the use of ground penetrating radar (GRP). The preliminary stratigraphic studies had documented a soil profile ideally suited to using this remote sensing technology. The upper 0.9 to 1.3 meters, where potentially significant archaeological remains would be likely, are uniformly fine sandy loams (Figure 1 - Soil Profile). Coarse particles larger than one cm are absent from these soils. Coarse river deposits of sands on channel gravels are located below the potentially sensitive soil horizons.

In 1989, the VDHP in conjunction with the Soil Conservation Service conducted an evaluation of a Native American burial ground using GPR. Although anomalies in the soil profiles were indicated by the GPR data, these could not be confirmed through excavation. Soil stratigraphic disturbances (features) and large particle fractions (possibly artifacts or bones) were clearly indicated in the GPR data. The soils in this study were water deposited soils similar to those found on the T-3 terrace — well sorted in sands, containing no coarse particles overlying a lithological discontinuity (Skinsas, personal communication).


Limitations in the use of GPR technology do exist. Heavy (clayey) or saturated soils tend to produce many “false targets” and severely limit the effective study depth. However, these limitations have not been encountered in sandy or loamy soils. Another possible limitation in GPR technology is in its reliance on the recognition of individual coarse particles smaller than 15 cm². Experimental studies have demonstrated that metal pipes as small as 5 cm in diameter are easily located. These pipes, however, measured more than a meter in length (Batey 1987, Journal of Field Archaeology, 14:1-8). Groupings of several coarse particles of small size are likely to be recognized as spatially limited textural boundaries (Gregg Schellentrager, personal communication).

Sub-Surface Informational Surveys Inc., out of Somers, Connecticut, was subcontracted to conduct the GPR survey and assist in the interpretation of the data. A SIR™ System 3 Model 3102 transducer (500 MHz) was used. To improve the interpretation of the GPR readings, a #38 Video Display™ microprocessor controlled module data analyzer computer program was used along with the printed analog graph. A sampling of the positive “targets” identified in the GPR study were excavated and identified through hand-dug shovel test pits to determine whether they represented cultural or natural artifacts.

The herbacious vegetation on the T-3 terrace was cut and removed in preparation for the GPR survey. A two-meter grid was established across the levee half of the terrace defining the survey area. Three in-
dependant traverses were run down each transect at intervals of approximately two-thirds of a meter (2 feet). A 500 nanosecond pulse rate was used to provide resolution down to a depth of 1.5 meters. Concurrent with and following the GPR survey, the hand-dug shovel test pit excavations were used to evaluate the positive “targets.” The shovel test pit units were excavated by pedogenic horizons and the contents passed through ¼-inch (6.4 mm) mesh hardware cloth to recover the artifacts. The artifacts were then removed to the Archaeology Consulting Team’s laboratory facilities in Essex Junction, Vermont, for detailed analyses.

Results

The analog readings from the GPR were divided into two major classes with sub-classes for interpretive purposes. The first major class is gross features (compound targets). These consist of large-scale soil disturbances such as the backhoe trench, a telephone cable trench, hydro-geological backhoe excavated test pits and woodchuck burrows, and intact major pedogenic soil stratum. The large scale soil disturbances were evident in the data of several adjacent traverses, had clearly defined edges, and demonstrated little to no evidence of pedogenic stratification. The pedogenic soil stratification was evident as contiguous readings of moderately high reflective material or lightly reflective material composing generally horizontal bands along individual and adjacent traverses except where interrupted by a large-scale soil disturbance.

The second major class of GPR readings consists of various individual coarse particles in the soil (singular targets). The analog graph from the GPR displays these singular targets as a series of stacked chevrons of varying kertosis and thickness depending on the size of reflectivity of the object (Figure 2 - Stacked Chevrons). Three general sub-classes of singular targets were recognized. Thin highly kertosed stacked chevrons indicating moderately reflective non-crystalline dense material, and thick low kertosed stacked chevrons indicating a reflectivity only slightly greater than the surrounding matrix suggested an alteration of the normal pedogenic soil stratum (e.g., a krotovina or other infilled minor soil feature).

