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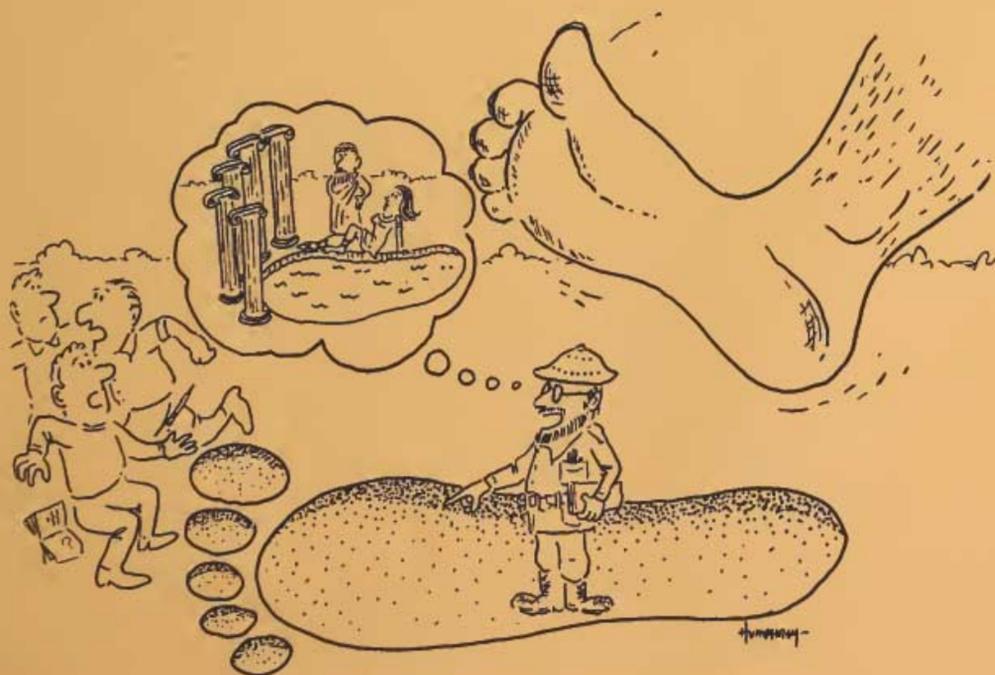
STUDENTS DIG IT!

Erich von Däniken has nothing on high school students in an introductory course in archeology: When confronted for the first time with such mundane Indian artifacts as potsherds, waste flakes from tool-making, deer bones, and a few broken tools, their imaginations run wild. Throw in a few human bones and their fantasies become feverish. Add an earthen mound to this mix and their explanations become extra-terrestrial!

Perhaps I exaggerate, but not very much. Archeology for most high school students has never been conceived of as a science. Instead it is viewed as a romantic search for, and the discovery of, antiquities such as King Philip's tomb, Agamemnon's golden mask, or the treasures of the Pharaohs.

When archeology begins to be understood as a science, it is not at all clear to students how to proceed. After all, the kinds of science most teenagers have been exposed to are earth science, biology, or chemistry. These subjects tend to be long on description and on the type of laboratory experimentation that seems to have little relevance to trash pits, human burials, and pottery sherds. The application of the scientific method to the material remains of past cultures has to be taught to high school students. In this way enthusiastic imaginations are subjected to the rigorous demands of scientific inquiry. This is a process that takes time but can be richly rewarding to both student and teacher.

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I teach in a large, upper-middle-class, public high school in the suburbs of Washington, D.C. Most of my students are 11th and 12th graders who have elected to take an 18-week course, half of it physical anthropology and half of it archeology. Invitation to Archaeology, by James Deetz, is the text for the archeology half, but the course is basically built around the use of scientific inquiry and the analysis of archeological data. Since it is not possible to involve all 90 students in a dig nor to arrange a schedule that would permit it, laboratory experiences are provided for all students.

Inference-Making and Testing

Nineteen years ago I participated in the excavation of the Crable site, a prehistoric Indian village site in Illinois, part of a program sponsored by the National Science Foundation for high school teachers. The archeologist in charge allowed the teacher participants to take some samples of the numerous materials found in the plow zone to use for instructional purposes. Using these, as well as slides and drawings, my students are presented with a variety of data about the site and what was found.

During the several weeks of time spent in the study of these materials, the students are expected to develop and test inferences, using the data given, both in artifacts and other materials. Inference-making and testing is done at three distinct levels of analysis and synthesis, each more complex than the preceding one. The first

level consists of analyzing each discrete item or bit of data and determining its function, if any. The second level of analysis consists of analyzing and explaining various features (such as trash pits). The third level of analysis as well as synthesis is at the cultural level (such as explaining subsistence patterns). Let me describe each step of this process.

A Sherd is Not a Stone

At the first level of inference-making and testing, students are presented with a variety of data. Slides show the site, the surrounding environment, and the excavations undertaken. Maps, drawings, and diagrams of the site are placed on the board and students are given a chance to take notes and ask questions. Then about two dozen sample artifacts and other items are distributed for examination and study. In presenting all of this data, I am careful not to make any inferences or draw any conclusions.

Students work in small groups at tables and are encouraged to work together in making and testing inferences. They are instructed to go through a three-step procedure with each item. First, what are its characteristics? Second, what is it? Third, what was its function? Each item should be described in writing, giving shape, size, color, texture, material, and any other pertinent features. Each item should be sketched. This takes most students at least a week to complete, and for some even longer. They have countless questions and continuously leap over the first two steps to the item's function. I move around the classroom, answering questions mainly by countering with some of my own, such as "What do you observe about the texture of that piece of rock?" "What are the grooves?" "What is the evidence for your inference?"

At first, frustration! Many students can't even distinguish a piece of cord-marked, shell-tempered pottery! "I guess it's a piece of stone," one student concludes after a cursory examination. He needs much help with observation. "Have you looked at it in cross-section?"

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"What is its shape?" "Is it flat?"
 "Why not?" "What are the white specks?"
 Students are encouraged to ask these questions of one another.

The cord markings on sherds require the closest observation. How were they made? Only after looking at a short, single section of one cord mark, and only after drawing it, do students finally see the twisted fiber imprint and begin to comprehend how the pot was made.

The Case of the Trash Pits

After completing this first step, the analysis of archeological features begins. At this level students must combine the discrete bits of evidence acquired at the first level into larger complexes. Students are provided with questions to direct their attention: "What were the excavated holes in which were found wood ashes, charcoal, animal and fish bones, sherds, lithic materials, etc.?" "How do you account for the human leg bones?" "Was the mound natural or man-made?" "What was its function?" Here is where fantasy and imagination run riot. However, students are given the following guide for testing their inferences in order to bring them back to the world of reality.

The excavated pits are analyzed first by the whole class. Every imaginable inference concerning their function is recorded on the board. Then each one is tested by the known data. Each bit of data supporting the inference is given a plus mark, while each bit of data that fails to support it or that refutes the inference is given a minus mark. After all of the pertinent supporting or refuting evidence has been weighed in this fashion, that particular inference having the most pluses and fewest minuses is given the highest probability of being correct. Invariably, in the case described, students conclude that the excavated holes were trash pits. Then students are directed

to make and test inferences in similar fashion with respect to other features.

Careful attention is given to spatial, temporal and formal aspects. The spatial aspect is stressed with regard to the trash pits. How is it that all of these diverse items are found jumbled up together? The human leg bones found adjoining a trash pit are a mystery that intrigues everyone until the drawing of this find is reexamined and both spatial and temporal possibilities are considered. Most students conclude that an earlier burial was disturbed by later diggers of a trash pit, and the remainder of the skeleton disposed of, leaving the lower leg bones undisturbed. And so another week is spent on this step of inference-making and testing.

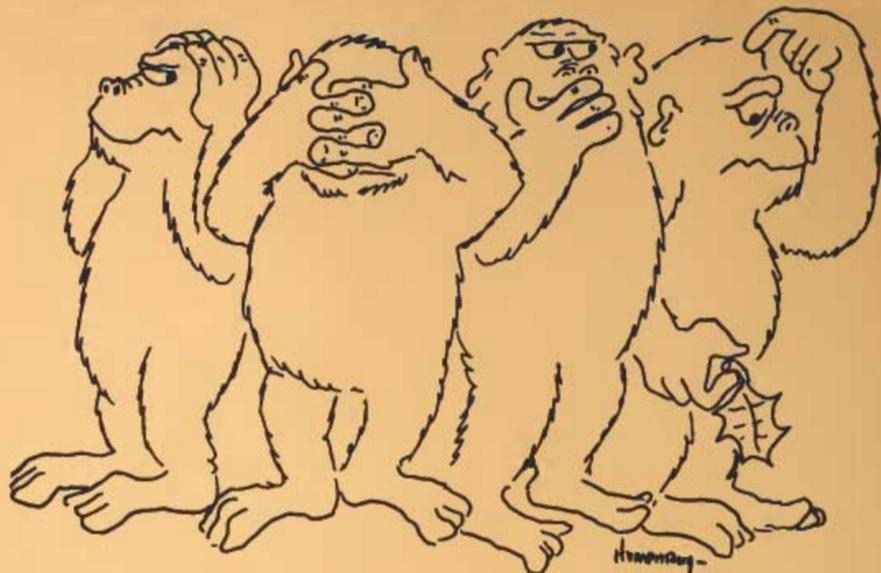
"By George, I've Got It!"

The third and most sophisticated part of the process is at the cultural level. Students are given questions such as: "What were the subsistence patterns of these people?" "How large was the village?" "What was the religion and ritual of these people?" Answers to these questions form the basis for a "site report" describing, insofar as possible, the culture of the people who inhabited the Crable site. At this level students must combine data and inferences from both of the previous levels, an intellectual task in synthesis.

By this time, most students have become much more sophisticated in the use of this method of making and testing inferences and are able to assemble a wide variety of data and to test their broad inferences. One of the most frequent comments made by students after completing their site report is, "When we started this study I couldn't imagine how you could tell anything about religion or social organization from just a few artifacts and slides. It's amazing how everything sort of fits together!"

One semester the students retrieved a large collection of artifacts from a dredging of the Chesapeake and Ohio

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Do You Know?