These three sub-classes of individual targets may be better understood through the use of the following metaphor. GPR function by emitting radio waves through the soil at a specific frequency and amplitude, and recording the reflected return echo. Sound is a more familiar form of radio wave differing only in the frequency and amplitude of the particular waves. The echo expected from a crystalline object like iron would be a crisp sound like a ping. The echo from a non-crystalline dense material like brick would have a hollow sound like a plunk, and the echo from a limited area of soil slightly more compact or having a slightly greater moisture content than the surrounding soils would have a muffled flat sound like a thud.

The most commonly used materials for stone tools by Native Americans in Vermont were quartz, quartzite and chert. These materials are dense, crystalline and crypto-crystalline forms of silica-dioxide. Although somewhat less dense than iron, the presence of these materials in the soil would register as a ping-like target on the GPR analog graph. Native American non-perishable vessels were made from steatite or fired clay (ceramics). These materials are non-crystalline and porous, but significantly denser than the surrounding soils. The presence of these materials in the soil would register as a plunk-like target on the GPR analog graph. Cooking hearths, burials, storage pits and refuse pits are soil features similar to krotovians (infilled rodent burrows). Because of the increased organic matter in these features, the moisture content within these features would be greater than the surrounding soils. The presence of these cultural features in the soil would register as a thud-like target on the GPR analog graph.

Twenty-three (23) ping-like, 22 plunk-like, and 32 thud-like targets were identified during the GPR study. Of these, ten (10) ping-like, nine (9) plunk-like and eleven (11) thud-like targets were excavated. The excavated targets provided a test sample of 40 percent. Targets were selected for excavation based on their concentration within limited areas, and quality of signature. In addition to the 30 excavation units located to define the GPR samples, three (3) units were randomly located to test non-targets.

Of the ten (10) ping-like targets evaluated, nine (9) were metal nails or wire, and one (1) was an unaltered, natural quartz pebble measuring roughly 5 x 5 x 5 cm. Of the nine plunk-like targets evaluated, one (1) was a heavily corroded nail, one (1) was a sheathed telephone cable (NET), one was a piece of phylite measuring roughly 10 x 5 x 2 cm., one (1) was a cow’s vertebra, one was a root burn, and the remaining four (4) were definable soil anomalies consisting of krotovinas. Of the eleven (11) thud-like targets evaluated, all were definable as pedogenic horizons differing from their adjacent horizons in compaction and/or moisture content.

Although undetected by the GPR, one (1) chert micro-flake measuring less than 1 x 1 x 0.1 cm. was located while analyzing a thud-like target. Despite the intensity of hand-dug shovel test pit units excavated in this general area, no other Native
American artifacts were recovered. We feel that it is more likely that this flake's original context was with the Native American site located on the T-4 terrace some 30 meters to the southeast.

While the GPR study successfully detected a variety of targets having characteristics similar to expected Native American archaeological remains such as quartz fragments and krotovinas, no Native American archaeological sites were identified on the T-3 terrace. As the GPR study did not locate existing cultural sites, the question of whether or not the procedure followed in the study does locate sites could not be definitively answered. The Vermont Division for Historic Preservation granted permission to conduct a partial GPR study at a Native American archaeological site located on T-4 terrace, in an attempt to answer this question.

One transect line was established on the upper face of the T-4 terrace. The transect was traversed twice with the GPR transducer-antenna using the same procedures and equipment described above. A smaller 35-nanosecond wavelength interval was used due to the shallower depth of potential archaeological materials. Five targets were registered on the GPR analog graphs of VT-WA-53, including four "pings" and one "plunk". These areas were excavated and the five targets identified. The four "pings" indicated quartz pebbles or flakes, and the one "plunk" was caused by a piece of European-American redware.

Based on the results of the GPR study on the T-4 terrace, the procedures would have located Native American artifacts if they had existed on the T-3 terrace. It was concluded that no significant Native American archaeological remains are located on this part of the T-3 terrace.

**Vermont Agency of Transportation Hires Agency Archaeologist**

_by Giovanna Peebles_

**Vermont Division for Historic Preservation**

I'm delighted to announce that the Vermont Agency of Transportation has just hired Dr. Duncan Wilkie, a native New Englander, as the first Agency archaeologist. This is a permanent, full-time position that has been years in the planning and was finally authorized.

Most recently, Duncan developed and directed the Heritage Studies Program at Plymouth State College in New Hampshire and concurrently held the position of staff archaeologist with the New Hampshire Division of Historical Resources. Before that and for over 10 years he ran a private archaeology consulting business in Missouri. For several years he worked for the Center for Regional History and Cultural Heritage at Southeast Missouri State University as the grants and projects manager.