- If you cannot make it to New York before September for the American Museum of Natural History's exhibit, "Ancestors--Four Million Years of Humanity," excellent photographs of many of the original hominid finds are shown in "Bones of Our Ancestors" by Boyce Rensberger and Margo Crabtree in the April issue of Science 84.
- The latest synthesis for understanding hominid evolution is in David Pilbeam's "The Descent of Hominoids and Hominids" (Scientific American March 1984).
- Geza Teleki created an excellent filmstrip and script, "Chimpanzee Society and Behavior" (Set #437). He also produced the filmstrip "Ecology of the Gombe National Park" (Set #119). To order either filmstrip contact: Educational Images Ltd., Order Dept., Attn: Linda Bush, P.O. Box 267, Lyons Falls, NY 13368, (315) 348-8211; (\$34.95 each).
- Colin Turnbull presents an up-to-date account of "the forest people" in The Mbuti Pygmies: Change and Adaptation, 1983 (Holt, Rinehart and Winston).
- The Mammoth Trumpet, a new semi-annual newspaper, reports on recent discoveries and current research techniques concerning the peopling of the Americas before 10,000 years ago, and human origins in general. The first issue, Winter 1984, includes articles on life in Ice Age Chile, early man in Patagonia, and cut marks on bones suggesting human presence in the Old Crow Basin in Canada's Yukon Territory. To subscribe, contact the Center for the Study of Early Man, University of Maine at Orono, Orono, ME 04469.
- Teaching Anthropology Newsletter from Nova Scotia focuses on resources for teaching precollege anthropology and new programs. To subscribe, write to Dr. Paul A. Erickson, Editor, Dept. of Anthropology, Saint Mary's Univ., Halifax, NS B3H 3C3.
- Richard Lee's latest book on the San is The Dobe !Kung, 1984 (Holt, Rinehart and Winston).
- "New Ways to View the Zoo for High School Students and Teachers" is a two-day workshop, July 24-25, offered by the National Zoo. Teachers will develop new observation materials for high school students. For more information call (202) 673-4724.

MRS. PLES & TAUNG VISIT NEW YORK

One morning in early April, a darkened limousine and police escort waited at New York's Kennedy Airport to take an important group of first-class passengers into the city, a group which included the world's most famous six-year-old. Despite their 19-hour flight, the passengers were in remarkably good shape. The only victim of jet-lag was the man responsible for their safe-conduct from Johannesburg, Phillip Tobias of the University of the Witwatersrand. Tobias was at the same time the oldest and the youngest member of the group, as the others were all fossils, human ancestors who had died thousands or even millions of years ago in the youth or prime of their lives. Carefully packed in a specially constructed case, the "Taung baby" and others were destined for the American Museum of Natural History, their first and perhaps last visit to the New World, to take part in a major exhibition: "Ancestors: Four Million Years of Humanity."

Once at the museum, the fossils joined their counterparts from all over the world in a series of study sessions where scholars and students were able to compare them directly, often for the first time. Here "Mrs. Ples.", the first adult member of the genus Australopithecus to come to light, met her descendants of many generations (about 13×10^4). One such descendant, the original Neanderthal, had spent almost 90 years in a German museum before Mrs. Ples was released from her rocky matrix in South Africa. And early members of our own species, Homo sapiens, from Europe, Asia, Australia, and Africa reposed on a common table for the inspection of the scientists. Those few who could not attend in person were represented by excellent casts.

The scientists attracted almost as much attention as the fossils. Their age range was more restricted but still impressive, from Raymond Dart, 92, who described the first australopithecine fossil in 1925, to young scientists in their twenties from all over the world,

like Berhane Asfaw of Ethiopia. Wu Jukang, of the Institute of Vertebrate Palaeontology and Palaeoanthropology in Beijing, who is responsible for ongoing work in China at sites like Zhoukoudian (Chou Kou Tien), and Mary Leakey, who carries on her work at Olduvai Gorge in Tanzania, were present. Also included were Henri and Marie-Antoinette de Lumley, excavators of the earliest French members of our genus at the site of Arago in the Pyrenees, Donald Johanson and Tim White, Glyn Isaac, David Pilbeam, Elwyn Simons, and about one hundred others around the world. (continued)



The scientific debate continued formally and informally for eight days. New fossils of a distant ancestor from Kenya and of a more recent ancestor from India were presented for the first time. The discovery of the earliest "digging sticks", polished bones about 1.5 million years old from Swartkrans in South Africa, suggested that exploitation of deeply buried large roots and bulbs may have been an important factor in the early hominid diet, facilitating their use of open-country environments. The relationship between Lucy and Mrs. Ples was hotly debated, as was the relationship between humans and the great apes. Cut marks made by stone tools were pointed out on a cast of the recently discovered Bodo skull from Ethiopia, implying that this ancient pioneer of Homo sapiens was scalped before becoming a fossil. The fate of the western European Neanderthals and their genetic contribution to modern Europeans was also reviewed in the light of recent finds of Neanderthals in France and Yugoslavia in the "Upper Palaeolithic" levels.

But the stars of the show remain the original fossils. They will be on exhibit until September 9 at the American Museum of Natural History, before disbanding to return to their respective home institutions. Their pearly teeth, so like our own and yet so different, and their delicate colors absorbed from the earth in which they have lain for millenia rivet our attention, and their vacant eye sockets dare us to explore the enigma of our past. Far from the ancient African savanna or the caves of the last ice age, our ancestors await our scrutiny in New York.

Alison S. Brooks
(AncestorsSymposium,
April 1984)

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Canal in Georgetown, Washington, D.C., We also use these for inference-making and testing with historical materials of the late 19th and early 20th centuries. The predominance of whiskey bottles over milk bottles leads to some interesting speculation about what life was like along the canal. These artifacts provide opportunities for preparing typologies.

Finally, a part of the semester exam given to students contains a sketch of a 30-foot profile of the Koster site in Illinois, much simplified and supplemented, with instructions to students to describe the culture at each of nine living levels, extending back to the PaleoIndian period. This exam is designed to evaluate the skills students have learned in inference-making and testing, as well as their familiarity with the prehistory of eastern North America, the second important segment of the nine-week course.

There are not too many high school archeology courses in the U.S., but those that exist can provide students with excellent opportunities to use scientific inquiry as a bridge between humanistic studies and science. It should not be hard for other teachers to find similar archeological resources that can give their students the thrill of discovery. When students are successful in using these resources to develop and test inferences, in a manner similar to archeologists, both students and teacher derive great satisfaction as well.

Richard P. Abell
Walt Whitman High School
Montgomery County Public
Schools

(Paper delivered at the 11th International Congress of Anthropology and Ethnological Sciences, August 1983.)

RETURN TO INDIA

(Editors' Note: Thirty years ago a young graduate student in anthropology went to a small south Indian village for 14 months for doctoral research. Twenty years later she returned with her eldest son for two weeks, and this past February she returned again for a two-month stay. In the years since her first visit, Louise Harper raised three sons, taught anthropology courses to scores of pre-college students, and participated in the G.W.U./S.I. Anthropology for Teachers Program. In March Louise sent us the following "Report from the Field" to share with Anthro-Notes readers.)

The Village

The village is nestled between forested rolling hills that still contain peacocks and wild boars--but all the tigers have gone. It is as beautiful a setting today as the first day I came here. The earth is red, and the areca nut (betel nut) and coconut palms are a lovely soft green. Flowers bloom profusely, and magenta and orange bougainvillea cascade over the front door of the house of the family with whom I am living.

The village is seven miles from a major town where the one-way narrow gauge railway stops, connecting this mountain area with the large city of Bangalore. The Hindu population has almost doubled to 775 people and there are seven castes living here in quite separate hamlets. To simplify, I will describe these castes as the Brahmans, the dominant caste, who own all the areca nut land; the Shudras who farm the paddy or make the clay pots; and the Untouchables, once indentured servants, who are now hired on a daily wage of Rs. 5 (50 cents) for a man and Rs. 3 for a woman.

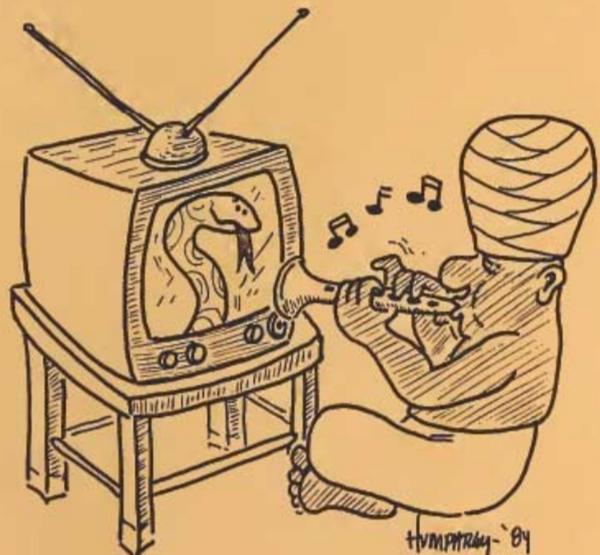
Physically the village has not changed very much. A family or two have moved out, and one has moved in. As large joint families partitioned, three new houses have been built. The houses range from the Brahman palatial two story, tile-roofed houses built around front

and back compounds, to the two-room thatched huts of the lower castes, one room for the family and one room for the goats. All Brahmans own cows and water buffalo for the milk they supply, and the Shudras may also have water buffalo and oxen to work in the fields. Only the lower castes own goats, a source of meat for them.

This short report focuses on the changes that I see for the 30 Brahman households since my first stay here, for it is with this caste that most of my limited time is being spent. What I say might or might not be applicable to the other castes. Today, as before, behavior, customs, and beliefs are often so totally different for each caste that I have come to believe there should be one fieldworker for each caste.

New Things

Thirty years ago this village was a remote, isolated, and conservative society. Brides were given to villages within approximately a 15 mile radius. Today the village is connected to the



outside world.

Electricity came to the village 25 years ago, and both Brahman hamlets and one Shudra hamlet utilize it. Wealthier Brahmans have installed pumps on their wells so women no longer have to draw all the water. Today each room has one light bulb. Families own radios and perhaps a blender in the kitchen supplementing the mortar and pestle in the back compound. Years ago wood stoves were always on the floor, a common cause of death among children when their clothing caught fire. Now a waist-high stove is a status symbol, and the fuel may be electricity, kerosene, or charcoal.

New crops are being grown. Some grow coffee for their own use and cardamon as a commercial crop. A couple of houses are experimenting with cinnamon, clove, and cocoa. One household grows silkworms, and two have small industries utilizing electrical power. One household is making and packaging areca nut powder, and one is making cups out of areca nut sheaves with a "punch" machine.

Plastic has invaded the village. Plastic buckets are used in the bathing area and plastic trays have replaced the gorgeous brass ones. Lower castes use plastic water jugs to draw water from the well. I wonder what this will mean for the potter caste.

Besides radio communication, some families subscribe to daily newspapers. While visiting one house yesterday, I was completely astounded to have a 30 year old man ask me, "Louise-amma, what do you think about the Reagan administration?"