As the AOT archaeologist, Duncan is responsible for helping the Agency carry out their federal and state-mandated archaeological preservation responsibilities. This includes a variety of tasks, for example, acting as AOT liaison with their archaeological consultants, reviewing and monitoring all archaeological studies conducted by consultants for AOT, conducting field inspections during early project planning, preparing scopes of work, doing public outreach, and coordinating these activities closely with our Division. Duncan's enthusiasm, experience, and capability will improve and facilitate the archaeological review process during AOT projects. Welcome Duncan!

**Site Protection and Public Outreach in Addison County:**

The Archaeology on the Farms Project

_by Jack Rossen_

The Archaeology on the Farms Project is a demonstration project funded by the Lake Champlain Basin Program and operated by the Vermont Division for Historic Preservation and the Addison County field office of the Soil Conservation Service (SCS). Since November 1991, SCS earth-moving projects on dairy farms such as manure pits, water diversions, and streambank stabilizations (ripraps) have been archaeologically surveyed to learn how projects affect archaeological and historic sites. Addison County was chosen as the test site because of its known high site density and because of the willingness of the Middlebury field office to participate. This work will continue until about March or April of 1993.

Thus far, over eighty farms have been visited and 22 new sites recorded. The project has demonstrated that despite the large number of sites in Addison County (706 site numbers have been assigned over the years, including almost 400 prehistoric sites) many sites remain unrecorded. Continuing protection is also necessary for previously recorded sites. About 15% of this year's SCS projects, a small percentage but substantial number, directly involve a prehistoric or historic cultural resource.

The SCS is a unique government agency. They participate in a bewildering variety of projects and may move earth with little turnaround time. SCS participation may include planning, design and construction supervision of both cost-shared and non-cost-
shared projects. In other cases, the SCS may provide technical assistance to projects they are otherwise uninvolved with. In terms of federal statutes that protect cultural resources, some SCS projects are clearly covered, while others fall into gray areas of the regulations. For all the above reasons, SCS has long operated under a de facto exemption from federal statutes.

The primary goal of the Archaeology on the Farms Project has been to understand the patterns of how SCS activities affect cultural resources. The effects are both positive and negative. For example, at one site, hedgerows were removed in order to allow contour plowing of a cornfield, and an additional water diversion ditch was planned. The hedgerow removal would be considered a positive impact on the archaeological site because it would lessen erosion, while the accompanying diversion was considered a negative impact, as it would destroy part of the site. Other SCS projects such as streambank riprap often have positive protection value for nearby archaeological sites. In summary, it is impossible to stereotype the SCS's role in regard to cultural resources. Every case study is complex. The project can boast of success stories in protecting sites and learn valuable information for the future from negative case studies. Probably the greatest challenge is to leave in place a system for the SCS to protect archaeological sites (and to recognize situations when professional archaeologists should be summoned) after the demonstration project is completed.

A second aspect of the project has been a public outreach campaign to raise awareness of the importance and fragility of cultural resources. One major theme of the effort has been to present archaeological sites as a preservation issue in the same sense as water, forests, soil and perhaps the most apt metaphor, as an endangered species. In this sense, the SCS has been helpful in providing public outreach opportunities. For example, most Addison County 6th graders annually attend a "Conservation Field Days" during which hands-on presentations are given on various conservation concerns. Archaeology has been added to this agenda.

Another major public outreach theme has been that agriculture and archaeology are not in conflict with each other. We are all familiar with the stereotype that the appearance of an archaeologist stops a project dead in its tracks. A strong effort has been made to relocate or redesign projects early in the planning process when necessary, and to demonstrate to farmers that they have interests in common with archaeologists. For example, plowing and cropping a site is usually considered a minimal impact. In comparison, land development that pushes farmers off the land is also an extremely destructive process for archaeological sites. Issues of site protection are discussed almost daily with Addison County farmers. These farmers tend to view themselves as land stewards and are usually interested in protecting sites. Some farmers have requested that additional surveys be conducted on their land to find and record sites.