The transportation system for the village is quite different. Before, the only way to travel was by bullock cart moving three miles an hour. Now practically every Brahman house has a bicycle, five have motor scooters or motorcycles, and a bus stops in the

village four times a day. The bus is often given as the reason why social change has come.

Agents of Change

Although the bus is considered the agent of change, it has not been the major force. (It has, however, changed one traditional behavior. Since all castes ride the bus, Brahmans may now come into contact with Untouchables. When Brahmans return from town, they do not take a ritual bath to cleanse themselves from this pollution before they touch other members of the family.) In my opinion, the major changes affecting the Brahmans stem from two simultaneous developments. The limited amount of available land became insufficient to support the growing Brahman population, and, at the same time, public education became available. Men could then train in alternative occupations. There are now two school teachers, a doctor, one man working for the army, and another in a bank. Thirty years ago Brahman boys and only a few girls attended elementary school. Since then a high school was built two miles away, and a college was founded in the town seven miles away. Today girls with only a high school education are having difficulty finding grooms since many suitors are asking for women with a B.A. degree.

This education shift has changed marriage patterns. During my first field trip, the first post-puberty marriages were just being performed, and a bride of 15 was considered old. Older people can still remember brides of six years and grooms of eleven. The appropriate ages now seem to be 18 to 25 years for women and 25 to 30 years for men. Since women are so much older and educated, they are given much more choice in deciding on their future husbands. Although there may be an occasional "love" marriage (and the English word is used), almost all marriages are still arranged by a girl's father. He searches for the groom, but the girl can veto his choice. Women

are also adding their own qualifications and prefer men who work in the city. This means that they will live in a nuclear family without a mother-in-law in the house.

In fact, the nuclear family has become more common in the village. Of the 30 Brahman households, 18 are now nuclear. Couples are deciding that two children are enough, even if two girls are born, and after that the wife will have the "operation." This seems to be the most accepted method of birth control, but other methods are known.

Pollution

Because so many villagers have had contact with city life, patterns of pollution have changed. Girls in the city do not observe the menstrual taboos. When girls return to the village they adapt to the old rules of "sitting outside" the sacred part of the house. No one should touch them, they must not cook, and they sleep separately. At the end of three days, all women may now bathe in the family bathroom rather than in the small pool in the areca nut garden.

Patterns of pollution from saliva have also changed. When I first came to this village, I had to remove my own banana leaves on which all meals were served, but now someone in the family will do this. Before, where meals had been eaten, all areas had to be washed with a small amount of purifying cow-dung. Now a damp rag will suffice.

Within the village the pattern of pollution from Untouchables has not altered to a great degree. Low caste villagers are not allowed in the Brahman houses nor in one of the temples. When giving some item to Untouchables, one still places that item on the ground, because earth does not pass pollution, and then they pick it up. Even today while I was washing my hands in the back compound, the Untouchable servant with a heavy load on her head did not pass me for fear we would touch.

Status of Women

With the assurance that comes with education and wider contacts, women are no longer shy in public. Modern couples will walk side by side and even touch. Women no longer eat off their husbands' used plates. Brahman women can now earn a small amount of money by husking areca nuts or sewing blouses on a sewing machine for others to wear. Although older husbands still choose saris for their wives, younger women go to town to select their own. Thirty years ago women remained in the rear of the house and back compound or hid behind the front door if they wanted to know what was happening. Today, in the late afternoon one can now see women sitting by the street "watching the world go by."

Attitudes Toward Change

It is very interesting to me that such rapid change within a single generation is not condemned. One does not hear the elders talking about "the good old days" nor criticizing the younger people. Several times, in fact, I have heard it said:

"What was good for the olden days was fine; but what is new for today is also fine."

Or as one older informant explained:

"When my father was alive he went to town three times in his life. When his younger brother became head of the household he went twice a year.
I used to go once a week.
My son may now go every day."

Louise Harper
Former anthropology teacher
Washington International
School, Washington, D.C.

TALKING WITH TEACHERS

(Editors' Note: Anthro. Notes editors periodically interview former participants of the George Washington University/Smithsonian Institution Anthropology for Teachers Program to discover how teachers are continuing to incorporate anthropology into their curricula. A selection of responses follows.)

To her surprise and delight Sallie Gough is spending this year teaching anthropology in Madrid, Spain, where her husband was assigned to the Air Force Base. Gough is teaching anthropology to 18 enthusiastic young airmen furthering their education after work. The students have conducted mother-infant observations, visited the National Archeological Museum where there is an early man exhibit and a reconstruction of the cave and paintings from Altamira, observed primates at Madrid's "huge, grand zoo", and analyzed aspects of Spanish culture.

A summer visit to China sparked new teaching projects for Susan Hirtz, still teaching 7th and 8th grades at Green Acres School in Maryland. On her summer tour in China, Hirtz visited the archeological dig, Xian. This school year the English and social studies teachers teamed up to teach a unit on China.

Willa Hennigan's 6th grade students at Bailey's Elementary School enthusiastically explored exhibits at the National Museum of Natural History through a new study approach. The students were divided into five groups with six students and one parent to each group. They visited five different stations in the museum with worksheets designed for each. "The students got so much more out of their visit and the parents who accompanied each group gave much positive feedback. The students were really involved."

The spring rite in Joyce Abell's anthropology classes at Bethesda Chevy Chase High School last year generated exciting anthropological insights for students. The 10th through 12th graders

stretched their legs and skills surveying a neighborhood considerably different from the one they live in. Away from the affluent suburb, Abell's classes visited Adams Morgan, a downtown, Washington, D.C. neighborhood economically and ethnically mixed. Their one day goals were to discover: 1) what groups of people live in Adams-Morgan, 2) what services are provided, and 3) where the neighborhood begins and ends. They divided into survey teams to observe and interview. The best informants turned out to be the Advisory Neighborhood Council representative, the shop merchants, the police, and the street people. Joyce Abell says the students came back from the experience realizing they can see far more than they thought and that different informants give very different views of the same place. Above all, the students commented on seeing people from so many different backgrounds working together in Adams-Morgan.

A unit on Native Americans began this year at Quander Road Center School in Virginia, thanks to Maxine Clark's study in the History of American Indians course at the Northern Virginia Community College and her previous year with the George Washington University/Smithsonian Institution Anthropology for Teachers Program.

Ting Oei teaching at South Lakes High School in Fairfax, Virginia brings anthropology into World History and World Civilizations classes in a creative way this year. Last summer Oei was one of three teachers working on the Curriculum Design for the Gifted and Talented. He restructured his courses around anthropology. Using four major themes, the class explores each theme from prehistory to the present. During the first quarter the focus is on Water and Its Role in Shaping Civilization. For the next three quarters, the students study Law and Religion: Man's Search for Stability; Aggression: How Man Does

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THE PAST BENEATH OUR FEET*

The lands administered by the National Park Service in and around our nation's capital are renowned for their scenic beauty, monuments, statuary, and historic buildings. Less evident, but equally important, are the prehistoric and historic archeological sites found throughout the parks of the National Capital Region. More than 11,000 years of changing lifestyles and different cultures are represented by the archeological remains--prehistoric campsites, workshops, stone quarries, and villages; sites of 17th through 19th century manor houses, kilns, mills, forges, foundaries, and fortifications; numerous Civil War battlefield sites; and the ruins of a variety of 19th century canal structures. Yet this archeological potpourri is but a pallid reflection of the sites that once existed.

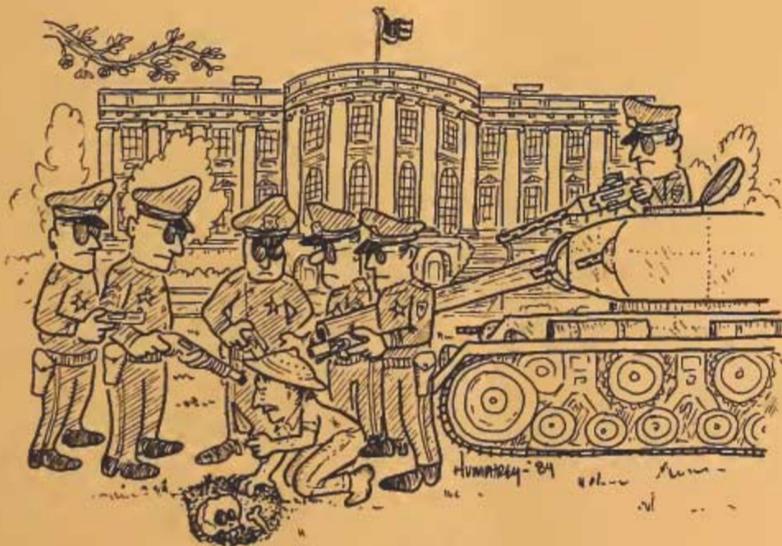
In 1897 a famous Smithsonian archeologist, W.H. Holmes, remarked upon "the multitude of inhabited sites from which our collectors have filled their cabinets with curious objects of art [artifacts]. The spot now the political center of the Nation was thus in prehistoric times a chief resort of the native peoples of the region." Many

remnants of the archeological record that escaped the 20th century destruction of urban development and suburban sprawl in the Washington, D.C., metropolitan area did so only because they happened to be located on lands set aside for park purposes. In most instances the parks were created with little or no knowledge that archeological sites even existed. Blind luck, not foresight, saved what is left of the area's rich archeological record.

Some sites that survived are truly amazing. For example, Rock Creek Park is a beautiful wooded stream valley that slices through the nation's capital. Nestled in one of the park's glades, only 2 1/2 miles from the White House, is one of the largest prehistoric boulder quarries known along the entire Atlantic Slope. Here, some 4,000 years ago, Indians dug into the deposits of quartzite and quartz boulders. From the cobbles and boulders the prehistoric miners flaked the stone into large oval-shaped blades that were later worked into projectile points or knives.

The quarry was first reported in 1880, but not until 1889 did W.H. Holmes, the Smithsonian archeologist, begin systematic investigations of the site.

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Holmes carried out his research sporadically during five years. Then, for almost a century, the site was left untouched by archeologists.

Armed with contemporary techniques and methods and the knowledge gained in the decades since Holmes's work, archeologists returned to the quarry in the summer of 1981. Faculty and students from New York University and National Park Service personnel joined in a cooperative venture designed to test some of W.H. Holmes's earlier hypotheses and to gather information on an unexplored area of the site. They discovered three workshops where prehistoric stone knappers had settled down to flake the stone into finer, oval-shaped blades. Analysis of the artifacts indicates that a variety of tasks, including bone- and wood-working, were being performed at the site in addition to the main activities of mining and stone working.