My personal perspective on Vermont's archaeology, as a prehistorian who is new to the region but who has studied in many other states and two foreign countries, is as follows. The archaeology of Vermont (and from my perspective, the prehistory in particular) is very poorly understood in comparison with other regions of the U.S. Other states are far ahead of Vermont in terms of having constructed solid chronologies and in being able to address specific documentation and protection of sites, which is necessary if meaningful research involving detailed problem designs and modern techniques is to occur. In this sense, enhanced site protection and public outreach are crucial to the development of our knowledge of Vermont's prehistory and history.

**New Archaeological Dating Technique Developed**

The Archaeology Consulting Team in Essex Junction, Vermont, has recently completed research on the development of a new means of dating the age of charcoal found in soil. This new procedure, the OCR (Oxidizable Carbon Ratio), is introduced as a means of improving the interpretability of radiocarbon data, and as a potential solution to some of the more problematic limits of the radiocarbon procedure. The OCR analysis provides an independent procedure for determining the age of charcoal found in soil. This procedure is based on the chemical analysis of coal within definable environmental contexts, and therefore it is not restricted by the limits of the nuclear-based radiocarbon procedure (de Vrie, Suess and Bomb effects). In addition to offering an accurate and precise dating procedure for archaeologists, the OCR procedure is much less expensive. The cost per sample for the OCR procedure is $50.00 as compared to radiocarbon analysis which is in excess of $200.00 per sample.

A paper presenting the preliminary research for the OCR procedure was presented at the 76th Annual Archaeological Conference of the New York State Archaeological Association in April of this year and will appear as an article in the next issue of *Archaeology of Eastern North America* (Volume 20). A paper presenting the final research and the OCR formula will be presented at the 59th Annual Meeting of the
Eastern States Archeological Federation in Pittsburgh, Pa., in November. An article for publication of this new data is in preparation.

For more information on this new procedure, contact the Archaeology Consulting Team, P.O. Box 145, Essex Junction, Vermont, 05453-0145, Tel: (802) 879-2017.

Notes From the State Archaeologist
by Giovanna Peebles
Vermont Division for Historic Preservation

The Horse Ferry wreck documentation in Burlington Bay had a successful third, and final, field season. Directed by former Vermonter Dr. Kevin Crisman, now professor of underwater archaeology at Texas A & M University, the program was run as a field school that combined hull documentation with educational goals. The program was co-sponsored by Texas A & M University, our Division, the Lake Champlain Maritime Museum, the Institute for Nautical Archaeology, and the University of Vermont.

Kevin is now drafting reconstruction drawings for this unique vessel, and the final project report is in preparation. An additional project goal is to formally list the Horse Ferry on the National Register of Historic Places.

Once a common type of watercraft on America’s rivers and lakes, the Burlington Bay Horse Ferry is the only surviving example of the turntable-type, horse-propelled ferry in the United States. The first successful horse-powered ferry took passengers across the East River, between Manhattan and Brooklyn, New York, in 1813. Kevin’s research suggests that the Burlington Bay ferry was built between 1819 and the 1840s, when the “turntable” technology for propelling these types of vessels was replaced with the more efficient “treadmill” mechanism. Featured in the October 1989 National Geographic magazine, the Horse Ferry was opened to the diving public as an Underwater Historic Preserve in 1990. A system of mooring buoys, guidelines, and underwater signage allows for safe access to the wreck yet promotes her preservation.

The historic stretch of Lake Champlain between Mount Independence and Fort Ticonderoga was the focus of an exciting underwater archaeological study during the summer of 1992. The Mount Independence/Fort Ticonderoga Submerged Cultural Resources project, directed by Arthur Cohn with Dr. Kevin Crisman’s interdisciplinary team of experienced and enthusiastic researchers. They intensively examined the Revolutionary War “Great Bridge” and located and studied other threatened sites from this important, but little understood, period of Vermont history. Preliminary reports of the summer’s work confirm the range and importance of underwater historic resources in this locale and will fuel many years of future study. The information gained will also greatly enhance the knowledge gathered over the last few summers of excavations on the Mount and provided important, new information for the Division’s proposed interpretive center at the Mount.

One of the singular aspects of this project was the teaming of a variety of organizations: the project was sponsored by the Lake Champlain Basin Program (formerly known as the Lake Champlain Management Conference); funded by the Environmental Protection Agency; administered by the New England Interstate Water Pollution Control Commission in cooperation with our Division; carried out by the Lake Champlain Maritime Museum in cooperation with Middlebury College, the State University of New York at Stony Brook, Texas A & M University, and the University of Vermont; and assisted by the Division, the Fort Ticonderoga Association, and the Bureau of Historic Sites.