While some members of the joint National Park Service/New York University archeological field school worked at the prehistoric quarry, others excavated at the nearby historic site of Bladgen's mills--one mill for bone fertilizer and the other for wheat. Although Bladgen's mill complex was the largest of seven mills gracing the banks of Rock Creek, little was known about it. The two mills were operating before 1850, but historians did not know how much earlier. Bladgen's mills ceased operation in 1889 and afterward fell into ruin. Sometime in the early 20th century, construction of the Rock Creek Park road system supposedly obliterated the remains of the two mills.

Knowing that historical "facts" and archeological reality are often at variance, the archeologists excavated three five-foot squares at the presumed locale of the historic mills. They sought to discover whether early 20th century road construction had indeed destroyed all trace of these mills. After excavating through old road pavement, landscaping fill, and flood-

deposited silt, the archeological team came upon evidence of the raceway that had separated the two mills and of the builder's trench and footings belonging to one of the stone walls of the bone mill. These remains were buried some five to eight feet below the present ground surface. Amid the deposits was a solid layer of bone fragments that for some unexplained reason were never ground into fertilizer.

Across the Potomac River from the District of Columbia, at Great Falls Park, Virginia, are the archeological ruins of the Patowmack Canal and its associated town, Matildaville. This canal was George Washington's grand project designed to bypass the Great Falls of the Potomac along the river's southern bank in order to provide a commercial trade route to the west. Constructed between 1785 and 1802, the canal and its five locks provided a total lift of 76 feet in little more than one mile.

In 1979 stabilization work on the canal and locks required the removal of some silt (accumulated since the canal went out of business in 1828) from the bottom of lock #1. To the surprise of those involved, buried in the wet silt of the lower gate pocket were timbers and boards. Exploratory excavations the following year revealed that these artifacts are the remnants of the lock gates, left in a closed position when the canal was abandoned. Subsequent research indicates that these lock gates are probably the oldest surviving ones in North America.

The lock gates were salvaged in 1982 as part of the 250th anniversary celebration of George Washington's birth. The gates were uncovered by archeologists from the University of Maryland under contract to the National Park Service. After the gates were completely exposed, they were lifted out and taken to the visitor center at Great Falls Park, Virginia, where they are currently undergoing conservation treatment by National Park Service personnel. It will take two or three years to treat the water-logged wood in order to prevent it from disintegrating or drying. During this time, the gates will be on display in a

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SUMMER FIELDWORK OPPORTUNITIES

Alexandria Archaeological Research Center, located in the Torpedo Factory in Old Town, Alexandria, is conducting archeological excavations through May. For the remainder of the season, volunteers will work in the lab, processing artifacts excavated from 19th century household sites. Contact Barbara Magid at (703) 838-4399.

American University, in cooperation with the National Park Service, is hiring individuals with fieldwork experience for archeological excavations in Maryland, West Virginia, Pennsylvania, and Massachusetts. Course credit can be arranged. Send resume and references to: June Evans, Dept. of Anthropology, American Univ., Washington, D.C. 20016; (202) 686-2182.

Baltimore Center for Urban Archaeology needs volunteers to excavate and to process artifacts in their downtown lab. This season excavations will be conducted on early 18th century basement kitchens and backyards starting in May. Call Louise Akerson at (301) 396-1866.

The Catholic University of America's summer field school at Thunderbird Archaeological Park, a paleo-Indian complex near Front Royal, Virginia, introduces students to all aspects of archeology with emphasis on cultural reconstruction. Classes will be held June 25 - July 13; July 16 - August 3; and July 16 - August 3. Write: The Catholic Univ. of America, Dept. of Anthropology, Washington, D.C. 20064; (202) 635-5080.

Center for American Archeology, associated with Northwestern University since 1964, co-sponsors research and teaching programs with the university. Archeological programs are focused at three campuses: a 24 building, residential complex at Kampsville, Illinois near St. Louis; a 70-acre facility at Crow Canyon, Arizona; and a historic farmhouse at Elgin, Illinois. Year-round archeological programs are conducted at each of the three campuses. Open to students from junior high through



college, teachers, interested adults, and museum staff, these programs are designed to provide maximum public participation in the archeological research process. Write: Admissions Office, Center for American Archeology at Northwestern Univ., P.O. Box 1499, Evanston, IL 60204.

University of California Research Expeditions Program offers an opportunity for the experienced and inexperienced to become a member of a small university field research team. Studies in areas of anthropology archeology, animal behavior, ecology/botany, and paleontology will take researchers to all parts of the globe. Write: University of California Research Expeditions Program, Desk P, Univ. of California, Berkeley, CA 94720; (415) 642-6586.

Earthwatch offers opportunities for the interested public (ages 16-75) to join scientific expeditions throughout the world with museum and university scholars of various disciplines. Write: Earthwatch, 10 Juniper Rd., Box 127, Belmont, MA 02178.

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Fairfax County Archaeological Survey welcomes volunteers to participate in surveying prehistoric and historic sites, partially submerged in water, located in the vicinity of Mason Neck, Virginia, a tidewater coastal plain. High school and college interns may receive academic credit. Contact Mike Johnson or Sue Henry at (703) 642-5807.