The recent celebratory opening of the archaeology and Abenaki exhibit at the St. Albans Historic Museum held special meaning for me for several reasons. First among them was my anxiety, at its inception, this was one project that might not come together. Its first breath of life occurred a number of years back when a developer accidentally destroyed a prehistoric Native American campsite in St. Albans. This was part of an Act 250 violation, and the Environmental District Commission asked me what might be done about it. Money for archaeology always being a scarce commodity, even in those days, I suggested that the developer establish an escrow account for $5000 to be used only in St. Albans and only for archaeology and public outreach. The money was given to the St. Albans Historical Museum to be used for those purposes with the Division’s approval.

With a good amount of interest added to the account since 1988, Admiral Warren Hamm and Anna Neville of the St. Albans Historical Museum decided last year that the time had come to use the money, and they proposed an exhibit. After a number of meetings and discussions to brainstorm ideas and who should be involved, the Museum, on my recommendation, hired Jim Garman, archaeologist and Ph.D. candidate at the University of Massachusetts at Amherst, to make the project happen. The Abenakis, through Dee Brightstar representing the Abenaki Research Pro-
ect, quickly became integral to the team, as did exhibit designer Don Hansen. The result is a remarkable tribute to the Abenaki people of Vermont, "the People of the Dawn Land."

The exhibit, including a very well-thought out combination of contemporary Abenaki crafts, reproductions of prehistoric stone tools, photographs, and accompanying text, will go a long way towards helping northwestern Vermonters better understand the original Vermonters. Early heated debates about whether to dig or not to dig, about focusing on prehistoric archaeology or contemporary culture, and on other sensitive issues were all resolved because a special group of people was working towards a special goal. The exhibit is worth a special trip to St. Albans. Go.

An invitation to present an all-day workshop to the Vermont Association of Foresters in July prompted me to finally draft the state’s guidelines for protecting cultural resources during logging. Many foresters have been asking us for guidance for a long time since they want to minimize harm to the many cellar holes and other historic archaeological sites they encounter during forestry activities. The workshop involved, first, an inside slide show/pep talk and then an in-field walkabout to look at historic sites at Ainsworth State Forest in Williamstown and talk about ways to protect the sites. I unveiled my draft guidelines at the workshop and by the end of the day was back to the drawing board after getting invaluable, and much needed, feed-back from a large group of enthusiastic and interested foresters. Contact me if you would like a draft of the “Guidelines for Protecting Cultural Resources During Logging” to review.

The special projects described above are the highlights of my summer; several others, such as Dr. Jack Rossen’s on-going “Archeology on the Farm” project, are reported elsewhere in this issue.

On-going work with the Lake Champlain Basin Program (LCBP) takes a lot of my time. I was honored by being selected as the basin-wide cultural resource representative on the Technical Advisory Committee in 1991, but a major commitment of time and involvement goes along with the honor. Formerly called the “Lake Champlain Management Conference,” the Basin Program is, to my knowledge, the only basin-wide planning effort in the United States that has actively included cultural resources in their comprehensive planning efforts. The LCBP funded 2 cultural resource projects within Fiscal Year 1991: the “Archeology on the Farm Project” and the “Submerged Cultural Resources Project” (reported on above). This is a remarkable show of support for the Lake’s rich and diverse cultural heritage. I will write more about this in the winter issue of the VAS Newsletter but, in the meanwhile, if you are interested in more information about the Lake Champlain Basin Program, contact the LCBP at the Gordon-Center House, 54 West Shore Road, Grand Isle, Vermont 05458 (802) 372-3213 or 1-800-468-5227. Ask to be put on the mailing list for their excellent, free Newsletter.

It seems as if Vermont’s depressed economy is not slowing down the number of Act 250 applications that we have to review. Any Act 250 application, or pre-application, that has archaeological concerns always requires an on-site visit with the applicant. David Skinas and I thus spend many days in the field explaining the importance of archaeological resources to developers and helping them resolve archaeological issues. And, of course, those field trips result in innumerable follow-up letters. The satisfaction is knowing that archaeologically sensitive areas and known sites around the site are being protected or studied. When most development in Vermont requires NO permit or regulatory review (such as your pool, my garage, the new barn, and hundreds of other activities), it is gratifying that there are some small steps we can take to protect the constant, on-going destruction of our archaeological heritage.