Fairfax County Public Schools sponsors a six-week historic archeology course for high school students, two weeks of classroom study and four weeks of excavation. The field school will operate from June 28 - August 9. Write: Frank Taylor, Masonville Instructional Center, 3705 Crest Dr., Annandale, VA 22003; (703) 698 7500.

George Mason University's archeological field program will focus this summer on historic cemeteries. An undergraduate course in survey, recording, and analysis of historic cemeteries of the Chesapeake Bay region will be conducted from May 29 - June 29. In conjunction with this course, a pamphlet describing the importance of cemeteries as cultural and archeological resources is being prepared. The pamphlet will provide guidelines for locating and documenting cemeteries. Contact Ann Palkovich at (703) 323-2900.

George Washington University's Department of Anthropology offers Field Research in Historical Archeology in Old Town Alexandria. This course provides an understanding of basic excavation techniques and artifact analysis. The first session begins May 14 - May 22; the second June 11 - June 19. Write: Pamela Cressey, Alexandria Archaeological Research Center, City Hall, Box 178, Alexandria, VA 22313; (703) 838-4399.

George Washington University's Department of American Studies offers Field Research in Industrial Archeology by Eric DeLoney from July 30 - August 3. This introduction to the identification of industrial/engineering structures will include on-site documentation and preparation of field notes and measurements for drawings. Write: Dept. of American Studies, George Washington

Univ., Washington, D.C. 20052.

Loudoun Archaeology Center, located in Leesburg, Virginia, offers volunteer opportunities in an excavation of a Woodland Indian site on the Potomac River; lab work processing lithic and ceramic artifacts and faunal material; and assistance in their computerization program. Their research facilities also include a library, an extensive slide collection, and thousands of recovered artifacts. Write: Loudoun Archaeology Center, P.O. Box 829, Leesburg, VA 22075; (703) 777-3797.

University of Maryland, in cooperation with Historic Annapolis, Inc., is in its third season of excavation in historic, urban Annapolis. Lectures, guest speakers, and field trips to archeological sites supplement the excavation work at the Jones Green site where the Maryland Gazette was printed in the 18th century. Applications should be received by May 1. The field school runs from June 4 - July 13. Write: Mark Leone, Dept. of Anthropology, Univ. of Maryland, College Park, MD 20742; (301) 454-4254/5.

University of Maryland's Baltimore City Campus at Catonsville is holding a field school specifically designed for working people. Beginning the end of May, the field school will be conducted for five weekends and three evenings. Excavation will be carried out on early 19th century sites around the Carroll Mansion located in the city of Baltimore. For further information call (301) 455-3167.

National Capital Region of the National Park Service welcomes volunteers to assist in curating archeological specimens from both prehistoric and historic archeological sites. Contact Stephen Potter at (202) 426-6660.

School of Arts and Sciences in Berkeley, California, offers summer field programs on "Landscape & People." This summer undergraduates and junior and senior high school students can learn about the environment, history, and life today in

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Ireland (June 12 - June 28); England (July 1 - July 29); and Switzerland (August 2 - August 20). Each program includes lectures by local university scholars. Academic credit may be arranged. Financial aid is available. Write: School of Arts and Sciences, Summer Programs, P.O. Box 5545, Berkeley, CA 94705; (415) 549-1482.

Smithsonian Associates Travel Program sponsors an eight-day archeological study tour of the ancient Anasazi culture, under the leadership of the staff of Crow Canyon campus of Northwestern University's Center for American Archeology, located near Mesa Verde, Colorado. Participants will learn excavation techniques and lab analysis. Tour dates are May 20 - May 27 and August 5 - August 12. Write: Smithsonian National Associates Program, A&I 1278, S.I., Washington, D.C. 20560; (202) 357 2477.

Thunderbird Research Corporation's archeological field training program is designed for the interested lay person. One week field sessions begin June 4 to August 21; equipment and instruction charge is \$100. Continuing Education units will be given for completion of a one-week session. Camping facilities are available at Virginia's first pre-historic National Historic Landmark. Write: Thunderbird Museum, 1984 Summer Field Program, Route 1, Box 1375, Front Royal, VA 22630.

Field School Listings in anthropology and archeology: 1) American Anthropological Association, 1703 New Hampshire Ave., N.W., Washington, D.C. 20009; \$3.00, and 2) Archaeological Institute of America, P.O. Box 1901, Kenmore Station, Boston, MA 02215; \$6.00.

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specially constructed room so the public can see this remnant of George Washington's engineering dream.

Ultimately, the value of archeology lies in its contribution to science and in the enrichment of public knowledge. Preserving, managing, and interpreting archeological sites provide the means of educating the public about the past and the ways it can be studied through the hundreds, and perhaps even thousands, of archeological remains in the National Capital Region.

Stephen R. Potter
Regional Archeologist
for the National Capital
Region of the National
Park Service

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Himself In; and Art: How Man Expresses Himself

Martha William's commitment and enthusiasm for historical archeology led her to study for another M.A., in Applied History, offered by George Mason University. In this new graduate program, she is studying historic preservation, museum studies, and archives management.

With the Anthropology for Teachers course and an M.A. in Anthropology from American University completed, M. Christopher Williams is designing a new two-semester anthropology course to begin next fall in Bishop McNamara High School in Forestville, Maryland. But Japan comes first. Williams and 30 other educators were selected to visit Japan this summer as part of a fellowship program co-sponsored by the National Council of Social Studies and the Japan Institute for Social and Economic Affairs.

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