Vermont’s depressed economy is having a major impact on the Division. In 1992 we took another substantial cut in our state budget and lost 2 more positions (we lost 3 positions the year before that). There’s no doubt that historic preservation is less than a pressing need in many minds when the amount of available money shrinks. If you love Vermont’s historic and archaeological heritage and see it linked to Vermont’s well-being, to the quality of our environment, and to the state’s economic health, speak up about it. Silence is not always a virtue. Make an early new year’s resolution to take a legislator to lunch this winter.

The illustration on the opposite page is a field sketch of two views of the cribbing member found floating near Mount Independence. It is thought to have become dislodged from the footings of the 1777 bridge. See article by Bernie Noble on page 1.
Looting at the Donovan Site (VT-AD-2) Continues
by Jack Rossen

One of the more frustrating episodes of the summer has been the devastating looting of the Donovan site (VT-AD-2) in Ferrisburg. Located at the confluence of Dead and Otter Creeks, the Donovan site is an extensive series of villages and encampments. It is one of only a few sites in Addison County containing proven sub-plowzone deposits.

The looting was first discovered in August, in the course of spot-checking a Soil Conservation Service project in the area. At that time, the location of 18 large pits was transit mapped, backdirt was screened, and holes were refilled. It was learned from this operation that the temporal components of the site appear to be spatially discrete, a characteristic that enhances the scientific potential of the site. In mid-September, a site revisit revealed 20 new large looter holes. The style of looting, in which dirt along the sloping bank is gouged out and pushed downhill, is very distinctive and suggests that the same person or persons is repeatedly responsible for the vandalism.

The owner of the site is very upset about the looting because his bank is now eroding severely, and he is constantly bothered by seen and unseen trespassing on his land. For archaeologists and interested citizens, the episode highlights the complex difficulties of site protection. The site area cannot be seen from the owner’s house. In addition, there are no laws to protect archaeological sites in this circumstance; protection must come under civil trespass laws.

The bottom line is that one of the state’s most important archaeological sites is being decimated under our noses. It is our heritage that is being stolen. If you have any ideas on how to deal with this problem, please call Jack Rossen at the Soil Conservation Service, Middlebury, at 388-5746. Perhaps we can alternate and keep watch on the site. Perhaps we can mount a letter writing campaign pushing its protection. I am open to suggestions.

Definitive Industrial Archaeology of Vermont is Published

Vic Rolando’s 200 Years of Soot and Sweat: The History and Archaeology of Vermont’s Iron, Charcoal, and Lime Industries has just been published. Announcements were mailed to all VAS members (and 3,000 others throughout the Northeast) in mid-September, just as the book went to press.

The 300-plus page book documents Vic’s 15-year archival and field search for the physical vestiges of Vermont’s industrial past and includes chapters on iron making and iron working, and charcoal and lime burning; chapters describing the 288 sites (319 ruins and remains) of blast furnaces, bloomery forges, foundries, charcoal mounds, and lime kilns; a glossary of 18th- and 19th-century terms relating to these industries; a comprehensive bibliography; and a full index. There are over 260 photos, illustrations, and maps. The foreword is by State Archaeologist Giovanna Peebles and Robert Edwards West who assisted Rolando in much of the work.

The manuscript was edited by Joan Mentzer of the Smithsonian Institution, produced by Post Scripts (Dian Post) of Federalsburg, Maryland, and printed by Dover Litho of Dover, Delaware. The VAS is the publisher of record with financial assistance from the author and a grant (applied for by the VAS) from the Vermont Statehood Bicentennial Commission. The front cover features a color photo of the Forest Dale blast furnace.

The 8¼-by 11-inch soft cover book is printed on 70-pound Patina paper; the spine is Smythe sewn for durability. Copies are available at $32.95 each (postage paid) from Mountain Publications, P.O. Box 1812, Manchester Center, Vt. 05255 (with checks payable to Mountain Publications). Vermont orders must include 5% sales tax or tax exempt number. Single orders of 5 or more are discounted 15%. Copies will also be available at the VAS Fall 1992 Meeting.
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